4.0 MITIGATION MONITORING AND REPORTING PROGRAMS

While the mitigation and reporting programs (MMRP) are part of the project approvals and therefore referenced in the documentation for consideration of both the General Plan and the BIG Specific Plan, they are also included here as chapter 4.0 of the Final EIR for convenience.

City of Barstow

CITY OF BARSTOW GENERAL PLAN

June 2026 | Mitigation Monitoring and Reporting Program

SCH# 2024020501

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CITY OF BARSTOW GENERAL PLAN

City of Barstow

City of Barstow
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MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the City of Barstow General Plan pursuant to the requirements of California Environmental Quality Act Guidelines Section 15097, *Mitigation Monitoring or Reporting*. The purpose of this MMRP is to ensure the implementation of mitigation measures identified as part of the environmental review for the proposed Project. The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. This MMRP includes the following information:

- The full text of the mitigation measures;
- The party responsible for implementing the mitigation measures;
- The timing for implementation of the mitigation measures; and
- The agency responsible for monitoring the implementation.

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
5.2 AGRICULTURE AND FORESTRY RESOURCES			
GP AG-1: Prior approval of any development permit on land considered Prime Farmland, Farmland of Statewide Importance, and Unique Farmlands, the City shall require the following: 1. Future development shall first seek to avoid developing on land classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. 2. Completion of the California Department of Conservation Land Evaluation & Site Assessment Model. If the model score is 39 points or less, conversion of the land is not significant, and no further mitigation is required. If the model score is between 40 and 79 points, conversion of the land to urban uses may be significant but will depend on the results of the model. A LESA model score of 80 or greater identifies the conversion as significant. 3. If the LESA model results determine that conversion of the agricultural land to urban uses is a significant impact, the development shall be conditioned to provide either an agricultural easement on existing farmland with a similar or greater LESA model score, or the creation of new agricultural land and easement at a 1:1 ratio.	Future Project Applicants	Prior to approval of any development permit on Prime Farmland, Farmland of Statewide Importance, and Unique Farmland	City of Barstow Planning Division
5.3 AIR QUALITY			
GP AQ-1: Reduce Emissions from Construction Activities. Prior to issuance of any construction permits for development projects subject to CEQA review (i.e., non-exempt projects), development project applicants shall prepare and submit to the City of Barstow (City) Planning Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with the Mojave Desert Air Quality Management District methodology and guidelines for projects	Future Project Applicants	Prior to issuance of any construction permits	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
in the Mojave Desert Air Basin. If construction-related criteria air pollutants are determined to have the potential to exceed the adopted thresholds of significance of the applicable air district, the City Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City Public Works Division. Mitigation measures to reduce construction-related emissions could include, but are not limited to: a. Use of construction equipment rated by the United States Environmental Protection Agency as having Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site and available for City review upon request. b. Ensure construction equipment is properly serviced and maintained to the manufacturer's standards. c. Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible. d. Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g., five minute maximum).			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
e. Preparation and implementation of a fugitive dust control plan that may include the following measures: f. Disturbed areas (including storage piles) that are not being actively utilized for construction purposes shall be effectively stabilized using water or chemical stabilizer/suppressant, or covered with a tarp or other suitable cover (e.g., revegetated). g. On-site unpaved roads and off-site unpaved access roads shall be effectively stabilized using water or chemical stabilizer/suppressant. h. Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking. i. Material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained when materials are transported off-site. j. Operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
k. Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, said piles shall be effectively stabilized to prevent fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. l. Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. m. Any site with 150 or more vehicle trips per day shall prevent carryout and track out. n. Limit traffic speeds on unpaved roads to 15 mph. o. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. p. Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area. q. Require electrical hookups for battery/electric tools. r. Require battery-electric or plug-in electric power where feasible for off-road equipment under 19 kW (e.g., compactors, pressure washers). s. Require model-year 2014 or newer heavy-duty trucks for construction access meeting CARB's lowest optional NOx standard.			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
GP AQ-2: Reduce Emissions from Operation. Prior to discretionary approval by the City of Barstow (City) Planning Division for development projects subject to CEQA review (i.e., nonexempt projects), project applicants shall prepare a technical assessment evaluating potential air quality impacts related to the project operation phase and submit it to the City Planning Division for review and approval. The evaluation shall be prepared in conformance with the Mojave Desert Air Quality Management District (MDAQMD) methodology and guidelines for projects in the Mojave Desert Air Basin. If operation-related air pollutants are determined to have the potential to exceed the MDAQMD-adopted thresholds of significance, the City Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions to below these thresholds during operational activities. The identified measures shall be included as part of the conditions of approval. Possible Mitigation measures to reduce long-term emissions can include, but are not limited to: a. For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions. b. Applicants for manufacturing and light industrial uses shall utilize energy storage and combined heat and power in appropriate applications to	Future Project Applicants	Prior to discretionary approval	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
optimize renewable energy generation systems and avoid peak energy use. c. Applicants for non-residential developments with over 50 employees shall provide changing/shower facilities as specified, at minimum, or greater than in the California Green Building Standards (CALGreen) Code (Non-residential Voluntary Measures). d. Applicants for multifamily, hotel, and motel developments shall provide bicycle parking facilities equivalent to or greater than as specified in the Residential Voluntary Measures of the CALGreen Code. e. Applicants for non-residential developments with 50 or more parking spaces shall provide preferential parking spaces for low-emitting, fuel-efficient, and carpool/van vehicles equivalent to or greater than the CALGreen Code (Non-residential Voluntary Measures). f. Applicants for non-residential developments and multi-family residential developments shall provide facilities to support electric charging stations identified in the Non-residential Voluntary Measures and Residential Voluntary Measures of the CALGreen Code, respectively. g. Applicant-provided appliances shall be Energy Star-certified appliances or appliances of equivalent energy efficiency (e.g., dishwashers, refrigerators, clothes washers, and dryers). Installation of Energy Star-certified or equivalent			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
appliances shall be verified by Building & Safety during plan check. h. Applicants for future development projects along existing and planned transit routes shall coordinate with the City of Barstow and the applicable transit agency to ensure that bus pad and shelter improvements are incorporated, as appropriate. i. Applicants for warehouse projects that maintain a heavy-duty truck fleet shall evaluate the feasibility of requiring a zero-emission heavy truck fleet, or near-zero heavy truck fleet. j. Applicants for warehouse projects shall place signage at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations (e.g., Rule 2485). At minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict nonessential idling to no more than two consecutive minutes (compared to five minutes currently allowed under Rule 2485); and 3) telephone numbers of the building facilities manager and CARB to report violations. k. If Applicants for warehouse project have domiciled heavy-duty trucks (Class 7 and 8) onsite, the tenant/operator of the facility shall be required to provide electric truck charging			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
facilities on site sufficient to charge the electric trucks domiciled on the site, and such facilities shall be made available for all electric trucks that use the facility, to the extent the applicable utility authorizes and has capacity to support.			
GP AQ-3: Operational Health Risk Assessment. Applicants for new discretionary industrial or warehousing projects or commercial land uses that would generate substantial diesel truck travel—i.e., 40 diesel trucks per day per the Mojave Desert Air Quality Management District (MDAQMD) CEQA Guidelines, or 40 or more trucks with diesel-powered transport refrigeration units per day based on the California Air Resources Board recommendations for siting new sensitive land uses—and that are within 1,000 feet of existing or planned sensitive land uses shall prepare a health risk assessment (HRA). Sensitive land uses consist of residences, senior living/assisted living communities, schools, daycare centers, playgrounds, and medical facilities. All HRAs shall be submitted to the City of Barstow Planning Division and the MDAQMD for evaluation. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and MDAQMD for projects in the Mojave Desert Air Basin (MDAB). If the HRA shows that the project incremental cancer risk exceeds ten in one million (10E-06) or the risk thresholds in effect at the time a project is considered, or that the appropriate noncancer hazard index exceeds 1.0 or the thresholds as determined by MDAQMD at the time a project is considered, the applicant will be required to identify and demonstrate that measures	Future Industrial and Warehousing Project Applicants, and Commercial Project Applicants generating substantial diesel truck travel	Prior to discretionary approval	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
are capable of reducing potential cancer and noncancer risks to the thresholds identified by MDAQMD above (i.e., cancer risk of 10E-06 or noncancer hazard index of 1.0), including appropriate enforcement mechanisms. Measures to reduce risk impacts may include but are not limited to: a. Restricting idling on-site beyond Air Toxic Control Measures idling restrictions, as feasible. b. Electrifying warehousing docks. c. Requiring use of newer equipment and/or vehicles. d. Restricting off-site truck travel through the creation of truck routes. Measures identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project.			
5.5 CULTURAL RESOURCES			
GP CUL-1: Assessment of Historic Built Environment Resources. Prior to any construction or demolition activities on the site of a federal, state, or local registered landmark or historic resource, a Historical Resources Assessment shall be prepared by an architectural historian or historian who meets the Secretary of the Interior's Professionally Qualified Standards (PQS) in architectural history. This shall include a records search and the qualified architectural historian or their designee shall conduct a reconnaissance-level and/or intensive-level survey of the project site in accordance with the California Office of Historic Preservation (OHP) guidelines to identify and record any previously unrecorded	Future Project Applicants, Architectural Historian	Prior to any construction or demolition activities on a site of federal, state, or local registered landmark or historic resource	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
historic structures that may be potentially affected by the proposed project. To minimize the potential for projects requiring the relocation, rehabilitation, or alteration of a historical resource to adversely change the significance of a historical resource, the proposed action on the site of a federal, state, or local registered landmark or historic resource must follow Secretary of the Interior's Standards for the Treatments of Historic Properties. The application of the standards shall be overseen by a qualified architectural historian or historic architect meeting Secretary of the Interior's PQS. Prior to any construction or demolition activities that may affect the historical resource, a report identifying and specifying the recommended treatment of the resource, any actions to preserve the resource's character-defining features, and recommended measures for pre-construction and construction phase actions shall be provided to the City of Barstow for review and approval. All final documentation shall be submitted to the City of Barstow and South Central Coastal Information Center (SCCIC).			
GP CUL-2: Treatment of Historic Built Environment Resources. If a proposed project on the site of a federal, state, or local registered landmark or historic resource would result in the demolition or significant alteration of a historical resource, then prior to any demolition or alteration, an architectural historian who meets the PQS, shall conduct additional recordation of the resource. Recordation shall take the form of Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), or Historic American Landscape Survey (HALS) documentation. The specific scope and details of documentation shall be developed at the project level but shall follow the	Future Project Applicants, Architectural Historian	Prior to any demolition or significant alteration of a historical resource	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
standards for documentation as outlined in the Department of the Interior's Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines, and the National Park Service Heritage Documentation Program guidelines for HABS/HAER/HALS. Final documentation shall be submitted to the City of Barstow, the Barstow Branch of the San Bernardino County Library, and the South Central Coastal Information Center (SCCIC).			
GP CUL-3: Assessment of Archaeological Resources. For projects for which CEQA requires an environmental impact report, mitigated negative declaration, or negative declaration, and that are proposed in areas that have not been previously graded or disturbed by development, or would extend below the area previously disturbed, an Archaeological Resources Assessment shall be prepared, during environmental review and prior to project approval, by an archaeologist who meets the Secretary of the Interior's Professionally Qualified Standards (PQS) in archaeology. The Assessment shall include a records search for the project area to determine if any archaeological resources have been previously recorded, evaluated, and/or listed, or recommended eligible for listing, in the National Register of Historic Places (NRHP), California Register of Historic Resources (CRHR), and/or any local registers. Following the records search, the qualified archaeologist or their designee shall conduct a reconnaissance-level and/or intensive-level survey in accordance with the California Office of Historic Preservation (OHP) guidelines to identify and record any previously unrecorded archaeological resources that may be potentially affected by the proposed project. If tribal resources are discovered during the preparation of the Archaeological Resources Assessment, the City shall consult with the tribes on record as required by law. Following recordation, the archaeologist shall evaluate any	Future Project Applicants, Archaeologist	During environmental review for projects requiring an environmental impact report or a (mitigated) negative declaration and prior to project approval	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
identified resources for eligibility for listing in the NRHP, CRHR, and any local registers, as well as its potential as a historical resource and/or unique archaeological resource under CEQA. Final documentation shall be submitted to the City of Barstow and the South-Central Coastal Information Center (SCCIC).			
GP CUL- 4: Treatment of Archaeological Resources. If archaeological resources that are eligible for listing in the NRHP, CRHR, and/or local register are identified within or adjacent to a proposed development evaluated under GP CUL-3, the City shall consider the feasibility of avoidance, or preservation in place, of the resource. For resources that would be avoided and preserved in place, the site of the archaeological resource, plus a 50 foot buffer around the archaeological resource, shall be clearly flagged to identify the construction avoidance area and assure impacts to these resources are avoided during construction activities. Flagging may be completed using construction tape, caution tape, or installing fencing around the area, and off-limits signs may be placed near the area. Once areas are delineated, and prior to any ground disturbance, a qualified archaeologist shall verify that the flagging clearly delineates the avoidance area and construction limits. Since the location of some archaeological resources is confidential, these resources shall be flagged as environmentally sensitive areas (ESA). The qualified archaeologist or their designee shall be present to monitor any ground disturbing activity for any projects that have eligible archaeological resources. For any archaeological resources that cannot be avoided or preserved in place, the qualified archaeologist shall prepare a data recovery (i.e., excavation) plan that shall be submitted to the City for review and approval. The plan shall include methods for treatment of recovered resources, such as reburial or curation, that are appropriate for the specific project.	Future Project Applicants, Archaeologist, Construction Contractor	During ground-disturbing and construction activities if an eligible archaeological resource is identified	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
GP CUL-5 Inadvertent Discoveries of Human Remains. For discoveries of Native American human remains, PRC § 5097.98 and HSC § 7050.5 shall be followed. If human remains are encountered, all ground-disturbing activities shall halt within 100 feet of the find. A Sensitive Resource Area (SRA) shall be established around the site plus the 100 foot buffer via the placement of a physical barrier/demarcation, such as fencing or caution tape. The human remains, along with any associated grave goods and associated burial and sacred items, shall remain in place until the procedures as outlined in PRC § 5097.98 and HSC § 7050.5 are completed. No photographs of the remains or associated funerary objects shall be taken unless specifically requested by the County Coroner as a part of the legal process.	Future Project Applicants, Construction Contractors	During ground-disturbing activities, if human remains are discovered	City of Barstow Planning Division
5.8 GREENHOUSE GAS EMISSIONS			
GP GHG-1: Climate Action Plan. The City of Barstow shall prepare a qualified Climate Action Plan (CAP) to align GHG emissions targets in the City with the GHG reduction targets of Assembly Bill (AB) 1279. The qualified CAP shall be completed within 36 months of certification of the General Plan EIR. The qualified CAP shall be updated every five years to ensure the City is monitoring the plan's progress toward achieving the City's greenhouse gas (GHG) reduction target and to require amendment if the plan is not achieving specified level. The update shall consider a trajectory consistent with the GHG emissions reduction goal established under AB 1279 for year 2045, and the latest applicable statewide legislative GHG emission reduction that may be in effect at the time of the CAP. The qualified CAP shall include the following: ▪ GHG inventories of existing and forecast year GHG levels.	City of Barstow Planning Division	Within 36 months of certification of the General Plan EIR	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
▪ Tools and strategies for reducing GHG emissions to ensure a trajectory with the long-term GHG reduction and carbon neutrality goal for year 2045 of Assembly Bill 1279. These may include, but are not limited to: o Encouraging electric vehicle adoption through incentive or education programs. o Adopting local ordinances or policies that require greater energy efficiency, waste reduction, and water conservation in new construction, additions, and/or alterations. o Encouraging the construction of solar arrays above parking lots, as well as the integration of solar and other renewable energy generation technologies in new construction, additions, and/or alterations. o Encouraging the incorporation of energy storage and other grid-harmonizing infrastructure in new construction, additions, and/or alterations. o Collaborating with Southern California Edison to encourage existing developments to upgrade natural gas equipment (e.g., furnaces) with electric equipment (e.g., heat pumps). o Ensuring municipal fleets are transitioning to zero-emission vehicles in accordance with CARB's Advanced Clean Fleets regulation.			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
○ Coordination with Southern California Edison to expand battery storage to support renewable energy generation and electric truck charging in the City. ▪ Plan implementation guidance that includes, at minimum, the following components consistent with the proposed CAP: ○ Administration and Staffing ○ Finance and Budgeting ○ Timelines for Measure Implementation ○ Community Outreach and Education ○ Monitoring, Reporting, and Adaptive Management ○ Tracking Tools Discretionary projects with applications submitted to the City prior to the adoption of the CAP shall consider measures identified in the California Air Pollution Control Officer's Association 2024 Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (GHG Handbook).			
GP GHG-2: Implementation of **MM BIG AQ-1** through **MM BIG AQ-14.**	Future Project Applicants, Construction Contractors	Prior to issuance of construction contracts, during construction	City of Barstow Planning Division
5.12 NOISE			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
GP NOI-1: Construction Noise Measures. Construction contractors shall implement the following measures for construction activities conducted in the City of Barstow. Construction plans submitted to the City shall identify these measures on demolition, grading, and construction plans. The City of Barstow shall verify that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading, and/or building permits. • Limit construction activities to the hours of 7:00 AM and 7:00 PM Monday through Sunday, unless an exception is approved by the Community Development Director, and enforce FTA nighttime construction noise standards outside of these hours. • During active construction, project equipment and trucks used for project construction shall use the best-available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. A technique shall be considered feasible when it would reduce, rather than increase, the noise impacts to the nearest sensitive receptor, and would not increase costs by over 10% of the base construction cost associated with using standard construction equipment without best available noise control techniques. Proper mufflers and/or silencers can	Future Construction Contractors	During plan review	City of Barstow Planning Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
achieve a 4 to 5 dBA reduction, while engine enclosers can achieve 8 to 10 dBA reduction. • Impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered. Where pneumatic tools must be used, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. Pneumatic tools typically measure at a noise level of 6 to 8 dBA lower than impact tools. • Stationary equipment, such as generators and air compressors, shall be located as far as feasible from nearby noise-sensitive uses. A distance is "as far as feasible" if there is no further distance from nearby noise-sensitive uses where the equipment could be placed and continued to perform its intended function while complying with the safety requirements set out in the operation manuals for each piece of such equipment. "Feasible" distances are limited to areas where construction contractors have permission to place equipment from relevant landowners. • Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors. A distance is "as far as feasible" if there is no further distance from nearby noise-sensitive uses where the stockpiled materials could be placed and mobile equipment used for stockpiling can continue to perform its intended function while complying with the safety			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
requirements set out in the operation manuals for each piece of such equipment. "Feasible" distances are limited to areas where construction contractors have permission to stockpile and use equipment from relevant landowners. • Construction traffic shall be limited to approved Goods Movement Routes established in Figure CM-4 of the proposed General Plan and as further regulated by state law. • At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take corrective action to stop any ongoing violations, provide worker education designed to prevent such violations in the future, and report the action to the City. • During the entire active construction period, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
• If construction is anticipated for more than two days adjacent to sensitive receptors, as required by the Community Development Director, erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 80 dBA Leq. Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier. Barriers are considered feasible if City Engineer determines, based on acoustical modeling provided by the applicant, that the barriers would be effective in maintaining construction noise levels at or below the performance standard, and if the barriers would not increase the project's base construction by over 10%.			
GP NOI-2: Traffic Noise Measures. No feasible mitigation measures have been identified that would substantially reduce impacts associated with a substantial increase in traffic noise levels for all roadways showing significant impacts. However, the following measures may be considered for mitigating or avoiding traffic noise impacts. *Special Roadway Paving* Notable reductions in tire noise have been achieved via the implementation of special paving materials. For example, the California Department of Transportation (Caltrans) conducted a study	Future Construction Contractors	During project design and prior to construction activities	City of Barstow Planning Division, City of Barstow Engineering Services Division

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
of pavement noise along Interstate 80 in Davis and found an average improvement of 6 dBA to 7 dBA compared to conventional asphalt overlay (Caltrans, 2011). *Sound Barrier Walls* Review of aerial depictions of the impacted segments show most residences along the study segments have direct access (via driveways) to the associated roadways. Therefore, barrier walls would prevent access to/from individual properties and would be infeasible because to be effective the barrier needs to break the line of sight of the receptor (home) from the noise source (road) which would mean blocking the driveway. Further, these impacted homes are on private property outside of the control of future project developers, so there may be limited admittance onto these properties to construct such walls. Lastly, the costs versus benefits ratio in relation to the number of benefited households may not be feasible and reasonable in all cases. *Sound Insulation of Existing Residences and Sensitive Receptors* Exterior-to-interior noise reductions depend on the materials used, the design of the homes, and their conditions. To determine what upgrades would be needed, a noise study would be required for each house to measure exterior-to-interior noise reduction. Sound insulation may require upgraded windows, upgraded doors, and a means of mechanical ventilation to allow for a “windows closed” condition. There are no funding mechanisms and procedures that would guarantee that the implementation of sound insulation features at each affected home would offset the increase in traffic noise to interior areas and ensure that the State’s 45 dBA CNEL standard for multifamily residences would be achieved.			

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring
GP NOI-3: Construction Vibration Analysis. Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures, such as historical resources, within 100 feet of nonengineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); or a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed the City's or FTA's architectural damage thresholds shown in **Table 5-12.5**. If vibration levels would exceed these thresholds, alternative methods shall be used, such as drilling piles instead of pile driving and static rollers instead of vibratory rollers. If necessary, construction vibration monitoring shall be conducted to ensure vibration thresholds are not exceeded.	Future Project Applicants, Construction Contractors, Acoustical Engineers	Prior to issuance of building permit for projects requiring pile driving	City of Barstow Planning Division, City of Barstow Engineering Services Division
GP NOI-4: Operation Vibration Analysis. Prior to issuance of a building permit for equipment that has the potential to result in significant vibration, a vibration analysis shall be conducted to assess and mitigate potential vibration impacts. This vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer and shall follow the latest practices, and precedents to show compliance with Strategy 2.B-2 vibration standard of 0.2 in/sec PPV.	Future Project Applicants, Construction Contractors, Acoustical Engineers	Prior to issuance of building permits for equipment that has potential for significant vibration	City of Barstow Planning Division, City of Barstow Engineering Services Division
5.16 TRIBAL CULTURAL RESOURCES			
Implementation of **MM GP CUL-1** and **MM GP CUL-3.**			
5.17 UTILITIES AND SERVICE SYSTEMS			
Implementation of Mitigation Measures provided in **Section 5.1** through **Section 5.17**			

City of Barstow

BARSTOW INTERNATIONAL GATEWAY

June 2026 | Mitigation Monitoring and Reporting Program

SCH# 2024020501

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

4.1 Introduction

The California Environmental Quality Act (CEQA) requires that all public agencies establish monitoring and/or reporting procedures for mitigation adopted as conditions of approval to mitigate or avoid significant environmental impacts. This Mitigation Monitoring and Reporting Program (MMRP) has been developed to provide a vehicle by which to monitor mitigation measures (MMs) outlined in the Proposed General Plan and Barstow International Gateway Project ("Project") Environmental Impact Report (EIR). The Project MMRP has been prepared in conformance with Public Resources Code § 21081.6 and City of Barstow ("City") monitoring requirements. Specifically, Public Resources Code § 21081.6 states:

> (a) *When making findings required by paragraph (1) of subdivision (a) of Section 21081 or when adopting a mitigated negative declaration pursuant to paragraph (2) of subdivision (c) of Section 21080, the following requirements shall apply:*
>
> *(1) The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead or responsible agency, prepare and submit a proposed reporting or monitoring program.*
>
> *(2) The lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.*

State CEQA Guidelines § 15097 provides clarification of mitigation monitoring and reporting requirements and guidance to local lead agencies on implementing strategies. The reporting or monitoring program must be designed to ensure compliance during Project implementation. The City of Barstow is the Lead Agency for the Project and is therefore responsible for ensuring MMRP implementation. The MMRP has been drafted to meet Public Resources Code § 21081.6 requirements as a fully enforceable monitoring program.

The MMRP is comprised of the Mitigation Program specified in the EIR and includes requirements to implement and monitor the Mitigation Program. The MMRP defines the following for each MM:

- **Definition of Mitigation.** The definition contains the criteria for the MM, either in the form of adherence to certain adopted regulations or identification of the steps to be taken in mitigation.
- **Responsible Party or Designated Representative.** Unless otherwise indicated, an applicant would be the responsible party for implementing the MM, and the City of Barstow or designated representative would be responsible for monitoring the MM's performance and implementation. To guarantee that the MM will not be inadvertently overlooked, a supervising public official acting as the Designated Representative is the official who grants the permit or authorization called for

in the performance. Where more than one official is identified, permits or authorization from all officials shall be required. Regardless of whether the City delegates reporting or monitoring responsibilities, the City, as lead agency, remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.

- **Time Frame.** In each case, a time frame is provided for the MM's performance or the review of evidence that mitigation has taken place. The performance points selected are designed to ensure that the Project's impact-related components do not proceed without establishing that the mitigation is implemented or ensured. All activities are subject to the approval of all required permits from agencies with permitting authority over the specific activity.

Table 4-1: Mitigation Monitoring and Reporting Program is provided on the following pages. The numbering system in **Table 4-1** corresponds with the EIR's numbering system. The table's "Verification" column will be used by the parties responsible for documenting when the MM has been completed. The City will complete ongoing documentation and MM compliance monitoring. The completed MMRP and supplemental documents will be kept on file at the City of San Bernardino Community Development Department.

4.2 Mitigation Monitoring and Reporting Program

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
AESTHETICS					
MM BIG AES-1: Construction Lighting and Screening Plan. Prior to any BIG Specific Plan area site clearance or grading activity, the implementing entity shall prepare a Construction Lighting and Screening Plan (CLSP), which shall be submitted to the City of Barstow Planning Department for review and approval. The City shall review the CLSP to verify that it identifies for the construction phase, lighting practices and systems (e.g., shielded and directional lighting oriented toward work areas and to avoid light trespass onto residential or other sensitive receptor properties) that minimize light pollution, glare, and light trespass, while maintaining nighttime safety, visibility, utility, and productivity pursuant to the following: ▪ Barstow Code § 19.06.010(e) - Light Trespass and Control of Glare concerning trespass of light onto adjacent properties/light-sensitive uses. (e.g., maximum brightness values not to be exceeded by artificial bulbs, screening around BIG footprint to limit light and glare, use of non-reflective glass, etc.), and prohibiting aiming, directing, and focusing to cause direct light from the luminaire to be directed toward residential buildings on adjacent or nearby land, or to create glare perceptible to persons operating motor vehicles on public ways. Use of the minimum lighting levels approved by the Occupational Safety and Health Administration (OSHA) pursuant to 29 CFR 1926.56 for general construction (i.e., 5 foot-candles or 54 lux). ▪ Use remote monitoring systems or other methods to ensure security of the construction site outside of construction hours. The CLSP shall also include specifications requiring that temporary construction fencing be installed along the BIG Specific Plan construction areas where adjacent to residences to screen views of construction activity and promote safety. Construction fencing shall be up to the height permitted by Barstow Code Section 19.18.060 (i.e., 8.0	Prior to any BIG Specific Plan area site clearance or grading activity	The implementing entity shall prepare a Construction Lighting and Screening Plan (CLSP). The City shall review and approve the CLSP after verifying specified construction phase lighting practices and systems, and temporary construction fencing, are included in the CLSP and meet the requirements in MM BIG AES-1.	City of Barstow Planning Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
feet) and include a privacy screen to provide as a safeguard from the surrounding environment, prevent trespassers from entering.					
AIR QUALITY					
MM BIG AQ-1: Fugitive Dust Emissions. During construction, the contractor shall employ the following measures to minimize and control fugitive dust emissions. The contractor shall prepare a fugitive dust control plan that complies with Mojave Desert Air Quality Management (MDAQMD) Rule 403, which, at a minimum, shall describe how each measure would be employed, identify the individual responsible for ensuring implementation, and address the following components unless alternative measures are approved by the MDAQMD. The fugitive dust control plan shall be submitted to MDAQMD for approval by the Air Pollution Control Officer prior to the start of construction activities. In accordance with Rule 403, the contractor shall maintain a copy of the fugitive dust control plan and records demonstrating compliance with the requirements of the fugitive dust control plan and Rule 403 through the closure of BIG construction, to be provided to MDAQMD personnel upon request. Pursuant to MDAQMD standard practice, MDAQMD may issue Notices to Comply and/or Notices of Violation for non-compliance with the approved fugitive dust control plan. ▪ Water unpaved road surface shall be maintained with adequate moisture. ▪ Limit vehicle travel speed on unpaved roads to 25 miles per hour for loaded haul trucks which may be exceeded if visible fugitive dust is not generated. ▪ Reduce non-essential dust-generating activities when average wind speed exceeds 25 mph. ▪ Stabilize disturbed surface areas, including storage piles, that are not being used for over two weeks, by using water, a chemical	Prior to the start of construction activities During and through the closure of BIG construction	The contractor shall prepare and submit to MDAQMD a fugitive dust control plan (FDCP) that complies with MDAQMD Rule 403 and meets the requirements set forth in MM BIG AQ-1. MDAQMD shall review and approve the FDCP after verifying the FDCP complies with MDAQMD Rule 403 and meets the requirements set forth in MM BIG AQ-1. The contractor shall maintain records demonstrating compliance with the requirements of the FDCP and Rule 403,	Mojave Desert Air Quality Management District Air Pollution Control Officer		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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stabilizer/suppressant, hydro mulch, or by covering with a tarp or other suitable cover or vegetative ground cover, to control fugitive dust emissions effectively. In areas adjacent to organic farms, the Contractor would use non-chemical means of dust suppression. Use of a water truck during visible dusting episodes is considered sufficient for compliance with this measure. For disturbed surface areas, project-related dust generating activities should be based on the difference between upwind and downwind dust (i.e., the metric should be no more dust than currently exiting the site). ▪ For buildings up to 6 stories in height, wet all exterior surfaces of buildings during demolition		verified by the contractor under penalty of perjury. MDAQMD may issue Notices to Comply and/or Notices of Violation for non-compliance with the approved fugitive dust control plan.			
MM BIG AQ-2: Low VOC Paint (Construction and Operations). During construction and operations, the implementing entity shall utilize "Super-Compliant" low VOC paints. Super-Compliant low VOC paints shall be no more than 10 grams per liter of VOC. Prior to issuance of building permits, the City of Barstow Building and Safety Department shall confirm that plans include the following specifications: ▪ All architectural coatings will be super-compliant low VOC paints. ▪ Recycle leftover paint. Take any leftover paint to a hazardous waste center; do not mix leftover water-based and oil-based paints. ▪ Keep lids closed on all paint containers when not in use to prevent VOC emissions and excessive odors. ▪ For water-based paints, clean up with water only. Whenever possible, do not rinse the cleanup water down the drain or pour it directly into the ground or the storm drain. Set aside the can of cleanup water and take it to the hazardous waste center (www.cleanup.org).	Prior to the issuance of building permits, during construction, and throughout all operational years.	The implementing entity shall submit, for review and approval by the City Community Development Department, Building and Safety Division, plans that comply with specifications and performance standards set forth in MM BIG AQ-2.	City of Barstow Community Development Department, Building and Safety Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
▪ Use compliant low-VOC cleaning solvents to clean paint application equipment. ▪ Keep all paint- and solvent-laden rags in sealed containers to prevent VOC emissions. ▪ Contractors shall construct/build with materials that do not require painting and use pre-painted construction materials to the extent practicable. ▪ Use high-pressure/low volume paint applicators with a minimum transfer efficiency of at least 50 percent or other application techniques with equivalent or higher transfer efficiency.					
MM BIG AQ-3: Reduce Exhaust Emissions from Off-Road Construction Equipment. Prior to issuance of construction contracts, BNSF or its designee shall incorporate the following off-road construction equipment exhaust emissions requirements into the contract specifications: ▪ All heavy-duty diesel off-road construction equipment used during the construction phase shall meet Tier 4 Final engine requirements, except for specialized equipment, such as Caterpillar 657 Scrapers, Caterpillar 777 Articulated Off-Highway Trucks, track laying machines, ballast regulators, and other specialized rail equipment that are not commercially available as Tier 4. In the event that non-specialized construction equipment cannot meet Tier 4 Final engine certification, the implementing entity must demonstrate through future documentation with written findings that no Tier 4 equipment of that type are reasonably available. ▪ A copy of each unit's certified tier specification and shall be made available to the City in quarterly reports.	Prior to the issuance of construction contracts; during construction	BNSF or its designee shall incorporate the emissions requirements specified in MM BIG AQ-3 into construction contract specifications and submit the documentation specified in MM BIG AQ-3 to the City. The City shall review and verify that documentation complies with the performance standards set forth in MM BIG AQ-3.	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
		The City shall review written findings provided by the Contractor of Tier 4 lack of availability for any equipment that is not Tier or not listed as an exception in MM BIG-3.			
MM BIG AQ-4: Renewable Diesel (Construction). During construction, the implementing entity shall use renewable diesel fuel to minimize and control exhaust emissions from heavy-duty diesel-fueled construction equipment and off-road heavy diesel trucks, except that traditional diesel can be used where renewable diesel is not available from suppliers within 200 miles of the BIG footprint. Renewable diesel shall meet the most recent ASTM D975 specification for Ultra Low Sulfur Diesel and have a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum fuels sold in California. The implementing entity shall provide the City with quarterly reports of renewable diesel purchase records and equipment and vehicle fuel consumption. The construction contract shall identify the quantity of traditional diesel purchased and fully document the availability and price of renewable diesel to meet BIG demand. This may include, but is not limited to: a list of all fuel suppliers contacted; supplier addresses and distances from BIG; statements or correspondence from suppliers demonstrating availability of renewable diesel or lack thereof; documentation establishing that suppliers within 200 miles do not carry renewable diesel in the quantities needed; price quotes where relevant; any other information	During construction	The implementing entity shall incorporate the renewable diesel fuel requirements in MM BIG AQ-4 into construction contract specifications. The implementing entity shall submit the documentation specified in MM BIG AQ-4 to the City, which shall review this documentation to verify compliance with the performance	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
requested by the City to verify compliance.		standards in MM BIG AQ-4.			
MM BIG AQ-5: Reduce Exhaust Emissions from On-Road Construction Equipment. Prior to issuance of construction contracts, the implementing entity shall incorporate the following material-hauling heavy truck fleet mix requirements into the contract specifications: ▪ All on-road trucks used to haul construction materials shall consist of an average fleet mix of equipment model year 2010 or newer, but no less than the average fleet mix for the current calendar year as set forth in the CARB's EMFAC2021 database. ▪ The contractor shall provide documentation to BNSF of efforts to secure such a fleet mix and shall maintain all supporting procurement records for City review upon request. ▪ The implementing entity shall keep a written record of the fleet mix for on-road construction equipment during BIG construction and provide the City annual reports documenting compliance.	Prior to the issuance of construction contracts	The implementing entity shall incorporate the material-hauling heavy truck fleet mix requirements in MM BIG AQ-5 into construction contract specifications. The City of Barstow shall review annual reports and as needed, procurement records, to confirm compliance with the performance standards in MM BIG AQ-5.	City of Barstow		
MM BIG AQ-6: Reduce the Potential Impact of Concrete and Asphalt Batch Plants. Prior to the construction or arrival of a batch plant on site, the implementing entity shall provide the City with documentation demonstrating that batch plants are sited at least 1,000 feet from sensitive receptors, including places such as daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The City shall verify compliance with this siting requirement by reviewing site plans, maps, or other	Prior to construction or arrival of a batch plant on site	The implementing entity shall provide the City with documentation demonstrating that batch plants meet the performance	City of Barstow; MDAQMD		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
distance documentation submitted by the implementing entity, and shall issue written confirmation of verification prior to installation or operation of any batch plant. If the documentation does not demonstrate the required 1,000-foot buffer, the City shall require corrective action before the batch plant may be established. Batch plants shall implement control measures required by MDAQMD as part of the Permit to Construct in order to reduce fugitive dust, such as water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central dust collection systems, and other suitable technology, to reduce emissions to be equivalent to the U.S. EPA AP-42 controlled emission factors for batch plants. The implementing entity shall provide a copy of the MDAQMD permit application to the City that each batch plant meets this standard during operation.		standards set forth in MM BIG AQ-6. City shall review documentation, verify compliance with performance standards set forth in MM BIG AQ-6, and either issue written confirmation of compliance or require corrective action prior to installation, operation, or establishment of any batch plant. For each batch plant, the implementing entity shall apply for, and once granted, comply with, an MDAQMD Permit to Construct, including control measures in MM BIG AQ-6. The implementing entity shall provide a copy of the permit			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
		application for each such plant to the City.			
MM BIG AQ-7: Sweep Paved Areas. During operations, paved areas such as parking lots, internal roadways, the container yard, chassis storage area, and cargo handling areas shall be swept at least once every 7 calendar days. The implementing entity shall maintain sweeping logs documenting the date, time, and areas swept for City review upon request and provide the City with annual reports documenting compliance.	At least once every 7 calendar days, throughout all operational years.	The implementing entity shall maintain sweeping logs as specified in MM BIG AQ-7 and provide the City with annual reports documenting compliance. The City of Barstow shall review annual reports and as needed, sweeping logs, to confirm compliance with the performance standards set forth in MM BIG AQ-7.	City of Barstow		
MM BIG AQ-8: Renewable Diesel RTG Cranes. Rubber Tired Gantry (RTG) cranes shall be powered with renewable diesel. BNSF shall provide the City of Barstow with evidence demonstrating use of renewable diesel for RTG cranes prior to the issuance of certificate of occupancy.	Prior to issuance of certificate of occupancy	BNSF shall provide the City with evidence demonstrating use of renewable diesel for RTG cranes. The City shall verify that the evidence provided ensures	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
		compliance with the performance standards set forth in MM BIG AQ-8.			
MM BIG AQ-9: Truck Idling Limits and Truck Route Signage. Prior to the issuance of a tenant occupancy permit, the Planning Division shall confirm that all truck access gates and loading docks within the BIG site shall have posted signage posted that states: ▪ Truck drivers shall turn off engines when not in use. ▪ Truck drivers shall shut down the engine after two minutes of continuous idling operation. Once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged. ▪ Telephone numbers of the building facilities manager, the South Coast AQMD, and CARB to report violations. ▪ Signs shall also inform truck drivers about the health effects of diesel particulates, the California Air Resources Board diesel idling regulations, and the importance of being a good neighbor by not parking in residential areas. ▪ Clearly mark truck routes with trailblazer signs, so that trucks will not travel next to or near sensitive land uses (e.g., residences, schools, day care centers, etc.). ▪ Restrict overnight truck parking in sensitive land uses by providing overnight truck parking inside the proposed Project site. ▪ The implementing entity shall designate an officer to monitor trucks on-site for compliance. Signs and drive aisle pavement markings shall clearly identify the on-site circulation pattern to minimize unnecessary on-site vehicular travel. ▪ Additionally, signs shall be provided at every truck exit driveway showing directional information to the off-site truck route. To the	Prior to the issuance of a tenant occupancy permit	The City Planning Division shall verify that all truck access gates and loading docks within the BIG site have posted signage with specified details set forth in MM BIG AQ-9 before issuing tenant occupancy permits for tenant improvements.	City of Barstow Planning Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
extent feasible, the BIG shall direct trucks away from sensitive receptors. All signage installed as part of BIG shall be legible, durable, and weather-proof. This mitigation measure applies only to tenant improvements and not the building shell approvals.					
MM BIG AQ-10: Tier 4 Emergency Back-Up Generators. Prior to the issuance of a tenant occupancy permit, the Planning Division shall confirm that the BIG plans and specifications require all standard emergency generators (i.e., non-cold storage generators) to meet California Air Resources Board Tier 4 Final emissions standards. A copy of each unit's Best Available Control Technology (BACT) documentation (certified tier specification) and CARB or Mojave Desert AQMD operating permit (if applicable) shall be provided to the City. This mitigation measure applies only to tenant improvements and not the building shell approvals.	Prior to the issuance of a tenant occupancy permit	Applicants for tenant occupancy permits shall submit copies of each unit's documentation, as specified in MM BIG AQ-10, to the City Planning Division. The City Planning Division shall review plans and specifications to verify conformity with the performance standards set forth in MM BIG-10.	City of Barstow Planning Division		
MM BIG AQ-11: Carl Moyer Truck Efficiency Improvements. Prior to the issuance of a tenant occupancy permit, the Planning Division shall confirm that tenant lease agreements include specifications that require vendor trucks for the industrial buildings include energy efficiency improvement features through the Carl Moyer Program— including truck modernization, retrofits, and/or aerodynamic kits and low rolling resistance tires— to reduce fuel consumption. This mitigation measure applies only to tenant improvements and not the	Prior to the issuance of a tenant occupancy permit	Any applicant for a tenant occupancy permit shall provide the City Planning Division a copy of the tenant lease agreement conforming to the	City of Barstow Planning Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
building shell approvals.		performance standards set forth in MM BIG AQ-11. The City Planning Division shall review the tenant lease agreement and verify conformity to the performance standards set forth in MM BIG AQ-11.			
MM BIG AQ-12: EPA Smart Way Program. Prior to the issuance of a tenant occupancy permit, the Planning Division shall confirm that tenant lease agreements include specifications that require tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and tenants shall be required to use carriers that are SmartWay carriers. This mitigation measure applies only to tenant improvements and not the building shell approvals**.**	Prior to issuance of a tenant occupancy permit	Any applicant for a tenant occupancy permit shall provide the City Planning Division a copy of the tenant lease agreement conforming to the performance standards set forth in MM BIG AQ-12. The City Planning Division shall review the tenant lease agreement and verify conformity to the performance	City of Barstow Planning Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
		standards set forth in MM BIG AQ-12.			
MM BIG AQ-13: Electric Landscape Equipment. Prior to the issuance of occupancy permits, the implementing entity shall confirm that agreements for landscaping services include contractual language that all handheld landscaping equipment used on-site shall be 100 percent electrically powered. This mitigation measure applies only to tenant permits and not the building shell approvals.	Prior to the issuance of occupancy permits	Any applicant for a tenant occupancy permit shall provide the City Planning Division a copy of the agreement conforming to the performance standards set forth in MM BIG AQ-13. The City Planning Division shall review the agreement and verify conformity to the performance standards set forth in MM BIG AQ-13.	City of Barstow Planning Division		
MM BIG AQ-14: Future EV Charging Infrastructure. Prior to the issuance of a building permit for transload warehouse facility tenant improvements, the implementing entity shall confirm that the BIG transload facility is designed to include the following: ▪ Prior to issuance of a Building Permit for the Shell Design, the buildings' electrical room shall be sufficiently sized to hold additional panels that may be needed to supply power for the future installation of EV truck charging stations on the site. Conduit should be installed from the electrical room to tractor trailer parking spaces in a logical location(s) on the site	Prior to the issuance of a building permit for transload warehouse facility tenant improvements	Any applicant for a building permit for the shell design of a transload warehouse facility tenant improvement, shall provide the City Planning Division documentation of site plan conformity	City of Barstow Planning Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
determined by the implementing entity during construction document plan check, for the purpose of accommodating the future installation of EV truck charging stations at such time this technology becomes commercially available and the buildings are being served by trucks with electric-powered engines. ▪ The buildings' electrical room shall be sufficiently sized to hold additional panels that may be needed in the future to supply power to trailers with TRUs during the loading/unloading of refrigerated goods, if required by future tenants who utilize cold storage. Conduit should be installed from the electrical room to the loading docks in a location determined by the tenant as the logical location(s) receive trailers with TRUs.		to the performance standards in MM BIG AQ-14. The City Planning Division shall review the documentation and verify conformity to the performance standards in MM BIG AQ-14.			
BIOLOGICAL RESOURCES					
MM BIG BIO-1: Worker Environmental Awareness Program and Training. Prior to construction mobilization, designated biologists shall prepare a Worker Environmental Awareness Program (WEAP), including a training presentation and key fact sheet, to train construction crews to be aware of and recognize sensitive biological resources that may be encountered within, or adjacent to, the BIG footprint as well as measures required to minimize and avoid impacts to such resources. The WEAP training materials shall be submitted to the City for review. Prior to construction mobilization, the designated biologists or biological monitors shall provide the approved WEAP training materials, including but not limited to the key fact sheet, to all construction personnel. The fact sheet shall be provided to construction personnel in other languages, as necessary, to accommodate non-English speaking workers. Additionally, prior to beginning construction work, all construction personnel shall attend the WEAP training presentation. A refresher WEAP training shall be completed annually thereafter during construction. At a minimum,	Prior to construction mobilization; annually for duration of construction	The implementing entity, through designated biologists, shall prepare a Worker Environmental Awareness Program (WEAP) meeting the performance standards specified in MM BIG BIO-1. The City shall review and approve the WEAP after verifying that the WEAP meets the performance	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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WEAP training materials reviewed during training shall include the following information: ▪ Key provisions of the FESA, CESA, the MBTA, CFGC § 1600, Porter-Cologne Act, and the CWA as they relate to BIG; ▪ Potential consequences and penalties for violation or noncompliance with these laws, regulations, and associated permits; ▪ General information, identification, and characteristics of special status wildlife and plant species, jurisdictional waters, and sensitive natural communities present on and adjacent to the BIG footprint as well as the required construction footprint boundaries; ▪ A discussion concerning the threat of common ravens (Corvus corax) to desert tortoise and instructions to not feed wildlife or dispose of food waste in a way that could attract and provide food for ravens; ▪ Hazardous substance spill prevention and containment measures; ▪ Contact information for designated biologists and instructions to call in the event of the discovery of a special status species or injured or dead wildlife; and ▪ Relevant mitigation measures and maps showing areas affected by resource-specific measures, as applicable. Upon completion of each WEAP training, each member of the construction personnel shall sign a form stating that they attended the training, understood the information presented, and agree to comply with the WEAP training requirements. The designated biologist or biological monitor shall provide training updates to construction personnel, as needed.		standards in MM BIG BIO-1. The implementing entity, through designated biologists or biological monitors, shall provide the approved WEAP materials and WEAP training to construction personnel, as well as updates as needed, as specified in MM BIG BIO-1. The implementing entity, through designated biologists or biological monitors, shall collect and maintain records of signed attendance forms, as specified in MM BIG BIO-1.			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
MM BIG BIO-2 Biological Resource Monitoring. At least 30 days prior to start of construction mobilization activities, the implementing entity shall submit for review and approval by USFWS and CDFW the designated biologists' and Species-Specific biological monitors name(s) and qualifications retained to oversee biological resource monitoring activities during BIG construction. No vegetation removal or mass grading shall begin until the implementing entity has received written confirmation from USFWS and CDFW that the designated biologists have been approved. A request for designated biologist and Species-Specific biological monitor approval shall be submitted in writing and shall include adequate information regarding the proposed designated biologist and Species-Specific biological monitor qualifications for a reasonable person to determine qualification status. If USFWS and/or CDFW do not respond within 30 days after a verifiable written request for designated biologist and biological monitor approval is submitted, the designated biologist and/or Species-Specific biological monitor shall be deemed approved. Should a new designated biologist and/or Species-Specific biological monitor be necessary, the implementing entity shall seek approval through the same process as above, with the request being deemed approved after 30 days after the written request. Note that the implementing entity's selection of General biological monitors does not require USFWS and CDFW approvals. Designated biologists shall oversee the timely implementation of all biological mitigation measures as outlined in the Mitigation Monitoring and Reporting Program (MMRP) during construction and the applicable post-construction monitoring period as required by the City and CDFW/USFWS for permit validity. The designated biologists shall also be responsible for guiding and directing the biological monitor's work. The designated biologists shall oversee the preparation of quarterly construction monitoring reports during construction and the post-construction monitoring report summarizing compliance with	At least 30 days prior to start of construction mobilization activities, including site mobilization, project limits delineation and fencing, demolition, staging, vegetation removal and mass grading; during construction; post-construction	Within 30 days of a written request by the implementing entity, USFWS and CDFW shall review, approve, and provide written confirmation of approval of the designated biologists and species-specific biological monitors, consistent with the performance standards in MM BIG BIO-2. The implementing entity, through the designated biologists, shall submit quarterly construction reports and a post-construction monitoring report to the City, consistent with the standards specified in MM BIG BIO-2, and summarizing compliance with	USFWS, CDFW, and City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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BIG-specific mitigation measures submitted to the City. Species-Specific biological monitors shall be responsible for implementation of species-specific mitigation measures for the species for which they have been approved and would report directly to a designated biologist. Qualifications for Species-Specific biological monitors can be found in the species-specific mitigation measures. General biological monitors shall be responsible for conducting WEAP training, facilitating implementation of general mitigation measures, except where specified that a specific individual with specific qualifications (such as designated biologist) must implement the mitigation measures, conducting general compliance monitoring, and reporting on compliance monitoring activities. General biological monitors shall perform daily monitoring during initial vegetation removal and construction activities that result in the breaking of the ground surface. Following initial vegetation removal and construction activities, General biological monitors shall perform regular random checks (not less than once per week but could be required more frequently depending on the presence of special status species) to ensure that mitigation measures are implemented. General biological monitors would report directly to a designated biologist.		other BIG-specific mitigation measures related to biological resources. The implementing entity, through general biological monitors, shall perform monitoring on daily and weekly bases, as specified in MM BIG BIO-2.			
MM BIG BIO-3: Work Stoppage. During BIG construction, the implementing entity shall adhere to the following guidelines: ▪ A designated biologist with appropriate qualifications shall be retained to move special status species or other wildlife of low or limited mobility out of harm's way. Movement of wildlife out of harm's way shall be limited to only those individuals that would otherwise be injured or killed from BIG-related activities and shall be moved only as far as necessary to ensure their safety. ▪ If a biological or aquatics resources issue or concern is observed during monitoring (e.g., a special status wildlife species within an	During construction	The implementing entity, through designated biologists or biological monitors, shall implement the work stoppage measures listed in MM BIG BIO-3, pursuant to the performance	USFWS, CDFW, and City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction]		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
active construction area), the designated biologist or biological monitor shall have the authority to stop work as soon as practicable and shall immediately notify the City and the foreman and/or supervisor for the specific activity/area. The foreman/supervisor shall seek a timely resolution of the biological or aquatics resources issue or concern. ▪ If the issue or concern involves special status species, work shall not resume until the species has left the work area, or until a designated biologist implements the appropriate species-specific measures to avoid take, which may involve coordination with USFWS and/or CDFW. ▪ If construction personnel or biological monitor observe a burrowing owl, desert tortoise, American badger, or desert kit fox individual or active burrow within the BIG footprint or in the vicinity of construction activities, the foreman/supervisor shall contact a designated biologist immediately and all work in the vicinity of the animal/active burrow which could cause disturbance, injury, or mortality, shall cease until a designated biologist or Species-Specific biological monitor provides clearance. ▪ If construction personnel or a biological monitor observe a Mojave fringe-toed lizard within the BIG footprint or in the vicinity of construction activities, the foreman/supervisor shall contact a designated biologist immediately and all work in the vicinity of the lizard which could cause disturbance, injury, or mortality, shall cease until a designated biologist or Species-Specific biological monitor provide clearance. ▪ If adverse impacts on willow flycatcher and/or yellow-billed cuckoo are documented by a Species-Specific biological monitor, all work within 500 feet of occupied habitat, or as deemed necessary by the Species-Specific biological monitor, shall cease until a designated biologist or Species-Specific biological monitor provide clearance.		standards set forth therein.			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
▪ If a bird nest is discovered by construction personnel, the foreman/supervisor shall contact a designated biologist immediately and all work within 500 feet of the nest shall cease until it can be determined if the nest is active (e.g., eggs, juveniles, and/or adults present) and, if necessary, the biological monitor shall establish an appropriate buffer. ▪ If an injured wildlife species is observed within or adjacent BIG, a designated biologist shall be notified immediately to determine if it is appropriate to release or transport the wildlife species to the nearest CDFW permitted veterinarian or rehabilitation center. The designated biologist shall follow all relevant guidelines for sensitive species. ▪ If entrapped wildlife is discovered within an open excavation, project personnel shall halt work (when safe to do so) and contact a designated biologist. Project personnel shall avoid the area to prevent disturbing the wildlife until a designated biologist or biological monitor provide clearance. ▪ If entrapped wildlife is discovered in any open pipes, culverts, and other similar structures, project personnel shall halt all work (when safe to do so) and contact a designated biologist. Project personnel shall avoid disturbing the wildlife and shall not move the structures until a designated biologist or biological monitor provide clearance.					
MM BIG BIO-4: Vehicles and Equipment. During BIG construction, the implementing entity shall ensure that vehicle traffic within the construction limits is restricted to established roads, construction areas, and other permissible areas. Access routes (ingress and egress to the site) shall be flagged and marked, and measures shall be adopted to prevent off-road vehicle traffic into species habitats beyond the approved project limits.	During construction	The implementing entity, through designated biologists or biological monitors, shall implement the vehicle traffic and construction	City of Barstow (See also MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
▪ If any vehicle must drive off established routes or cleared construction limits in suitable desert tortoise or burrowing owl habitat, a Species-Specific biological monitor shall walk the vehicle path in search of desert tortoise and/or burrowing owl and confirm the species are absent from the area, prior to use of the path The Species-Specific biological monitor shall visually account for the route or construction site footprint plus a 15-foot buffer on each side. During the construction phase, the implementing entity shall implement the following measures: ▪ Vehicles shall not exceed 25 miles per hour. Nighttime vehicle speeds may be reduced at the discretion of the designated biologist and as described in the Nighttime Construction and Lighting Plan to be prepared per **MM-BIO 8**. ▪ If special status species are present within or near BIG access routes, speed limits shall be reduced at the discretion of a designated biologist. All personnel shall abide by the reduced speed limit within the designated area. ▪ A biological monitor shall oversee the adherence to on-site speed limits within Mojave fringe-toed lizard occupied habitat during species' active periods; for the purposes of this measure the active period is defined as March through September when temperatures are above 70. The biological monitor shall require additional speed limit signs, temporary speed bumps, or additional WEAP training to ensure compliance with this measure. ▪ All BIG and construction personnel shall stop and/or avoid wildlife that are present on roads (if safe to do so). ▪ BIG personnel shall not intentionally harm or harass wildlife that are present on roads. ▪ If wildlife are blocking vehicle and equipment access and do not move of their own volition within 10 minutes, BIG personnel shall contact a designated biologist.		equipment-related measures listed in MM BIG BIO-4, pursuant to the performance standards set forth therein.	and post-construction])		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
▪ All wildlife vehicle or equipment strikes shall be reported to a designated biologist. ▪ Prior to moving a parked vehicle or staged equipment, all BIG personnel shall check under the vehicles and equipment for special-status wildlife. If wildlife is discovered under vehicles or equipment, project personnel shall halt work and allow wildlife to move safely away prior to moving vehicles or equipment. BIG personnel shall not harm or harass wildlife seeking refuge under vehicles and equipment. If wildlife do not move of their own volition within 10 minutes, project personnel shall contact a designated biologist. ▪ If a vehicle or construction equipment is parked for more than 10 minutes outside of the desert tortoise exclusion fenced area within suitable desert tortoise habitat, the ground under the vehicle shall be inspected for the presence of desert tortoise before the vehicle or equipment is moved. If a desert tortoise is present, the vehicle or equipment shall not be moved until the desert tortoise moves on its own away from the vehicle or equipment. If, during construction, a desert tortoise does not move within 10 minutes, an agency-approved Species-Specific biological monitor shall move the animal out of harm's way to a safe location no greater than 300 meters (984 feet), according to USFWS protocol. ▪ Drip pans shall be placed under parked (for an hour or more) or staged equipment that is near native habitat or aquatic resources that are to be avoided by BIG. ▪ The implementing entity shall ensure that these measures have been properly communicated to all personnel associated with BIG.					
MM BIG BIO-5: Compliance Reporting. A designated biologist shall report any non-compliance or unauthorized take of special-status species to the appropriate agencies within 48 hours of its occurrence.	During construction, including within 48 hours of any non-	The implementing entity, through a designated	Appropriate agencies (i.e., CDFW, USFWS); City of		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Monitoring reports that document compliance status with the MMs shall be prepared by designated biologists and submitted quarterly during construction and post construction to the City. All mitigation measures shall be implemented as stated herein except for necessary modifications approved by a qualified biologist. Failure to implement mitigation measures shall be reported in monitoring reports.	compliance or unauthorized take of special-status species; post-construction	biologist, shall report non-compliance with mitigation measures and unauthorized take to appropriate agencies within 48 hours thereof, as specified in MM BIG BIO-5. The implementing entity, through a designated biologist, shall submit quarterly monitoring reports and one post-construction report to the City.	Barstow (See also, MM BIG BIO-2 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-6: Weed Control and Landscaping. Prior to the start of construction mobilization activities, the implementing entity shall prepare and submit to the City for review an Adaptive Weed Control Plan to avoid and minimize the spread of non-native plant species from BIG to adjacent undeveloped lands during construction and operation. BIG landscape plans shall be reviewed by a designated biologist; any invasive plant species, as defined by the California Invasive Plant Council (www.cal-ipc.org), California Native Plant Society (www.cnps.org) or similar, shall be prohibited. Provisions of the Adaptive Weed Control Plan may include the following:	Prior to the start of construction mobilization activities, during construction, during all operational years	The implementing entity shall prepare and submit an Adaptive Weed Control Plan (AWCP) to the City for review to verify the AWCP's compliance with the performance	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
a. installation of container plants and/or hydro-seeding areas adjacent to existing, undisturbed native vegetation areas with native plant species that are common within adjacent areas; b. review and screening of proposed plants to identify and avoid potential invasive species; c. weed removal during the initial planting of landscaped areas; d. methods to survey for and treat weeds during BIG construction and operations, particularly in disturbed areas after native vegetation and soils removal where weeds can quickly establish; e. weed controls for heavy equipment that come onto the site, e.g., track outs, all equipment pieces are delivered clean as confirmed via inspection, etc. Any site landscaping shall use water-wise concepts, including drought tolerant vegetation and native vegetation to the greatest extent feasible. To prevent weeds growing as a result of available water (and further ameliorate the water demands of BIG), water efficient and targeted irrigation systems (such as drip irrigation with a smart controller) shall be installed where necessary in lieu of traditional watering methods. Furthermore, the implementing entity shall comply with 49 CFR § 213 which includes prohibitions and requirements regarding vegetation growth within and adjacent to the rail right-of-way.		standards in MM BIG BIO-6. The implementing entity shall prepare and submit landscape plans for review by a designated biologist to verify the plans' compliance with the performance standards in MM BIG BIO-6 and 49 CFR § 213.			
MM BIG BIO-7: Delineation of Construction Work Limits. To prevent inadvertent disturbance to areas outside the delineated construction work areas, prior to start of all construction mobilization activities, including equipment staging and maintenance and vegetation removal, the implementing entity shall clearly delineate the construction work limits (e.g., installation of flagging, staking, or other delineation methods approved by a designated biologist), and require construction personnel not to go beyond the delineated areas. All construction work shall be conducted within the delineated construction work	Prior to the start of all construction mobilization activities; during construction	The implementing entity, through designated biologists or biological monitors, shall implement the work limit-related measures listed in MM BIG BIO-7,	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
limits, which shall be maintained throughout BIG construction. Should temporary visibility construction fencing be installed to delineate the construction work limits, that do not allow for dispersal of wildlife from construction work limits into adjacent undeveloped lands, a biological monitor shall check the perimeter fence at the beginning of each work day. The implementing entity shall consult with approved designated biologists to confirm that marking of construction boundaries are adequate to prevent unauthorized access beyond the limits of work while facilitating wildlife escape from active construction areas.		pursuant to the performance standards set forth therein.			
MM BIG BIO-8: Nighttime Work and Lighting. Nighttime construction shall minimize impacts on wildlife habitat by using the following methods to be described in a Nighttime Construction and Lighting Plan and submitted to the City for review: ▪ Conduct nighttime work only within the boundaries of previously disturbed, cleared and grubbed areas; ▪ Observe slower vehicle speeds at nighttime at the discretion of the designated biologist; ▪ Shield and direct nighttime lighting to avoid illuminating wildlife habitat, including movement corridors and bat roosts; ▪ When work safety considerations allow, use the minimum lighting levels approved by the Occupational Safety and Health Administration (OSHA) pursuant to 29 CFR 1926.56 for general construction (i.e., 5 foot-candles or 54 lux); ▪ Use low beams or turn off headlights when safety considerations permit; and ▪ Minimize the duration of lighting by using remote monitoring systems or other methods to allow security of the construction site during hours it is not in use.	Prior to construction; during construction	The implementing entity shall prepare a Nighttime Construction and Lighting Plan (NCLP) pursuant to the performance standards in MM BIG BIO-8. The City shall review the NCLP to verify the NCLP's compliance with the performance standards in MM BIG BIO-8.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
MM BIG BIO-9: Wildlife Entrapment. At the end of each workday during construction, the implementing entity's construction personnel shall cover all excavated, steep-sided holes or trenches more than eight inches deep and that have sidewalls steeper than 1:1 (45 degree) slope with plywood or similar materials, or provide a minimum of one escape ramp per 100 feet of trenching (with slopes no greater than 3:1) constructed of earth fill or wooden planks. A biological monitor shall thoroughly inspect holes and trenches for trapped animals before they are covered or filled and/ or if the work area is inactive for more than 24 hours. The implementing entity's construction personnel shall screen, cover, or elevate at least one foot above ground, construction pipe, culverts, or similar structures with a diameter of three inches or greater that are stored outside overnight. These pipes, culverts, and similar structures shall be inspected by the General biological monitor for wildlife before such material is moved, buried, or capped. Construction pipe, culverts, or similar structures with a diameter greater than three inches that is stored less than eight inches above ground, located outside of desert tortoise exclusion fencing, and left unattended for more than 24 hours when desert tortoise is active (i.e., early March through early June and September through early November) shall be inspected for desert tortoise by an agency-approved Species-Specific biological monitor. As an alternative, all such structures shall be capped or placed on pipe racks.	During construction	The implementing entity, through a biological monitor, construction personnel, and a Species-Specific biological monitor, as specified in MM BIG BIO-9, shall implement the wildlife entrapment-related measures specified in MM BIG BIO-9, pursuant to the performance standards specified therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-10: Trash Abatement. The implementing entity or its contractor shall ensure that fully covered trash receptacles that are animal-proof and weather-proof are used to contain all "micro-trash" (e.g., screws, nuts washers), food scraps, food wrappers, and other miscellaneous trash. Receptacles shall be emptied at least once a week, to avoid attracting opportunistic predators such as ravens,	During construction; throughout all operational years	The implementing entity shall implement the trash abatement measures specified in MM BIG BIO-10, pursuant to the	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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coyotes, and feral dogs.		performance standards therein.	and post-construction])		
MM BIG BIO-11: Dead Wildlife Disposal. During construction, and ongoing during operations, the implementing entity shall remove any dead wildlife found on the BIG footprint, as practical, to reduce attraction of opportunistic predators. Dead and injured wildlife shall be promptly reported to a designated biologist and handled and removed in accordance with any applicable project permits and plans.	During construction; throughout all operational years	The implementing entity, through a designated biologist, shall implement the dead wildlife disposal measures specified in MM BIG BIO-11, pursuant to the performance standards therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-12: Domestic Dogs. The implementing entity shall not permit pet dogs in active project areas. Service animals are exempt from this prohibition.	During construction	The implementing entity shall implement the domestic dog exclusion measures specified in MM BIG BIO-12, pursuant to the performance standards therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-13: Desert Tortoise Clearance Surveys. Prior to commencement of construction mobilization activities, desert tortoise exclusion fencing shall be installed and maintained according to a CESA ITP and Biological Opinion to avoid take of desert tortoise including destruction of nests or their potential habitat in the impact footprint, where individuals are known to occur, recent sign has been observed, or construction activities have the potential to result in take. A	Prior to the start of construction mobilization activities; during construction	The implementing entity, through a Species-Specific biological monitor, shall conduct a pre-construction survey, monitor exclusion	USFWS, CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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qualified Species-Specific biological monitor shall first conduct a pre-construction survey for desert tortoise according to the CESA ITP and Biological Opinion at locations where exclusionary fence will be installed and translocate or relocate any desert tortoise present at exclusionary fence installation locations as required by the CESA ITP and Biological Opinion and only then exclusionary fencing shall be installed and the qualified Species-Specific biological monitor shall be present during exclusion fence installation. Desert tortoise exclusion fencing in desert tortoise habitat shall be constructed to standards outlined in Chapter 8 of the Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS, 2009b) and shall be used to delineate the area. The desert tortoise exclusion fencing shall be maintained and monitored daily during the desert tortoise activity period (i.e., early March through early June and September through early November) to allow for fencing to be maintained in good condition, and to determine if tortoises are "trapped" along the fencing searching for a way to access the other side. Outside of the desert tortoise activity period, fence inspections shall occur at least once weekly by a qualified Species-Specific biological monitor. If failures in the exclusion fence are documented, desert tortoise clearance surveys shall be repeated for affected areas. At the discretion of the designated biologist, desert tortoise exclusion fencing design shall incorporate areas of shade and/or predation protection (e.g., artificial burrows) in the event a desert tortoise becomes trapped along the fence. Desert tortoise guards, or other agency approved design, shall be installed and connected to the exclusionary fencing at construction area entry points to prohibit desert tortoise from crossing into the construction right-of-way. The desert tortoise guard shall have a clear escape route away from construction activity for any desert tortoise that should fall into the guard. The guard shall be inspected daily by a qualified biological monitor for desert tortoise and to ensure the escape route is free of obstruction and debris.		fence installation, conduct ongoing fence monitoring on a daily or weekly basis, conduct additional desert tortoise clearance surveys following each detection of exclusion fence failures, and conduct daily inspections of the desert tortoise guard during the active period, as specified in MM BIG BIO-13, pursuant to the performance standards specified therein. The implementing entity, through a Species-Specific biological monitor and/or designated biologists approved as specified in MM BIG BIO-13, shall conduct clearance surveys in suitable habitat following	requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Immediately following the installation of desert tortoise exclusion fencing, Species-Specific biological monitors and/or designated biologists approved by USFWS in accordance with the Desert Tortoise Authorized Biologist Qualifications Form (Section 3.2) of the Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS, 2009b) and CDFW shall conduct clearance surveys in suitable habitat for desert tortoise. The survey(s) shall be conducted in general accordance with Chapter 6 of the Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS, 2009) or current clearance survey protocol and shall align with requirements in the CESA ITP and Biological Opinion. Survey results shall be provided to the City, CDFW, and USFWS. If active desert tortoise burrows are identified in the impact footprint during desert tortoise clearance surveys and required to be moved off site, a desert tortoise translocation plan will be implemented as approved by USFWS and CDFW. All unoccupied desert tortoise pallets and burrows that are not practical to avoid shall be examined and excavated by hand during the clearance survey by the qualified Species Specific biological monitors and collapsed to prevent reentry following the procedures and precautions outlined in the Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS, 2009b), CESA ITP, and Biological Opinion.		installation of exclusion fencing, pursuant to the performance standards specified therein. The City, CDFW, and USFWS shall receive and review the survey results to verify conformity to the performance standards specified in MM BIG BIO-13. The implementing entity, through a Species-Specific biological monitor and/or designated biologists, as specified in MM BIG BIO-14, shall implement the approved desert tortoise translocation plan if necessary pursuant to MM BIG BIO-13.			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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MM BIG BIO-14: Desert Tortoise Relocation and Translocation. Prior to start of construction mobilization activities, a designated biologist approved by CDFW through a CESA ITP and USFWS through a Biological Opinion shall prepare a BIG-specific Desert Tortoise Translocation Plan, based on the Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (USFWS, 2020), Health Assessment Procedures for the Mojave Desert Tortoise (Gopherus agassizii): A Handbook Pertinent to Translocation (USFWS, 2016) and Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS, 2009b) or other current USFWS guidelines and in accordance with applicable Incidental Take Permits and Biological Opinions. The BIG-specific Desert Tortoise Translocation Plan shall identify suitable relocation and translocation sites, provide details on desert tortoise surveys and for moving desert tortoise out of harm's way, and include the methodology for visual desert tortoise body condition assessments. The designated biologist shall provide the BIG-specific Desert Tortoise Translocation Plan to the USFWS and CDFW for review and approval at least 30 days prior to start of translocation. At a minimum, the Desert Tortoise Translocation Plan shall include the following measures: ▪ The qualified Species-Specific biological monitor or the designated biologist shall implement the Desert Tortoise Translocation Plan during BIG construction. Only qualified Species-Specific biological monitors or designated biologists authorized by the USFWS and CDFW to handle desert tortoise shall move the animal and project-specific ITPs for desert tortoise shall be acquired under CESA and FESA prior to such actions. ▪ The approved Species-Specific biological monitor or designated biologist shall move the desert tortoise found in construction work areas out of danger outside of the potential impact footprint, following the procedures and conditions outlined in the Incidental Take Permit and Biological Opinion.	Prior to start of construction mobilization activities, including at least 30 days prior to the start of translocation	The implementing entity, through a CDFW- and USFWS-approved designated biologist shall prepare and implement a BIG-specific Desert Tortoise Translocation Plan, as specified in MM BIG BIO-14, pursuant to the performance standards specified therein.	USFWS, CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
▪ Prior to the approved Species-Specific biological monitor or designated biologist moving desert tortoise out of the construction work area, the biological monitor or designated biologist shall survey the relocation and translocation site to confirm that suitable burrows for desert tortoise exist. If few or no burrows are available, artificial burrows and/or shade structures shall be created along the outer perimeter of the desert tortoise exclusion fencing following the guidelines in the Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (USFWS 2009b) and Shade Structures for Desert Tortoise Exclusion Fence: Design Guidance (USFWS 2018), or as updated or replaced by the USFWS and in accordance with the CESA ITP and Biological Opinion. ▪ If needed, artificial burrows shall be installed outside of the construction work area (along the outer perimeter of the desert tortoise exclusion fencing if applicable) from where the individual was relocated to provide cover and prevent exposure to predators and dehydration. Prior to excavation of an occupied burrow, artificial burrows shall be installed.					
MM BIG BIO-15: Common Raven Management. Prior to the start of construction mobilization activities, the implementing entity shall prepare a Raven Management Plan to avoid attracting common ravens to BIG by creating food or water subsidies, perch sites, roost sites, or nest sites. The Raven Management Plan may include the following measures to be implemented during construction: ▪ Water used for dust control purposes shall not be wasteful and when used, shall avoid creating unintentional ponded water and eliminate any unintentional created standing water. ▪ Water tanks shall be sealed and free of leaks. Standing water created from leaks shall be promptly repaired.	Prior to the start of construction mobilization activities; during construction	The implementing entity shall prepare and implement a Raven Management Plan, as specified in MM BIG BIO-15, pursuant to the performance standards specified therein. The implementing entity shall	CDFW, USFWS, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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▪ Irrigation used during revegetation and landscaping shall be kept to a minimum to avoid standing water, where feasible. The implementing entity shall coordinate with CDFW and USFWS to remove inactive raven nests and/or other suitable stick nests during the non-breeding season each year of BIG construction. Active raven nests within the BIG footprint shall be reported to USFWS and CDFW. ▪ During BIG construction, a biological monitor with knowledge of common raven identification (including nests) and desert tortoise remains (e.g., carcass, shell and bone fragments) shall conduct one survey per month for presence of common ravens and nests within 100 feet of the BIG footprint in occupied desert tortoise habitat for the purpose of identifying ravens that may prey upon desert tortoise. The location(s) of nest and desert tortoise remains shall be recorded using a GPS unit. Additionally, the implementing entity shall participate in the interagency Raven Monitoring and Management Program to address indirect impacts to desert tortoise related to the potential increase in the raven population. The implementing entity's participation in the program shall be subject to compensation through the payment of a onetime fee not to exceed $150 and no less than $105 per disturbed acre, as established by the Desert Managers Group. Payment shall be made prior to the start of ground disturbance or other project activities that may result in potential take of desert tortoise. Evidence of the USFWS and/or CDFW determination and payment of any required fees shall be submitted to the City		coordinate with USFWS and CDFW to remove inactive raven nests within the BIG footprint and shall report active raven nests to USFWS and CDFW, as specified in MM BIG BIO-15, pursuant to the performance standards specified therein. The implementing entity, through a biological monitor, shall conduct monthly presence surveys, as specified in MM BIG BIO-15, pursuant to the performance standards specified therein. The implementing entity shall provide, and the City shall verify, evidence of payment of required fees for			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
		the implementing entity to participate in the interagency Raven Monitoring and Management Program.			
MM BIG BIO-16: Desert Tortoise Compensatory Mitigation Plan. Prior to start of construction mobilization activities, the implementing entity shall prepare a Compensatory Mitigation Plan (CMP) in consultation with CDFW and USFWS that describes the compensatory mitigation that shall be provided at a minimum 1:1 ratio to offset permanent and temporary impacts on desert tortoise habitat. The CMP shall describe the following: ▪ A description of desert tortoise and habitat types for which compensatory mitigation is being proposed. ▪ A description of the methods used to identify and evaluate mitigation options. Options may include one or more of the following: • Purchase of mitigation credits from an agency-approved mitigation bank (e.g., Mojave Desert Tortoise Conservation Bank or other CDFW/USFWS approved mitigation bank). • Incidental take permit coverage through an existing agency general conservation plan (e.g., USFWS Desert Tortoise General Conservation Plan). • Protection of desert tortoise habitat through acquisition and a conservation easement and funding for long-term management of the habitat. Endowment funds shall be transferred to the applicable agency or entity approved by CDFW and USFWS and the conservation easements shall be held by an entity approved in writing by the applicable	Prior to the start of construction mobilization activities	The implementing entity shall consult with USFWS and CDFW to prepare a CMP, as specified in MM BIG BIO-16, pursuant to the performance standards specified therein. The implementing entity shall provide the City, CDFW, and USFWS with the CMP for verification of compliance with the performance standards specified in MM BIG BIO-16.	CDFW, USFWS, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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regulatory agency; for example, CDFW and USFWS. In circumstances where BNSF protects habitat through a conservation easement, the terms of the conservation easement shall be subject to approval of the applicable regulatory agencies, such as CDFW and USFWS and the conservation easement shall identify applicable regulatory agencies as third-party beneficiaries with a right of access to the easement areas. ▪ A summary of the estimated direct permanent and temporary impacts on desert tortoise and desert tortoise habitat ▪ A description of the process that is proposed to be used to confirm impacts. Actual impacts on desert tortoise and desert tortoise habitat could differ from estimates. Should this occur, adjustments shall be made to the proposed compensatory mitigation in consultation with CDFW/USFWS. Final compensatory mitigation shall be determined in consultation with CDFW and USFWS as a part of the CESA ITP and federal take authorization review and approval process. The CMP shall be submitted to the City, CDFW, and USFWS.					
MM BIG BIO-17: Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, and LeConte's Thrasher Construction Requirements. Construction activities within suitable southwestern willow flycatcher, western yellow-billed cuckoo, and LeConte's thrasher nesting habitat should occur outside of the breeding season (generally May 1 through August 31 for southwestern willow flycatcher and western yellow-billed cuckoo and late January to early June for LeConte's thrasher) when feasible. If construction activities must occur within the breeding season, any nesting habitat shall be removed prior to the breeding season. If construction activities must occur within 500 feet of suitable nesting	Within 30 days prior to start of construction activities that occur within 500 feet of suitable habitat; during construction	The implementing entity shall time construction activities, as specified in MM BIG BIO-17, pursuant to the performance standards specified therein when feasible.	CDFW, USFWS, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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habitat (i.e., near the Mojave River) and within the nesting season for southwestern willow flycatcher, western yellow-billed cuckoo, and LeConte's thrasher, pre-construction surveys shall be conducted prior to construction activities that occur within 500 feet of suitable habitat. Results shall be provided to the City. A Species-Specific BM shall conduct pre-construction surveys for southwestern willow flycatcher, western yellow-billed cuckoo, and LeConte's thrasher within 30 days prior to start of construction activities that occur within 500 feet of suitable habitat. The Species-Specific BM shall hold a USFWS recovery permit and be authorized by the agency to conduct pre-construction southwestern willow flycatcher surveys and/or western yellow-billed cuckoo surveys. The Species-Specific BM shall also conduct the pre-construction LeConte's thrasher survey in general accordance with the guidelines provided by the Desert Thrasher Working Group (2018, 2024) or other acceptable survey methodology that allows for thorough detection of nests (if any). If southwestern willow flycatcher, western yellow-billed cuckoo, and/or LeConte's thrasher is documented nesting within the BIG footprint during pre-construction surveys, no work shall occur within a 500-foot buffer of the nest and consultation with USFWS and CDFW shall occur (as applicable to the species under their jurisdiction), and additional measures may be implemented to avoid take. Federal and state incidental take permits may be required for proposed actions that are determined to have adverse effects on southwestern willow flycatcher, western yellow-billed cuckoo, and/or LeConte's thrasher. If southwestern willow flycatcher, western yellow-billed cuckoo, and/or LeConte's thrasher nesting behavior and/or breeding territories are documented within 500 feet of construction activities during pre-construction surveys and construction activities must proceed during the nesting season, no work shall occur within a 500-foot buffer of the nest and construction noise shall be monitored and minimized per a		The implementing entity, through a Species-Specific Biological Monitor, shall conduct pre-construction surveys prior to construction activities, as specified in MM BIG BIO-17, pursuant to the performance standards specified therein. The Biological Monitor shall provide survey results to the City for verification of consistency with MM BIG BIO-17. The implementing entity, through a Species-Specific Biological Monitor, shall consult with USFWS and CDFW, as specified in MM BIG BIO-17, pursuant to the performance			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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Wildlife Noise Study and Monitoring Plan to be implemented with DB oversight. Prior to and during construction, noise monitoring shall be conducted within suitable nesting habitat contiguous with occupied territories at the vegetation limit closest to impact area. Noise limits are only applicable to the occupied nest habitat and suitable contiguous nesting vegetation determined to be part of the nesting territory. Noise monitoring shall be conducted by a qualified noise specialist on coordination with a Species-Specific BM. While conducting noise monitoring, the BM shall monitor the active nests to allow normal breeding behaviors to not be indirectly impacted by noise from construction activities. Construction noise levels shall not exceed pre-construction ambient levels or a 70 dBA hourly average, whichever is greater, in habitat occupied by nesting southwestern willow flycatcher, western yellow-billed cuckoo, and LeConte's thrasher unless authorized by the appropriate regulatory authorities (i.e., CDFW and/or USFWS). Construction activities that exceeded noise limits in the nest territory would be adjusted to reduce noise to below pre-construction ambient levels, a 70dBA hourly average, or the agency-approved threshold. Alternatively, noise attenuation measures shall be implemented to reduce noise within occupied southwestern willow flycatcher, western yellow-billed cuckoo, and/or LeConte's thrasher breeding territories to below the limit. Measures may include installation of sound barriers or walls, phasing of equipment use, changes in scheduling, and temporary avoidance of certain portions of the impact area. Noise monitoring shall be conducted when attenuation measures are implemented to document a successful or unsuccessful reduction in noise to below the established threshold. If such adjustments or measures are not feasible and noise levels are found to result in average hourly noise levels greater than 70 dBA or pre-construction ambient levels, whichever is greater, work would be postponed until after the breeding season or after the southwestern willow flycatcher, western yellow-billed		standards specified therein. The implementing entity, through a Designated Biologist, shall implement a Wildlife Noise Study and Monitoring Plan if active nests occur within 500 feet of construction activities, as specified in MM BIG BIO-17, pursuant to the performance standards specified therein. The implementing entity, through a Species-Specific Biological Monitor and qualified noise specialist, shall monitor active nests, as specified in MM BIG BIO-17, pursuant to the performance			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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cuckoo, and/or LeConte's thrasher fledglings are no longer dependent on the affected breeding territory, as confirmed by a qualified biologist unless authorized by the appropriate regulatory authorities (i.e., CDFW and/or USFWS). A noise level verification report shall be submitted by the implementing entity to CDFW and/or USFWS every two weeks during work that required noise monitoring for listed or candidate species as described above.		standards specified therein. When noise attenuation measures are implemented, the implementing entity, in consultation with a qualified noise specialist, shall conduct noise monitoring and submit noise level verification reports to CDFW and/or USFWS every two weeks during work for which noise monitoring is required, as specified in MM BIG BIO-17, pursuant to the performance standards specified therein.			
MM BIG BIO-18: Nesting Birds. To comply with CFGC §§ 3503, 3503.5, and 3513 and to avoid potential impacts on nesting birds, vegetation removal activities shall be conducted outside of the bird nesting season (generally February through August) to the greatest extent feasible. Regardless of the time of year, a biological monitor shall	Within three days before initial construction activities; and during construction,	The implementing entity shall time construction activities, as specified in MM BIG	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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conduct a nesting bird survey no more than three days prior to initial construction activities. Results shall be provided to the City. Pre-construction surveys shall focus on evidence of nesting, including nest locations and nesting behavior. The biological monitor shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are identified during the nesting bird survey, a biological monitor shall establish suitable exclusion buffers around the nests based on the level of construction activity within the vicinity and sensitivity of the species observed. The buffers shall be avoided until the nests are no longer occupied, and the juvenile birds can survive independently from the nests, as determined by the biological monitor. The biological monitor familiar with the nesting phenology of the nesting species may increase or decrease the buffer based on nest and buffer monitoring results. Active nests and adequacy of the established buffer distance shall be monitored by the biological monitor until the young have fledged or BIG construction has been completed. The biological monitor has the authority to stop work if nesting pairs exhibit signs of distress. If nests are documented during general biological monitoring activities, the biological monitor shall implement exclusion buffers and stop or redirect construction activities to avoid take of nesting birds. If there are time lapses between construction activities, and prior to re-initiation of construction activities, pre-construction nesting bird surveys shall be repeated.	including following time lapses between, and prior to reinitiation of, construction activities	BIO-18, pursuant to the performance standards specified therein. The implementing entity, through a biological monitor, shall conduct pre-construction nesting bird surveys, provide the results of pre-construction surveys to the City, conduct nest and buffer monitoring, as specified in MM BIG BIO-18, pursuant to the performance standards specified therein. The City shall review the preconstruction survey to verify compliance with MM BIG BIO-18, pursuant to the performance	reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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		standards specified therein.			
MM BIG BIO-19: Construction Noise. During all construction, the implementing entity or their contractor shall ensure that noise-generating equipment use is restricted to hours least likely to disrupt wildlife to the maximum extent practicable. The use of generators shall be restricted except for temporary use in emergencies. Power shall be provided via low noise-level sources (e.g., solar photovoltaic systems, cogeneration systems, small hydroelectric systems, or small wind turbine systems). If generators must be temporarily used, noise suppression devices such as mufflers or enclosures for generators shall be used.	During construction	The implementing entity shall implement the construction noise measures specified in MM BIG BIO-19, pursuant to the performance standards therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-20: Swainson's Hawk Construction Requirements. Swainson's hawk nest surveys shall be conducted during the breeding season immediately prior to start of construction and provided to the City and CDFW. Surveys shall be conducted within the area of the BIG Project construction footprint plus a 0.5-mile buffer by agency-approved Species-Specific biological monitors following the protocol outlined in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee, 2000). The Species-Specific biological monitor shall be familiar with Swainson's hawk identification and life history and be approved to conduct surveys by CDFW. If active Swainson's hawk nests are found during nest surveys, the Species-Specific biological monitor shall establish an appropriate avoidance buffer around each nest in consultation with CDFW based on work activities proposed. The avoidance buffer will remain in place until a Species-Specific biological monitor confirms that the Swainson's hawk young have fledged or the nest is no longer active. If full avoidance of active Swainson's hawk nest(s) cannot be achieved, the	During the breeding season immediately prior to the start of construction	The implementing entity, through a CDFW-approved, Species-Specific biological monitor, shall conduct Swainson's hawk nest surveys and provide the results to CDFW and the City, and consult with CDFW regarding avoidance buffers, as specified in MM BIG BIO-20, pursuant to the performance	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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Project Proponent shall obtain an ITP.		standards specified therein. The Project Proponent shall obtain an ITP as needed, as specified in MM BIG BIO-20, pursuant to the performance standards specified therein.			
MM BIG BIO-21: Western Burrowing Owl Construction Requirements. No less than 14 days prior to the start of construction mobilization activities within suitable habitat, a qualified Species-Specific BM shall conduct pre-construction surveys for burrowing owl and/or occupied nest burrows within the limits of the BIG construction footprint plus a 500-foot buffer, according to the 2012 Staff Report on Burrowing Owl Mitigation. Additionally, time lapses between BIG construction within suitable habitat shall trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance. The pre-construction surveys shall be repeated if there is a time lapse between construction activities of 14 days or more within previously surveyed areas. All surveys shall be conducted in accordance with the most current CDFW survey methods. If burrowing owl or active burrows, or sign (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, decoration, or excrement) are not observed during the pre-construction surveys, no additional conditions shall be required to avoid direct impacts on burrowing owl	Prior to construction, including no less than 14 days prior to the start of construction mobilization activities; during construction, including within 24 hours prior to ground disturbance.	The implementing entity shall time construction activities, as specified in MM BIG BIO-21, pursuant to the performance standards specified The implementing entity, through a qualified Species-Specific Biological Monitor, shall conduct pre-construction surveys and subsequent take avoidance surveys, and monitoring, as	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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within the surveyed areas. If burrowing owl is documented during pre-construction surveys, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31) and all impacts to burrowing owl shall be fully avoided until a CDFW approved Species-Specific BM verifies through non-invasive methods that either the birds have abandoned or failed nesting attempts, or that juveniles from the occupied burrows are foraging independently and capable of independent survival. A Species-Specific BM shall establish exclusion buffers to protect active nests in accordance with the recommendations included in CDFW's *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version). A qualified Species-Specific BM shall conduct ongoing monitoring during construction activities. If burrowing owl is observed during the non-breeding season (September 1 through January 31) or confirmed to not be nesting during pre-construction surveys, a non-disturbance buffer between construction activities and the occupied burrow shall be installed by a qualified Species-Specific BM in accordance with the recommendations included in the Staff Report on Burrowing Owl Mitigation (CDFW, 2012 or most recent version). The implementing entity shall submit at least one burrowing owl pre-construction survey report for each surveyed area to the satisfaction of CDFW to document compliance with BIG's western burrowing owl MMs. Survey reports shall also be submitted to the City. If full avoidance is not possible, either directly or indirectly, an ITP under CESA shall be obtained from CDFW and a Burrowing Owl Plan shall be prepared and submitted for review and approval by CDFW. The plan shall also be submitted to the City. Once approved by CDFW, the plan shall be implemented in conjunction with the CESA ITP to relocate non-breeding burrowing owls from BIG. The plan shall detail		specified in MM BIG BIO-21, pursuant to the performance standards specified therein. The implementing entity shall submit at least one burrowing owl pre-construction survey report for each surveyed area to CDFW and the City for verification of compliance with the performance standards specified in MM BIG BIO-21. If full avoidance of impacts to burrowing owls is not possible, the implementing entity shall obtain an ITP from CDFW, as specified in MM BIG BIO-21, pursuant to the performance standards specified therein. The implementing entity		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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methods for relocation of burrowing owls and provide guidance for the monitoring and management of the replacement burrow sites and associated reporting requirements. Details of the Burrowing Owl Plan shall be determined in consultation with CDFW, and is anticipated to include, but may not be limited to, the following: ▪ Proposed avoidance, and monitoring actions • Number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed). • Seasonal restrictions of relocation efforts - Relocation efforts shall occur during the non-breeding season (September 1 through January 31). Relocation during the breeding season (February 1 through August 31) may only occur if a qualified biologist determines that the bird have not begun egg-laying, or that the fledged juveniles are foraging independently and are capable of independent survival. • Climatic restrictions of relocation efforts - Relocation shall not occur during extreme temperatures or that may cause mortality during rain or high wind. • Monitoring schedule and length - Full-time monitoring shall occur for at least two weeks following passive relocation and periodically thereafter or as required by the CESA ITP.		shall also submit the Burrowing Owl Plan to the City for verification of compliance with the performance standards specified in MM BIG BIO-21. If full avoidance of impacts to burrowing owls is not possible, the implementing entity shall prepare a Burrowing Owl Plan in consultation with CDFW, submit the Plan to CDFW for approval, and implement the approved plan, as specified in MM BIG BIO-21, pursuant to the performance standards specified therein.			
MM BIG BIO-22: Western Burrowing Owl Compensatory Mitigation. Prior to start of construction mobilization activities, the implementing entity shall prepare a Compensatory Mitigation Plan (CMP) in consultation with CDFW that describes the compensatory mitigation that shall be provided at a minimum 1:1 ratio to offset permanent and	Prior to the start of construction mobilization activities	The implementing entity shall consult with CDFW to prepare a CMP, as specified in MM BIG	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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temporary impacts on burrowing owl habitat. The CMP shall describe the following: ▪ A description of burrowing owl and habitat types for which compensatory mitigation is being proposed. ▪ A description of the methods used to identify and evaluate mitigation options. Options may include one or more of the following: • Purchase of mitigation credits from a CDFW-approved mitigation bank. • Protection of burrowing owl habitat through a conservation easement and funding for long-term management of the habitat. Endowment funds shall be transferred to the applicable agency or entity and conservation easements shall be held by an entity approved in writing by CDFW. The terms of the conservation easement shall be subject to approval of CDFW, and the conservation easement shall identify CDFW as a third party beneficiary with a right of access to the easement areas. ▪ A summary of the estimated direct permanent and temporary Project impacts on burrowing owl and burrowing owl habitat. ▪ A description of the process that is proposed to be used to confirm Project impacts. Actual Project impacts on burrowing owl and burrowing habitat could differ from estimates. Should this occur, the Permittee shall be responsible for providing compensatory mitigation for final Project impacts. The burrowing owl CMP and mitigation requirements shall be submitted to the City and CDFW for review. If all or any portion of the acquired desert tortoise and/or Mojave fringe-toed lizard compensatory mitigation (**MM BIG BIO-16 and MM BIG BIO-24**, respectively) or other required compensatory mitigation lands/credits		BIO-22, pursuant to the performance standards specified therein. The implementing entity shall provide the City and CDFW with the CMP for verification of compliance with the performance standards specified in MM BIG BIO-22.	monitoring and reporting requirements during and post-construction])		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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meet the criteria for burrowing owl compensatory mitigation, it may be used to fulfill that portion of the obligation for burrowing owl compensatory mitigation requirements. Final compensatory mitigation for burrowing owl shall be determined in consultation with CDFW as a part of the CESA ITP review and approval process.					
MM BIG BIO-23: Mojave Fringe-toed Lizard Construction Requirements. When possible, construction activities within Mojave fringe-toed lizard suitable habitat shall be conducted during the active season (March 1 – September 30). A Species-Specific biological monitor shall be present during initial construction activities within suitable Mojave fringe-toed lizard dune habitat and shall inspect the impact area daily to confirm the area remains clear of the species. Any observed Mojave fringe-toed lizard shall be relocated outside of active work areas and out of harm's way. If necessary, reports summarizing relocation activities shall be submitted to the CDFW.	During construction, including initial construction activities	The implementing entity shall time construction activities, when possible, as specified in MM BIG BIO-23, pursuant to the performance standards specified therein. The implementing entity, through a Species-Specific biological monitor, shall perform the monitoring; daily inspections; relocations; and, at the request of CDFW, provide relocation activity reports, as specified in MM BIG BIO-23, pursuant to the performance	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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		standards specified therein.			
MM BIG BIO-24: Mojave Fringe-toed Lizard Compensatory Mitigation. Prior to construction mobilization activities, the implementing entity shall prepare a compensatory mitigation plan for direct impacts on Mojave fringe-toed lizard and 1,009.1 acres of occupied dune habitat (active desert dunes, stabilized and partially stabilized dunes, disturbed stabilized and partially stabilized dunes). Dune habitat shall be mitigated in-kind through the acquisition and preservation of dune habitat suitable for Mojave fringe-toed lizard at a minimum 2:1 ratio to offset permanent and temporary impacts on Mojave fringe-toed lizard habitat. Land selected for compensatory mitigation must be: ▪ Deposits of aeolian or fine windblown sands associated with dunes, washes, hillsides, margins of dry lakes, and/or sandy hummocks within the Mojave Desert; ▪ Occupied with Mojave fringe-toed lizard or with potential for connectivity to lands occupied by Mojave fringe-toed lizard; ▪ Prioritized within the Mojave River Watershed ▪ Near land currently under or planned for protection; and ▪ Not characterized as highly disturbed. A long-term management plan and endowment for land acquisition, preservation, and management in perpetuity shall be established by a qualified land manager/conservancy. All or any portion of the compensatory mitigation lands/credits acquired for impacts on other sensitive resources (i.e., aquatic resources or sensitive vegetation communities) may also be used to fulfill compensatory mitigation requirements for Mojave fringe-toed lizard For example, compensatory mitigation pursuant to **MM BIG BIO-**	Prior to construction mobilization activities	The implementing entity shall consult with CDFW to prepare a compensatory mitigation plan as specified in MM BIG BIO-24, pursuant to the performance standards specified therein.	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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16 and **MM BIG BIO-22** may also be used to fulfill compensatory mitigation requirements for Mojave fringe-toed lizard if acquired mitigation lands/credits meet the criteria above. Final compensatory mitigation for Mojave fringe-toed lizard shall be determined in coordination with CDFW.					
MM BIG BIO-25: Dry Season Construction. Construction within the Mojave River corridor shall be restricted to the dry season when there are no observable surface flows within 1,000 feet of the BIG construction footprint, to the extent feasible. If construction must occur outside of the dry season, biological monitors shall conduct daily pre-construction sweeps within 250 feet of direct impact areas occurring within the Mojave River corridor, such as construction associated with the Hinkley Road Bridge. If American beaver is observed, construction cannot be initiated until the species is able to disperse from the area. Construction activities may resume after a biological monitor confirms American beaver is no longer present within direct and indirect impact areas. If impacts to American beaver are unavoidable, the Project Proponents shall not commence Project activities at the locations where American beaver are found and contact CDFW immediately within 24 hours to discuss proper avoidance, minimization, and mitigation.	During construction	The implementing entity shall time construction activities and consult with CDFW when impacts to species are unavoidable, as specified in MM BIG BIO-25, pursuant to the performance standards specified therein. The implementing entity, through biological monitors, shall coordinate daily pre-construction inspections and confirm species absence, as specified in MM BIG BIO-25, pursuant to the performance	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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		standards specified therein.			
MM BIG BIO-26: Ringtail, American Badger and Desert Kit Fox Construction Requirements. Prior to start of construction mobilization activities within suitable habitat, biological monitors familiar with ringtail, American badger, and desert kit fox shall conduct surveys within the limits of the BIG construction footprint for occupied dens. The survey(s) shall occur no more than 48 hours prior to start of ground-disturbing activities in suitable habitat for ringtail, American badger and desert kit fox within the potential impact footprint. Survey results shall be provided to CDFW and the City. If ringtail, American badger or desert kit fox dens are documented within the survey area, a biological monitor shall establish a no-work exclusion buffer around the den and dens shall not be disturbed until a biological monitor verifies through non-invasive methods that either the den is no longer occupied, or that juveniles from a natal den are foraging independently and capable of independent survival and not dependent on the den. A biological monitor shall monitor the den during construction activities approximately every other day if it is a natal den or weekly otherwise. The definitive frequency and duration of monitoring shall be dependent upon the age and behavior of the ringtail, American badger, or desert kit fox pups and the efficacy of the exclusion buffers, as determined by a designated biologist or biological monitor and in coordination with CDFW. Passive relocation methods may be employed for non-natal dens that cannot be avoided by construction activities. For individual, non-natal badger and kit fox dens, a plan for passive relocation, burrow monitoring, and excavation of vacated	Prior to the start of construction mobilization activities, including no more than 48 hours prior to the start of ground-disturbing activities; during construction	The implementing entity, through qualified biological monitors, shall conduct pre-construction surveys, provide the survey results to CDFW and the City for verification of compliance with MM BIG BIO-26, as specified in MM BIG BIO-26, pursuant to the performance standards specified therein. If the specified species are documented in the survey area, the implementing entity, through qualified biological monitors, shall monitor dens in coordination with	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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burrows will be developed in coordination with CDFW and the City.		CDFW, as specified in MM BIG BIO-26, pursuant to the performance standards therein. For individual, non-natal badger and kit fox dens, the implementing entity, through qualified biological monitors, shall develop a plan for passive relocation, burrow monitoring, and excavation of vacated burrows in coordination with CDFW.			
MM BIG BIO-27: Bat Construction Requirements. Prior to start of demolition or disturbance of structures suitable for roosting (i.e., bridges), pre-construction surveys for special-status bat species shall be conducted by a biological monitor. Pre-construction surveys shall be conducted no more than 14 days prior to the start of demolition activities. Survey results shall be provided to CDFW and the City. If active bat roosting is documented during pre-construction surveys within structures to be impacted, bat exclusion techniques, consistent with recommendations provided in Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions (H. T. Harvey & Associates, 2019), shall be implemented. If required, exclusion shall be implemented between September 1 and October 15 to the extent	No more than 14 days prior to the start of demolition or disturbance of structures suitable for roosting	The implementing entity, through qualified biological monitors, shall conduct pre-construction surveys, provide the survey results to CDFW and the City for verification of compliance with MM BIG BIO-27, as	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction]),		

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feasible. Exclusion shall not occur during the typical bat maternity season (April through August). Prior to demolition and/or improvement of structures that could support roosting bats, including Hinkley Road Bridge, or trees that will be removed, a biologist with expertise in chiropterology (study of bats) shall survey these features and any areas that could provide suitable roosting habitat to confirm they do not contain maternity roosts or special-status bats. If special-status bats and/or maternity roosts are confirmed to be absent, **MM BIG BIO-1** above will be followed prior to construction to reduce potential impacts to individual roosting bats to a less than significant level and no further mitigation is required. If a potential maternity roost and/or a special-status bat roost is present, a Bat Avoidance and Mitigation Plan shall be developed in coordination with the City and CDFW, which may include the following measures to reduce potential impacts to special-status bat species to a less than significant level ▪ **Maternity Roosting Season Avoidance.** All proposed demolition activities of active roost sites, including bat roost exclusion, shall occur outside the general bat maternity roosting season of March through August to reduce potentially significant impacts to maternity roosting bats. If the maternity roosting season cannot be avoided, then roost exclusion can occur outside the maternity roosting season (September through February) to exclude bats from the demolition area prior to the start of demolition during the maternity roosting season. The measures below shall be required to ensure to avoid impacts to roosting bats during the exclusion process. ▪ **Replacement Roost Installation.** If there is a potential or known maternity roost within a structure to be demolished, a replacement roost shall be installed outside the maternity roosting season. At least one month prior to the exclusion of bats		specified in MM BIG BIO-27, pursuant to the performance standards therein. If a potential maternity roost and/or a special-status bat roost is present, the implementing entity, shall prepare, in coordination with the City and CDFW, a Bat Avoidance and Mitigation Plan, as specified in BIO-27, pursuant to the performance standards therein.			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
from a roost, the implementing entity shall procure and install two or more (dependent on colony size) bat boxes from a reputable vendor, such as Bat Conservation and Management, to allow bats sufficient time to acclimate to a new potential roost location. The bat boxes shall be installed within close proximity to the trees and/or structures and in an area that is within close proximity to suitable foraging habitat (i.e., near the Mojave River). Additionally, the bat boxes shall be oriented to the south or southwest, and the area chosen for the bat boxes must receive sufficient sunlight (at least 6 hours) to allow the bat boxes to reach an optimum internal temperature (approximately 90°F) to mimic the existing bat roost. The bat boxes shall be suitable to house crevice-roosting bat species, and large enough to contain a minimum of 50 bats (e.g., Four Chamber Premium Bat House or Bat Bunker Plus). The bat boxes shall be installed on a 20-foot-tall steel pole. ▪ **Roost Exclusion.** Roost exclusion must only occur during the time when bats are most active (early spring or fall) to increase the potential to exclude all bats from roosts and avoid the maternity roosting season, thereby minimizing the potential for a significant impact to occur. Approximately one month after bat boxes have been installed, exclusion of the existing roost shall occur. The primary exit points for roosting bats shall be identified, and all secondary ingress/egress locations shall be covered with a tarp or wood planks to prevent bats from leaving from other locations. The primary exit point shall remain uncovered to allow exclusion devices to be installed. Exclusion devices shall consist of a screen (poly netting, window screen, or fiberglass screening) with mesh 1/6 of an inch or smaller, installed at the top of the roost location and sealed along the sides and passing 2 feet below the bottom of the primary exit point. The exclusion devices shall be installed at night to increase the potential that bats have already left the roost and are less likely to return. Exclusion devices shall be left in place					

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for a 1-week period to ensure that any remaining bats in the roost are excluded. A passive acoustic monitoring detector shall also be deployed during the exclusion period in order to verify excluded species and monitor if bat activity has decreased during the exclusion period. Periodic monitoring during the exclusion period should also be conducted to observe if any bats are still emerging from additional areas at BIG, and an active monitoring survey conducted on the final night of exclusion to ensure that no bats are emerging and determine that exclusion has been successful. Any continued presence of roosting bats shall require an adjustment to the exclusion devices and schedule. The exclusion devices may remain in place until the start of demolition activities. If any bats are found roosting in any proposed demolition areas prior to demolition, additional exclusion shall be required and follow the same methodology described in this mitigation measure ▪ **Roost Habitat Creation.** If sensitive bat species are present within Hinkley Road Bridge or other structures that will persist post BIG construction but require bat displacement for improvements to be made, bat friendly roost designs shall be developed as part of Project plans as feasible. Bat friendly designs shall be developed in coordination with a qualified biologist, the City, and CDFW.					
MM BIG BIO-28: Compensatory Mitigation for Sensitive Natural Communities. Prior to start of construction mobilization activities, the implementing entity shall prepare a compensatory mitigation plan for permanent impacts of 1,014 acres of dune vegetation communities, including high-quality *Dicoria canescens – Abronia villosa – Panicum urvilleanum* sparsely vegetated alliance (e.g., active desert dunes; 551.5 acres), moderate-quality *Dicoria canescens – Abronia villosa – Panicum urvilleanum* sparsely vegetated alliance – partially stabilized (e.g., partially stabilized desert dunes; 7.1 acres), and low-quality *Dicoria canescens – Abronia villosa – Panicum urvilleanum* sparsely	Prior to the start of construction mobilization activities	The implementing entity shall prepare and implement a compensatory mitigation plan for sensitive natural communities, as specified in MM BIG BIO-28, pursuant to the performance	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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vegetated alliance – disturbed/stabilized (e.g., disturbed/stabilized desert dunes; 450.6 acres) at a minimum 1:1 ratio. Dune habitat shall be mitigated in-kind through the acquisition and preservation of dune habitat. If all or any portion of the acquired Mojave fringe-toed lizard **(MM BIG BIO-24)** or other required compensatory mitigation lands/credits meet the criteria above, it may be used to fulfill that portion of the obligation for CDFW sensitive upland vegetation communities**.**		standards specified therein.			
MM BIG BIO-29: Jurisdictional Aquatic Resources Permit Requirement. Prior to impacting jurisdictional aquatic resources, the implementing entity shall obtain a Clean Water Act (CWA) Section 404 Individual Permit from the U.S. Army Corps of Engineers (USACE) for permanent impacts on non-wetland waters of the U.S., a CWA Section 404 water quality certification (or other required permit) from the Regional Water Quality Control Board (RWQCB) for permanent impacts on non-wetland waters of the U.S./State, and a California Fish and Game Commission (CFGC) Section 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) for impacts on vegetated streambed and unvegetated streambed and watercourse jurisdictional by CDFW. The implementing entity shall implement/comply with all permit conditions and mitigation measures required by the resource agencies. Compensatory mitigation to offset impacts on jurisdictional aquatic resources may be implemented through on-site and/or off-site, permittee-responsible mitigation, mitigation bank credit purchase (e.g., purchase of enhancement and/or preservation credits at the Mojave River Watershed Mitigation Bank or other approved mitigation bank), or a combination of these options depending on availability. The proposed mitigation strategy shall prioritize in-kind and in-watershed options per the regulatory agencies' preferences. A minimum compensatory mitigation ratio of 1:1 will be required; final mitigation ratios and	Prior to impacting jurisdictional aquatic resources	The implementing entity shall obtain, implement, and comply with all requirements of the permits and certifications specified in MM BIG BIO-29, pursuant to the performance standards specified therein. The implementing entity shall consult with USACE, RWQCB, and CDFW to determine mitigation ratios and credits, as specified in MM BIG BIO-29, pursuant to the performance	USACE, RWQCB, CDFW, CFGC, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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credits shall be determined in consultation with USACE, RWQCB, and CDFW based on agency evaluation of current resource functions and values and through each agency's respective permitting process. Should implementing entity-sponsored mitigation be implemented, a Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared and approved by the agencies in accordance with the proposed program permits. The HMMP shall include but is not limited to a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; and proposed success criteria. Any off-site applicant-sponsored mitigation shall be conserved and managed in perpetuity.		standards specified therein. If the implementing entity-sponsored mitigation is implemented, the implementing entity shall prepare and submit to the relevant agencies for approval an HMMP, as specified in MM BIG BIO-29, pursuant to the performance standards specified therein.			
MM BIO-30: Water Quality Best Management Practices. Prior to construction mobilization activities, the implementing entity shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California Construction Stormwater General Permit Order 2022-0057-DWQ requirements to avoid and minimize impacts associated with erosion, runoff, and stormwater contaminants. The SWPPP shall include best management practices (biological monitors) to avoid and minimize impacts on downstream jurisdictional aquatic resources including, but not limited to: ▪ Vehicles and equipment should not be operated in ponded or flowing water except as described in permits. ▪ Water containing mud, silt, or other pollutants from grading or other activities should not be allowed to enter jurisdictional	Prior to construction mobilization activities	The implementing entity shall prepare a Storm Water Pollution Prevention Plan (SWPPP), as specified in MM BIG BIO-30, pursuant to the performance standards specified therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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waters adjacent to BIG or be placed in locations that may be subjected to high storm flows. ▪ Spoil sites should not be located within 30 feet from the boundaries of downstream jurisdictional waters or in locations that may be subject to high storm flows, where spoils might be washed back into drainages adjacent to BIG. ▪ Raw cement/concrete or washings thereof; asphalt, paint or other coating material; oil or other petroleum products; or any other substances that could be hazardous to vegetation or wildlife resources, resulting from BIG construction, should be prevented from contaminating the soil and/or entering avoided jurisdictional waters downstream of BIG. ▪ No equipment maintenance or fueling should be performed within 100 feet of jurisdictional waters downstream of BIG, where petroleum products or other pollutants from the equipment may enter these areas. ▪ Temporary structures, storage of construction materials, and staging/storage of construction equipment should be located outside jurisdictional waters downstream of BIG. ▪ No equipment maintenance or fueling should be performed within 100 feet of jurisdictional waters downstream of BIG, where petroleum products or other pollutants from the equipment may enter these areas. ▪ Temporary structures, storage of construction materials, and staging/storage of construction equipment should be located outside jurisdictional waters downstream of BIG.					
MM BIO-31: Vegetation Removal. The implementing entity shall ensure that all cut vegetation is hauled out of any waterways and stored, if necessary, where it cannot be washed by rainfall or runoff into waterways. When maintenance activities are completed, any	During construction; when maintenance	The implementing entity shall implement the vegetation removal measures specified	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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excess vegetation shall be removed from the BIG footprint.	activities are completed	in MM BIG BIO-31, pursuant to the performance standards therein.	reporting requirements during and post-construction])		
MM BIO-32: Wildlife Crossings. With BIG implementation, a wildlife crossing shall be constructed at the Unnamed Stream (Milepost 12.5) below the BNSF tracks and to facilitate wildlife movement between areas of natural habitat on either side of the railway. This rail feature shall be placed alongside four smaller culverts constructed to convey water: three 36-inch and one 48-inch diameter culverts. The wildlife crossing shall be an 84-inch diameter culvert designed to facilitate passage beneath the rail right-of-way, which would connect open space east of the railway to the Mojave River, thereby maintaining access to existing linkages (i.e., the Rank 4/5 ACE, California Desert Linkage Network, and CEHC Potential Riparian Connection). The wildlife crossing shall also include a dedicated underpass beneath National Trails Highway to facilitate movement of wildlife from habitat south of the roadway to the culvert under the BNSF tracks, situated just south of the Mojave River Corridor. Design features for facilitating wildlife culvert usage shall include installing inlet and outlet points flush with the ground and maintaining one to six inches of native soil along the bottom of the culvert. The wildlife crossing shall be designed to function as all-weather wildlife passage to the extent feasible and shall be sized and configured to exceed minimum hydraulic conveyance requirements, or be located separately from primary hydraulic structures, as feasible, to ensure suitability for wildlife movement during both dry and wet conditions. Final sizing, placement, and configuration of the wildlife crossing shall be refined during final engineering design in coordination with the CDFW and other applicable agencies.	Prior to construction, including the start of vegetation removal and/or mass grading; during construction; for the first two years following completion of construction	The implementing entity, through consultation with CDFW and other applicable agencies, shall design and construct a wildlife crossing, as specified in MM BIG BIO-32, pursuant to the performance standards specified therein. The implementing entity shall prepare and submit to the City for review a long-term management plan for wildlife crossing, as specified in MM BIG BIO-32, pursuant to the performance standards specified therein. The City shall review the	CDFW, City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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A long-term management plan for the wildlife crossing shall be submitted to the City for review prior to start of vegetation removal and/or mass grading. The long-term management plan shall include: ▪ Additional measures to encourage wildlife use include, but are not limited to, maintenance or restoration of native vegetation near, but not obstructing, culvert or crossing entrances, and invasive plant removal. ▪ Routine clearing of debris and trash from the wildlife crossings shall be completed on a quarterly basis and following large storm events to allow ample space to remain available for wildlife travel. ▪ Access points to the wildlife crossings shall contain rocks or woody refuge sites to attract subterranean wildlife and structural cover elements shall be provided within the structure, as feasible, to facilitate movement of small and medium mammals and reptiles. ▪ Habitat quality (i.e., the percentage of invasive versus native plants and level of anthropogenic degradation) within a 200-meter radius surrounding the crossing entrances shall be monitored quarterly by staff under the direction of a qualified biologist to confirm wildlife corridor functionality for the first two years following construction, with monitoring frequency and duration subject to adjustment based on observed conditions. ▪ A mitigation entity responsible for the implementation of the long-term management plan As part of BIG implementation, the existing Lenwood Channel would be widened per the Project Description as described in the Draft EIR. Enhancements to the channel shall be incorporated to maintain and support wildlife movement through the eastern portion of the project site toward the Mojave River corridor. A long-term management plan for the enhancements shall be prepared and submitted to the City of Barstow for review and approval prior to construction. The plan would include the following, to the extent feasible given site constraints:		plan to verify compliance with MM BIG BIO-32. The implementing entity, through staff under the direction of a qualified biologist, shall monitor habitat quality to confirm wildlife corridor functionality, as specified in MM BIG BIO-32, pursuant to the performance standards specified therein. The implementing entity shall prepare and submit to the City for review and approval a long-term management plan for the widening of the existing Lenwood Channel, as specified in MM BIG BIO-32, pursuant to the performance standards specified			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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▪ Installation and maintenance of fencing along the channel to guide wildlife through the channel while restricting entry into hazardous areas within the project footprint. ▪ Installation of native vegetation in select locations along the channel edges to provide cover, where practicable. ▪ Placement of structural cover features, such as rocks or woody debris, where feasible, to provide refuge for small and medium mammals and reptiles. ▪ Periodic clearing of debris and trash to maintain passable conditions for wildlife, particularly following significant storm events. ▪ Monitoring of conditions to assess functional wildlife passage. ▪ Assignment of a responsible mitigation entity to oversee implementation of the long-term management plan to be developed in accordance with the overarching objectives describe above.		therein. The City shall review the plan to verify compliance with MM BIG BIO-32 prior to approval.			
MM BIG BIO-33: Staging, Stockpiles, Materials and Equipment Storage. During BIG construction, all construction materials, staging, employee parking, storage, dispensing, fueling, maintenance activities, and spoils shall be located only in areas cleared within the previous 48 hours by a designated biologist or a previously disturbed area. For off-site construction activities, staging areas shall be located within permanent impact areas or previously disturbed areas (e.g., developed areas, areas already disturbed by construction). Efforts shall be made to discourage sensitive wildlife inhabitation of spoils, stockpiles, and materials (i.e. covering with secured tarps, spreading out materials, etc.) in consultation with approved designated biologists. Uncovered/ unmanaged spoils and stockpiles left undisturbed for 48 hours or more shall be inspected before being disturbed as determined necessary by the designated biologist.	During construction	The implementing entity, in consultation with designated biologists, shall implement the staging, stockpiles, materials and equipment storage measures in MM BIG BIO-33, in compliance with the performance	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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		standards detailed therein.			
MM BIG BIO-34: Permanent Security Fencing. Prior to final construction design and upon securing a CESA ITP for CESA species and a USFWS BO for federally listed species, the designated biologist shall review and submit the fencing plans for the BIG Specific Plan Area to CDFW for review and consultation that are adjacent to natural habitats to confirm the fences provide a sufficient barrier to restrict wildlife from entering the BIG Specific Plan area. The permanent security fencing shall be enhanced with a barrier (e.g., fine-mesh fencing) that extends at least 12 inches below ground and 12 inches above ground to prevent special status reptile and mammal species, including desert tortoise, from moving through or underneath the fencing and gaining access to the BIG Specific Plan area. Where fencing is proposed between natural habitats and roadway right-of-way, at the 12-inch depth of the below-grade portion fence apron, the barrier shall extend or be bent at an approximately 90-degree angle and oriented outward from the roadway right- of-way a minimum of 12 inches to prevent fossorial (burrowing) mammals and reptiles from digging or tunneling below the security fence and gaining access to BIG. A climber barrier (e.g., rigid curved or bent overhang) shall be installed at the top of the apron to prevent reptiles and mammals from climbing over the apron. The designated biologists shall confirm that the selected apron material and climber barrier do not cause harm, injury, entanglement, or entrapment to wildlife species. The implementing entity shall provide quarterly inspection and repair of the fencing during construction. The specific design and method for installation method of an apron or barrier may vary as required by regulatory permits issued under the	Prior to final construction design, after receiving a CESA ITP for CESA species and a USFWS BO for federally listed species; prior to operations	The implementing entity, through a designated biologist, shall submit fencing plans to CDFW for review and consultation. The fencing plans shall conform to the performance standards set forth in MM BIG BIO-34. The implementing entity, through a designated biologist, shall perform quarterly inspections and repairs of fencing during construction, pursuant to the performance standards set forth in MM BIG BIO-34. The implementing entity, through biological monitors	CDFW, USFWS, and City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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FESA or CESA. Prior to start of operations, staff under the direction of biological monitors shall field-inspect the fencing that is adjacent to natural habitats and confirm appropriate installation and the implementing entity shall carry out repair of the fencing, as needed. Fencing plan review and field inspection shall be documented in a memorandum from the designated biologists and provided to CDFW and the City.		and designated biologists, shall carry out, and submit a memorandum to the City and CDFW detailing, fencing plan review and field inspection, pursuant to the performance standards set forth in MM BIG BIO-34.			
MM BIG BIO-35: General Avian Safe Design. Prior to final construction design, the implementing entity shall ensure that fencing, electric lines, communication towers, and buildings are designed to be bird- and raptor-safe in accordance with recommendations presented in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee [APLIC] 2006) and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012). The designated biologist shall review the design for areas of high concern (e.g., areas adjacent to suitable raptor nesting habitat) to confirm the safety features provide sufficient protection for birds. Avian safe design features shall be implemented and maintained by the implementing entity during the period of operations. The project shall incorporate the following into the design: ▪ Sufficient spacing of phase conductors to prevent bird electrocution. ▪ Configuration of power lines to reduce vertical spread of lines and/or reductions in the span length if such options are feasible.	Prior to final construction design; prior to the start of operations	The implementing entity shall review the project design to ensure the project design conforms to the avian safe design standards identified in MM BIG BIO-35. The implementing entity, through a designated biologist, shall review the project design to ensure bird safety features provide sufficient protection for birds	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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▪ Marking of lines and fences (e.g., with Bird Flight Diverters) to increase the visibility of lines and reduce potential collisions. Where fencing is necessary, use of bird-compatible design standards to increase visibility of fences to reduce collision and entanglement. ▪ Metal fence stakes plugged with bolts or other material to prevent raptor talons from becoming entrapped within the bolt holes. ▪ Perch guards to discourage avian presence on and near BIG facilities. ▪ Minimizing the use of guywires. Where the use of guywires is necessary, mark the guywires using the best available methods to minimize avian strikes (e.g., line markers). ▪ A monopole or dual-pole design versus a lattice tower design to minimize perching and nesting opportunities. ▪ Communication tower design in conformance with Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning (USFWS, 2021b). ▪ Facility lighting that does not attract birds or their prey to the BIG. This includes using non-steady burning lights (e.g., red, dual red and white strobe, strobe-like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen). Prior to start of operations, biological monitors shall field-inspect the avian safe design features and summarize findings in a memorandum to be provided to the City		in areas of high concern. The implementing entity, through biological monitors, shall conduct a field inspection of avian-safe design features, prepare a memorandum summarizing findings, and provide the memorandum to the City. The City shall review the memorandum to verify compliance with the performance standards specified in MM BIO-35.			

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MM BIG BIO-36: Nighttime Lighting During Operations. To address the permanent and intermittent impacts from lighting, the implementing entity shall implement measures to minimize the intensity, direction, and duration of operational lighting of permanent facilities (e.g., traction power facilities, radio sites, and maintenance facilities), as well as intermittent train lighting in compliance with BIG Specific Plan lighting standards (BIG Specific Plan Section 3.6). These shall include the following measures to minimize light trespass into adjacent habitat: ▪ All lights shall be fully cutoff or fully shielded to prevent uplight and limit horizontal spill into adjacent habitat. ▪ Warm lighting (3,000K or lower) shall be used to reduce blue light emissions). ▪ All exterior lighting fixtures shall be directed downward to illuminate pedestrian pathways and parking areas and avoid unnecessary glare and light trespass. ▪ Within the transload warehouse center, pole-mounted or building-mounted lighting fixtures shall be no more than 50 feet in height to limit light trespass.	Throughout all operational years	The implementing entity shall implement the operational nighttime lighting measures specified in MM BIG BIO-36, pursuant to the performance standards specified therein.	City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		
MM BIG BIO-37: Desert Native Plant Salvage Plan. Prior to start of construction mobilization activities, the implementing entity shall prepare a Desert Native Plant Salvage Plan for the removal of any plant species regulated under the CDNPA and County Code § 88.01.060. Adequate mitigation for CDNPA/County-protected plants may include the salvage of plants for translocation to a suitable recipient site if removal cannot be avoided. In the case of translocation, the Desert Native Plant Salvage Plan shall be prepared for review and approval by the City and CDFW. The plan shall include a description and map showing plants to be salvaged, salvage and transport methods, the proposed recipient site, and disposition of the plant specimens at the recipient site. Recipient sites may include existing conservation areas,	Prior to the start of construction mobilization activities	The implementing entity shall prepare a Desert Native Plant Salvage Plan pursuant to the performance standards for removal specified in MM BIG BIO-37. The implementing entity shall prepare	CDFW (if applicable), City of Barstow (See also, MM BIG BIO-2 and MM BIG BIO-5 [identifying regular monitoring and reporting requirements during and post-construction])		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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botanical preserves, museums and zoological societies, among other conservation organizations that provide adequate habitat and management of desert native plants.		a Desert Native Plant Salvage Plan for review and approval by the City and CDFW pursuant to the performance standards for translocation specified in MM BIG BIO-37.			
CULTURAL RESOURCES					
MM BIG CUL-1: Phase III Data Recovery. Prior to any ground-disturbing activities, a Phase III Data Recovery Plan for the 19 archaeological sites identified as historical resources and unique archaeological resources shall be planned and implemented. Prior to BIG approval, an archaeologist that meets Secretary of Interior Professional Qualifications in Archaeology and who has at least 10 years of experience in the Mojave Desert for both prehistoric and historic era resources, henceforth identified as the BIG Project Archaeologist, shall prepare a Phase III Data Recovery Plan. Approval of the Plan may be completed after BIG approval, though implementation of the Plan must occur prior to, or concurrent with, installation of fencing for Desert Tortoise that is required as biological resources mitigation. The Plan shall include details related to research design, excavation methodology, and final disposition, and shall be reflective of requirements outlined in **BIG CUL** mitigation measures. Additionally, the plan shall be reflective of BIG design and proposed ground disturbance, in that if any of the 19 archeological sites or portions of sites that will not be subject to physical impacts should be left in place. The Plan shall be submitted to the Lead Agency, as well as the Cultural Resources Management Department for the Yuhaaviatam of San	Prior to, or concurrent with, installation of fencing for Desert Tortoise; no later than 120 days after fieldwork completion	The implementing entity, through a qualified archaeologist, shall prepare a Phase III Data Recovery Plan, as specified in MM BIG CUL-1, pursuant to the performance standards therein. The implementing entity shall submit the Plan to the City and consulting Tribes for review and comment, and to the City and USACE for approval. The implementing entity shall	City of Barstow, U.S. Army Corps of Engineers		

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Manuel Nation and the Tribal Historic Preservation Office for the Morongo Band of Mission Indians, henceforth referred to as the consulting Tribes, for review and comment. Parties shall be provided with a comment period of 20 business days from the date of receipt. Once approved by the City and U.S. Army Corps of Engineers, the plan shall be overseen by the BIG Project Archaeologist, with fieldwork overseen and implemented by archaeological field staff that have demonstrated experience in the Mojave Desert for both prehistoric and historic era resources. The BIG Project Archaeologist and City (or City and U.S. Army Corps of Engineers, as applicable) shall coordinate with consulting Tribes who have elected to place a Native American monitor on-site during data recovery regarding schedule and monitor acquisition. For any consulting Tribe that requires a formal agreement to obtain a Native American monitor, the applicant shall enter into said agreement with the respective Tribe. Data recovery shall require a Tribal monitor. Upon completion of the data recovery field efforts, a draft Phase III Rata Recovery Report shall be compiled and submitted to the implementing entity, City, U.S. Army Corps of Engineers, and consulting Tribes for review and comment no later than 120 days after fieldwork completion. Once approved and considered final by the consulting Tribes, City, and U.S. Army Corps of Engineers, a final copy shall be submitted to the aforementioned recipients, as well as the South Central Coastal Information Center (SCCIC).		implement the Plan, through the BIG Project Archaeologist and in consultation with the City, USACE, and consulting Tribes, as specified in MM BIG CUL-1, pursuant to the performance standards therein. The implementing entity, through the BIG Project Archaeologist, and City (or City and USACE, as applicable) shall coordinate with consulting Tribes who have elected to place a Native American monitor on-site during data recovery regarding schedule and monitor acquisition. The BIG Project Archaeologist shall prepare a Phase III			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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		Data Recovery Report and submit the Report for review and approval by the consulting Tribes, City, and USACE. The final Report shall be sent to the consulting Tribes, City, and USACE, as well as the SCCIC.			
MM BIG CUL-2: Cultural Resources Monitoring Plan. Prior to the installation of fencing for Desert Tortoise that is required as biological resources mitigation, as well as any other ground-disturbing activities connected to BIG, a Cultural Resources Monitoring and Management Plan (CRMMP) must be approved by the City and US Army Corps of Engineers that shall be enforced for all ground-disturbing activities that take place within the BIG footprint after BIG approval. The CRMMP shall be prepared by the BIG Project Archaeologist and be reflective of cultural resources mitigation and outlines requirements for conducting Worker Environmental Awareness Program (WEAP) training, archaeological and Native American monitoring, and inadvertent discoveries of archaeological resources. The CRMMP shall include, but is not limited to, roles and responsibilities, summary description of known and potential cultural resources, monitoring procedures, process for inadvertent discovery of cultural resources, process for determining treatment of cultural resources, and process for inadvertent discovery of human remains. The CRMMP shall also include appendices with the approved mitigation measures/conditions of approval, as well as contact information for all relevant parties. The	Prior to the installation of fencing for Desert Tortoise; throughout all ground-disturbing activities associated with BIG site preparation and construction.	The implementing entity, through the BIG Project Archaeologist, shall prepare a CRMMP, as specified in MM BIG CUL-2, pursuant to the performance standards therein. The implementing entity shall submit the Plan to the City, USACE, and consulting Tribes for review and comment, and to the City and USACE for approval.	City of Barstow, U.S. Army Corps of Engineers		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
draft CRMMP shall be submitted to the implementing entity, City, US Army Corps of Engineers, and consulting Tribes for review and comment. Parties shall be provided with a comment period of 15 business days from the date of receipt. Once approved by the City and U.S. Army Corps of Engineers, the CRMMP shall be enforced through the duration of all ground-disturbing activities associated with BIG site preparation and construction.		The implementing entity shall implement the Plan, through the BIG Project Archaeologist and in consultation with the City, USACE, and consulting Tribes, as specified in MM BIG CUL-2, pursuant to the performance standards therein.			
MM BIG CUL-3: Worker's Environmental Awareness Program. Concurrently with the preparation of the CRMMP, the BIG Project Archaeologist shall prepare a Worker Environmental Awareness Program (WEAP) training for all on-site personnel related to cultural resources for BIG. The draft WEAP training shall be submitted to the implementing entity, City, US Army Corps of Engineers, and consulting Tribes for review and comment. Parties shall be provided with a comment period of 15 business days from the date of receipt. Once approved by the City and US Army Corps of Engineers, the training shall be utilized for all WEAP trainings provided by the BIG Project Archaeologist, or their designee, throughout BIG site preparation and construction. The WEAP shall include an overview of the requirements in the CRMMP, applicable mitigation measures, and information related to cultural resources that may be identified during BIG site preparation and construction, how to identify them, and the process to follow in the case of inadvertent discovery. The consulting Tribes shall be contacted with an invitation to participate in the initial training	Throughout site preparation and construction	The implementing entity, through the BIG Project Archaeologist, shall prepare a Worker Environmental Awareness Program (WEAP) meeting the performance standards specified in MM BIG CUL-3, to be submitted to the City, USACE, and consulting Tribes for review and comment. The City, USACE shall	City of Barstow, US Army Corps of Engineers		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
at least 10 business days prior to the scheduled date. All personnel that access the site during BIG site preparation and construction must undergo this training, to include any personnel that access the BIG footprint after the initial WEAP training is provided but prior to completion of construction. Methods and timing for providing the training may vary throughout BIG construction depending on schedule, though the training itself shall not exceed 1 hour and all participants shall be required to add their name to a sign-in sheet for tracking purposes.		approve the WEAP after verifying that the WEAP meets the performance standards specified in MM BIG CUL-3. The implementing entity, through designated biologists or biological monitors, shall collect and maintain records of signed attendance forms, as referenced in MM BIG CUL-3.			
MM BIG CUL-4: Construction Monitoring. Archaeological monitors shall be present during all ground-disturbing activities. Archaeological monitors shall be designated as either a Crew Chief or Field Technician, with a ratio of no fewer than one Crew Chief for every eight Field Technicians. Crew Chiefs are required to have a bachelor's degree in Anthropology, Archaeology, or a related field and at least 3 years of demonstrated experience in Mojave Desert archaeology. Field Technicians are required to have a bachelor's degree in Anthropology, Archaeology, or a related field. All Field Technicians are required to undergo an Archaeological Resources Training prepared by the BIG Project Archaeologist or their designee prior to accessing the BIG footprint. A sufficient number of archaeological monitors shall be present each work day to ensure that simultaneously occurring ground disturbing activities receive thorough levels of monitoring coverage.	During all ground disturbing activities	The implementing entity, through archaeological monitors, shall implement the construction monitoring measures specified in MM BIG CUL-4, pursuant to the performance standards therein.	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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The monitors would work under the direct supervision of the BIG Project Archaeologist, who shall serve as the Principal Investigator for BIG. In addition, the consulting Tribes shall be contacted with an invitation to provide Native American monitors representing each respective Tribe who shall be present during all ground-disturbing activities. However, ground-disturbing activities shall be permitted to continue on any days that were included in the schedule and for which a Tribal monitor is not provided. "Ground-disturbing activities" mean tree/shrub removal and planting, clearing/grubbing, grading, excavation, trenching, fence/gate removal and installation, drainage and irrigation removal and installation, and archaeological work. The tribal representative, in coordination with the BIG Project Archaeologist, and review of the CRMMP, may determine that certain ground-disturbing activities are exempt from monitoring. For any consulting Tribe that requires a formal agreement to obtain a Native American monitor, the implementing entity shall enter into said agreement with the respective Tribe. All archaeological and Native American monitors shall have the authority to temporarily divert, redirect, or halt ground-disturbing activities to address potential inadvertent discoveries.		The implementing entity shall enter into a formal agreement with any consulting Tribe that requires a formal agreement to obtain the services of a Native American monitor.			
MM BIG CUL-5. Inadvertent Discoveries of Cultural Resources. In the event that cultural resources are discovered during BIG construction, all earthwork and ground-disturbing activities shall halt within 50 feet of the discovery. The on-site archaeological monitor shall immediately notify the BIG Project Archaeologist, who shall work with both the archaeological monitor to identify if the resource is potentially a Historical Resource and/or Unique Archaeological Resource (i.e., significant). All prehistoric resources shall be considered tribal cultural resources. For any resources that are not potentially significant, or within the boundary of previously recorded site that was identified as	During construction	The implementing entity, through the on-site archaeological monitor and the BIG Project Archaeologist, shall, in the event of an inadvertent discovery, implement the measures specified	City of Barstow, U.S. Army Corps of Engineers		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
ineligible/not significant during BIG environmental review, the BIG Project Archaeologist shall prepare a site record or site record update, as appropriate, and the monitors shall collect the resource for later reburial as treatment for its status as a tribal cultural resource. Work shall continue in the area once this is completed. Should a resource be identified within a previously recorded site that is potentially significant and, therefore, potentially increase the eligibility status of the site from ineligible to eligible, the site shall be treated as a potentially significant resource, and steps A through B below shall be followed. Similarly, for any previously unknown and unrecorded resources that are potentially significant, steps A through B below shall be followed. A. An Archaeological Resource Area (ARA) shall be established around the find plus the 50 foot buffer via the placement of a physical barrier/demarcation, such as fencing or caution tape. This material shall be provided by the implementing entity and put in place by construction personnel in the presence of, and at the direction of, the archaeological and Native American monitors. B. The archaeological monitors shall immediately contact the BIG Project Archaeologist, who shall contact the consulting Tribes, City, and U.S. Army Corps of Engineers within 1 business day to provide notification of the find, details related to the nature of the resource, and evaluation recommendations or recommended effort to support evaluations, such as subsurface testing of the resource. Parties must respond within 1 business day with feedback. Should no response be provided by the City and U.S. Army Corps of Engineers within 1 business day, the evaluation recommendations or recommendations for additional effort to support evaluations shall be considered		in MM BIG CUL-5, pursuant to the performance standards specified therein. The implementing entity, through the BIG Project Archaeologist, shall prepare a site record, or update thereto, for resources that are not potentially significant, and the archaeological and Native American monitors shall collect the resource for treatment as described in MM BIG CUL-5. The implementing entity, through the BIG Project Archaeologist, shall consult the consulting Tribes, City, and USACE regarding a potentially		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
approved. For resources that require additional effort, implementation of the additional work shall occur within 1 business day of approval or non-response. Upon completion of the additional work, the BIG Project Archaeologist shall submit the evaluation recommendations to the parties. Parties must respond within 1 business day with feedback. Should no response be provided by the City and U.S. Army Corps of Engineers within 1 business day, the evaluation recommendation shall be considered approved. a. For resources that are evaluated as ineligible, the previously noted steps in this mitigation measure related to recordation and collection shall be followed. b. For significant/eligible cultural resources, the BIG Project Archaeologist shall make recommendations to the City and U.S. Army Corps of Engineers and consulting Tribes regarding the measures that shall be implemented to avoid or mitigate impacts to the resource. Parties must respond within 3 business days with feedback. Should no response be provided by the City and U.S. Army Corps of Engineers within 3 business days, the recommendations shall be considered approved. Treatment measures shall be considered in the following order: 1. Preservation in place (i.e., avoidance) is the preferred manner of treatment. In this case, the site shall be recorded on a site record and the established ARA shall remain in place until all ground-disturbing activities are completed within that area of the BIG footprint. 2. If preservation in place is determined to be infeasible by the BIG Project Archaeologist based on input from the implementing entity, City, and U.S. Army Corps of Engineers, treatment may include implementation of archaeological data recovery (i.e., excavations) to		significant resource discovery, and implement the monitoring and treatment measures described in MM BIG CUL-5, consistent with the performance standards therein.			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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remove the resource along with subsequent laboratory processing and analysis. Should this be the case, a Data Recovery Plan shall be prepared by the BIG Project Archaeologist and submitted to the City and consulting Tribes for review and approval. Timelines for review and approval may vary depending on the resource, but all Data Recovery Plans for inadvertent discoveries should be approved within 10 business days of discovery. Upon conclusion of Data Recovery, all findings shall be recorded on site records, as well as included in a report drafted by the BIG Project Archaeologist after the completion of BIG and submitted to the City, U.S. Army Corps of Engineers, and consulting Tribes for review and approval. i. Prehistoric archaeological material shall be reburied in an area that shall not be impacted by future earth-moving activities and reside in a permanent conservation easement or Deed Restriction. Such an area shall be identified by the Lead Agency in consultation with the applicant, BIG Project Archaeologist, and consulting Tribes. Should reburial be infeasible, the material and associated site records/ reports shall be curated at a Tribal-accredited facility or an American Association of Museums (AAM)-accredited facility within the County or adjacent Counties, as agreed by the consulting Tribes. ii. Historic archaeological material shall be curated at an American Association of Museums (AAM)-accredited facility within the County or adjacent Counties. If no institution accepts the historic archaeological material, it shall be offered to a					

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
local school or historical society in the area for educational purposes. If no one accepts the material, the resource may be destroyed after recordation.					
MM BIG CUL-6: Reporting Protocols Once all ground-disturbing activities are complete and all resources have been appropriately reburied or curated, the BIG Project Archaeologist shall draft a Monitoring Report that includes details related to BIG construction, duration of monitoring, inadvertent discoveries, eligibility evaluations, and final disposition of all inadvertent discoveries. The draft Monitoring Report shall be submitted to the implementing entity, City, U.S. Army Corps of Engineers, and consulting Tribes for review. In addition to the submission of the Phase III Data Recovery Report to the SCCIC, as noted in **MM BIG CUL-1**, the Monitoring Report, CRMMP, any additional data recovery plans and reports, and all site records shall be submitted to the implementing entity, consulting Tribes, City, U.S. Army Corps of Engineers, and SCCIC once final.	Once all ground-disturbing activities are complete and all resources have been appropriately reburied of curated	The implementing entity, through the BIG Project Archaeologist, shall prepare a monitoring report, as specified in MM BIG CUL-6, pursuant to the performance standards therein. The implementing entity shall submit the draft Monitoring Report to the City, USACE, and consulting Tribes for review, and submit final copies of the Monitoring Report, CRMMP, any additional data recovery plans and reports, and all site records to the City, USACE, consulting Tribes, and SCCIC.	City of Barstow, U.S. Army Corps of Engineers		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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BIG CUL-7: Public Education Once all ground-disturbing activities are complete and all resources have been appropriately reburied or curated for construction of the railyard, the BIG Project Archaeologist shall work with the consulting Tribes to develop a public education program focused on the history and culture of the Serrano people indigenous to the Barstow area. The program shall include broad information related to the archaeological resources identified within the BIG footprint, as appropriate to preserve the confidentiality of archaeological data and as agreed upon by the consulting Tribes, as well as information that demonstrates the long history and connection the Serrano people have to the area. Additionally, the program shall underline the living Serrano communities and their active stewardship of their ancestral lands, including the Barstow area. BNSF shall be responsible for funding, completing, and disseminating the materials. All materials, to include any text, imagery, and format, shall be subject to final approval by the consulting Tribes. The program shall include: A. An educational booklet (10-15 pages) that shall be provided to local museums, libraries, schools, historical societies, and the consulting Tribes. The product shall be primarily geared toward a younger audience and shall be printed and available online. The educational booklet shall be due within one year of railyard construction being completed. B. Outreach to a local museum, library, or a publicly accessible administrative building/community center to identify a location to develop a museum exhibit or mural. Should a property agree to house such an exhibit, the exhibit shall be completed within 5 years of project completion. C. A plaque acknowledging that the City of Barstow and BIG occupy unceded Maara'yam (Serrano) ancestral territory, to be developed in consultation with the consulting Tribes. This plaque shall be displayed in any location identified by the City of	Within one and five years of completion of construction, following completion of all ground disturbing activities and appropriate reburial or curation of all resources	The implementing entity, through the BIG Project Archaeologist, shall develop the public education program described in MM BIG CUL-7, in consultation with, and subject to the approval of, the consulting Tribes, pursuant to the performance standards specified in MM BIG CUL-7.	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Barstow that agrees to do so, as well as on the home page of the BIG project website, within 1 year of railyard construction completion.					
MM BIG CUL-8: Inadvertent Discoveries of Human Remains. For discoveries of Native American human remains, PRC § 5097.98 and HSC § 7050.5 shall be followed. If human remains are encountered, all ground-disturbing activities shall halt within 100 feet of the find. A Sensitive Resource Area (SRA) shall be established around the site plus the 100 foot buffer via the placement of a physical barrier/ demarcation, such as fencing or caution tape. The human remains, along with any associated grave goods and associated burial and sacred items, shall remain in place until the procedures as outlined in PRC § 5097.98 and HSC § 7050.5 are completed. No photographs of the remains or associated funerary objects shall be taken unless specifically requested by the County Coroner as a part of the legal process.	During construction and operation	The implementing entity shall implement the measures related to inadvertent discoveries specified in MM BIG CUL-8, pursuant to the performance standards specified therein.	City of Barstow, County of San Bernardino Coroner		
ENERGY					
MM BIG EN-1: On-Site Renewable Electricity Generation. Prior to the issuance of building permits for intermodal facility structures or transload facilities, BIG shall install on-site rooftop solar generation beyond Title 24 compliance, or approximately 17 megawatts direct current (MWdc) for the total 9 million square-foot warehouse building area. Solar panel installation shall be phased proportionally with buildout of the Transload Warehouse Center (i.e., on-site solar generation shall generally be distributed equally among future buildings and the total 17 MWdc may not be required less than 9 million square feet are not ultimately developed). BIG shall ensure solar photovoltaic (PV) panels or other source of renewable energy generation is incorporated into the design based on the maximum solar roof area available. The maximum solar roof area	Prior to the issuance of building permits for intermodal facility structures or transload facilities	The implementing entity shall implement the measures related to on-site renewable electricity generation specified in MM BIG EN-1, pursuant to the performance standards specified therein.	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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available will be building specific and dependent on the structural considerations of each building and the ability to maximize the solar zone of each building (as defined in Section 110.10 of the California Energy Code). The solar zone (i.e., the location where solar panels can be installed) shall comply with 2022 California Energy Code, § 110.10, and shall comply with access, pathway, ventilation, and spacing requirements and excluding any skylight area. The final PV generation facility size is dependent on the maximum solar roof area available and shall be approved by Southern California Edison (SCE). SCE's Rule 21 governs operating and metering requirements for any facility connected to SCE's distribution system. Each building shall include an electrical system and other infrastructure sufficiently sized to accommodate the PV arrays. The electrical system and infrastructure shall be clearly labeled with noticeable and permanent signage. This mitigation measure applies only to tenant or occupancy permits and not the building shell approvals.					
MM BIG EN-2: CALGreen Tier 2. Prior to the issuance of building permit for intermodal facility structures or transload facilities, the City shall provide documentation to the City of Barstow demonstrating that BIG is designed in a manner consistent with 2025, or then current, CALGreen Tier 2 standards in effect at the time of building permit application.	Prior to the issuance of a building permit for intermodal facility structures or transload facilities	BNSF shall provide documentation to the City demonstrating that BIG is consistent with CALGreen Tier 2 standards, as specified in MM BIG EN-2, pursuant to the performance standards therein.	City of Barstow		
GEOLOGY, SOILS AND MINERAL RESOURCES					

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
MM BIG GEO-1: The implementing entity shall submit a Paleontological Resources Impact Mitigation Program (PRIMP) prepared by a qualified paleontologist to the City of Barstow (City) prior to construction commencing. A qualified paleontologist is defined as an individual with an M.S./M.A. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques, and who is knowledgeable in the geology and paleontology of the area. The PRIMP shall be consistent with the Society of Vertebrate Paleontology 2010 guidelines. The PRIMP shall include, but is not limited to, the requirements for preconstruction meeting attendance and worker environmental awareness training, where monitoring is required within the BIG footprint based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring, discoveries treatment protocols and timelines, paleontological methods including any sediment sampling, reporting, and collections management/curation.	Prior to start of construction	The implementing entity, through a qualified palaeontologist, shall prepare and submit to the City a Paleontological Resources Impact Mitigation Program (PRIMP), as specified in MM BIG GEO-1, pursuant to the performance standards therein.	City of Barstow		
MM BIG GEO-2: A qualified paleontologist shall attend preconstruction meetings to consult with the grading and excavation contractors concerning planned depths, excavation schedules, paleontological field techniques, and safety issues. In addition, all on-site construction personnel shall receive Worker Education and Awareness Program training prior to the commencement of excavation work. All BIG construction occurring within previously undisturbed fossil bearing formations shall be monitored by a qualified paleontologist or qualified paleontological monitor. Detailed narrative and exhibit outlining areas and depths that require monitoring across the BIG footprint shall be included in the Paleontological Resources Impact Mitigation Program (PRIMP). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials and works under the direction of a qualified paleontologist. If fossils are discovered, the paleontologist (or paleontological monitor) will recover them. In most cases, this fossil salvage can be completed in a short	Prior to the commencement of excavation work, during construction	The implementing entity, through the qualified palaeontologist and paleontological monitor, shall implement the worker education and construction monitoring measures specified in MM BIG GEO-2, pursuant to the performance standards therein.	City of Barstow		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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period of time; however, some fossil specimens, such as a complete large mammal skeleton, may require an extended salvage period. In these instances, the paleontologist (or paleontological monitor) will be allowed to temporarily direct, divert, or halt grading in the vicinity to allow recovery of fossil remains in a timely manner, which will be outlined and defined in the PRIMP. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen-washing operation on site.					
MM BIG GEO-3: Fossil remains collected during the monitoring and salvage portion of the Paleontological Resources Impact Program (PRIMP) shall be cleaned, repaired, sorted, and catalogued. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will be deposited (as a donation) in a scientific institution with permanent paleontological collections located within San Bernardino County (or, if no repository is available, adjacent Counties). A final data recovery report shall be completed by a qualified paleontologist that outlines the results of the paleontological monitoring program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. The report shall be submitted to the implementing entity and City upon completion.	During the monitoring and salvage portion of the Paleontological Resources Impact Program (PRIMP); following completion of construction	The implementing entity, through a qualified palaeontologist, shall prepare a final data recovery report and submit this report to the City, as specified in MM BIG GEO-3, pursuant to the performance standards therein.	City of Barstow		
HAZARDOUS MATERIALS & WASTES					

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
MM BIG HAZ -1: Limited Soil Management Plan. Prior to construction commencement, the implementing entity shall retain a qualified environmental consultant to prepare a Limited Soil Management Plan (SMP) for only areas considered as RECs within the BIG footprint. The SMP shall establish procedures for identification and management of impacted and clean soil, segregation, and management of impacted soil in accordance with regulatory requirements, transportation of impacted soil to an off-site disposal facility licensed to accept such soil, and identification and management of construction debris during excavation, grading, and construction activities to be completed within the BIG footprint. The SMP shall be submitted to the City of Barstow Building and Safety Division for review and approval. The SMP shall include the following: ▪ Procedures for identification, handling, reporting, and removal of the known or unknown ASTs/USTs, piping, dispensers, or other storage tank components that may be encountered (see **MM BIG HAZ-3**). ▪ Health and safety measures for when performing demolition, grading, or other construction activities, which may include but are not limited to, personal protective equipment and periodic work breathing zone monitoring for volatile organic compounds using a handheld organic vapor analyzer in the event impacted soils are encountered during excavation activities. This will be documented through a health and safety plan as it pertains to on-site workers that may come in contact with contaminated soil. ▪ The limited SMP shall be prepared and executed for point source areas based on the Phase I and II ESA reports, which define soil, soil vapor, and groundwater impacts throughout the BIG footprint. The limited SMP shall require the timely testing and sampling of soils so that contaminated soils can be separated from inert soils for proper disposal versus reused on the site. The limited SMP shall specify the testing parameters and sampling	Prior to construction commencement; during BIG construction	The implementing entity shall, through an environmental consultant, prepare a Limited Soil Management Plan (SMP), as specified in MM BIG HAZ-1, pursuant to the performance standards therein, including testing and sampling procedures. The implementing entity shall submit the SMP to the City Building and Safety Division for review and approval, upon verification of compliance with the performance standards in MM BIG HAZ-1.	City of Barstow Community Development Department, Building and Safety Division		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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frequency as well as transportation and disposal requirements. If groundwater is anticipated to be encountered within collocated areas of the limited SMP, then provisions for groundwater management shall be considered within the limited SMP. ▪ During BIG construction, the implementing entity's contractor shall remove and properly dispose of impacted materials in accordance with the provisions of the limited SMP. If soil is stockpiled prior to disposal, it will be managed in accordance with the SMP and BIG's Storm Water Pollution Prevention Plan, prior to its transfer for treatment and/or disposal.					
BIG HAZ-2: Water Well Abandonment. The intent for water well abandonment is to ensure that wells associated with the former residential operations within BIG are properly sealed and abandoned. Well abandonment or reuse treatment will require adherence to State RWQCB and regional Certified Unified Program Agency (CUPA) guidelines for well abandonment if wells are not planned to be used for future development.	Prior to construction	The implementing entity shall properly seal and abandon water wells associated with former residential operations within BIG, pursuant to the performance standards set forth in MM BIG HAZ-2.	City of Barstow		
BIG HAZ-3: AST or UST Removal. AST and UST removal is intended to provide specific sampling and removal procedures for AST/USTs known or unknown at the start of construction. Prior to demolition permit issuance, the implementing entity shall demonstrate to the Barstow Department of Building and Safety and San Bernardino County Fire Protection District Hazardous Materials Division (CUPA) that a licensed contractor authorized to remove the above ground/USTs has been	Prior to demolition permit issuance; during construction	The implementing entity shall provide documentation demonstrating to the City Department of Building and Safety	City of Barstow Community Development Department, Building and Safety Division, San Bernardino County		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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retained. The ASTs/USTs shall include the required permitting, soil sampling testing, and reporting the CUPA. If soil contamination exists, then impacted soils shall be removed and handled properly according to the Limited Soil Management Plan (see **MM BIG HAZ-1**). If previously unidentified USTs and/or ASTs are discovered during demolition or any ground disturbing activities, all construction within a 30-feet radius exclusion zone of the unidentified USTs and/or ASTs shall stop work. Implementation of proper permitting, cleaning, sampling, and reporting as described above shall be completed.		and San Bernardino County Fire Protection District Hazardous Materials Division (CUPA) that a licensed contractor has been retained, as specified in MM BIG HAZ-3, pursuant to the performance standards described therein.	Fire District Hazardous Materials Division (CUPA)		
BIG HAZ-4: Data Gaps Requiring Further Environmental Site Assessment. Prior to the issuance of a grading permit, the Applicant shall conduct assessment in accordance with ASTM standards to address potential environmental concerns identified at PEC sites identified within the BIG footprint. Documentation shall include clearance or other forms of approval from responsible regulatory agencies, as warranted, confirming that the site conditions are suitable for the intended use and that any potential risks have been mitigated to a level that is safe for construction and future occupancy.	Prior to issuance of a grading permit	The implementing entity shall prepare the documentation described in MM BIG HAZ-4, pursuant to the performance standards therein.	City of Barstow		
NOISE					
MM BIG NOI-1: Nighttime Construction Noise Logistics Plan. Prior to the start of nighttime construction that is within 500 feet of residences, the implementing entity shall submit and gain approval from the City of Barstow Director of Public Works or City Engineer for a Nighttime Construction Noise Logistics Plan that meets the performance standards specified herein for nighttime construction throughout the BIG footprint. The Nighttime Construction Noise	At least 5 days prior to the start of nighttime construction within 500 feet of residences	The implementing entity shall prepare a Nighttime Construction Noise Logistics Plan (NCNLP) for approval by the City	City of Barstow Director of Public Works or City Engineer, Noise Disturbance Coordinator		

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Logistics Plan shall identify the specific nighttime construction activity areas, list the construction equipment to be used during nighttime construction, include a determination, supported with citation to factual evidence, that certain specified noise reduction measures, incorporated into the Plan, would be implemented to ensure that exterior noise levels from nighttime construction activity, at the residence or residences nearest to that activity, do not exceed the FTA's 70 dBA Leq(8-hour) nighttime exterior construction noise standard for construction activities near residential uses. To achieve this noise standard, potential noise reduction measures in the Nighttime Construction Noise Logistics Plan may include, but are not limited to, the following: ▪ Install a temporary construction site sound barrier near the noise source. ▪ Prohibit unnecessary idling of internal combustion engines. Post signs at gates and other places where vehicles may congregate reminding operators of the State's Airborne Toxic Control Measure (ATCM) limiting idling to no more than 5 minutes. ▪ Utilize "quiet" air compressors (less than 65 dBA) and other stationary noise sources where technology exists. ▪ Monitor the effectiveness of noise attenuation measures by taking noise measurements and make adjustments to nighttime construction activities as required to meet the FTA's 70 dBA Leq(8-hour) nighttime exterior construction noise standard for residential uses. ▪ Specify additional noise attenuation measures and best practices, with supporting evidence, that demonstrates reduction of nighttime construction noise impacts for the residences nearest to the nighttime noise activity to below the FTA's nighttime exterior construction noise standard for residential uses. In addition, the Nighttime Construction Noise Logistics Plan shall		Director of Public Works or City Engineer, as specified in MM BIG NOI-1, pursuant to the performance standards therein. The NCNLP shall include requirements that construction contracts contain noise attenuation requirements; that nighttime construction notices must be submitted to the City Director of Planning, Building and Code Enforcement or Director's designee for review of approval; and that the implementing entity's contractor must ensure a Noise Disturbance Coordinator is on site during nighttime construction			

TABLE 4-1: MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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require implementation of the following measures: ▪ Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices. ▪ Property owners and occupants located within 500 feet of areas when nighttime construction would occur shall be sent a notice, at least 5 days prior to commencement of nighttime construction activities, regarding the construction schedule of BIG. The initial format of notices shall be reviewed and approved by the Director of Planning, Building and Code Enforcement or Director's designee. The notice shall indicate the dates and duration of construction activities, the general type of construction activities to be performed, as well as provide a contact name and a telephone number for the Noise Disturbance Coordinator where residents can inquire about the construction process and register complaints. Copies of each nighttime noise notice would be provided to the City. ▪ Prior to nighttime construction, the implementing entity's contractor shall ensure a Noise Disturbance Coordinator is on site during nighttime construction activities. The Noise Disturbance Coordinator is responsible for responding to complaints about construction noise. When a complaint is received, the Noise Disturbance Coordinator shall determine the cause (e.g., starting too early, bad muffler, etc.), implement reasonable measures to resolve the complaint, and document actions taken. All notices sent to residential units within 500 feet of the construction site shall include the contact name and the telephone number for the Noise Disturbance Coordinator. If the Plan determines that noise reduction measures incorporated into the Plan cannot ensure that exterior noise levels from an		activities to document actions taken in response to noise complaints, as specified in MM BIG NOI-1, pursuant to the performance standards therein.			

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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individual type of nighttime construction activity, at the residence or residences nearest to that activity, do not exceed the FTA's 70 dBA Leq(8-hour) nighttime exterior construction noise standard for residential uses, the Plan shall demonstrate that noise reduction measures incorporated into the Plan, potentially including limitation of the individual type of activity at issue to daytime hours, would reduce the noise levels from that activity to the greatest extent practically achievable.					
MM BIG NOI-2: Noise Barriers. The implementing entity shall construct two noise barriers as listed below to mitigate BIG's operational noise impacts: ▪ A 10-foot-high, approximately 470-foot-long noise barrier surrounding the substation in the northeastern portion of the solar farm (BAR-3); and ▪ A 14-foot-high, approximately 150-foot-long acoustic noise barrier along the eastern and southern boundary the emergency generators in the northeastern portion of the intermodal facility (BAR-5). To be effective, the barriers shall be constructed with a solid material with no gaps in the face of the wall or at the base. Openings or gaps between sound wall materials or the ground substantially reduce the effectiveness of the noise barrier. Acceptable materials for the construction of the barrier shall have a minimum density of 3.5 pounds per square foot of surface area and may be composed of the following: masonry block, stucco veneer over wood framing (or foam core), glass, Plexiglass, Lexan (9 ¼ inch thick), or metal. The barrier may also be constructed out of a combination of the above listed materials. All noise control barrier walls shall be designed to preclude structural failure due to such factors as winds, shear, shallow soil failure, earthquakes, and erosion. The City Building Official shall review and	Prior to the issuance of a building permit	The implementing entity shall submit proposed designs for the noise barriers described in MM BIG NOI-2 to the City Building Official for review and approval based on compliance with the performance standards in MM BIG NOI-2.	City of Barstow Building Official		

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MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
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approve all proposed designs prior to the issuance of a building permit. The approximate locations of the noise barriers are provided in **Figure 5.12 14** and **Figure 5.12 15.**					
MM BIG NOI-3: Rubberized Asphalt. Prior to issuance of a grading permit for work associated with Main Street improvements, BNSF offsite improvement plans shall be submitted to the City Director of Community Development to show that, on Main Street, from Country Club Drive to Lenwood Road, BIG shall utilize rubberized asphalt. For the portion from Country Club Drive to approximately 3,200 feet east (where new pavement would be installed), this would be full width new pavement construction. From approximately 3,200 feet east of Country Club Drive to Lenwood Road (approximately 1,900 feet), this would be full width mill and overlay with rubberized asphalt. On Main Street, BIG shall mill and overlay segments of the existing roadway with rubberized asphalt from approximately 200 feet east and west of each Receptor 1 through Receptor 4 (per **Figure 5.12-12**). The City and the County shall determine that, for the segment of Lenwood Road from Agate Road to Community Boulevard within 200 feet of a sensitive receptor property line, the County shall use rubberized asphalt for mill and overlay following transload warehouse center buildings greater than 7.8 million square feet. Prior to certificate of occupancy for transload warehouse center buildings beyond 7.8 million square feet, BNSF shall pay the County the incremental increase in cost to mill and overlay Lenwood Road with rubberized asphalt for the roadway section from Agate Road to Community Boulevard within 200 feet of a sensitive receptor property line.	Prior to the issuance of a grading permit for work associated with Main Street improvements; prior to the certificate of occupancy for transload warehouse center buildings beyond 7.8 million square feet.	The implementing entity shall submit offsite improvement plans to the City Director of Community Development, as specified in MM BIG NOI-3, pursuant to the performance standards therein. The implementing entity shall pay the County as specified in MM BIG NOI-3, pursuant to the performance standards therein.	City of Barstow Director of Community Development; County of San Bernardino		


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