Note to Reader: This administrative draft document is being released prior to the public draft version that will be released for formal public review and comment later in 2018. The administrative draft incorporates comments by the lead agencies on prior versions, but has not been reviewed or approved by the lead agencies for adequacy in meeting the requirements of CEQA or NEPA. All members of the public will have an opportunity to provide comments on the public draft. Responses will be prepared only on comments submitted during the formal public review and comment period on the Supplemental EIR/EIS information.

1 Appendix 3B

2 # Environmental Commitments, AMMs, and CMs

Appendix 3B
Environmental Commitments, AMMs, and CMs

This appendix has been updated for environmental commitments that are incorporated into the proposed project that may have been refined or added to since the publication of the Final EIR/EIS.

3B.1 Environmental Commitments

As part of the planning and environmental assessment process, the project proponents will incorporate the following environmental commitments and best management practices (BMPs) into the proposed project to avoid or minimize potential adverse effects (a NEPA term) and potential significant impacts (a CEQA term). The project proponents will implement these environmental commitments as part of the project construction activities. In other words, these commitments will be satisfied even if not separately imposed by the permitting agencies. If permitting agencies impose additional measures or modifications, those will also be adhered to as part of the permit(s). Because the terms of these environmental commitments and BMPs remain largely the same as outlined in Appendix 3B of the Final EIR/EIS, the discussion is not repeated here and only includes refinements that have been made to any of the environmental commitments since the publication of the Final EIR/EIS.

3B.1.1 Geotechnical Studies

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.2 Conform with Applicable Design Standards and Building Codes

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.3 Electrical Power Guidelines

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.4 Electrical Power Line Support Placement

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.5 Develop and Implement Stormwater Pollution Prevention Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.6 Develop and Implement Erosion and Sediment Control Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.7 Develop and Implement Fish Rescue and Salvage Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.8 Develop and Implement a Barge Operations Plan

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.9 Construction Equipment Exhaust Reduction Plan

Prior to construction, project proponents will develop a construction equipment exhaust reduction plan to reduce criteria air pollutants from construction equipment. The reduction plan will be provided to the appropriate Plan Area air districts for review prior to construction. Control technology that achieves equivalent or greater reductions than those identified below may be specified as new emissions reduction technologies become available and cost-effective.

3B.1.9.1 Off-Road Heavy-Duty Engines

Prior to construction start for each major project feature, project proponents will ensure all heavy-duty off-road construction diesel equipment utilize U.S. Environmental Protection Agency (USEPA) certified Tier 4 or newer engines. A copy of each unit's certified tier specification and any required California Air Resources Board (ARB) or air pollution control district operating permit will be made available to the California Department of Water Resources (DWR) at the time of mobilization of each piece of equipment. Each contractor will keep a written record (supported by equipment-hour meters where available) of equipment usage during project construction for each piece of equipment. Each contractor will provide DWR with monthly reports of equipment operating hours and annual reports documenting compliance.

In addition to the Tier 4 performance standard, the following best management practices will be incorporated into the reduction plan.

- Minimize idling time either by shutting equipment off when not in use or limiting the time of idling to 3 minutes (5 minutes required by 13 California Code of Regulations 2449[d][3], 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by an Automotive Service Excellent-certified mechanic and determined to be running in proper condition before it is placed in operation.
- Ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0[1]) will be repaired immediately. Noncompliant equipment will be documented and a summary provided annually to the lead agency and air district with jurisdiction over the construction site. A visual inspection of all in-operation equipment will be made at least weekly by the contractor and witnessed monthly or more frequently by the proponent agency(ies), and a periodic summary of the visual survey results will be submitted by the contractor throughout the duration of the proposed project, except that the summary will not be required for any 30-day period in which no construction activity occurs. The summary will include the quantity and type of vehicles inspected, as well as the dates of each survey. The air districts or other officials may conduct periodic site inspections to determine compliance. Nothing in this measure will supersede other air district or state rules or regulations.

Explanation of effectiveness: These BMPs are proven, standard measures that minimize the generation of criteria air pollutants and greenhouse gas (GHG) emission from construction equipment. Accordingly, implementation of the construction equipment exhaust plan would help reduce the severity of potential public health and climate change impacts from these project-related emissions. However, as discussed in Chapter 22, *Air Quality and Greenhouse Gases*, implementation of these BMPs alone would not be sufficient to reduce significant impacts to a less-than-significant level. For these impacts (e.g., Impacts AQ-1, AQ-2, AQ-3, AQ-9, and AQ-16) mitigation measures would be implemented to further minimize the severity of the impacts. Even then, the impacts for some alternatives would be significant and unavoidable (see Table ES-8 in the Final EIR/EIS Executive Summary for details).

3B.1.9.2 Marine Vessels

Prior to construction start for each major project feature, project proponents will ensure that all marine vessels used to construct project facilities utilize USEPA certified Tier 3 or newer engines. As noted in Appendix 22A, *Air Quality Analysis Methodology*, the air quality analysis has been performed based on model year 2010 emission factors (Tier 3 compliance for new engines) obtained from the California Air Resources Board (2012).

3B.1.9.3 Heavy Duty Haul Trucks

Prior to construction start for each major project feature project proponents will ensure that all on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used to construct project facilities comply with at least USEPA 2007 on-road emission standards for particulate matter 10 microns in diameter or less (PM10) and nitrogen oxides (NO_X) (0.01 grams per break-horsepower hour [g/bhp-hr] and 0.20 g/bhp-hr, respectively). These PM10 and NO_X standards were phased in through the 2007 and 2010 model years on a percent of sales basis (50% of sales in 2007 to 2009 and 100% of sales in 2010). As noted in Appendix 22A, *Air Quality Analysis Methodology*, the air quality analysis has been performed using emission factors based on model

[1] Based on the Ringelmann scale, which measures the density of smoke in the air.

year 2010 or newer engines, and no less than the average fleet mix for the current calendar year as set forth in ARB's EMFAC2017 model.

3B.1.9.4 Locomotives

Prior to construction start for each major project feature project proponents will ensure that all diesel tunneling locomotives used to construct project facilities utilize USEPA certified Tier 4 or newer engines.

Explanation of effectiveness: This environmental commitment will reduce criteria air pollutants from construction equipment by including performance standards for newer and cleaner off-road equipment, marine vessels, and haul trucks, and requiring all tunneling locomotives to utilize Tier 4 engines. However, some impacts related to generation of criteria pollutants, such as PM10, reactive organic gases (ROG) and NO_X emissions, would still exceed air quality district thresholds and would remain significant and unavoidable. This environmental commitment would also lessen effects related to alteration in existing visual quality or character during construction of conveyance facilities, as described in Impact AES-1 of Chapter 17, *Aesthetic and Visual Resources*. Earthmoving activities and associated heavy equipment and vehicles would be readily visible throughout operation of these sites and have the potential to create dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. This commitment would reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust to help reduce the creation of dust clouds that would negatively affect short-range views. However, this environmental commitment, along with mitigation measures, would still not reduce impacts fully, and impacts related to visual quality or character would remain significant and unavoidable.

3B.1.10 DWR Construction Best Management Practices to Reduce GHG Emissions

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.11 Develop and Implement Noise Abatement Plan

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.12 Develop and Implement Hazardous Materials Management Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.13 Develop and Implement Spill Prevention, Containment, and Countermeasure Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.14 Develop and Implement a Fire Prevention and Control Plan

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.15 Prepare and Implement Mosquito Management Plans

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.16 Conduct Environmental Training

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.17 Fugitive Dust Control

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.18 Disposal and Reuse of Spoils, Reusable Tunnel Material (RTM), and Dredged Material

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.19 Provide Notification of Maintenance Activities in Waterways

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.20 Selenium Management

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.21 CEQA and NEPA Compliance for BDCP-related Conservation Projects

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.22 Comply with Caltrans' Division of Aeronautics on Location of Conveyance Facilities within 2 Miles of Airport Boundary

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.23 Use of Slurry Cutoff Walls to Protect Groundwater during Dewatering Operations

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.1.24 Use of Slurry Cutoff Walls and Toe Drains to Minimize Seepage from Forebays

Please refer to the discussion in Appendix 3B, *Environmental Commitments, AMMs and CMs*, in the Final EIR/EIS.

3B.2 Other Commitments

No new commitments for the purpose of addressing other nonenvironmental consequences of implementing the proposed project have been added for this Supplemental EIR/EIS. Please see Section 3B.3 in Appendix 3B of the Final EIR/EIS for a discussion of these additional commitments.

3B.3 Avoidance and Minimization Measures

Avoidance and minimization measures (AMMs) have been incorporated into the analysis throughout the EIR/EIS as a means of avoiding or reducing impacts of the proposed project. Those listed below in Table 3B-1 have been identified as avoiding or reducing effects to a less-than-significant level. *AMM26 Salt Marsh Harvest Mouse and Suisun Shrew* and *AMM37 Recreation,* which were previously described for certain alternatives explored in the Final EIR/EIS, have not been included in Table 3B-1 because there would be no activity in salt marsh harvest mouse or Suisun shrew habitat under the proposed project. Because the terms of these avoidance and minimization measures remain largely the same as outlined in Appendix 3B of the Final EIR/EIS, a full description of each AMM is not repeated here.

1 **Table 3B-1. Summary of Avoidance and Minimization Measures Used As Mitigation**

Number	Title	Summary
Benefit All Natural Communities and Covered Species		
AMM1	Worker Awareness Training	Includes procedures and training requirements to educate construction personnel on the types of sensitive resources in the project area, the applicable environmental rules and regulations, and the measures required to avoid and minimize effects on these resources.
AMM2	Construction Best Management Practices and Monitoring	Standard practices and measures that will be implemented prior, during, and after construction to avoid or minimize effects of construction activities on sensitive resources (e.g., species, habitat), and monitoring protocols for verifying the protection provided by the implemented measures.
Primarily Benefit Covered Fishes		
AMM3	Stormwater Pollution Prevention Plan	Includes measures that will be implemented to minimize pollutants in stormwater discharges during and after construction related to covered activities, and that will be incorporated into a stormwater pollution prevention plan to prevent water quality degradation related to pollutant delivery from project area runoff to receiving waters.
AMM4	Erosion and Sediment Control Plan	Includes measures that will be implemented for ground-disturbing activities to control short-term and long-term erosion and sedimentation effects and to restore soils and vegetation in areas affected by construction activities, and that will be incorporated into plans developed and implemented as part of the National Pollutant Discharge Elimination System permitting process for covered activities.
AMM5	Spill Prevention, Containment, and Countermeasure Plan	Includes measures to prevent and respond to spills of hazardous material that could affect navigable waters, including actions used to prevent spills, as well as specifying actions that will be taken should any spills occur, and emergency notification procedures.
AMM6	Disposal and Reuse of Spoils, Reusable Tunnel Material, and Dredged Material	Includes measures for handling, storage, beneficial reuse, and disposal of excavation or dredge spoils and reusable tunnel material, including procedures for the chemical characterization of this material or the decant water to comply with permit requirements, and reducing potential effects on aquatic habitat, as well as specific measures to avoid and minimize effects on species in the areas where reusable tunnel material would be used or disposed.
AMM7	Barge Operations Plan	Includes measures to avoid or minimize effects on aquatic species and habitat related to barge operations, by establishing specific protocols for the operation of all project-related vessels at the construction and/or barge landing sites. Also includes monitoring protocols to verify compliance with the plan and procedures for contingency plans.
Primarily Benefit Covered Plants, Wildlife, or Natural Communities		
AMM10	Restoration of Temporarily Affected Natural Communities	Restore and monitor natural communities in the Plan Area that are temporarily affected by covered activities. Measures will be incorporated into restoration and monitoring plans and will include methods for stockpiling and storing topsoil, restoring soil conditions, and revegetating disturbed areas; schedules for monitoring and maintenance; strategies for adaptive management; reporting requirements; and success criteria.
AMM11	Covered Plant Species	Requires rare plant surveys of project sites with suitable habitat for special-status plants. Includes measures to avoid and minimize effects on populations of rare plants.

Number	Title	Summary
AMM12	Vernal Pool Crustaceans	Includes provisions to require project design to minimize indirect effects on modeled habitat, avoid effects on core recovery areas, minimize ground-disturbing activities or alterations to hydrology, conduct protocol-level surveys if activities take place in core recovery areas, and redesign projects to ensure that no suitable habitat within these areas.
AMM13	California Tiger Salamander	During the project planning phase, identify suitable habitat within 1.3 miles of the project footprint, ash survey aquatic habitats in potential work areas for California tiger salamander. If California tiger salamander larvae or eggs are found, implement prescribed mitigation.
AMM14	California Red-Legged Frog	During the project planning phase, identify suitable habitat within 1 mile of the project footprint, conduct a preconstruction survey, implement protective measures for areas where species presence is known or assumed, and establish appropriate buffer distances. If aquatic habitat cannot be avoided, implement prescribed surveys and mitigation.
AMM15	Valley Elderberry Longhorn Beetle	During the project planning phase, conduct surveys for elderberry shrubs within 100 feet of covered activities involving ground disturbance, and design project to avoid effects within 100 feet of shrubs, if feasible. Implement additional protective measures, as stipulated in AMM2. Elderberry shrubs identified within project footprints that cannot be avoided will be transplanted to previously approved conservation areas in the Plan Area.
AMM18	Swainson's Hawk	Conduct preconstruction surveys of potentially occupied breeding habitat in and within 0.25 mile of the project footprint to locate active nest sites.
AMM19	California Clapper Rail	Identify suitable habitat in and within 500 feet of the project footprint. Perform surveys and implement prescribed protective measures in areas where species is present or assumed to be present.
AMM20	Greater Sandhill Crane	Conduct preconstruction surveys to determine winter roost occupancy within 0.75 mile of the construction area boundary and determine related areas of foraging and roosting habitat. Implement protective measures in occupied areas.
AMM21	Tricolored Blackbird	Conduct preconstruction surveys in breeding habitat within 1,300 feet of the project footprint, if the project is to occur during the breeding season. Avoid any construction activity within 250 feet of an active tricolored blackbird nesting colony, and minimize such activity within 1,300 feet.
AMM22	Suisun Song Sparrow, Yellow-Breasted Chat, Least Bell's Vireo, Western Yellow-Billed Cuckoo	Conduct preconstruction surveys of potential breeding habitat in and within 500 feet of project activities. It may be necessary to conduct the breeding bird surveys during the preceding year depending on when construction is scheduled to start. Implement protective measures in occupied areas.
AMM23	Western Burrowing Owl	Perform surveys where burrowing owl habitat (or sign) is encountered within 500 feet of a proposed construction area. If burrowing owls or suitable burrowing owl burrows are identified during the habitat survey, and if the project does not fully avoid direct and indirect impacts on the suitable habitat, perform preconstruction surveys and implement certain minimization measures.
AMM24	San Joaquin Kit Fox	Conduct habitat assessment in and within 250 feet of project footprint. If suitable habitat is present, conduct a preconstruction survey and implement U.S. Fish and Wildlife Service guidelines. Implement protective measures in occupied areas.

Number	Title	Summary
AMM25	Riparian Woodrat and Riparian Brush Rabbit	Conduct surveys for projects occurring within suitable habitat as identified from habitat modeling and by additional assessments conducted during the planning phase of construction or restoration projects following U.S. Fish and Wildlife Service *Draft Habitat Assessment Guidelines and Survey Protocol for the Riparian Brush Rabbit and the Riparian Woodrat*. Implement protective measures in suitable habitat.
AMM27	Selenium Management	Develop a plan to evaluate site-specific restoration conditions and include design elements that minimize any conditions that could be conducive to increases of bioavailable selenium in restored areas. Before ground-breaking activities associated with site-specific restoration occurs, identify and evaluate potentially feasible actions for the purpose of minimizing conditions that promote bioaccumulation of selenium in restored areas.
AMM28	Geotechnical Studies	Conduct geotechnical investigations to identify the types of soil avoidance or soil stabilization measures that should be implemented to ensure that the facilities are constructed to withstand subsidence and settlement and to conform to applicable state and federal standards.
AMM29	Design Standards and Building Codes	Ensure that the standards, guidelines, and codes, which establish minimum design criteria and construction requirements for project facilities, will be followed. Follow any other standards, guidelines, and code requirements that are promulgated during the detailed design and construction phases and during operation of the conveyance facilities.
AMM30	Transmission Line Design and Alignment Guidelines	Design the alignment of proposed transmission lines to minimize impacts on sensitive terrestrial and aquatic habitats when siting poles and towers. Restore disturbed areas to preconstruction conditions. In agricultural areas, implement additional BMPs. Site transmission lines to avoid greater sandhill crane roost sites or, for temporary roost sites, by relocating roost sites prior to construction if needed. Site transmission lines to minimize bird strike risk.
AMM31	Noise Abatement	Develop and implement a plan to avoid or reduce the potential in-air noise impacts related to construction, maintenance, and operations.
AMM32	Hazardous Material Management	Develop and implement site-specific plans that will provide detailed information on the types of hazardous materials used or stored at all sites associated with the water conveyance facilities and required emergency-response procedures in case of a spill. Before construction activities begin, establish a specific protocol for the proper handling and disposal of hazardous materials.
AMM33	Mosquito Management	Consult with appropriate mosquito and vector control districts before the sedimentation basins, solids lagoons, and the intermediate forebay inundation area become operational. Once these components are operational, consult again with the control districts to determine if mosquitoes are present in these facilities, and implement mosquito control techniques as applicable. Consult with the control districts when designing and planning restoration sites.
AMM34	Construction Site Security	Provide all security personnel with environmental training similar to that of onsite construction workers, so that they understand the environmental conditions and issues associated with the various areas for which they are responsible at a given time.
AMM35	Fugitive Dust Control	Implement basic and enhanced control measures at all construction and staging areas to reduce construction-related fugitive dust and ensure the project commitments are appropriately implemented before and during construction, and that proper documentation procedures are followed.

Number	Title	Summary
AMM 38	California Black Rail	Preconstruction surveys for California black rail will be conducted where potentially suitable habitat for this species occurs within 500 feet of work areas. If California black rail is present in the immediate construction area, protective measures will apply during construction activities.
AMM 39	White Tailed Kite	Conduct preconstruction surveys of potentially occupied breeding habitat in and within 0.25 mile of the project footprint to locate active nest sites.

3B.4 Environmental Commitments

The proposed project would continue to implement Environmental Commitments are 3, 4, 6, 7, 8, 9, 10, 11, 12, 15, and 16. The explanations regarding their effectiveness as included in Appendix 3B of the Final EIR/EIS continue to be applicable.

3B.5 References Cited

California Air Resources Board. 2012. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California. February.