APPENDIX B
NESTING BIRD HABITAT AVOIDANCE MEMO

Memorandum

January 18, 2014

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Reviewed:	Jeremy Svehla, Project Manager	
Subject:	**Salt River Ecosystem Restoration Project (Phase 2)** **Sensitive Bird Nesting Habitat Protection Plan**	Job no.: 10653-10-001

1. Purpose

The Sensitive Bird Nesting Habitat Protection Memo dated February 15, 2012 served as the basis for protection of nesting birds during Phase 1 of the Salt River Ecosystem Restoration Project; which was largely focused on the restoration of tidal marsh. This memo is intended to amend the February 2012 memo and provide the basis for avoiding impacts to nesting birds during subsequent construction seasons within Phase 2; which includes the re-habilitation of Salt River channel corridor and floodplain.

This memo outlines measures to avoid impacts to nesting birds during Phase 2 work, including a proactive approach to managing nesting habitat prior to the nesting season within the construction limits. The avoidance measures presented in this memorandum are generally consistent with the intent of the Final Environmental Impact Report, the Coastal Development Permit, Section 3503 of the California Department of Fish and Wildlife (CDFW) Code and the Federal Migratory Bird Treaty Act, and have been developed based on:

- The different site and habitat conditions presented by Phase 1 and Phase 2,
- The constraints on construction sequencing posed by adjacent infrastructure and land use in Phase 2, and
- Discussions with CDFW biologists.

2. Background

The Project consists of two primary construction phases; Riverside Ranch Tidal Wetland Restoration (Phase 1) and the Salt River Channel and Riparian Floodplain Corridor Restoration (Phase 2). Each of these phases offers distinctly different site and habitat conditions, as well as differing opportunities for construction sequencing.

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Phase 1 encompasses an area of approximately 400 acres and offers a diverse range of habitats, including; inner-tidal channel, salt marsh, seasonal wetland, riparian, and agricultural grassland habitat. Phase 2 is comprised of a more linear corridor some 200 feet wide and 5 miles long that primarily supports a willow-dominated riparian habitat. The Phase 1 area is generally surrounded by agricultural lands, with some large adjoining contiguous areas of riparian and open water estuarine habitats. The Phase 2 construction footprint is bounded by more typical rural residential and agricultural lands including county roads, infrastructure, housing, and/or active dairy operations for much of its length.

During the 2013 construction season, Phase 1 construction was successfully completed while also avoiding impacts to a wide variety of nesting bird species. This was largely due to the size of the area and the diversity of habitats; which allowed the project to move construction activities from place to place to avoid nesting birds over the course of the nesting season. However, the project also worked closely with its biologist and biologists from CDFW to modify construction activities to conform to the biologist's recommendations about timing of work and types of equipment used. When necessary, the biologist closely monitored the behavior of the birds during construction. Repeatedly, the birds demonstrated a high tolerance to construction activities and were not found to abandon nests directly adjacent to project activities. These species included ground, scrub-shrub and riparian habitat nesters.

The Phase 2 footprint will be much more confined relative to Phase 1 and must be constructed in a linear sequence. Due to the physical site and sequencing constraints of Phase 2 a proactive approach to avoiding impacts to nesting birds will be important. These avoidance measures have been developed based on field biology experience gained during Phase 1 construction coupled with an understanding of the Phase 2 habitats and necessary construction sequencing.

3. Phase 2 Nesting Habitat Descriptions

Figure 1 provides a typical cross-sectional depiction of the Phase 2 project footprint which is comprised of two distinct areas of potential nesting habitat:

1. Nesting habitat within the construction limits (approximately 200 feet wide), and
2. Nesting habitat in the retained vegetation immediately adjoining the construction limits (an approximate average 20 feet wide).

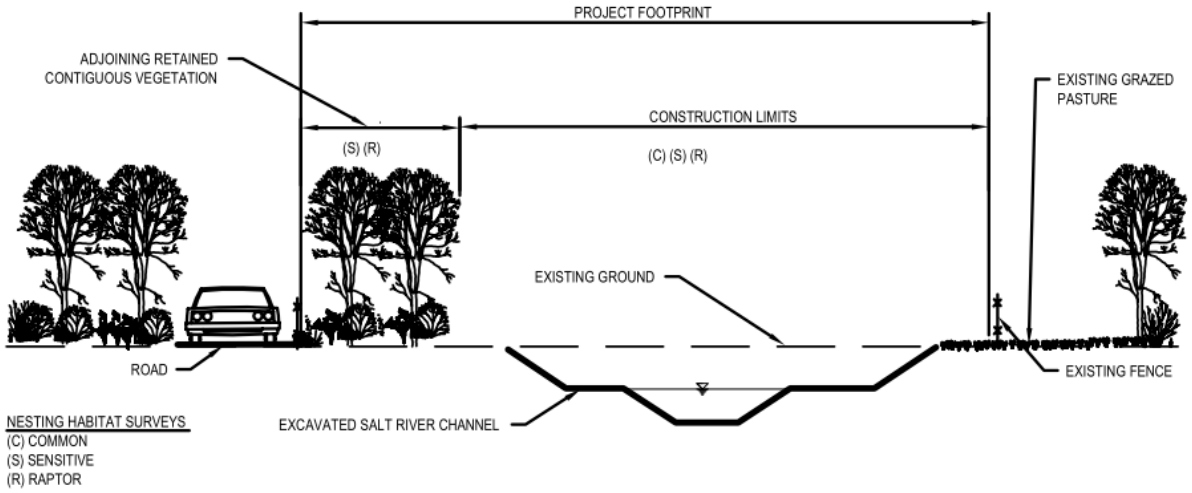

Figure 1. Typical cross-sectional depiction of the Phase 2 project footprint with proposed nesting surveys in construction limits and adjoining retained contiguous vegetation.

Prior to construction in 2014, vegetation will be removed from the construction limits, which averages approximately 200 feet in width to accommodate the channel excavation and re-planting of diverse riparian habitat species. A band of vegetation (approximately 20 feet in width) will be preserved adjoining the construction limits. The intact vegetation was retained by design to provide some mature riparian cover and habitat while the newly planted vegetation establishes. Assessment and avoidance measures are described below for these two distinct areas.

4. Nesting Habitat Within Construction Limits

As previously stated, construction limits is defined as the area where active ground disturbance associated with channel excavation will occur. The following avoidance measures apply to these areas.

4.1 Pre-Construction Avoidance Measures

To reduce the probability of nesting birds occupying habitat within the construction limits, vegetation will be cleared by mechanical and/or hand methods as conditions allow between August 15 and March 1. After March 1, at the direction of the HCRCD, a qualified biologist will conduct routine habitat assessments of the cleared areas to determine whether regrowth is potentially creating suitable habitat for nesting birds. The habitat assessment is not intended to be a detailed nesting protocol-level survey, but rather presence-absence observations that allows the biologist to provide timely direction for continued vegetation maintenance as a preventative measure to avoid direct impacts to nesting birds.

If the habitat assessment reveals potential nesting habitat, but active nests are not observed, the biologist will advise the contractor/HCRCD to conduct additional vegetation maintenance as described above. Maintenance should occur within 7-days from the date of the assessment,

unless, in the opinion of the biologist a longer time is acceptable. Routine maintenance by hand and light weight mechanical equipment and traditional agricultural practices such as mowing and grazing will occur until commencement of construction.

4.2 Nesting Habitat Survey

Beginning March 1, if during the habitat assessment the qualified biologist identifies an active nest (defined as a nest containing viable eggs, hatchlings, or chicks) of a common, species of special concern, Endangered Species Act (ESA) listed, California Endangered Species Act (CESA) listed, and/or raptor species within the cleared construction footprint, the nest will be avoided and appropriate setbacks specified in Section 6 will be established.

5. Nesting Habitat within Adjoining Retained Vegetation

The construction limits predominantly adjoin either actively managed agricultural pastures, retained vegetation, or developed areas such as dairy facilities, roads, and rural residential dwellings. The avoidance measures specified below apply to the retained riparian habitat directly adjoining the construction limits.

5.1 Avoidance Measures

During the vegetation maintenance within the construction limits and prior to excavation activities, surveys will not be conducted in the adjoining riparian habitat due to the infrequent and minimal ground/noise disturbance associated with the previously specified vegetation maintenance activities.

Within 7-days prior to commencement of excavation activities within the construction limits, the retained vegetation directly adjoining the construction limits will be surveyed for active nesting ESA listed, CESA listed, and/or raptor species. If habitat density prevents the use of standard audible and visual detection techniques, the use of audible calling may be utilized at the discretion of the biologist but is not anticipated to be necessary.

During Phase 1 construction, common nesting species consistently demonstrated a high tolerance to close proximity construction activities. The project biologist monitored work occurring within buffers and observed that construction activities within a buffer of much less than 100 feet did not negatively impact nesting behavior. Based on this, and based on the unique constrained project footprint being approximately 200 feet-wide with a narrow band of average 20 feet of retained vegetation, surveys for common migratory birds in adjoining retained riparian vegetation are not proposed between March 1 and August 15 during excavation activities. If construction activities require a direct impact to adjoining riparian vegetation between March 1 and August 15, then surveys for common, species of special concern, ESA listed, CESA listed, and/or raptor species shall first be conducted in those areas.

6. Avoidance Setbacks

In accordance to section 1 and 2 above, the following setbacks shall be flagged and avoided if an active nest is observed. An active nest is defined as a nest that in the opinion of the biologist contains viable eggs, hatchlings, and/or chicks. Avoidance setbacks apply only to construction activities within the project

footprint as depicted in Figure 1 and do not extend beyond the project footprint on to adjacent roads or private land.

Species	Avoidance Setback (feet)
Common and Species of Special Concern	Minimum of 3
Sensitive (ESA/CESA listed)	300
Raptor	500

Avoidance setbacks may be modified by the project biologist, after consultation with CDFW and based upon site-specific factors, for example; different species may be more or less sensitive to disturbance, and the type and duration of impact may also influence the amount of buffer needed.

7. Survey Methods

Surveys and survey results will be focused on those areas directly under the Project's control. Surveys are not intended to be conducted, and avoidance measures are not proposed to be implemented, on areas and activities immediately adjoining the construction limits and not under the Project's control. This includes such things as vehicle use of existing roads, and standard agricultural activities such as grazing, haying, and mowing on adjacent private land.

Surveys are intended to identify confirmed or probable nesting activity, based on the professional judgment of the project biologist. Where the habitat being surveyed allows the surveyor to walk through without risk of damaging nests and surrounding vegetation, then the survey may include a physical search of the area in addition to behavioral observations. Where habitat is dense or otherwise impenetrable it may be possible to infer the locations of nests through behavioral observations of adult birds from the edge of the habitat. For example, singing positions of parent males can be mapped to determine the general nesting area and this can be further refined with additional behavioral observations. Survey methods will generally follow methods outlined in Ralph et al (1993). Protocol-level surveys are not necessary based on direct field experience in Phase 1. Previous protocol-level surveys performed during Phase 1 construction using audio broadcasting may have actively elicited breeding call responses and drew unconfirmed individuals into the broadcast area in search of mates. Locations of nests or nesting behavior will be flagged and either mapped in the field on large-scale maps or GPS'd depending on the nest location. In order to locate nesting birds a combination of strategies will be utilized. Specific strategies will depend primarily on two factors – timing and habitat characteristics.

8. Survey Timing

A qualified biologist shall conduct the assessments during the nest-building stage for most species, as this is the earliest time of the nesting season and when nesting birds are relatively conspicuous. During this stage the surveyor can watch for birds carrying nest material and track them to their nests. If the biologist determines the nest is inactive, the biologist may choose to remove the nest, thereby reducing the likelihood the nest progresses to an active status and becomes vulnerable to construction related

impacts. If the nest is active it may be monitored if and until completion (fledging) date can be projected with a reasonably high level of accuracy. During the egg-laying and incubation stages nesting birds are less conspicuous, making nest finding more difficult, requiring different strategies. Subtle behavioral cues (e.g., specific call types) are particularly helpful during these stages. Surveys conducted during the nestling stage make it relatively easy to find nests as both parents actively feed young and can be observed carrying food throughout the day.

9. Mapping

As surveys are completed, locations of nests will be identified and mapped. The map will identify the observations by category. The maps are intended to be working maps that will be utilized by the construction manager throughout the construction season and will be periodically updated as the nesting season progresses. The initial and final nesting bird maps and a brief written commentary describing the results will be provided to CDFW and the California Coastal Commission.

10. Deliverables

A map of confirmed nests and probable nesting areas (based on bird behavioral observations) would be provided to CDFW and California Coastal Commission for review and approval prior to the start of construction, and will include a brief written summary describing results. At the end of the construction season, the map and written summary would be updated with results of follow-up surveys.

11. Allowable Construction Preparation and Agricultural Activities

The following activities may occur within or immediately adjoining the construction limits and do not require advance nesting surveys if in the opinion of the biologist these activities do not significantly disturb potential or existing nesting habitat during the nesting season:

- construction equipment use of construction ingress/egress corridors,
- construction survey staking,
- construction preparatory activities such as fence removal/placement and erosion/sediment control BMP placement,
- cofferdam and diversion bypass piping placement,
- construction entrance/staging area placement,
- sediment stockpile and reuse on agricultural lands, and
- limited riparian thinning to accommodate any of the above activities.

12. Literature Cited

Ralph, C.J.; Geupel, G.R.; Pyle, P.; Martin, T.E.; DeSante, D.F. 1993. Handbook of field methods for monitoring landbirds. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. Gen. Tech. Rep. PSW-GTR-144.41 p.