5.4 BIOLOGICAL RESOURCES

5.4.1 INTRODUCTION

This section describes the existing regulatory and environmental setting and analyzes the potential of the Project (proposed General Plan and BIG) to: (1) have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; (2) substantially effect any riparian habitat or other sensitive natural community; (3) substantially effect State or federally protected wetlands; (4) interfere substantially with the movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; (5) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or (6) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Where significant impacts remain despite compliance with the existing regulatory framework, feasible mitigation measures are recommended to avoid or reduce the Project's potentially significant environmental impacts.

Proposed General Plan

The proposed General Plan information in this section is based on methodology and information discussed in **Section 5.4.3** and **Section 5.4.4**, respectively.

Barstow International Gateway (BIG)

BIG-related information in this section is based in part on the following study:

- *Barstow International Gateway Biological Resources Technical Report*; see **Appendix 5.4 BIG-1: Biological Resources Technical Report.**

Summary of Findings: Proposed General Plan

Portions of the City and its Sphere of Influence (SOI) (General Plan area) are undeveloped and could provide habitat for sensitive and special status plant and wildlife species. Development on vacant or agricultural land that may potentially include sensitive biological resources or previously undisturbed habitats could result in habitat fragmentation and constrain wildlife movement that has regional significance. Sensitive natural communities in the General Plan area, including riparian communities and wetlands, could potentially be impacted by future development.

The Mojave River is identified as a riparian corridor that provides connectivity throughout the General Plan area. Development of areas adjacent to the Mojave River could impede movement of native or migratory species because of an increase in noise and activity.

The proposed General Plan would not conflict with any local policies or ordinances protecting biological resources, and the County of San Bernardino Countywide Plan policies would remain intact following

implementation of the proposed General Plan. The proposed General Plan includes policies to ensure that future development projects within the West Mojave Habitat Conservation Plan areas do not conflict with the Conservation Plan. This EIR section concludes that with the implementation of local, State, and federal regulations, as well as the proposed General Plan policies, the proposed General Plan's impacts to biological resources would be less than significant.

Summary of Findings – Barstow International Gateway:

The BIG project would affect local biological resources associated with construction and operational activities. During construction, sensitive natural habitats such as desert dunes and riparian areas would be directly affected through clearing and vegetation removal, which would displace various plant and wildlife species. Key species affected include the desert tortoise, southwestern willow flycatcher, and western yellow-billed cuckoo. With mitigation efforts such as habitat preservation, relocation of species, biological monitors, and implementation of construction buffers, impacts would be reduced to less than significant. Additionally, wildlife movement corridors could be disrupted, potentially impeding the movement of native and migratory species. To address potential disruptions, BIG includes a wildlife corridor crossing under the proposed western lead tracks to maintain wildlife movement. Measures such as permanent fencing and reduced nighttime lighting would help minimize ongoing operational impacts to wildlife. The BIG project would adhere to local policies and ordinances protecting biological resources. Overall, the BIG project would have significant impacts to biological resources that are mitigated to less than significant levels through design elements, compliance with existing regulatory requirements, and implementing mitigation measures and monitoring programs.

5.4.2 REGULATORY SETTING

5.4.2.1 Federal

Endangered Species Act of 1973 (16 United States Code § 1531 et seq.)

The Federal Endangered Species Act (FESA) and subsequent amendments provide requirements for conserving federally listed species and the ecosystems upon which they depend. The FESA defines as "endangered" any plant or wildlife species that is in danger of extinction throughout all or a significant portion of its known geographic range. A "threatened" species is a species that is likely to become endangered. A "proposed" species is one that has been officially proposed by the U.S. Fish and Wildlife Service (USFWS) for addition to the Federal threatened and endangered species list.

The FESA has four major components: (1) Section 4 provisions for listing species and designating critical habitat; (2) the Section 7 requirement for federal agencies to consult with the USFWS to ensure that their actions are not likely to jeopardize the continued existence of species or result in the modification or destruction of critical habitat; (3) the Section 9 prohibition against "taking" listed species; and (4) the Section 10 provisions for permitting the incidental take of listed species. Notably, the term "take" is interpreted to include the concept of "harm." (50 Code of Federal Regulations [CFR] 17.3). "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 United States Code [USC] § 1532[19]). "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by

significantly impairing behavioral patterns (50 CFR § 17.3). "Harassment" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR § 17.3).

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C §§ 661-666[e] et seq.), as amended in 1964, was enacted to protect fish and wildlife when federal actions control or modify a natural stream or body of water. The law requires federal agencies to consider the effect of such proposed projects on fish and wildlife resources. The federal agencies must consult and coordinate with the U.S. Fish and Wildlife Service (USFWS) and state wildlife agencies to identify ways to prevent the loss of and damage to fish and wildlife resources, and to further develop and improve these resources.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC § 703 et seq.). Activities that result in removal or destruction of any active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests and bird mortality resulting indirectly from disturbance activities are not considered violations of the MBTA.

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Executive Order 13186 (January 10, 2001) directs federal agencies that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a memorandum of understanding (MOU) with the USFWS to promote the conservation of migratory bird populations. The MOU should include implementation actions and reporting procedures that would be followed through each agency's formal planning process, such as resource management plans and fisheries management plans.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC §§ 668-668c) prohibits anyone from "taking" bald eagles (*Haliaeetus leucocephalus*), including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. In 1962, Congress amended the act to cover golden eagles (*Aquila chrysaetos*). The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle…[or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Bald and Golden Eagle Protection Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." The 1962 amendments included a specific exemption for possession of eagles for religious purposes of Native American tribes; however, an Indian Religious Permit is required.

On November 10, 2009, the USFWS implemented new rules under the existing Bald and Golden Eagle Protection Act, requiring USFWS permits for all activities that may disturb or incidentally take an eagle or its nest because of an otherwise legal activity. Under USFWS rules (16 USC § 22.3; 72 Federal Register 31,132, June 5, 2007), "disturb" means "to agitate or bother a bald or golden eagle to a degree that causes,

or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are absent, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Clean Water Act (33 United States Code § 1251 et seq.)

The federal Clean Water Act (CWA) serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. The applicable sections of the CWA are further discussed below.

- **Under Section 401**, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must obtain certification from the state in which the discharge would originate or from the interstate water pollution control agency with jurisdiction over affected waters. Project sponsors must obtain a 401 Water Quality Certification from the applicable State Water Resources Control Board (SWRCB).
- The SWRCB or the Regional Water Quality Control Board (RWQCB), as delegated by the U.S. Environmental Protection Agency (U.S. EPA), have principal authority to issue a CWA Section 401 water quality certification or waiver. In circumstances where a proposed project crosses multiple RWQCB jurisdictional boundaries, the SWRCB would generally assume regulatory responsibilities pursuant to CWA Section 404 and Porter-Cologne (Cal. Water Code § 13000 et seq.).
- **Under Section 402,** all point-source discharges, including, but not limited to, construction-related stormwater discharges to surface waters, are regulated through the National Pollutant Discharge Elimination System (NPDES) program. Project sponsors must obtain an NPDES permit from the SWRCB.
- **Under Section 404**, U.S. Army Corps of Engineers (USACE) and the U.S. EPA regulate the discharge of dredged and fill materials into the waters of the U.S. (including wetlands and non-wetland waters), which include those waters listed in 33 C.F.R. Part 328.3(a) (Definitions of Waters of the U.S.).

Executive Order 11990: Protection of Wetlands

Executive Order 11990 aims to avoid direct or indirect impacts on wetlands from federal or federally approved projects when a practicable alternative is available. If wetland impacts cannot be avoided, all practicable measures to minimize harm must be included.

Executive Order 13112: Invasive Species

Executive Order 13112, issued in 1999, directs federal agencies to prevent and control the introduction and spread of invasive nonnative species in a cost effective, environmentally sound manner to minimize their effects on economic, ecological, and human health. The Executive Order was intended to build on existing laws, such as the FESA.

West Mojave Coordinated Management Plan

The West Mojave Coordinated Management Plan is a federal land use plan amendment for the California Desert Conservation Area Plan implemented by the Bureau of Land Management (BLM) for approximately 3.3 million acres of public lands administered by the BLM's California Desert District, located in Inyo, Kern, Los Angeles, and San Bernardino counties. The habitat conservation plan (HCP) component of the plan provides a comprehensive strategy to conserve and protect federally and state-listed species, as well as other special status species and their habitats, for 9.3 million acres of private and public land in San Bernardino, Kern, Los Angeles, and Inyo counties. The HCP component of the plan was not approved, but the West Mojave Coordinated Management Plan does serve as a land use plan amendment under the California Desert Conservation Area Plan for BLM lands. The City of Barstow and San Bernardino County are plan collaborators and signatories on the West Mojave Coordinated Management Plan EIR, and the BIG footprint falls within the West Mojave Coordinated Management Plan planning area.

5.4.2.2 State

California Endangered Species Act

The California Endangered Species Act (CESA) protect state-listed Threatened and Endangered species. Under CESA, the California Department of Fish and Wildlife (CDFW) regulates activities that may result in "take" of individuals ("take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under CESA.

CESA §§ 2081(b) and (c) allow the CDFW to issue an incidental take permit (ITP) for a state-listed threatened and endangered species only if specific criteria are met. These criteria can be found in Title 14 California Code of Regulations (CCR) §§ 783.4(a) and (b). A § 2081(b) ITP cannot authorize the take of "fully protected" species and "specified birds." If a project is planned in an area where a fully protected species or specified bird occurs, an applicant must design the project to avoid all take; the CDFW cannot provide take authorization under CESA. On private property, endangered plants may also be protected by the Native Plant Protection Act (NPPA) of 1977. Threatened plants are protected by CESA, and rare plants are protected by the NPPA; however, CESA § 2080.1 authorizes that private entities may take plant species listed as endangered or threatened under the FESA and CESA through a federal ITP issued pursuant to § 10 of the FESA, if the CDFW certifies that the ITS or ITP is consistent with CESA. In addition, CEQA requires disclosure of any potential impacts on listed species and alternatives or mitigation that would reduce those impacts.

California Species of Special Concern

In addition to federal- and state-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a "watch list" (Watch List). Species on the Watch List are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection. CDFW also maintains a Watch List consisting of taxa that were previously designated as Species of Special Concern but no longer merit that status, or which do not yet meet Species

of Special Concern criteria, but for which there is concern and a need for additional information to clarify status.

Natural Community Conservation Planning Act

In 1991, the California Natural Community Conservation Planning (NCCP) Act (CFGC § 2800 et seq.) was approved and the NCCP Coastal Sage Scrub program was initiated in southern California. The NCCP program was established "to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." The NCCP Act encourages preparation of plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time.

California Fish and Game Code Sections 1600-1602

Pursuant to Division 2, Chapter 6, § 1602 of the CFGC, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Notification of Lake or Streambed Alteration must be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" (CFGC § 1602). CDFW has jurisdiction over riparian habitats associated with watercourses and wetland habitats supported by a river, lake, or stream. Jurisdictional waters are delineated by the outer edge of riparian vegetation (i.e., drip line) or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources (e.g., riparian or wetland areas not supported by a river, lake, or stream). The CDFW reviews the proposed actions and, if necessary, submits a draft agreement to the applicant that includes measures to protect affected fish and wildlife resources. The final Lake or Streambed Alteration Agreement is mutually agreed upon by CDFW and the applicant.

California Fish and Game Code Sections 4000-4012 (Furbearing Mammal)

Desert kit fox is protected by the California Code of Regulations (14 CCR § 460) and CFGC §§ 4000-4012 as a furbearing mammal. Both regulations prohibit the take of the species.

California Fish and Game Code Sections 3503, 3511, 3513, 3801, 4700, 5050, 5515, and 2081.15 (Fully Protected Species)

The CDFW protects and manages fish, wildlife, and native plant resources within California. The California Fish and Game Commission and/or CDFW are responsible for issuing permits for the take or possession of protected species. The following sections of the CFGC address protected species: § 3511 (birds), § 4700 (mammals), § 5050 (reptiles and amphibians), and § 5515 (fish). In addition, the protection of birds of prey is provided in §§ 3503, 3513, and 3800 CFGC. The Fully Protected classification was California's initial effort to identify and provide additional protection to wildlife that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the State and/or federal endangered species acts.

Birds of prey are protected under the CFGC. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction-related

disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW. Under CFGC §§ 3503 and 3503.5, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to CFGC § 3800 are prohibited.

California Native Plant Protection Act

The California Native Plant Protection Act (NPPA) of 1977 (CFGC §§ 1990-1913) directed CDFW to carry out legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protected endangered and rare plants from take. The NPPA therefore includes measures to preserve, protect, and enhance rare and endangered native plants.

The California Endangered Species Act (CESA) has largely superseded the NPPA for all plants designated endangered by the NPPA. The NPPA nevertheless provides limitations on take of rare and endangered species: "…no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plant, except in compliance with provisions of the CESA (14 CCR § 783.1). Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow CDFW to salvage any rare or endangered native plant material.

California Desert Native Plant Act

The California Desert Native Plants Act prohibits the removal of certain species of California desert native plants on public and privately owned lands without a valid permit from the sheriff or commissioner of the county where collecting would occur. A wide range of desert plants are protected under this act, including all species in the agave and cactus families. Plants listed as rare, endangered, or threatened under federal, or State law or regulations are excluded from this act. This act applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) provides for statewide coordination of water quality regulations. The SWRCB was established as the statewide authority and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis. The RWQCBs have primary responsibility for protecting water quality in California. The RWQCBs regulate discharges to surface waters under CWA Section 401. In addition, the RWQCBs are responsible for administering the Porter-Cologne Water Quality Control Act.

Pursuant to the Porter-Cologne Water Quality Control Act, the State is given authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 permit is not required for the activity. "Waste" is partially

defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

5.4.2.3 Local

San Bernardino County Countywide Plan

The County adopted the Countywide Plan (CWP) in October 2020. The CWP Policy Plan addresses the physical, social and economic issues facing areas of the unincorporated County. **Table 5.4-1: Countywide Plan Policy Plan – Relevant Biological Resources Goals and Policies** includes the biological-resource-related goals and policies relevant to the Project.

Table 5.4-1: Countywide Plan Policy Plan – Relevant Biological Resources Goals and Policies

Goal or Policy	
NATURAL RESOURCES ELEMENT	
Policy NR-2.5	**Stormwater discharge.** We ensure compliance with the County's Municipal Stormwater NPDES (National Pollutant Discharge Elimination System) Permit by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices, low impact development strategies, and technological advances. For existing development, we monitor businesses and coordinate with municipalities.
Goal NR-5	**Biological Resources.** An interconnected landscape of open spaces and habitat areas that promotes biodiversity and healthy ecosystems, both for their intrinsic value and for the value placed on them by residents and visitors.
Policy NR-5.1	**Coordinated habitat planning.** We participate in landscape-scale habitat conservation planning and coordinate with existing or proposed habitat conservation and natural resource management plans for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting.
Policy NR-5.2	**Capacity for resource protection and management.** We coordinate with public and nongovernmental agencies to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species.
Policy NR-5.3	**Multiple-resource benefits.** We prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character.
Policy NR-5.4	**Off-base recovery efforts.** We coordinate with military installations to facilitate off-base recovery of threatened and endangered species and landscape-scale conservation.
Policy NR-5.5	**Mitigation and future responsibilities**. We require that new development satisfy habitat conservation responsibilities without shifting conservation responsibilities onto military property.
Policy NR-5.6	**Mitigation banking.** We support the proactive assemblage of lands to protect biological resources and facilitate development through private or public mitigation banking. We require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.

Table 5.4-1: Countywide Plan Policy Plan – Relevant Biological Resources Goals and Policies	
Goal or Policy	
NATURAL RESOURCES ELEMENT	
Policy NR-5.7	**Development review, entitlement, and mitigation.** We comply with federal and state regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.
Policy NR-5.8	**Invasive species.** We require the use of non-invasive plant species with new development and encourage the management of existing invasive plant species that degrade ecological function.
Source: County of San Bernardino. 2020a. *Countywide Policy Plan*. https://countywideplan.sbcounty.gov/policy-plan/.	

The CWP Policy Plan includes the following Policy Map that addresses biological resources:

- Policy Map NR-2: Parks and Open Space Resources: Depicts the County's trails, parks, Bureau of Land Management (BLM) wilderness areas, BLM areas of critical concern, national parks, and national forests.

See **Section 5.4.1: Environmental Setting** below for further discussion concerning the above conditions and their potential presence in the BIG footprint.

For applicability of the above CWP goals and policies to the proposed General Plan and BIG, see **Section 5.0: Environmental Analysis**.

Codified Ordinances of the San Bernardino County

The Codified Ordinances of the County of San Bernardino (County Code) regulations addressing biological resources are provided below.

County Code Chapter 82.11: Biotic Resources (BR) Overlay. The BR Overlay implements 2015 General Plan policies regarding the protection and conservation of beneficial rare and endangered plants and wildlife resources and their habitats, which have been identified within unincorporated areas of the County. County Code § 82.11.020: Location Requirements specifies that the BR Overlay be applied to areas that have been identified by a County, State or federal agency as habitat for species of unique, rare, threatened or endangered plants or wildlife or their habitats listed in the 2015 General Plan. Areas within the General Plan area have BR Overlays applied. The BIG footprint is within the Burrowing Owl BR Overlay per the San Bernardino County Museum Biological Species Database and 2015 General Plan (County of San Bernardino, 2019). Pursuant to County Code § 82.11.030: Application Requirements, if land use is proposed, or an existing land use is increased by more than 25 percent of disturbed area within a BR Overlay, the land use application shall include a biotic resources report; refer to **Appendix 5.4 BIG-1** for the biotic resources report prepared for BIG.

County Code Chapter 83.04: Conditional Grading Compliance. The purpose of this chapter is to ensure compliance with conditions of approval on projects involving earthwork grading. The provisions in this chapter regulate on-site continuous inspections that are required by the Building Official of grading projects or developments with conditions of approval:

- Require any specific or general features to be incorporated into the earthwork; or

- Restrict or limit the earthwork in any way that is more restrictive than the grading provisions prescribed in the California Building Code.

County Code Chapter 88.01: Plant Protection and Management. This chapter provides regulatory and management guidance for plant resources in unincorporated areas as well as mixed public and private lands. It primarily addresses tree and vegetation removal in public land and private land in unincorporated areas.

County Code Chapter 88.01 § 080: Riparian Plant Conservation. This section addresses the health of riparian corridors, their impact on waterways within the region, their use as habitat by various plant and wildlife species, and their stabilization of stream banks.

County Code Chapter 88.02: Soil and Water Conservation. This chapter promotes the health of soil communities to limit soil erosion potential and preserve air quality. This code primarily regulates ground-disturbing activities.

County Code Title 6 Chapter 1: California Building Code. The County's building regulations are found in this chapter. State law permits jurisdictions to amend State building codes to address local geographic, topographic, or climatic conditions. The CBC is updated on a three-year cycle.

For applicability of the above County Code standards to the proposed Project, see **Section 5.0**.

City of Barstow 2015-2020 General Plan

The City adopted the City of Barstow 2015-2020 General Plan (2015 General Plan) in February 2015. The 2015 General Plan is the overarching guide for implementation of the City's Development Code, which defines development regulations and establishes zoning districts throughout the City.

Table 5.4-2: 2015 General Plan Relevant Goals, Strategies and Policies includes the biological resource-related goals and policies relevant to the Project. For applicability of the 2015 General Plan goals and policies to the Project, see **Section 5.0**.

Table 5.4-2: 2015 General Plan Relevant Goals, Strategies and Policies	
Goal, Strategy or Policy	
RESOURCE CONSERVATION AND OPEN SPACE ELEMENT	
Goal 3	Seek to preserve biological resources within the Planning Area.
Policy 3.A	Conserve suitable habitat for threatened and endangered species found in the region and facilitate mitigation of impacts where unavoidable.
Strategy 3.A.1	Perform site-specific studies prior to development activities to determine the precise mitigation necessary to preserve and enhance biological resources, with particular attention given to the preservation of areas identified as having a high biological significance and sensitivity.
Policy 3.A.2	Establish corridors for the movement of wildlife between the established Desert Wildlife Management Areas and Desert Tortoise Critical Habitat.
Policy 3.A.3	Strive to maintain native riparian and associated natural habitats along the Mojave River. When applicable, require a U.S. Army Corps of Engineers 404 Permit
Policy 3.A.4	Maintain the Mojave River as a travel and watershed corridor, retaining the link between natural areas to the north and south of Barstow.
Source: City of Barstow. 2015. *City of Barstow 2015-2020 General Plan.* https://www.barstowca.org/home/showpublisheddocument/5359/636607004808630000.	

Code of the City of Barstow

The Municipal Code of the City of Barstow (Barstow Code) regulations addressing biological resources are provided below. For applicability of the Barstow Code standards to the proposed General Plan and BIG, see **Section 5.0**.

Barstow Code Chapter 19.20: Open Space and Government Districts. The Open Space District is intended to provide permanent open space in the community and to safeguard the health, safety, and welfare of the people by limiting developments in the areas. Open space, pursuant to California Government Code § 65560, maybe so designated for one of the following reasons:

- Open space for the preservation of natural resources.
- Open space used for the managed production of resources.
- Open space for outdoor recreation, including, but not limited to, areas of outstanding scenic, historic, and cultural value.
- Open space for public health and safety including, but not limited to, areas which require special management or regulation because of hazardous or special conditions.

5.4.3 METHODOLOGY FOR EVALUATING IMPACTS

This section defines the study area (i.e., affected environment) and summarizes the methodology used to analyze potential impacts concerning biological resources.

5.4.3.1 Definition of Study Area

The “study area” is the geographic boundary in which the environmental investigations were conducted specific to each resource topic.

Proposed General Plan

The study area for the proposed General Plan is the City of Barstow and its SOI; see **Figure 3-1: Regional Vicinity Map** and **Figure 3-2: Local Vicinity Map** in **Section 3:0: Project Description**.

Barstow International Gateway

The study area for direct impacts concerning biological resources is the BIG footprint.

The study area for indirect impacts concerning biological resources, referred to in **Appendix 5.4 BIG-1** and in the following analysis as the "survey area," is the BIG footprint plus a 1,000-foot buffer.[1]

5.4.3.2 Methodology

Proposed General Plan

A review was conducted to analyze biological and aquatic resources throughout the General Plan area. Existing information regarding biological and aquatic resources present or potentially present within the General Plan area was obtained through a review of pertinent literature and databases, as listed below:

- The Biological Resources Existing Conditions Report for the San Bernardino Countywide Plan was also used to determine the environmental setting for the General Plan area (San Bernardino, 2020b).
- A map from Data Basin depicting the BLM West Mojave Plan vegetation was used to provide information and context about the special status species vegetation and other vegetation types in the General Plan area. The vegetation types within the General Plan area include but are not limited to agriculture, creosote bush scrub, desert saltbush scrub, desert wash scrub, and montane riparian scrub (Data Basin, 2011).
- The California Rare Plant Rank status applies to plants only. The California Rare Plant Ranks are a ranking system originally developed by the California Native Plant Society (CNPS) to better define and categorize rarity in California's flora. Rare plants are ranked by rarity from 1A to 4 and are accompanied by a decimal number of 0.1 to 0.3 that determines their threat level. The higher rare plant rank, the less rare it is and the higher the decimal number the less threatened it is. **Table 5.4-3: California Rare Plant Ranks and Federal and State** Designations shows the definition of the rare plant rankings and federal and State definitions applied to special status plant species.
- The California Natural Diversity Database (CNDDB), which is an inventory of the status and locations of rare plants and wildlife in California, was used to identify special status plant and wildlife species in the General Plan area (CDFW, 2023).
- The USFWS' National Wetlands Inventory: Wetlands Mapper was used to identify wetlands and riparian habitats in the General Plan area (USFWS, 2023).

[1] As the riparian bird survey area is the most conservative (the BIG footprint plus a 1,000-foot buffer), it is the survey area referenced as the indirect study area.

Table 5.4-3: California Rare Plant Ranks and Federal and State Designations	
California Rare Plant Rank	**Definition**
1A	Plants presumed extinct in California and rare/extinct elsewhere.
1B.1	Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California.
1B.2	Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California.
1B.3	Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California.
2A	Plants presumed extirpated in California, but more common elsewhere.
2B.1	Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California.
2B.2	Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California.
2B.3	Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California.
3.1	Plants about which we need more information; seriously threatened in California.
3.2	Plants about which we need more information; fairly threatened in California.
3.3	Plants about which we need more information; not very threatened in California.
4.1	Plants of limited distribution; seriously threatened in California.
4.2	Plants of limited distribution; fairly threatened in California.
4.3	Plants of limited distribution; not very threatened in California.
Federal Status	
Status	**Definition**
Endangered	The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
Threatened	The classification provided to an animal or plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
Proposed Endangered	The classification provided to an animal or plant that is proposed for federal listing as Endangered in the Federal Register under § 4 of the Endangered Species Act.
Proposed Threatened	The classification provided to an animal or plant that is proposed for federal listing as Threatened in the Federal Register under § 4 of the Endangered Species Act.
Candidate	The classification provided to an animal or plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the Federal Endangered and Threatened species list.
None	The plant or animal has no federal status.
Delisted	The plant or animal was previously listed as Endangered or Threatened but is no longer listed on the Federal Endangered and Threatened species list.
State Status	
Status	**Definition**
Endangered	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

Table 5.4-3: California Rare Plant Ranks and Federal and State Designations	
California Rare Plant Rank	**Definition**
Threatened	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
Rare	The classification provided to a native plant species, subspecies, or variety when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. This designation stems from the Native Plant Protection Act of 1977.
None	The plant or animal has no State status.
Delisted	The plant or animal was previously listed as Endangered, Threatened or Rare but is no longer listed by the State of California.
Candidate Endangered	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.
Candidate Threatened	The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of threatened species.
Source: CDFW, 2023.	

Barstow International Gateway

Vegetation mapping, general biological surveys, habitat assessments and focused surveys for special status species were conducted within the survey area. Additionally, a formal aquatic resources delineation was conducted within the survey area for aquatic resources that may be considered jurisdictional by the USACE pursuant to CWA Section 404, by the RWQCB pursuant to CWA Section 404 and the Porter-Cologne Water Quality Control Act, and by the CDFW pursuant to CFGC Section 1602. The BIG footprint was also assessed for its functionality as a regional and local wildlife corridor. The technical report and additional information on methodology can be found in **Appendix 5.4 BIG-1**.

Desktop Data Review

A literature review was conducted to analyze biological and aquatic resources throughout the survey area prior to conducting field surveys. Existing information regarding biological and aquatic resources present or potentially present within the survey area was obtained through a review of pertinent literature and databases; see **Appendix 5.4 BIG-1** for the list of databases. Database results, along with local biological knowledge, were used to assess special status species' potential for occurrence within the survey area. The potential for special status species to occur within the BIG footprint was refined by considering the

habitat affinities of each species, field habitat assessments, vegetation mapping, and local biological knowledge.

Vegetation Mapping and General Biological Surveys

Biologists conducted vegetation mapping, general biological surveys, and habitat assessments for special status plants and wildlife within the BIG footprint between November 2018 and July 2025 (see **Appendix 5.4 BIG-1**). Vegetation mapping was conducted in the field to provide a baseline of the biological resources that occur or have potential to occur within the survey area. Vegetation mapping was conducted by driving and walking throughout the survey area and mapping vegetation communities on aerial. The extent of each habitat type was calculated using the ArcGIS Geographic Information System (GIS) program.

General biological surveys were conducted for plants and wildlife concurrently with vegetation mapping. Plant species encountered during field surveys were identified and recorded in a field notebook.

Wildlife species were documented during field surveys by sight, calls, tracks, scat, or other signs, and were recorded in a field notebook. The list of the wildlife species observed includes all species observed during general biological surveys and wildlife movement studies as well as those observed during focused surveys for special status species.

The survey area was assessed for habitat with the potential to support special status plant and wildlife species. The locations of observed biological resources designated as special status by the USFWS, CDFW, and/or CNPS were recorded in a field notebook, on aerial maps, and/or a handheld Global Positioning System (GPS) device. Expected wildlife use of the BIG footprint was assessed based on the results of the species database queries, known habitat preferences of local species, and knowledge of their biogeographic distribution in the region.

A list of all species encountered with the BIG survey area is in **Appendix 5.4 BIG-1**.

Special Status Plant Species Surveys

Plant species are considered to have special status if they meet one or more of the following criteria:

- Listed or proposed for listing by federal or State agencies as threatened or endangered;
- California Rare Plant Rank (CRPR) List 1 through 4 species; or
- Considered rare, endangered, or threatened by CDFW or other local conservation organizations or specialists: or
- Protected under San Bernardino County Code 88.01 and the California Desert Native Plants Act.

A habitat assessment was conducted for special status plant species during general biological field surveys conducted in November 2018 through July 2025. During the habitat assessment, areas mapped as developed, disturbed habitat, and agriculture were eliminated from the special status plant survey area (BIG footprint plus a 50-foot-wide buffer) due to lack of suitable habitat for special status species known for the area. Based on the habitat assessment, the following CRPR 1 and 2 species were identified as focal species due to the presence of suitable habitat within the special status plant survey area as well as consultation with USFWS and CDFW: Barstow woolly sunflower (*Eriophyllum mohavense*), beaver Dam

breadroot (*Pediomelum castoreum*), creamy blazing star (*Mentzelia tridentata*), Emory's crucifixion thorn (*Castela emoryi*), Mojave monkeyflower (*Diplacus mohavensis*), Parish's phacelia (*Phacelia parishii*), and spiny-hair blazingstar (*Mentzelia tricuspis*).

Special status plant surveys were conducted within suitable habitat in the special status plant survey area between May 2023 and May 2025. Botanical surveys for special status plants followed the CDFW's botanical survey guidelines.

Western Joshua Tress Census. Western Joshua tree was observed within the BIG footprint during the habitat assessment. As such, a focused western Joshua tree census was conducted within the BIG footprint and a 50-foot-wide buffer in October 2024. Each western Joshua tree within the special-status plant survey area received a unique identification number, and a sub-meter GPS was used to record the location of each tree. In accordance with the *Western Joshua Tree Conservation Permitting Census Instructions*, trees were classified into the following size classes: A – less than one meter in height; B – one meter or greater but less than five meters in height; and C – five meters or greater in height. Additional information collected included status (live/dead), maturity (branched/not branched), phenological stage (flowers/fruits/none), and proposed impacts (removal, trim, relocation, other, or none). Complete survey methods are presented in **Appendix 5.4 BIG-1** in Attachment FF: *Barstow International Gateway Project Western Joshua Tree Census Report*.

Special Status Wildlife Species Surveys

Wildlife species are considered to have special status if they meet one or more of the following criteria:

- Listed or considered for listing or proposed for listing under the FESA or CESA
- USWFS Bird of Conservation Concern
- BLM Sensitive
- CDFW Species of Special Concern
- CDFW Fully Protected Species
- CDFW Watch List (WL) Species
- Protected Furbearing Mammal

Desert Tortoise Surveys. Focused presence/absence surveys for desert tortoise were conducted within suitable habitat within the BIG footprint. Desert tortoise surveys were conducted between October 16, 2021, and October 16, 2024, within the proposed footprints for the transload warehouse center, rail yard, solar farm, off-site improvements, and the Tortilla substation improvements. Areas were surveyed separately at different times due to the timing of access authorizations for various parcels.

The surveys followed guidelines established in the *Mojave Desert Tortoise Pre-Project Survey Protocols*. Complete survey methods are presented in **Appendix 5.4 BIG-1** in Attachments J, K, L, and M: *Desert Tortoise Presence/Absence Survey Report, BNSF Railway Company (BNSF) Barstow International Gateway (BIG) Project, Barstow, California*, Attachment O: *Protocol Desert Tortoise Survey Results for the Barstow International Gateway Project in and adjacent to Barstow, San Bernardino County, California* report,

Attachment P: *Protocol Desert Tortoise Survey Results for the Tortilla Substation Project in Barstow, San Bernardino County, California* report, and Attachment Q: *Protocol Desert Tortoise Survey Results for the Barstow International Gateway – Solar East and Additional Project Areas in and adjacent to Barstow* report. Due to the timing of access authorizations, some desert tortoise surveys were conducted outside the recommended seasonal survey window for protocol surveys.

Least Bell's Vireo Surveys. A habitat assessment was conducted for least Bell's vireo on March 18, 2020, and on August 10, 2021, within the BIG footprint plus a 1,000-foot-wide buffer (riparian bird survey area). Focused presence/absence surveys were conducted for least Bell's vireo within accessible suitable habitat and the riparian bird survey area between April 19 and July 8, 2021, April 25 and August 18, 2022, and April 10 and July 24, 2023.

The surveys were conducted in accordance with the USFWS *Least Bell's Vireo Survey Guidelines*. Complete survey methods are presented in **Appendix 5.4 BIG-1** in Attachment R: *45-Day Report for Least Bell's Vireo Surveys for the BNSF Barstow International Gateway Project, San Bernardino County, California*.

Mojave Fringe-Toed Lizard Surveys. Biologists documented suitable habitat for the Mojave fringe-toed lizard within portions of BIG along the Mojave River that support dune communities. To assess the occupancy of the site by Mojave fringe-toed lizard, focused presence/absence surveys were conducted from June to October 2023, which was within the active season for the species. Although there is no legally mandated survey protocol for Mojave fringe-toed lizards, surveyors based the methods on protocol for a similar species, the *Coachella Valley Fringe-Toed Lizard (Uma inorta) Survey Protoco*l.

The survey area included all areas mapped as active desert dunes, active desert dunes – disturbed, stabilized/partially stabilized desert dunes within the BIG footprint plus a 100-foot-wide buffer. Surveyors walked full-coverage belt transects spaced approximately 10 meters apart throughout the entire survey area. Mojave fringe-toed lizard foraging and dispersal activity can be observed outside of the time and temperature constraints outlined in the Survey Protocol; therefore, surveys did not strictly follow those restrictions.

Mojave Ground Squirrel Surveys. A biologist conducted habitat assessments for Mojave ground squirrel within the BIG footprint on November 9, 2021, and January 3, 2022. Based on the results of the habitat assessments, focused live trapping surveys were conducted for Mohave ground squirrel at two locations within the BIG footprint that contain highly suitable habitat for the species. Surveys were conducted in three sessions at each location and occurred between April 13 and July 2, 2022, in accordance with the CDFW *Mohave ground squirrel Survey Guidelines*. Another habitat assessment was conducted in March 2025. Based on the habitat assessment results, additional focused live trapping surveys for Mohave ground squirrel were conducted at seven locations within the BIG footprint in 2025. The three sessions occurred from March 31 to April 29, May 1 to May 31, and June 1 to July 6, 2025, in accordance with the revised CDFW *Mohave Ground Squirrel Survey Guidelines*.

Complete survey methods for the habitat assessment and the focus surveys are presented in **Appendix 5.4 BIG-1** in the Attachment U: Mohave ground squirrel Habitat Assessment, BNSF Railway Company (BNSF) Barstow International Gateway (BIG) Project and Attachment V: Mohave ground squirrel Survey for the

BNSF Barstow International Gateway (BIG) Project, San Bernardino County, California, Attachment V: Mohave ground squirrel Survey for the BNSF Barstow International Gateway (BIG) Project, San Bernardino County, California, and Attachment W: Mohave ground squirrel Survey for the BNSF Barstow International Gateway (BIG) Project, San Bernardino County, California.

Willow Flycatcher Surveys. A willow flycatcher habitat assessment was conducted on March 18, 2020, and on August 10, 2021, within the BIG footprint and surrounding areas. Permitted biologist Linette Davenport (PER0007536) conducted focused presence/absence surveys for the willow flycatcher within accessible suitable habitat in a portion of the BIG footprint plus a 1,000-foot-wide buffer between May 3 and July 15, 2021, May 17 and August 11, 2022, and May 23 and July 10, 2023.

Surveys were conducted according to *A Natural History Summary and Survey Protocol for the Willow Flycatcher*. Complete survey methods are presented in **Appendix 5.4 BIG-1** in Attachments W and X: Focused Presence/Absence Survey for Willow Flycatcher, Communities of Lenwood and Hodge, San Bernardino County, California dated August 2021 and September 2022.

Special Status Bat Surveys. Reconnaissance bat surveys were conducted between June 30 and July 25, 2025. Anabat detectors (Titley Scientific)[2] were placed across areas of the BIG footprint identified as potentially suitable bat habitat. Site selection was based on features known to support bat roosting activity, such as bridges and culverts. During placement of Anabat detectors, suitable features were also visually inspected for roosting bats and sign (i.e., guano). Each detector was securely mounted at an appropriate height near the identified habitat feature and was programmed to record from sunset to sunrise. The collected data was analyzed using specialized software to identify bat species and assess relative activity across the selected Anabat sites.

Swainson's Hawk Surveys. Focused Swainson's hawk surveys were conducted between March 20 and July 30, 2024; Swainson's hawk surveys were repeated between March 20 and July 17, 2025. Biologists conducted surveys during two nesting seasons throughout the BIG footprint plus a 0.5-mile-wide buffer to assess species activity and potential to nest within the BIG footprint. During each of the two nesting seasons, three surveys were conducted between March and April, which is during the period that Swainson's hawks are known to return to their nesting territories and begin displaying courtship and nesting behaviors. An additional three surveys were conducted during each of the two nesting seasons between June and July, during the period prior to fledging when nestlings are active and visible within nests.

Surveys were conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. Complete survey methods are presented in **Appendix 5.4 BIG-1** in Attachment BB: Barstow International Gateway Project Protocol Presence/Absence 2024 Survey Report for Swainson's Hawk (*Buteo swainsoni*) and Attachment CC: Barstow International Gateway Project Protocol Presence/Absence 2025 Survey Report for Swainson's Hawk (*Buteo swainsoni*).

[2] Anabat detectors are ultrasonic recording devices that detect and log the high-frequency echolocation calls produced by bats, allowing for species identification and bat activity monitoring.

Western Burrowing Owl Surveys. The BIG footprint is within the San Bernardino County Burrowing Owl Overlay Zone. Focused western burrowing owl (burrowing owl) surveys were conducted within accessible suitable habitat within the BIG footprint between October 16, 2021, and July 10, 2024. Areas where access was prohibited were visually assessed with binoculars. Focused burrowing owl surveys were conducted within the BIG footprint during both breeding (February 1 – August 31) and non-breeding (September 1 – January 31) seasons. Survey methods followed the guidelines outlined in the CDFW *Staff Report on Burrowing Owl Mitigation*, except that a buffer was not used given access restrictions outside the BIG footprint and as discussed below, portions of the survey area were surveyed only once.

Complete survey methodology for each burrowing owl survey conducted within the BIG footprint is presented in **Appendix 5.4 BIG-1**. During the 2021-2022 non-breeding and breeding seasons, some portions of the survey area were surveyed once rather than the recommended four survey passes due to the timing of access authorization. To ensure full coverage of the BIG footprint (and 500-foot-wide buffer), four survey passes were conducted during the 2022 breeding season and four passes in the 2023 breeding season which included areas previously surveyed in 2021-2022 (including areas only surveyed once in the 2022 breeding season and areas surveyed during the 2021-2022 non-breeding season) as well as areas not previously surveyed after the completion of the 2021-2022 burrowing owl surveys.

The 2024 breeding season burrowing owl surveys also included a 500-foot-wide buffer of the entire BIG footprint; buffer areas not directly accessible were surveyed with binoculars. The 2024 breeding season burrowing owl surveys included the solar farm plus a 500-foot-wide buffer; buffer areas not directly accessible were surveyed with binoculars. Given the size of the BIG footprint, surveys did not follow the recommended daily timing; however, presence/absence of burrowing owls on the BIG footprint were assessed by analyzing the presence of suitable burrows and recent burrowing owl sign.

Western Yellow-Billed Cuckoo Surveys. Biologists conducted a habitat assessment for yellow-billed cuckoo on August 10, 2021, within the BIG footprint plus a 1,000-foot-wide buffer. A biologist conducted focused presence/absence surveys for yellow-billed cuckoo within suitable habitat within the survey area between June 29 and August 11, 2022, and June 19 and August 10, 2023.

Surveys were conducted according to the *A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo*. Survey methods are presented in **Appendix 5.4 BIG-1** in Attachment Z: Focused Presence/ Absence Survey for Yellow-Billed Cuckoo, Barstow International Gateway, Communities of Lenwood and Hodge, San Bernardino County, California, and Attachment AA: 2023 Focused Presence/Absence Survey for Yellow-Billed Cuckoo, Barstow International Gateway, Community of Hodge, San Bernardino County, California.

Aquatic Resources Delineation

A formal aquatic resources delineation was conducted within the survey area per USACE guidelines between October 2021 and August 2025,[3] to identify areas that may be considered jurisdictional by the USACE pursuant to CWA Section 404; by the RWQCB pursuant to CWA Section 401 and the Porter-Cologne

[3] As the *Revised Definition of "Waters of the United States"; Conforming* became effective on September 8, 2023, after the completion of the aquatic resources delineation, the aquatic resources delineation is not affected by the revised definition of Waters of the United States.

Water Quality Control Act; and by the CDFW pursuant to CFGC § 1602. Field visits were conducted over portions of the survey area based on when access was granted to each parcel/portion of the survey area. Areas where access was prohibited were visually assessed with binoculars and/or aerial imagery.

Prior to delineation of the BIG footprint, field maps were created using GIS and a color aerial. Staff also reviewed the USFWS National Wetlands Inventory (NWI) data and USGS National Hydrography Dataset (NHD) and topography data to further determine the potential locations of aquatic resources within the survey area. Google Earth was utilized to assess current and historic presence or absence of flows and/or ponding in the survey area.

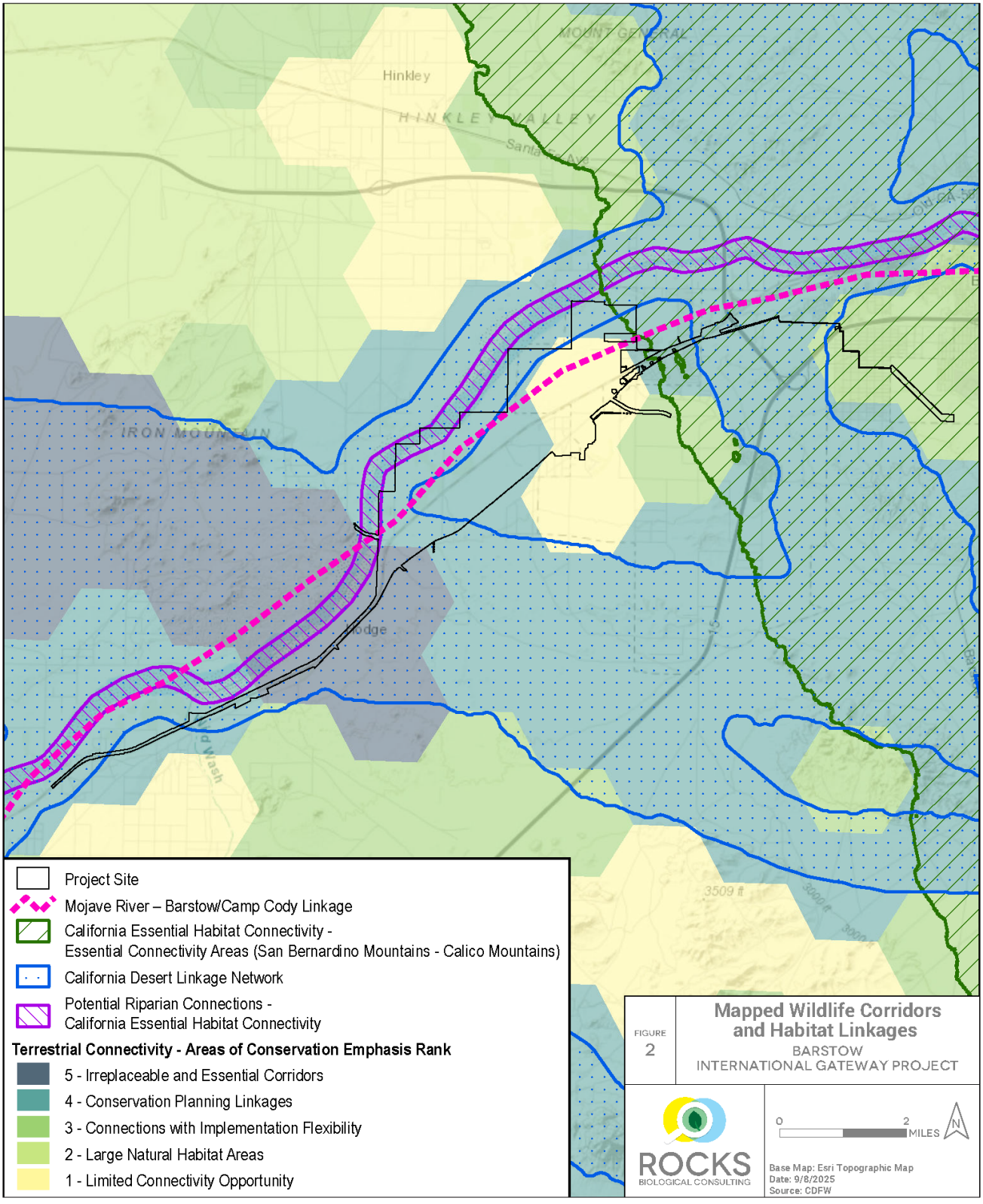
Areas with depressions, drainage patterns, and/or wetland vegetation within the survey area were evaluated, with focus on the presence of defined channels/wetland vegetation, soils, and hydrology. While in the field, potential aquatic resources were recorded using a hand-held GPS unit with a level of accuracy ranging from 4 to 30 feet. Staff refined the data using aerial photographs and topographic maps with one-foot contours to ensure accuracy.

Lateral limits of potential non-wetland waters of the U.S. for the USACE and the RWQCB were identified using field indicators of an Ordinary High Water Mark (OHWM) as outlined in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*. Additionally, staff examined potential USACE and RWQCB jurisdictional wetland areas using the routine determination methods set forth in Part IV, Section D, Subsection 2 of the 1987 USACE *Wetland Delineation Manual*, the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0*, and *The State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*.

CDFW potential jurisdictional boundaries were determined based on the presence of lake and/or streambed and riparian habitat or wetland areas supported by (i.e., adjacent or connected to) a lake or streambed, based on the definition of streambed as outlined at 14 California Code of Regulations (CCR) § 1.72 and in the 1987 *Rutherford v. State of California* decision (188 Cal. App. 3d 1268). To assist in assessing CDFW-jurisdictional limits in desert areas, staff utilized the methods outlined in the *MESA – Mapping Episodic Stream Activity Field Guide*. The MESA Field Guide guidelines indicate the active watercourse extends beyond the streambed and can consist of associated features such as low-flow, active, and braided channels and banks associated with islands, and secondary channels within the bounds of a larger channel complex. Complete methods are presented in **Appendix 5.4 BIG-1**.

Wildlife Corridors

As depicted in **Figure 5.4-1: Wildlife Corridors and CEHC Project**, the BIG footprint overlaps with five potential wildlife movement corridors: Terrestrial Connectivity Area of Conservation Emphasis (ACE), California Desert Linkage Network, California Essential Habitat Connectivity (CEHC) Essential Connectivity Area, CEHC Potential Riparian Connection, and the Mojave River – Barstow/Camp Cody Linkage identified in the Missing Linkages project. A wildlife corridor is a physical feature that links wildlife habitat often consisting of native vegetation that joins two or more larger areas of similar wildlife habitat. Wildlife corridors enable migration, colonization, and genetic diversity through interbreeding and are therefore critical for the movement of wildlife and the continuation of viable populations.



Source: Rocks Biological Consulting, 2025.

Figure 5.4-1
Wildlife Corridors and CEHC Projects

The BIG footprint was assessed for its potential to serve as a wildlife corridor by considering the wildlife species potentially present, their various home ranges and migration patterns, and the site conditions supporting/precluding wildlife movement. A site-specific wildlife movement study was conducted to determine current wildlife movement patterns within the BIG footprint and identify important wildlife movement areas. The wildlife movement study included six monitoring sessions that were conducted in March, June, September, and November 2024, as well as January and March 2025. During each study period, 26 to 35 cameras were stationed throughout the BIG footprint, within the following general locations: Lenwood Channel, Unnamed Stream (Milepost 10.9), existing BNSF railway main track and lead track extension under crossings or culverts, along unpaved access roads and other on-site habitat areas, and Main Street crossings. Complete methods are presented in **Appendix 5.4 BIG-1** Attachment GG: *Barstow International Gateway Project - Wildlife Movement Study and Camera Trapping Report*.

5.4.1 ENVIRONMENTAL SETTING

Proposed General Plan

Desert Region Setting and Climate

The General Plan area is within the Western Mojave Desert Region and is composed of mountains, alluvial fans, playas, basins, plateaus, and dunes. These geomorphic features often provide unique habitat value due to their physical structure and diverse environments that offer food and shelter for wildlife.

The Western Mojave Desert Region is polarizing in its climate: it has hot, dry summers and mild to cold winters. Rain events, while typically spread out in frequency, are derived from winter frontal storms coming off the Pacific Ocean and intermittent summer convective monsoons (Dudek, 2019). Annual precipitation in the region ranges from 3.5 inches at lower elevations to nearly 10 inches in the mountains; wind direction typically blows in a west-southwest direction (NPS, 2023; Meteoblue, 2024).

Biological Conditions

Special Status Plant Species

The special status plant species that are potentially within the General Plan area are shown in **Table 5.4-4: Special-Status Plant Species Potentially Present in City and Sphere of Influence –Proposed General Plan**.

Special Status Wildlife Species

Special status wildlife species are legally protected under CESA, FESA, or other regulations, and species that are considered by the scientific community to be sufficiently rare to qualify for such listing. **Table 5.4-5: Special-Status Wildlife Species Potentially Present in the City and Sphere of Influence – Proposed General Plan** identifies the sensitive wildlife species potentially present in the General Plan area, their common name, their federal and State listing status, and their CDFW status (**Table 5.4-6: Vegetation Communities and Land Covers – Proposed General Plan** defines the federal and State statuses found in **Table 5.4-4: Special-Status Plant Species Potentially Present in City and Sphere of Influence – Proposed General Plan**).

Table 5.4-4: Special-Status Plant Species Potentially Present in City and Sphere of Influence – Proposed General Plan

Scientific Name	Common Name	Federal/State Status	California Rare Plant Rank
Yucca brevifolia	Western Joshua tree	None/Candidate	CBR
Funastrum utahense	Utah vine milkweed	None/ None	4.2
Eriophyllum mohavense	Barstow woolly sunflower	None/ None	1B.2
Sclerocactus polyancistrus	Mojave fish-hook cactus	None/ None	4.2
Nemacladus gracilis	Graceful nemacladus	None/ None	4.3
Astragalus lentiginosus var. borreganus	Borrego milk-vetch	None/ None	4.3
Pediomelum castoreum	Beaver Dam breadroot	None/ None	1B.2
Psorothamnus arborescens var. arborescens	Mojave indigo-bush	None/ None	4.3
Phacelia parishii	Parish's phacelia	None/ None	1B.1
Mentzelia tricuspis	Spiny-hair blazing star	None/ None	2B.1
Mentzelia tridentata	Creamy blazing star	None/ None	1B.3
Abronia villosa var. aurita	Chaparral sand-verbena	None/ None	1B.1
Menodora spinescens var. mohavensis	Mojave menodora	None/ None	1B.2
Canbya candida	White pygmy-poppy	None/ None	4.2
Eschscholzia androuxii	Joshua Tree poppy	None/ None	4.3
Diplacus mohavensis	Mojave monkeyflower	None/ None	1B.2
Chorizanthe spinosa	Mojave spineflower	None/ None	4.2
Delphinium parishii ssp. subglobosum	Colorado Desert larkspur	None/ None	4.3
Castela emoryi	Emory's crucifixion-thorn	None/ None	2B.2
Lycium torreyi	Torreys box-thorn	None/ None	4.2
Muilla coronata	Crowned muilla	None/ None	4.2

Source: CDFW 2023.
Barstow, Barstow SE, Dagget, Hinkley, Hodge, Nebo, Turtle Valley quadrangles.

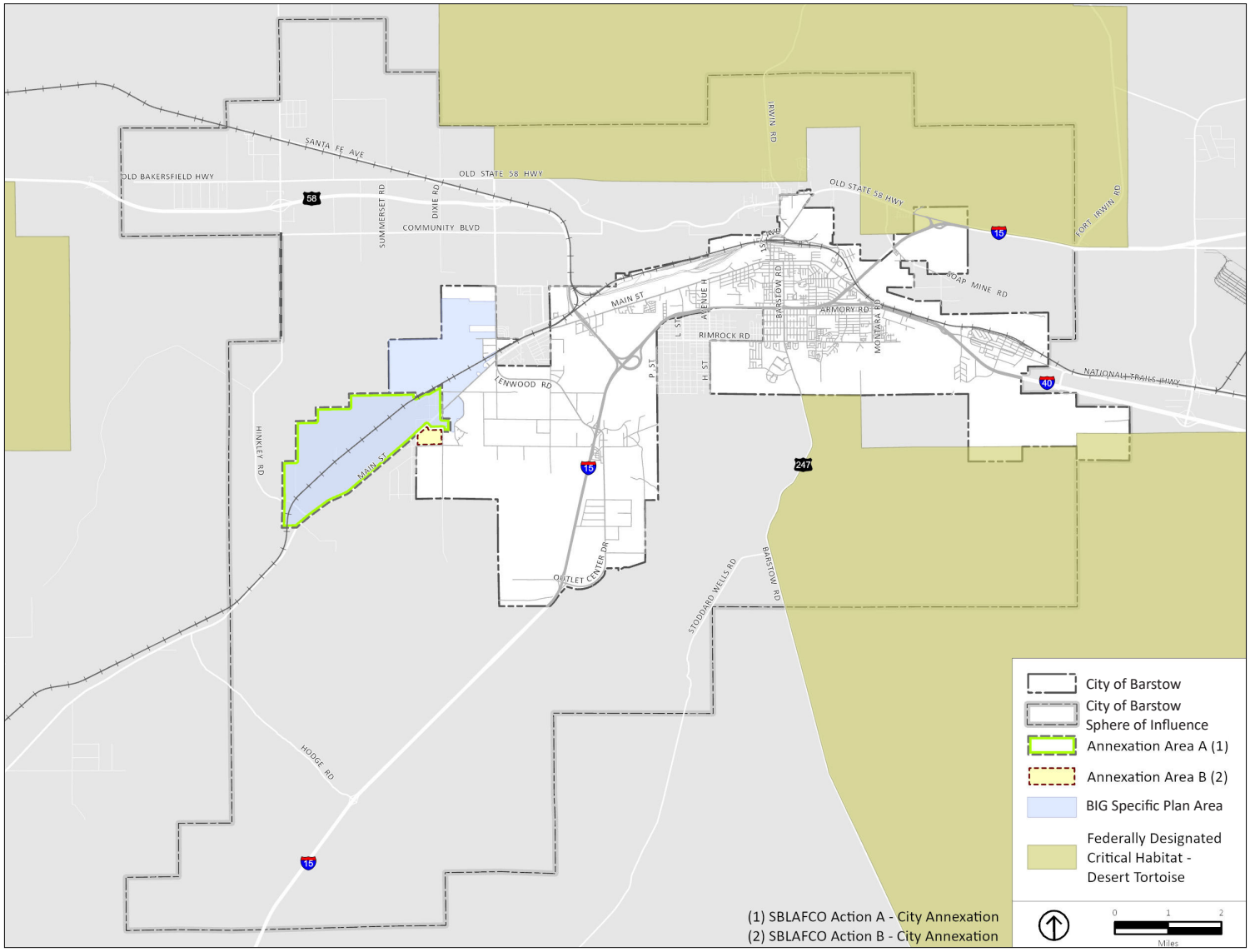
Table 5.4-5: Special-Status Wildlife Species Potentially Present in the City and Sphere of Influence – Proposed General Plan			
Scientific Name	**Common Name**	**Federal/State Status**	**CDFW Status**
Amphibians			
Anaxyrus californicus	Arroyo toad	Endangered/None	SSC
Birds			
Accipiter cooperii	Cooper's hawk	None/None	WL
Accipiter striatus	Sharp-shinned hawk	None/None	WL
Agelaius tricolor	Tricolored blackbird	None/Threatened	SSC
Aquila chrysaetos	Golden eagle	None/None	FP/WL
Artemisiospiza belli	Bell's sparrow	None/None	WL
Asio otus	Long-eared owl	BCC/None	SSC
Buteo regalis	Ferruginous hawk	None/None	WL
Buteo swainsoni	Swainson's hawk	None/Threatened	None
Calypte costae	Costa's hummingbird	BCC/None	None
Charadrius montanus	Mountain plover	BCC/None	SSC
Circus hudsonius	Northern harrier	None/None	SSC
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	Threatened/ Endangered	None
Contopus cooperi	Olive-sided flycatcher	BCC/None	SSC
Falco columbarius	Merlin	None/None	WL
Falco mexicanus	Prairie falcon	None/None	WL
Icteria virens	Yellow-breasted chat	None/None	SSC
Lanius ludovicianus	Loggerhead shrike	None/None	SSC
Pandion haliaetus	Osprey	None/None	WL
Pelecanus erythrorhynchos	American white pelican	None/None	SSC
Piranga rubra	Summer tanager	None/None	SSC
Pooecetes gramineus affinis	Oregon vesper sparrow	BCC/None	SSC
Polioptila melanura	Black-tailed gnatcatcher	None/None	WL
Setophaga petechia	Yellow warbler	None/None	SSC
Spinus lawrencei	Lawrence's goldfinch	BCC/None	None
Toxostoma bendirei	Bendire's thrasher	None/None	SSC
Toxostoma lecontei	Le Conte's thrasher	None/None	SSC
Vireo bellii pusillus	Least Bell's vireo	Endangered/ Endangered	None
Leiothlypis luciae	Lucy's warbler	None/None	SSC
Athene cunicularia hypugaea	Western burrowing owl	None/Candidate	SSC
Empidonax traillii	Willow flycatcher	None/Endangered	None
Empidonax traillii extimus	Willow Flycatcher	Endangered/ Endangered	None
Fish			
Siphateles bicolor mohavensis	Mohave tui chub	Endangered/ Endangered	FP

Table 5.4-5: Special-Status Wildlife Species Potentially Present in the City and Sphere of Influence – Proposed General Plan			
Scientific Name	**Common Name**	**Federal/State Status**	**CDFW Status**
Invertebrates			
Bombus crotchii	Crotch's bumble bee	None/Candidate	None
Danaus plexippus	Monarch	Candidate/None	None
Mammals			
Taxidea taxus	American badger	None/None	SSC
Xerospermophilus mohavensis	Mohave ground squirrel	None/Threatened	None
Antrozous pallidus	Pallid bat	None/None	SSC
Corynorhinus townsendii	Townsend's big-eared bat	None/None	SSC
Euderma maculatum	Spotted bat	None/None	SSC
Eumops perotis californicus	Western mastiff bat	None/None	SSC
Lasionycteris noctivagans	Silver-haired bat	None/None	None
Lasiurus xanthinus	Western yellow bat	None/None	SSC
Macrotus californicus	California leaf-nosed bat	None/None	SSC
Microtus californicus mohavensis	Mohave river vole	None/None	SSC
Myotis yumanensis	Yuma myotis	None/None	None
Vulpes macrotis arsipus	Desert kit fox	None/None	FBM
Mollusks			
Anodonta californiensis	California floater	None/None	None
Reptiles			
Emys marmorata	Western pond turtle	None/None	SSC
Uma scoparia	Mojave fringe-toed lizard	None/None	SSC
Gopherus agassizii	Desert tortoise	Threatened/ Threatened	None

Notes:
CDFW: California Department of Fish and Wildlife
BCC: USFWS Bird of Conservation Concern
FBM: California Furbearing Mammal, protected from take (14 CCR § 460 or 463)
FP: Fully Protected
SSC: Species of Special Concern
WL: Watch List
Source: CDFW 2023.
Barstow, Barstow SE, Dagget, Hinkley, Hodge, Nebo, Turtle Valley quadrangles.

Federally Designated Critical Habitat

As shown in **Figure 5.4-2: Federally Designated Critical Habitat –Proposed General Plan** , portions of the General Plan area are federally designated as critical habitat for desert tortoise in the northeastern and southeastern parts of the General Plan area.



Source:
USFWS, 2023.

Figure 5.4-2
Federally Designated Critical Habitat - Proposed General Plan

Vegetation Communities and Land Covers

Sensitive natural communities are those that are listed as critically imperiled, threatened, or vulnerable, according to the State ranking system. Special status species are plants that are legally protected under the State or federal ESA or other regulations, and species that are considered by the scientific community to be sufficiently rare to qualify for such a listing.

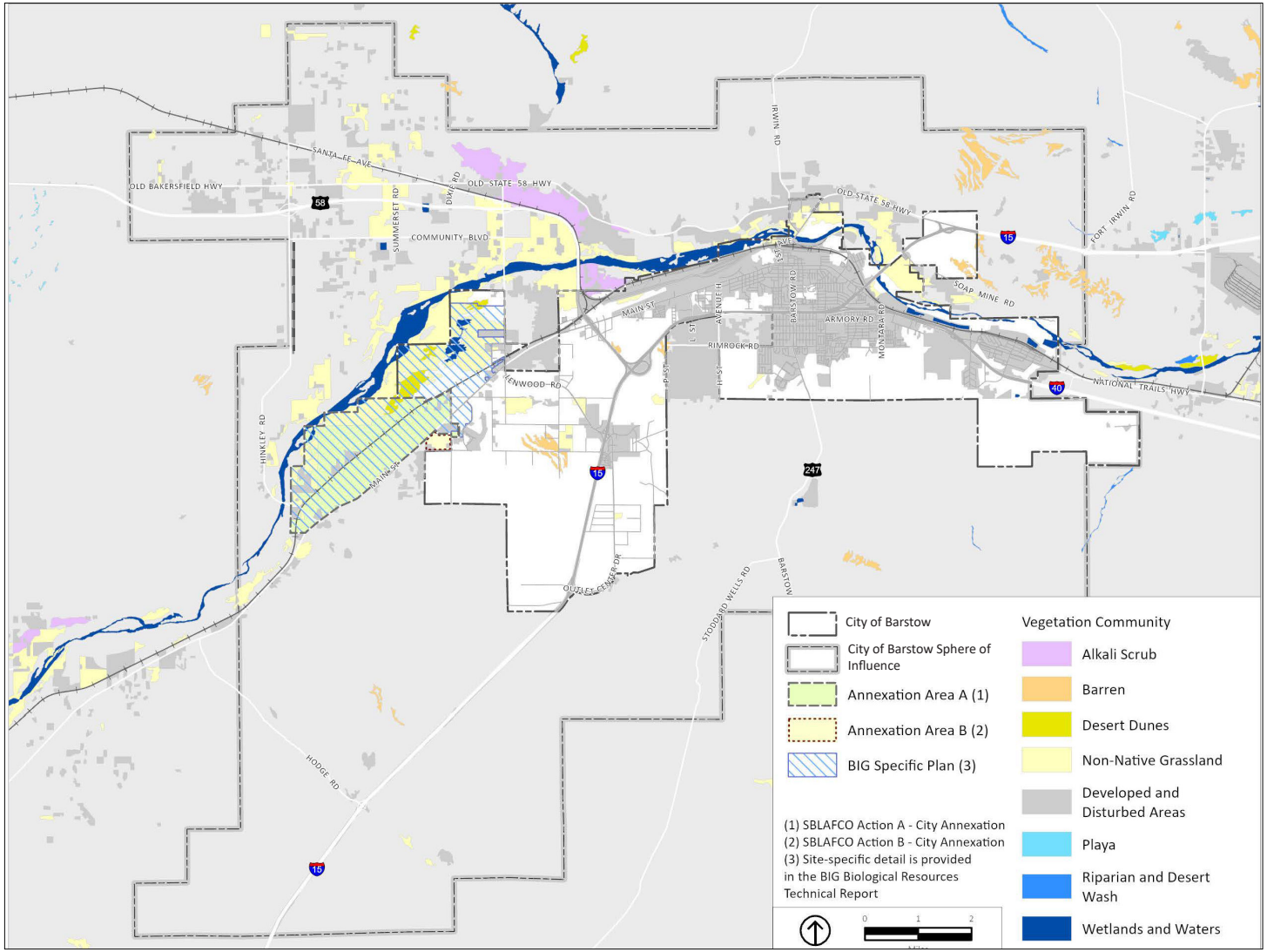
Additionally, sand dunes are considered unique landforms that support special status plant and wildlife species and are found in various portions of the Desert Region of San Bernardino County, including the General Plan area. **Figure 5.4-3: Vegetation Communities and Land Covers – Proposed General Plan** shows the locations of the vegetation communities and land covers within the proposed General Plan area.

Table 5.4-6: Vegetation Communities and Land Covers – Proposed General Plan, identifies the vegetation communities and land covers, as well as their acreages, within the General Plan area.

Table 5.4-6: Vegetation Communities and Land Covers – Proposed General Plan

Vegetation Community/Land Cover Type	Acreage in City of Barstow	Acreage in Sphere of Influence
Agriculture	8	2,655
Chenopod Scrub	592	4,133
Desert Bedrock Cliff and Outcrop	184	623
Desert Dry Wash Woodland	--	12
Desert Dunes	169	41
Non-Native Grassland	1,491	4,046
Playa	--	4
Riparian Forest and Woodland	44	59
Riparian Scrub	496	1,371
Sonoran and Mojavean Desert Scrub	15,761	78,317
Desert Sink Scrub	17	923
Developed and Disturbed Areas	7,235	7,210
Waterway	440	1,339
Subtotal	26,437	100,733
Total Acreage in General Plan Area		127,170

Source: Dudek, 2019.



Source:
City of Barstow, 2025; County of San Bernardino, 2022.

Figure 5.4-3
Vegetation Communities and Land Covers - Proposed General Plan

Aquatic Resources (Riparian Habitat, Other Sensitive Natural Communities, and Wetlands)

The Mojave River's source starts within the San Bernardino Mountains, traverses the General Plan area, and terminates at Soda Lake. The Mojave River has intermittent surface flow with most of the water flow occurring underground. Water comes to the surface in areas with impermeable rock, such as the upper and lower narrows near Victorville and in the Afton Canyon area northeast of the City (Dudek 2019). Riparian communities occur along the Mojave River. The General Plan area also include jurisdictional wetlands and other waters within, such as within the northwestern portion of the SOI.

Wildlife Movement

Wildlife corridors are passages that provide wildlife with the ability to move from one area to another to find food and habitat, as well as reproduce. Open space areas within the General Plan area can provide refuge for some wildlife species. Open space areas such as parks and cemeteries typically have mature trees and may have water features, both important elements providing food and cover for wildlife. Some types of agricultural land uses may also offer some habitat value. There are large areas of open space, such as the desert lands and Mojave River, within the General Plan area. The SOI has significantly more open space areas suitable for wildlife habitat since portions of the City are developed.

Barstow International Gateway

The approximately 5,000-acre BIG footprint is in the western part of the City and southwestern part of the County. The BIG footprint is generally bordered by the Mojave River on the north, Main Street on the south, Lenwood Road on the east, and Hinkley Road on the west**.**

Existing Conditions

The biological technical report contains a great deal of information concerning both common and uncommon plant and wildlife species that are found within the General Plan area. The report also provides site-specific information for BIG concerning the locations within the General Plan area, where species are likely to be found. This section of the EIR focuses on uncommon species that may be particularly worthy of environmental protection.

Big Footprint Conditions

Various waterways exist along the BIG footprint that extend in the south direction which traverse Lords Road, Holcomb Ranch Road, Link Road, and Jiggs Road. A waterway also exists at the western portion of the BIG footprint, traversing Link Road, Hinkley Road, and Main Street (Route 66). Some landscaping exists in patches at the BIG footprint's western portion along and north of Jiggs Road.

Topography and Soils

The BIG footprint is relatively flat except for aeolian dune habitat north of BNSF's existing mainline in the northern portion of the BIG footprint and several hillslopes south of the existing mainline in the central portion of the BIG footprint. The Mojave River and watershed, which is unique to the region, runs parallel to the north of BIG and within northern portions of the BIG footprint. The overall BIG footprint gradually decreases in elevation moving northwest towards the Mojave River and consists of elevations ranging

from approximately 2,200 to 2,730 feet above mean sea level (msl). Drainage patterns within the BIG footprint generally trend southeast to north/northwest towards the Mojave River.

Vegetation and Land Cover

The BIG footprint supports 15 vegetation communities and two land covers which are generally described below in **Table 5.4-7: Summary of Vegetation Communities and Land Cover Within the BIG Footprint**.

Table 5.4-7: Summary of Vegetation Communities and Land Cover Within the BIG Footprint

Vegetation Community/ Land Cover	Holland Classification	Global/ State Rank	Acres	Description
Vegetation Communities				
Ambrosia dumosa Shrubland Alliance	Desert saltbush scrub	G5/ S5	16.4	Ambrosia dumosa shrubland is characterized by white bursage and creosote. It supports a moderate to dense cover of non-native Mediterranean grass and other shrubs are present in low cover, including allscale saltbush and four-wing saltbush.
Atriplex canescens Shrubland Alliance	Desert saltbush scrub	G5/ S4	184.2	Atriplex canescens shrubland comprises four-wing salt bush, Mediterranean grass, allscale saltbush, white bursage, pale wolf berry, green ephedra, Mojave indigo bush, desert senna, creosote, desert dandelion, Fremont's pincushion, Russian thistle.
Atriplex canescens Shrubland Alliance – Disturbed	Disturbed desert saltbush scrub	G5/ S4	25.5	Atriplex canescens shrubland – disturbed is similar to Atriplex canescens shrubland however, it has experienced significant anthropogenic degradation.
Atriplex polycarpa Shrubland Alliance	Desert saltbush scrub	G4/ S4	235.1	Atriplex polycarpa shrubland is dominated by allscale saltbush and Mediterranean grass, but also contains the following: four-wing saltbush, creosote, London rocket, and desert dandelion.
Atriplex polycarpa Shrubland Alliance – Disturbed	Disturbed desert saltbush scrub	G4/ S4	159.8	Atriplex polycarpa shrubland – disturbed is similar to Atriplex polycarpa shrubland however, it has experienced significant anthropogenic degradation.
Brassica tournefortii – Malcolmia africana Provisional Herbaceous Semi-natural Alliance	Non-native grassland (former agriculture)	GNR/ SNR	321.5	Brassica tournefortii – Malcolmia africana provisional herbaceous semi-natural alliance is dominated by non-native Mediterranean grass and London rocket.
Dicoria canescens – Abronia villosa – Panicum urvilleanum Sparsely Vegetated Alliance	Active desert dunes	G4/ S3.2	1,016.4	Dicoria canescens – Abronia villosa – Panicum urvilleanum sparsely vegetated alliance is characterized by low overall vegetation cover. Dominant plants include desert dicoria, Russian thistle, and dune evening primrose. Dicoria canescens – Abronia villosa – Panicum

Table 5.4-7: Summary of Vegetation Communities and Land Cover Within the BIG Footprint				
				urvilleanum sparsely vegetated alliance are considered active dunes that are not stabilized and are made up of loose, windblown sand.
Dicoria canescens – Abronia villosa – Panicum urvilleanum Sparsely Vegetated Alliance – Disturbed/ Stabilized	Disturbed stabilized and partially stabilized dunes	G4/ S3.2	454.7	Dicoria canescens – Abronia villosa – Panicum urvilleanum sparsely vegetated alliance - disturbed/stabilized is similar to Dicoria canescens – Abronia villosa – Panicum uillean sparsely vegetated alliance, however, it has experienced significant degradation. Soils in this community are made up of loose sandy soils that have been compacted or stabilized by disturbances and the presence of vegetation. Human debris is present throughout the community. Additionally, soil compaction has occurred due to off-highway vehicle use and other anthropogenic structures like roads and agriculture.
Dicoria canescens – Abronia villosa – Panicum urvilleanum Sparsely Vegetated Alliance – Partially Stabilized	Stabilized and partially stabilized dunes	G4/ S3.2	116.8	*Dicoria canescens – Abronia villosa – Panicum urvilleanum* sparsely vegetated alliance – partially stabilized is similar to Dicoria canescens – Abronia villosa – Panicum urvilleanum sparsely vegetated alliance, however, it has experienced partial stabilization by native herbaceous vegetation. Soils in this community are made up of uncompacted loose sands that have been partially stabilized by low to moderate cover of native herbs.
Larrea tridentata – Ambrosia dumosa Shrubland Alliance	Creosote bush (white bursage) scrub	S5/G5	1,228.6	*Larrea tridentata – Ambrosia dumosa* shrubland alliance is characterized by creosote and white bursage with four-wing saltbush and allscale saltbush also present.
Larrea tridentata – Ambrosia dumosa Shrubland Alliance - Disturbed	Disturbed creosote bush (white bursage) scrub	S5/G5	0.9	*Larrea tridentata – Ambrosia dumosa* shrubland alliance – disturbed is similar to the Larrea tridentata – Ambrosia dumosa shrubland alliance, however it has experienced significant anthropogenic degradation.
Larrea tridentata Shrubland Alliance	Creosote bush scrub	S5/G5	120.9	*Larrea tridentata* shrubland alliance is dominated by creosote and Mediterranean grass. Other species are present at a lower cover, including allscale saltbush, Russian thistle, four-wing saltbush, and Ephedra sp. amongst others.
Larrea tridentata Shrubland Alliance – Disturbed	Disturbed creosote bush scrub	S5/G5	26.9	*Larrea tridentata* shrubland alliance - disturbed is similar to the Larrea tridentata shrubland alliance, however it has experienced significant anthropogenic degradation.
Tamarix spp. Shrubland Semi-natural Alliance	Tamarisk scrub	SNA/ GNA	18.0	Tamarisk spp. shrubland semi-natural alliance is dominated by tamarisk species

Table 5.4-7: Summary of Vegetation Communities and Land Cover Within the BIG Footprint				
Unvegetated Channel	N/A	No rank	28.2	Unvegetated channel consists of dry ephemeral or intermittent washes lacking plant cover in the active floodplain. Topographically, unvegetated channel is gently sloped in the direction of downstream flow. Soils are generally sandy with some granules throughout.
Land Use				
Developed	Developed	No rank	349.5	Developed Land within the BIG footprint include BNSF's existing mainline, roads, commercial buildings, residences, substations, storage yards, and paved or graded surfaces. There is little to no native vegetation, though ornamental species may be present at low cover.
Disturbed	Disturbed	No rank	633.7	Disturbed Land within the BIG footprint is highly variable and characterized by having no vegetation cover to being dominated by non-native Mediterranean grass or Russian thistle. Native plants are present at very low cover and include four-wing saltbush, allscale saltbush, desert dicoria, desert mallow, white mallow, and annual ambrosia. Other non-native species present include common barley and red-stemmed filaree
Notes: Global Rarity Ranks: G4: Worldwide >100 occurrences and/or >12,950 hectares G5: Demonstrably secure because of its worldwide abundance GNR: Unranked, global rank not yet assessed. State Rarity Ranks: S3: Statewide 21-100 occurrences and/or 2,590-12,950 hectares S3.2: Plants about which we need more information; fairly threatened in California. S4: Statewide >100 occurrences and/or >12,950 hectares S5: Demonstrably secure because of its worldwide abundance SNR: Unranked, State rank not yet assessed.				

Critical Habitat

The FESA defines critical habitat as a specific geographic area, or areas, which contains features essential for the survival and recovery of endangered and threatened species (Critical Habitat). USFWS designates Critical Habitat for endangered and threatened species and may include sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Critical Habitat may also include areas that are not currently occupied by the species, but that will be needed for its recovery. Special management of Critical Habitat, including measures for water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types is required to ensure the long-term survival and recovery of the identified species.

Although USFWS-designated Critical Habitat for desert tortoise occurs within three miles of the BIG footprint, no USFWS-designated Critical Habitat is present within the BIG footprint for any special status wildlife.

Special-Status Plant Species

Special status plant species and their potential to occur within the BIG footprint are assessed in **Table 5.4-8: Special-Status Plant Species Potential to Occur Within the** BIG Footprint. Refer to **Table 5.4-3: California Rare Plant Ranks and Federal and** State Designations for definitions of the applicable status for each plant.

Table 5.4-8: Special-Status Plant Species Potential to Occur Within the BIG Footprint

Species	Status	Habitat Description	Potential to Occur
Barstow woolly sunflower (*Eriophyllum mohavense*)	CRPR 1B.2, BLM	Annual herb. Blooms March-May. Chenopod scrub, Mojavean desert scrub, and playas. Elevation 1,640-3,150 feet.	**Presumed absent.** Species documented within one mile of BIG, however this species was not observed during special-status plant surveys.
Beaver dam breadroot (*Pediomelum castoreum*)	CRPR 1B.2, BLM	Perennial herb. Blooms April-May. Mojavean desert scrub and Joshua tree woodland. Elevation 2,000-5,005 feet.	**Presumed absent.** Species documented within one mile of the BIG footprint, however this species was not observed during special-status plant surveys.
California alkali grass (*Puccinellia simplex*)	CRPR 1B.2, BLM	Annual herb. Blooms March-May. Chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation 5-3,050 feet.	**None**. Suitable habitat absent.
Chaparral sand-verbena (*Abronia villosa* var. *aurita*)	CRPR 1B.1, BLM	Annual herb. Blooms (January) March-September. Chaparral, coastal scrub, and desert dunes. Elevation 245-5,250 feet.	**Presumed absent**. Suitable habitat present but limited. Species known range largely west of the BIG footprint, although there are historical occurrences within three miles of the BIG footprint (outside of the study area).
Creamy blazing star (*Mentzelia tridentata*)	CRPR 1B.3	Annual herb. Blooms March-May. Mojavean desert scrub. Elevation 2,295-3,855 feet.	**Presumed absent.** Suitable habitat present however, this species was not observed during special-status plant surveys.
Darlington's blazing star (*Mentzelia puberula*)	CRPR 2B.2	Perennial herb. Blooms March-May. Mojavean desert scrub and Sonoran desert scrub. Elevation 295-4,200 feet.	**Presumed absent**. Suitable habitat present but species range is approximately 12 miles southeast of the BIG footprint.
Desert cymopterus (*Cymopterus deserticola*)	CRPR 1B.2, BLM	Perennial herb. Blooms March-May. Joshua tree woodland and Mojavean desert scrub. Elevation 2,065-4,920 feet.	**Presumed absent**. Suitable creosote bush scrub habitat present but species not documented in BIG's vicinity.
Emory's crucifixion-thorn (*Castela emoryi*)	CRPR 2B.2	Perennial deciduous shrub. Blooms (April) June-July (September-October). Mojavean desert scrub, playas, and Sonoran desert scrub. Elevation 295-2,380 feet.	**Presumed absent.** This species was not observed during special-status plant surveys. Species known range is entirely east of the BIG footprint.

Table 5.4-8: Special-Status Plant Species Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
Jackass clover (*Wislizenia refracta ssp. refracta*)	CRPR 2B.2	Annual herb. Blooms April-November. Desert dunes, Mojavean desert scrub, playas, and Sonoran desert scrub. Elevation 1,970-2,625 feet.	**Presumed absent**. Suitable habitat present but species not documented in BIG's vicinity.
Mojave menodora (*Menodora spinescens var. mohavensis)*	CRPR 1B.2, BLM	Perennial deciduous shrub. Blooms April-May. Mojavean desert scrub. Elevation 2,265-6,560 feet.	**None**. Suitable microhabitat areas absent. This species is found in areas with andesite gravel, rocky hillsides, and canyons, which are absent.
Mojave monkeyflower (*Diplacus mohavensis*)	CRPR 1B.2, BLM	Annual herb. Blooms April-June. Mojavean desert scrub and Joshua tree woodland. Elevation 1,970-3,935 feet.	**Presumed absent.** Species documented within one mile of BIG, however this species was not observed during special-status plant surveys.
Parish's phacelia (*Phacelia parishii*)	CRPR 1B.1, BLM	Annual herb. Blooms April-May (June-July). Mojavean desert scrub and playas. Elevation 1,770-3,935 feet.	**Presumed absent.** Species was not observed during special-status plant surveys.
Spiny-hair blazing star (*Mentzelia tricuspis*)	CRPR 2B.1	Annual herb. Blooms March-May. Mojavean desert scrub. Elevation 490-4,200 feet.	**Presumed absent.** Species was not observed during special-status plant surveys.
Western Joshua tree (*Yucca brevifolia*)	SC	Perennial shrub to tree. Blooms March-June. Found on desert flats and slopes in Joshua tree woodland and other desert scrub habitats. Elevation 1,300-7,550 feet.	**Present.** The species is present on developed land adjacent to Route 66, north of Lenwood Channel likely as planted ornamental trees. Wild populations of this species are not known to occur in BIG's vicinity and were not observed during special status plant surveys.

Note:
BLM: Bureau of Land Management Sensitive Species
SC: State Candidate for listing under the California Endangered Species Act
California Rare Plant Ranking (CRPR):
1A presumed extirpated in California and rare or extinct elsewhere
1B rare, threatened, or endangered in California and elsewhere
2A presumed extirpated in California but more common elsewhere
2B rare, threatened, or endangered in California but more common elsewhere
3 plants for which more information needed
4 plants of limited distribution
California Threat Ranks:
0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Threatened and Endangered Plant Species

As identified in **Table 5.4-8: Special-Status Plant Species Potential to Occur Within the BIG Footprint**, no federally or state-listed as threatened or endangered plant species were observed during general biological field surveys within the BIG footprint, and none have a moderate or high potential to occur based on the lack of suitable habitats within the BIG footprint. Western Joshua tree, a State Candidate for listing, are present within the BIG footprint.

Western Joshua Tree. A total of 33 western Joshua trees (including dead individuals) were documented within the BIG footprint and a 50-foot-wide buffer, including 12 Class A, 13 Class B, and 8 Class C western Joshua trees. The trees occur within developed land in the eastern portion of the BIG footprint. Observed trees within the BIG footprint are assumed to be ornamentally planted due to their proximity to developments and the lack of western Joshua trees in the natural habitats within the BIG footprint.

Other Special-Status Plant Species

Thirteen non-listed special status plant species were identified to have potential to occur based on the presence of suitable habitat and previously recorded observations within three miles of the BIG footprint (**Table 5.4-8: Special-Status Plant Species Potential to Occur Within the BIG Footprint**). However, none of these special status species were observed during focused surveys and are either presumed absent from or have no potential to occur in the BIG footprint. As such, no impacts are anticipated to these species and they are not discussed further in this section. Two non-listed species, Mojave fishhook cactus (*Sclerocactus polyancistrus*) and Mojave indigo bush (*Psorothamnus arborescens* var. *arborescens*) were documented within the BIG footprint during the 2023 special status plant survey. Mojave fishhook cactus and Mojave indigo bush are CRPR list 4.2 and 4.3 species, respectively, meaning that the plants are considered Watch List species in need of monitoring; however, evaluation for impact significance under CEQA is not required. No other CRPR or BLM Sensitive Species were observed during the special status plant survey within the BIG footprint.

County of San Bernardino Desert Native Plants

The BIG footprint has the potential support plants regulated under the County of San Bernardino Development Code. During special-status plant surveys conducted in 2025, creosote rings, *Prosopis* sp., Mojave yucca, desert holly, and the previously mentioned western Joshua tree and Mojave fishhook cactus were observed. No other regulated species were observed during surveys.

Special-Status Wildlife Species

An analysis of the potential for special status wildlife to occur in the BIG footprint is provided in **Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the** BIG Footprint. Species that were not observed within the BIG footprint or survey area and are designated as 'None' or 'Low' potential to occur in **Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint** are not addressed further as no impacts are anticipated to these species. Additional information about these species and their potential to occur can be found in **Appendix 5.4 BIG-1**.

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
FISH			
Mohave tui chub (Siphateles bicolor mohavensis)	FE, SE	Formerly found in deep pools and slough-like areas of the Mojave River, this species now only occurs in highly modified refuge sites in San Bernardino County.	**None**. Suitable habitat absent.
INVERTEBRATES			
Monarch (*Danaus* plexippus)	FC (California overwintering population)	Found in open fields and meadows with milkweed in the summer. Found in various habitats with nectar sources during the winter. Roost in eucalyptus, Monterey pines, and Monterey cypresses in California.	**None**. Suitable habitat absent.
Crotch's bumble bee (*Bombus crotchii*)	SC	Found in arid shrublands and grasslands in coastal and foothill areas of southern California. Nectar plants include *Salvia* spp., Lupinus spp., *Phacelia* spp., buckwheats, and lupines.	**None.** Although BIG occurs along the eastern edge of the current known range, the arid climate and lack of preferred nectar sources precludes BIG from supporting the species year round. is not suitable to support the species year round.
AMPHIBIANS			
Arroyo toad (*Anaxyrus californicus*)	FE, SSC	Alluvial washes and slow-moving streams with shallow ponds. Find sand is required for burrowing.	**None**. Suitable breeding habitat absent. Per coordination with USFWS, this species is not expected to occur in the area.
REPTILES			
Desert tortoise (*Gopherus agassizii*)	FT, ST	Burrows in firm sandy or gravelly soils along creosote bush flats, riverbanks, washes, dunes, alluvial fans, hillsides, and canyons, often containing rocky areas.	**Present**. Species observed during focused surveys.
Mojave fringe-toed lizard (*Uma scoparia*)	SSC, BLM	Sparsely vegetated dunes, flats, riverbanks, and washes containing loose sands for burrowing.	**Present**. Species observed during focused surveys.
BIRDS			
American white pelican (*Pelecanus erythrorhynchos*)[2]	SSC, BCC	Nests on isolated islands in freshwater lakes or ephemeral islands in shallow wetlands.	**None**. Suitable habitat absent.
Bell's sparrow (*Artemisiospiza belli*)	WL	Found in sagebrush, alkali desert scrub, and desert scrub in low, dense stands of shrubs. Frequently associated with *Atriplex* spp. in desert habitats.	**Foraging: Present**. **Nesting: Moderate-to-High.** Suitable nesting habitat present.
Bendire's thrasher (*Toxostoma bendirei)*	SSC, BCC, BLM	Found in flat areas of desert succulent shrub in the Mojave Desert. Prefers open areas with short vegetation.	**Foraging: Low**. **Nesting: Low**. Not known from the BIG footprint vicinity. Little to no

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
		Nests in cactus, thorny shrubs, and small trees.	cacti or succulents on the BIG footprint. Not observed during biological surveys.
Black-tailed gnatcatcher (*Polioptila melanura*)	WL	Found in desert scrub, including washes densely lined with creosote and salt bush as well as areas studded with ocotillo, prickly pear, cholla, and mesquite.	**Foraging: Present**. Observed within tamarisk thickets along the Mojave River during 2021 and 2022 focused least Bell's vireo surveys. **Nesting: Moderate**. Suitable nesting habitat occurs within tamarisk thickets in near the BIG footprint.
Cooper's hawk (*Accipiter cooperii*)[1]	WL	Usually found in oak woodlands but occasionally in willow or eucalyptus woodlands as well as ornamental woodlands in suburban settings.	**Foraging: Present**. Observed within the riparian habitat south of Hinkley Road during 2022 focused yellow-billed cuckoo surveys. **Nesting: Low-to-Moderate.** Ornamental trees suitable for nesting occur within scattered residences on site.
Costa's hummingbird (*Calypte costae*)[1]	BCC	Found in Sonoran and Mojave Desert scrub, coastal California chaparral and sage scrub, and deciduous forest and desert scrub in Baja California, Mexico.	**Foraging: Present**. Observed during 2022 focused surveys for yellow-billed cuckoo and least Bell's vireo near the Hinkley Road Bridge. **Nesting: Moderate**. Suitable nesting habitat present.
Ferruginous hawk (*Buteo regalis*)[5]	WL	Found in open grasslands, agricultural areas, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats.	**Foraging: High**. Known to occur in in BIG's vicinity. Suitable foraging habitat present. **Nesting: None.** Species does not nest in California.
Golden eagle (*Aquila chrysaetos*)[4]	FP, WL, BLM	Found in mountainous canyonlands, deserts, agricultural fields, and semi-open habitats.	**Foraging: Present**. Observed flying in BIG's vicinity during 2023 focused burrowing owl surveys. **Nesting: None**. Suitable nesting habitat absent.
Lawrence's goldfinch (*Spinus lawrencei*)[1]	BCC	Found in dry, open oak woodlands, coastal scrub, pinyon pine-juniper woodlands and streamside habitats.	**Foraging: None**. **Nesting: None**. Suitable habitat absent.
Least Bell's vireo (*Vireo bellii pusillus*)[1]	FE, SE	Found in riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian.	**Foraging: Low.** Species was not documented during focused surveys in 2021, 2022, or 2023. **Nesting: Low.** Marginally suitable nesting habitat present.

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint

Species	Status	Habitat Description	Potential to Occur
Le Conte's thrasher (*Toxostoma lecontei*)	SSC, BCC	Found in saltbush scrub, creosote bush scrub, and other lightly vegetated desert scrub. Permanent resident within California range.	**Foraging: Present**. Observed during 2021 focused least Bell's vireo surveys. **Nesting: Moderate.** Suitable nesting habitat present.
Loggerhead shrike (*Lanius ludovicianus*)[1]	SSC	Found within various open habitats interspersed with shrubs and small trees, including disturbed habitats.	**Foraging: Present**. Observed during various focused species surveys in 2022 and 2023. **Nesting: Moderate.** Suitable nesting habitat present.
Long-eared owl (*Asio otus*)[1]	SSC, BCC	Roost in dense vegetation and forage in open grasslands and shrublands in elevations up to 6,500 feet.	**Foraging: Present**. **Nesting: Present.** Documented nesting pair in April 2025 during rare plant surveys in the northeastern part of the BIG footprint.
Lucy's warbler (*Leiothlypis luciae*)[1]	SSC	Primarily found in mesquite thickets; opportunistically found in palo verde, tamarisk, cottonwood, ironwood, and willow trees. Nests are placed in tree cavities.	**Foraging: Present**. Observed during 2022 focused willow flycatcher surveys and focused least Bell's vireo surveys. **Nesting: Moderate**.
Merlin (*Falco columbarius*)[5]	WL	Found in edges of grasslands and deserts. In open country, clumps of trees or windbreaks are required for roosting.	**Foraging: Moderate**. Known from local area and foraging habitat present. **Nesting: None**.
Mountain plover (*Charadrius montanus*)[5]	SSC, BCC, BLM	Species winters on large, (often agricultural) fields in southern California.	**Overwintering: None.** Agricultural fields on BIG have converted to non-native grassland and are no longer being maintained/plowed. **Nesting: None.**
Northern harrier (*Circus hudsonius*)[1]	SSC	Found within various open habitats including deserts, plains, agricultural fields, and estuaries.	**Foraging: Present**. Observed flying over the northeastern portion of the transload warehouse center footprint during 2023 focused burrowing owl surveys. **Nesting: None**. Suitable nesting habitat absent.
Olive-sided flycatcher (*Contopus cooperi*)[1]	SSC, BCC	Found along edges or within openings of semi-open to dense forests, largely composed of conifers in southern California. Broaden tree genera preferences during migration; desert migrants are found in various habitats containing trees. Nests primarily in conifers, occasionally in willows, oaks, alders, and eucalyptus.	**Foraging: Present**. Observed within tamarisk thickets along the Mojave River during 2022 focused willow flycatcher surveys and 2021 focused least Bell's vireo surveys. **Nesting: Low**. Suitable nesting habitat absent.

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
Oregon vesper sparrow (*Pooecetes gramineus affinis*)[5]	SSC, BCC	Winters on open, flat areas containing low grasslands or savannahs in southern California.	**Foraging: None.** **Nesting: None**. Suitable habitat absent.
Osprey (*Pandion haliaetus*)[1]	WL	Found near aquatic habitats; species requires aquatic habitats for prey (fish). Nests in tall, dead snags or artificial platforms.	**Foraging: Present**. Observed flying in vicinity of BIG during 2022 focused least Bell's vireo surveys. **Nesting: Low**. Suitable nesting habitat absent.
Prairie falcon (*Falco mexicanus*)[1]	WL	Found in desert shrubland and grasslands. Primarily forage in grassland habitats.	**Foraging: Present**. Observed flying over the northeastern portion of the transload warehouse center footprint during 2023 focused burrowing owl surveys. **Nesting: None**. Nesting habitat absent.
Sharp-shinned hawk (*Accipiter striatus*)[1]	WL	Found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats.	**Foraging: Present**. Observed flying over the northeastern portion of the rail yard footprint during the 2020 least Bell's vireo habitat assessment. **Nesting: None.** This species is not known to nest in southern California.
Summer tanager (*Piranga rubra*)[1]	SSC	Found in riparian habitats containing willows and cottonwoods.	**Foraging: Low.** **Nesting: Low**. Limited suitable habitat present.
Swainson's hawk (*Buteo swainsoni*)[1]	ST, BLM	Found in open habitats for foraging including grasslands, prairies, and sometimes pastures. Nest in solitary trees or sometimes very small groves near water.	**Foraging: Low to Moderate.** Observed flying over the site during 2023 riparian bird surveys and during focused surveys in 2024-2025. Preferred foraging in active agricultural fields occurs approx. one mile north of BIG. **Nesting: Low.** Pair observed nesting within one mile of BIG during 2024 focused surveys; however, potential on-site nesting habitat is of lower quality than adjacent lands and Swainson's hawk nesting is rare in the vicinity.
Tricolored blackbird (*Agelaius tricolor*) [2]	ST, BLM, SSC, BCC	Breeds near fresh water where emergent vegetation is present, including cattails, willow thickets, and tall herbs. Forages in grasslands and croplands.	**Foraging: Present**. A single individual observed within the 1,000-foot buffer of the southwestern portion of the rail yard footprint during 2023 riparian bird surveys. **Nesting: Low.**

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
Vermilion flycatcher (*Pyrocephalus rubinus*)[1]	SSC	Found in deserts, scrub, agricultural fields, parks, golf courses, and riparian woodlands, often near water.	**Foraging: Present.** An adult and juvenile were observed in an ornamental tree southwest of the former agricultural fields. **Nesting: Moderate.** Suitable habitat present at Hinkley Road Bridge.
Western burrowing owl (*Athene cunicularia hypugaea*)[3]	SSC, BLM	Found in grasslands and open scrub from the coast to foothills. Strongly associated with California ground squirrel and other fossorial mammal burrows.	**Overwintering: Present**. **Nesting: Low-to-Moderate**. Not observed breeding on site in 2022 or 2023.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)[1]	FT, SE, BLM	Found primarily in riparian forests and woodlands.	**Foraging**: **Present**. One individual was observed within the 1,000-foot buffer of the southwestern portion of the rail yard footprint during one of five focused surveys for this species. **Nesting: Low.** Only marginally suitable nesting habitat occurs within and surrounding Hinkley Road Bridge and southwestern offsite improvements, preferred willow-cottonwood riparian is absent from BIG and the surrounding areas.
Willow Flycatcher (*Empidonax traillii*)	FE[6], SE	Breeds in dense riparian forests and woodlands with structural diversity, often with open water. Restricted to a few colonies throughout southern California.	**Foraging: Present/Low-to-Moderate.** Observed during focused surveys 2022, willow flycatcher not identified. **Nesting: Low to Moderate**. Marginally suitable habitat within and surrounding Hinkley Road bridge and southwestern portion of rail yard footprint.
Yellow warbler (*Setophaga petechia*)[1]	SSC	Found within various riparian habitats and occasionally disturbed habitats.	**Foraging: Present.** **Nesting: Moderate**. Suitable nesting habitat present.
Yellow-breasted chat (*Icteria virens*)[1]	SSC	Found within various riparian habitats and occasionally disturbed and successional habitats.	**Foraging: Moderate.** Suitable riparian habitat present near Hinkley Road Bridge and southwestern offsite improvements. **Nesting: Moderate.** Suitable nesting habitat present.

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint			
Species	**Status**	**Habitat Description**	**Potential to Occur**
MAMMALS			
American badger (*Taxidea taxus*)	SSC	Found in arid, open grasslands, fields, and pastures containing firm soil for burrowing. American badger may also be found in marshes and deserts.	**Moderate to High**. Suitable habitat and burrowing substrate present.
American beaver (*Castor canadensis*)	FBM	Found in montane riparian, valley foothill riparian, riverine, lacustrine, aspen, and fresh emergent wetland habitats. Isolated populations occur in San Bernardino County.	**Present.** One adult observed swimming upstream in the Mojave River near Hinkley Road bridge.
California leaf-nosed bat (*Macrotus californicus*)	SSC, BLM	Found in desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis communities. Roosts can include caves, rock shelters, buildings, and bridges.	**Moderate**. Suitable roosting and foraging habitat present.
Desert kit fox (*Vulpes macrotis arsipus*)	FBM	Found in creosote scrub bush, desert scrub, and grassland communities.	**Present**. Observed on site during 2024 wildlife movement study. Suitable habitat and burrowing substrate present.
Mohave ground squirrel (*Xerospermophilus mohavensis*)	ST, BLM	Found in desert areas containing creosote bush scrub, shadscale scrub, alkali sinks, and Joshua tree woodlands. Sandy or friable soils are required to burrow.	**Low.** Species was not observed or otherwise documented during focused surveys in 2022 and 2025; BIG occurs outside of the species' current known range.
Mohave river vole (*Microtus californicus mohavensis*)	SSC	Found in moist meadows, irrigated fields and channels, and waterbody fringes near the Mojave River.	**None**. Suitable habitat absent.
Pallid bat (*Antrozous pallidus*)	SSC, BLM	Found primarily in open, dry habitats, such as grasslands and shrublands, that contain rocky areas for roosting. Roosts can include caves, crevices, and open buildings.	**Moderate**. Suitable roosting and foraging habitat present.
Ringtail [Ring-tailed cat] (*Bassariscus astutus*)	FP	Found in various habitats including riparian, desert scrub, chaparral, pine-oak and conifer woodland where it typically utilizes rocky areas with cliffs or crevices within 0.5 miles from water. Can also use tree hollows, tree roots, burrows, or brush piles for shelter.	**Low.** Although ephemeral water and desert scrub habitat is present on site, rocky areas and suitable daytime shelters are absent.
Spotted bat (*Euderma maculatum*)	SSC, BLM	Found in arid deserts and grasslands typically near sheer cliffs. Roosts can include rock crevices, caves, and buildings.	**Low.** Suitable foraging habitat present. Suitable roosts are absent.

Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint

Species	Status	Habitat Description	Potential to Occur
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC, BLM	Found in a wide variety of habitats. Roosts in caves, tunnels, buildings, and human-made structures. Distribution is strongly correlated with suitable open roosting habitats. This species does not roost in cracks or crevices.	**Moderate**. Suitable roosting and foraging habitat present.
Western mastiff bat (Eumops perotis californicus)	SSC, BLM	Found in desert scrub and urban areas with extensive open space for foraging and abundant roost locations provided by crevices in rock outcrops and buildings. Roost sites must be a minimum of 9.8 feet above ground to facilitate take off.	**Low.** Suitable foraging habitat present. Suitable roosts absent.
Yuma myotis (*Myotis yumanensis*)	BLM	Found commonly throughout California but is uncommon in the Mojave and Colorado desert regions. Species roosts in buildings, mines, caves, crevices, abandoned swallow nests, and under bridges. Separate, often more open, night roosts may be used.	**Moderate.** Suitable roosting and foraging habitat present. This species was believed to have been observed during special-status bat surveys; however, identification could not be confirmed.

Notes:
BCC: USFWS Bird of Conservation Concern
FBM: California Furbearing Mammal, protected from take (14 CCR § 460 or 463)
FC: Federal candidate for listing under ESA
FE: Federally Endangered
FP: CDFW Fully Protected
FT: Federally Threatened
SE: State Endangered
ST: State Threatened
BLM: Bureau of Land Management Sensitive Species
SSC: CDFW Species of Special Concern
WL: CDFW Watch List
[1] CNDDB, administered by CDFW, only tracks documented nest sites and behavior indicating reproduction for this species
[2] CNDDB, administered by CDFW, only tracks detections of nesting colonies for this species
[3] CNDDB, administered by CDFW, tracks detections of burrow sites and some wintering sites for this species
[4] CNDDB, administered by CDFW, tracks detections of nest sites, behavior indicating reproduction, and wintering locations for this species
[5] CNDDB, administered by CDFW, only tracks detections of wintering locations for this species
[6] Only the subspecies of willow flycatcher is listed under the ESA

Source: **Appendix 5.4 BIG-1: Biological Resources Technical Report.**

As identified in **Table 5.4-9: Special-Status Wildlife Species with Potential to Occur Within the BIG Footprint**, five federally and/or state-listed endangered or threatened species were documented within the BIG footprint. One federally and state-listed as threatened species, desert tortoise, was observed within the BIG footprint during focused surveys in October 2021, February 2022, April 2023, September 2024, and October 2024. The federally listed as threatened and state-listed as endangered yellow-billed cuckoo was observed during focused surveys in June 2023. The state-listed as endangered willow flycatcher was observed during focused surveys in 2022, as well as incidentally during other species' surveys. The state-listed as threatened Swainson's hawk and tricolored blackbird were observed incidentally during focused riparian bird surveys in July 2023 and June 2023, respectively. Swainson's hawk

was also observed within and adjacent to the BIG footprint, including nesting off site, during focused surveys conducted in 2024 and 2025. Western burrowing owl, a candidate for State-listing, was observed over wintering but not nesting within the BIG footprint during surveys. No other federally or state-listed endangered, threatened, or candidate wildlife species have been documented within or adjacent to the BIG footprint during focused species surveys.

Although not documented within the BIG footprint, four federally and/or state-listed endangered or threatened species have been reported within three miles of the BIG footprint, including arroyo toad (*Anaxyrus californicus*), least Bell's vireo, Mohave ground squirrel, and willow flycatcher. Arroyo toad is not anticipated to occur within the BIG footprint and is not further discussed in this section.

Nineteen non-listed special status wildlife species were documented within and adjacent to the BIG footprint during general biological surveys and incidentally during focused species surveys from 2020 through 2025. These non-listed special status wildlife species include CDFW SSC, CDFW WL species, CDFW FP species, California FBM, BLM Sensitive species, and USFWS Bird of Conservation Concern (BCC) species. In addition to the 19 non-listed special status species that were documented during surveys, several other non-listed special status wildlife species have historical records within three miles of the BIG footprint and have a "Moderate" to "High"' potential to occur within the BIG footprint. Complete survey results are presented in **Appendix 5.4 BIG-1**.

Threatened and Endangered Wildlife Species

Desert Tortoise. The desert tortoise is federally and state-listed as threatened. This species ranges across the Mojave, Sonoran, and Colorado deserts and occupies desert scrub, desert washes, and Joshua tree woodland habitats at elevations between below sea level to 7,220 feet. Desert tortoise is most active between the months of March and June and may remain active year-round dependent on food availability and environmental conditions. This species excavates burrows in friable soils, often under shrubs and on slopes, to provide shelter and serve as a nest. Desert tortoise primarily feed on annual forbs and grasses.

Focused presence/absence surveys were conducted from 2021-2024. No desert tortoise were observed during the 2021 survey, but two Class 1 burrows and two Class 2 burrows were found within the northern-central portion of the BIG footprint. Of the two Class 1 burrows observed, was likely occupied at the time of the survey due to the presence of fresh tracks and scat. In 2022, an adult desert tortoise and a Class 1 burrow were observed within the central-southwestern portion of the BIG footprint. During the May and September, and October 2023 surveys, no desert tortoise or sign were observed within the portion of the BIG footprint surveyed. During the October 2023 survey, one desert tortoise and seven Class 1 burrows were observed within the 500-foot-wide buffer surrounding the BIG footprint. In 2024, no desert tortoise individuals, sign, or active burrows were observed in the portion of the BIG footprint during the April and May surveys. Surveys later in 2024 observed no desert tortoise within the BIG footprint but three desert tortoise were observed within the buffer around the BIG footprint. One desert tortoise carcass was also found and was assumed to be the individual observed in the buffer around the BIG footprint in 2023. One Class 1 burrow and several Class 2 burrows were observed in the BIG footprint. Four Class 1 burrows, 19 Class 2 burrows, and four Class 3 burrows were identified and 13 Class 4 and 5 "possible" burrows were observed in the buffer around the BIG footprint. Eight incidental observations of desert tortoise were also

recorded during other focused species surveys in 2023. Complete survey results are presented in **Appendix 5.4 BIG-1**.

Based on the results of the focused surveys, the formula described in the *Mojave Desert Tortoise Pre-Project Survey Protocols* was used to estimate the number of desert tortoise with a carapace length greater than or equal to 180 mm. An estimate of approximately two adult desert tortoise occupying the BIG footprint was calculated using the formula.

Mohave Ground Squirrel. Mohave ground squirrel is state-listed as threatened. This species occurs in the Mojave Desert in portions of Inyo, Kern, Los Angeles, and San Bernardino Counties. The Mojave River is recognized as the southeastern range limit of Mohave ground squirrel; however, the species has occurred beyond the Mojave River, as far as Lucerne Valley. Mohave ground squirrel inhabits desert scrub, alkali desert scrub, and Joshua tree woodland habitats.

Current research suggests that the eastern range of Mohave ground squirrel has shifted westward due to development pressure and habitat conversion in the west Mojave Desert. Recent trapping studies in the Barstow region have not detected Mohave ground squirrel in the immediate vicinity of the BIG footprint, including surveys conducted in Barstow and Hinkley from 2013 to 2020. Additional trapping efforts conducted southwest of Barstow from 1998 to 2007 also yielded negative results for Mohave ground squirrel. Edwards Air Force Base has the closest known core population of the species which is approximately 30 miles west of the BIG footprint, while there are a recent observations in Hinkley Valley and Victor Valley.

Although BIG is located along the southeastern edge of the historic range for Mohave ground squirrel, the species was not documented within the BIG footprint during protocol trapping surveys conducted in 2022 and 2025. Suitable creosote bush and allscale scrub habitat for Mohave ground squirrel is present within the BIG footprint. However, Mohave ground squirrel is considered absent from the BIG footprint based on recent survey results and current literature. Complete habitat assessment and survey results are presented in **Appendix 5.4 BIG-1**.

Willow Flycatcher. Willow flycatcher is federally and state-listed as endangered. The willow flycatcher is one of southern California's rarest birds, restricted to riparian forest and woodland habitats. Subspecies of willow flycatcher are very similar in appearance and can be differentiated using specialized equipment to identify subtle differences in color and morphology. The willow flycatcher generally is paler than other willow flycatcher subspecies. Additionally, breeding locale can be used to help differentiate subspecies on breeding grounds.

The willow flycatcher breeds throughout much of the southwestern United States in riparian woodland, typically adjacent to or even over water. Surface water or saturated soil is usually present in or adjacent to willow flycatcher nesting sites. It uses riparian woodland that has a canopy and an understory of shrubs or saplings. Typically, the habitat is dominated by willows although willow flycatcher has also been documented breeding within habitats composed of alder (*Alnus* spp.), ash (*Fraxinus* spp.), coast live oak, and even stands of non-native tamarisk (*Tamarix* spp.). Because the willow flycatcher frequently nests

adjacent to water, aquatic plants such as cattail (*Typha* spp.) and bulrush (*Schoenoplectus* spp.) are also typical of willow flycatcher habitat.

The willow flycatcher's breeding range includes southern California, Arizona, New Mexico, southwestern Colorado, and extreme southern portions of Nevada and Utah. Occupied willow flycatcher nesting habitat at low- and mid-elevation sites typically includes dense willows and native broadleaf trees with a height from 3 to 15 meters; characterized by trees of different size classes; often a distinct overstory of cottonwood (*Populus* spp.), willow or other broadleaf tree, with recognizable sub-canopy layers and a dense understory of mixed species; exotic or introduced species may be a rare component, particularly in the understory. The willow flycatcher's breeding season extends from approximately May 15 through July 16, with peak nesting activity typically occurring in mid-June.

During the 2022 focused willow flycatcher surveys, several willow flycatchers were observed during the first two surveys passes, and incidentally until June 15 during 2022 focused least Bell's vireo surveys. No evidence of breeding was observed, and willow flycatchers observed from May 15 to June 24 are considered migrants unless breeding; therefore, these individuals were assumed to be migrants and not nesting willow flycatchers. Another three willow flycatchers were incidentally observed on August 11 during 2022 focused yellow-billed cuckoo surveys. It is undetermined whether these individuals were willow flycatchers that bred locally and were observed during post-breeding dispersal or if they were migrating willow flycatchers. Although no willow flycatchers were observed in 2023, the subspecies of willow flycatcher still has low-to-moderate potential to occur. Complete survey results are presented in **Appendix 5.4 BIG-1**.

Swainson's Hawk. Swainson's hawk is state-listed as threatened. Current breeding occurs in the Central Valley, in sparsely foliated juniper-sage flats, riparian areas, and oak savannahs, and throughout the Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Infrequent breeding also occurs across Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. August through September, Swainson's hawk migrates from North America, south to Argentina, returning to the northern hemisphere to nest in March through August. Swainson's hawk migrates south through central and southern California in September and October, travelling towards northern California in March through May.

Nesting occurs in trees and shrubs or on top of utility poles near foraging sites. In urban areas across the Central Valley, Swainson's hawk prefers mature coniferous trees. In southern California, nesting is known to occur in cottonwoods and sycamores. Accessibility to foraging habitat is positively correlated with nesting, particularly in urban areas. Grasslands, open desert areas, or agricultural fields with sparsely dispersed trees are essential for hunting; prey items, which include rodents, lagomorphs, ground squirrels, and arthropods. Roosting occurs in large trees, if available near foraging grounds, or within grasses.

During focused surveys conducted in 2024, six Swainson's hawks were observed flying through the BIG footprint near Hinkley Bridge. These individuals were observed in flight only once; therefore, it is assumed they were migrating through the survey area. Swainson's hawks were not observed within the BIG footprint during any of the other surveys. However, approximately one mile north of the BIG footprint, a Swainson's hawk pair was confirmed nesting. Focused surveys during 2025 have documented more than ten Swainson's hawk individuals foraging in agricultural fields north of the BIG footprint near the historic

nesting site; however, nesting activity has not been observed. Swainson's hawk has also been observed flying north over dune habitat in the northern project footprint during 2025 focused plants surveys.

The agricultural fields north of the BIG footprint provide high quality foraging habitat for Swainson's hawk, as evidenced by nearby nesting in 2024 and continued foraging activity in the area. Although the BIG footprint supports suitable open foraging habitat, the 2025 survey results indicate that Swainson's hawk is selectively foraging in the agriculture fields over the natural communities within the BIG footprint. Cottonwoods and other native trees within riparian thickets near the Mojave River as well as mature ornamental trees throughout BIG may provide suitable nesting habitat for this species; however, suitable nesting trees are also available adjacent to the off-site high-quality agricultural foraging habitat and Swainson's hawk has never been documented nesting within the BIG footprint.

Tricolored Blackbird. Tricolored blackbird is state-listed as threatened. Tricolored blackbirds nest in large colonies near open water in emergent marsh or riparian vegetation, near abundant insect prey. Suitable nesting vegetation includes cattails, tules (*Scirpus*.spp.), nettles (*Urtica* sp.), thistles (*Cirsium* sp.), willows, Himalayan blackberry (*Rubus discolor*), and less commonly, tamarisk, and cottonwood (*Populus* spp.). Tricolored blackbirds breed from mid-March to early August and migrate south from within their resident range (e.g., from Sacramento to the northern San Joaquin Valley) during winter months.

A single tricolored blackbird was observed flying over the southwestern portion of the rail yard footprint during 2023 focused riparian bird surveys. Riparian vegetation including tamarisk as well as agricultural land within the survey area may provide marginally suitable nesting habitat for this species. Additionally, ample orthopteran prey occurs throughout the BIG footprint, near potential nesting sites. The agricultural fields also provide suitable foraging habitat for this species.

Western Burrowing Owl. The western burrowing owl (burrowing owl) is a Candidate for Listing under CESA, a CDFW SSC at nesting and some wintering sites, is a USFWS BCC, and is federally protected by the MBTA. The western subspecies of burrowing owl breeds from southern Canada to the western half of the United States and into Baja California and central Mexico. In California, suitable habitat for burrowing owl is generally characterized by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils, such as naturally occurring grassland, shrub steppe, and desert habitats. Burrowing owl may also occur in agricultural areas, ruderal grassy fields, vacant lots, and pastures containing suitable vegetation structure and useable burrows with nearby foraging habitat. Burrowing owl usually use burrows dug by California ground squirrel (*Otospermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) and dens or holes dug by other fossorial species including badger, coyote (*Canis latrans*), and kit fox (*Vulpes macrotis*). It also frequently use natural rock cavities, debris piles, culverts, pipes, and artificial burrows for nesting and roosting.

Focused breeding and non-breeding season burrowing owl surveys were conducted within the BIG footprint. During the non-breeding season between October 16, 2021, and January 12, 2022, focused presence/absence surveys were conducted and nine burrowing owl of unknown ages were documented within the rail yard and transload warehouse center portions of the BIG footprint. Biologists also documented 27 suitable burrows, 13 of which had burrowing owl sign (e.g., pellets, whitewash, and/or feathers) and one being actively used by a burrowing owl.

During the breeding season between April and August 2022, approximately 495 acres within the rail yard and transload warehouse center portions of the BIG footprint were surveyed and yielded negative results for live burrowing owl individuals, although suitable burrows and sign were documented. Twelve burrows with burrowing owl sign were recorded, although active burrows with recent sign were not documented.

During the subsequent breeding season between February and July 2023, the remaining 4,600 acres of the BIG footprint consisting of the portions of the transload warehouse center and rail yard, solar farm, and Tortilla substation improvements plus a 500-foot-wide buffer were surveyed and yielded negative results for live burrowing owl individuals. Within the remaining portions of the transload warehouse center and rail yard portions of the BIG footprint, a total of 112 burrows were observed (including burrows observed during 2021-2022 surveys), of which 76 were determined to be suitable for burrowing owl; burrowing owl sign, including whitewash, pellets, and feathers were present at 16 of these burrows. None of the observed sign was determined to be fresh and from the current breeding season. Within the solar farm portion of the BIG footprint, a total of 40 burrows were recorded, 18 of which were determined to be suitable for burrowing owl; burrowing owl sign, including whitewash, pellets, and feathers were present at four of these burrows. None of the observed sign was determined to be fresh and from the current breeding season. Within the Tortilla substation improvements portion of the BIG footprint, no live owls were documented and 10 suitable unoccupied burrows were recorded.

Burrowing owl was observed incidentally during desert tortoise focused presence/absence surveys in fall 2024. At least one individual was observed using a burrow within the southern portion of Lenwood Channel at various times from September 2024 to January 2025. Burrowing owl was also seen flying over the BIG footprint in September 2024. Additionally, burrowing owl was observed using a burrow in the agricultural fields within the southwestern portion of the transload warehouse center footprint at various dates in October 2024. Burrowing owl is assumed to be present on site due to the incidental observations as recent as January 2025.

Western Yellow-Billed Cuckoo. The western yellow-billed cuckoo is federally listed as threatened and state listed as endangered. It inhabits riparian areas exclusively, typically nesting in low to moderate elevation riparian woodlands with native broadleaf trees. The species is generally observed in cottonwood-willow-dominated habitats, though riparian cover can vary. In California, habitat often consists of willow species and Fremont cottonwoods (*Populus fremontii*) multi-structured riparian vegetation greater than 50 acres (20 hectares), 70 percent or more canopy cover, and a minimum width of 100 meters and connectivity to nearby habitats. The yellow-billed cuckoo is migratory and breeds throughout the southwestern United States between late May and early September.

One yellow-billed cuckoo was heard vocalizing during focused surveys in July 2023 within the 1,000-foot-wide buffer around the BIG footprint. The vocalizing individual was presumed to be alone and was heard repeatedly calling, likely in response to broadcast vocalization repeatedly called for approximately 20 minutes before moving towards the Mojave River. It also appeared to forage on the numerous grasshoppers in the area. When the surveying biologist returned to the same area on July 4, 2023, the individual was not heard or seen again, nor during any subsequent survey visits. Due to the single

observation, this individual was not likely breeding within the 1,000-foot buffer. Complete survey results are presented in **Appendix 5.4 BIG-1**.

Although the yellow-billed cuckoo has potential to breed within the Mojave River corridor and marginally suitable habitat is present within the BIG footprint in the form of tamarisk thickets mapped within and around the Hinkley Road Bridge, willow and cottonwood-dominated habitats with perennially flowing water (the preferred habitat of this species) are absent from the BIG footprint and the immediately surrounding areas. Although detected during a single survey within the 2023 breeding season, the individual was likely a migrant passing through the areas. Considering the lack of preferred nesting habitat, yellow-billed cuckoo has moderate potential to migrate through the BIG footprint and low potential to nest within the BIG footprint.

Non-Listed Special-Status Wildlife Species

American Badger. American badger is a CDFW SSC found throughout most of California. American badgers are carnivorous; they primarily feed on mammals such as ground squirrels and pocket gophers, but will also eat reptiles, insects, earthworms, eggs, birds, and carrion. They inhabit various dry habitats with friable soils suitable for digging burrows, which are essential for survival. They typically reused old burrows, but some may dig a new den each night.

Badgers are considered ecosystem engineers meaning they significantly modify their environment in a way that provides or maintains microhabitats for other species that would otherwise cease to exist. American badger dens are utilized by a wide variety of species including special status species such as the desert tortoise and the burrowing owl. The intensive digging and resulting biopedturbation performed by this species lead to an increase in soil nutrient cycling, fungal growth, cryptobiotic crust formation, and fertile land for vascular plants. American badgers are born underground and rely on natal burrows for protection during development, making them especially vulnerable to land clearing construction activities. Badgers may be found within environments altered by human activities; however, this species has been heavily impacted by trapping and poisoning.

American badger was not detected during field surveys; however, suitable habitat and burrowing substrate was observed throughout the BIG footprint. Due to the presence of suitable burrowing substrate and co-occurring burrowing species such as desert tortoise and burrowing owl, the American badger has a moderate to high potential to occur.

American Beaver. American beaver typically occurs in montane riparian, valley foothill riparian, riverine, lacustrine, aspen, and fresh emergent wetland habitats; however, isolated populations are known to occur in San Bernardino County within areas of the Mojave River containing permanent water. The species is dependent on water for cover from predators where they often construct their lodges for refuge and young rearing; however, they have also been known to dwell in burrows in muddy banks. American beavers are non-migratory and are known to establish home ranges of up to 36 acres in the San Bernardino Mountains, which usually consists of one adult pair and offspring.

One American beaver was incidentally observed swimming upstream in the Mojave River near Hinkley Road bridge during 2024 focused nesting Swainson's hawk surveys. No other American beaver sign,

including tracks, cut vegetation, lodges, or dams, were observed during surveys. The solitary American beaver observed in 2024 likely traveled from an upstream area of the river that flows perennially. The species is not anticipated to construct burrows or otherwise dwell immediately adjacent to the BIG footprint since the section of the Mojave River near the BIG footprint does not contain permanent water throughout the year. American beaver may be present in the vicinity of the BIG footprint for a relatively short duration, specifically only when the Mojave River has enough flowing water to support the species.

Bell's Sparrow. Bell's sparrow is a CDFW WL species that was once considered a subspecies of sage sparrow, which the American Ornithological Society (AOS) split into two species, Bell's sparrow and sagebrush sparrow (*Artemisiospiza nevadensis*), in 2013. It is found in desert scrub, alkali desert scrub, chaparral, and coastal sage scrub across cis- and transmontane California. Bell's sparrows are frequently observed in low growing dense shrubs, and often seek refuge in *Adenostoma* spp., sagebrush (*Artemesia* spp.), bitterbush (*Purshia* spp.), or saltbush depending on the locality. This species primarily feeds upon insects, spiders, and seeds which they glean from the ground and shrubs. During the winter, Bell's sparrow occupies lower, drier elevations, generally with more open space.

Bell's sparrow was incidentally observed during 2021 focused least Bell's vireo surveys. Considering its affinity to saltbush, especially during winter months, this species is potentially present throughout other areas of allscale scrub habitat within the BIG footprint. Bell's sparrow breeds in moderately dense chaparral and desert scrubs. Suitable nesting habitat is present on site within creosote and allscale scrub vegetation communities; therefore, Bell's sparrow has moderate to high potential to nest on the BIG footprint.

Black-tailed Gnatcatcher. Black-tailed gnatcatcher is a CDFW WL species found in the southwestern United States and Mexico. This species inhabits semiarid and desert scrub habitats up to 7,000 feet above msl. Black-tailed gnatcatchers are well adapted to dry environments, not requiring year-round water sources, and forage almost entirely on insects among leaves and branches of desert vegetation. Nests are placed in thorny or leafy trees and scrubs with adequate shading from the sun. This species has a low tolerance for disturbance and typically does not nest in, or otherwise utilize, non-native vegetation.

This species was observed within tamarisk thickets along the Mojave River during 2021 and 2022 focused least Bell's vireo surveys. Several black-tailed gnatcatchers were observed within 1,000 feet southwest of Hinkley Road. Suitable black-tailed gnatcatcher nesting and foraging habitat occurs on site; therefore, this species has a moderate potential to occur within the BIG footprint.

California Leaf-nosed Bat. California leaf-nosed bat is a CDFW SSC and BLM-designated sensitive species. This species is found in various desert riparian, wash, and scrub habitat areas in southern California. California leaf-nosed bats are colonial roosters and will select roosts that provide protection against high daytime temperatures, including mines, caves, and occasionally buildings and bridges. Maternity roosts are formed during the late spring and early summer months with young typically born (one per female) between May and June. Young are typically weaned one month after birth. California leaf-nosed bats are primarily insectivorous and forage low over open ground for a wide variety of insect species.

California leaf-nosed bat was not observed on site during the initial bat habitat assessment and visual survey. Anabat data was collected at select locations in the BIG footprint. This species has moderate potential to occur on the BIG footprint due to the presence of potentially suitable roosting site (i.e., the Hinkley Road Bridge). The bridge is structurally capable of hosting roosting bats as it contains dark crevices and features suitable for pedal grasping. Additionally, the Hinkley Road Bridge occurs near seasonally mesic, riparian habitat adequate for foraging.

Cooper's Hawk. Cooper's hawk is a CDFW WL species when nesting. Cooper's hawk breeds throughout the United States and into Canada and Mexico. In California, Cooper's hawk nests in live oak, riparian, and other forest habitats from sea level to 9,000 feet above msl. The Cooper's hawk is tolerant of human disturbance and habitat fragmentation and nests in suburban and urban settings. Cooper's hawk hunt in open woodland and habitat edges, catching avian prey in the air, on the ground, and in vegetation. The Cooper's hawk hunts various small birds and may also hunt small mammals, reptiles, and amphibians. Their nest is typically a platform of sticks and twigs lined with bark and eggs are laid in February through June with the clutch size of four to five eggs.

Cooper's hawk was observed during 2022 focused yellow-billed cuckoo surveys. The Copper's hawk individual was observed flying within the riparian habitat south of Hinkley Road in the BIG footprint's vicinity. The species was observed again in June and September 2024 during desert tortoise surveys. Ornamental trees suitable for nesting occur along the northeastern portion of the BIG footprint, within the scattered residences occurring along National Trails Highway. Cooper's hawk has a low-to-moderate potential to nest within the BIG footprint. Additionally, Cooper's hawk may continue to forage on the site.

Costa's Hummingbird. Costa's hummingbird is a USFWS BCC when nesting. It is found year-round in southern California, southwestern Arizona, the Baja peninsula, and northwestern Mexico. Its breeding range extends further into the southwestern United States and northwestern Mexico, and its wintering range extends south to the western coast of central Mexico. In California, Costa's hummingbird inhabits Sonoran and Mojave desert scrub, chaparral, and sage scrub. In the Mojave, they are typically found in scrub and woodland habitats near springs and streams with cottonwoods, brittlebrush, and four-winged saltbush among other trees and shrubs. This species feeds on nectar and small flying insects. They nest about three to seven feet above ground in shrubs, often with little vegetative cover.

Costa's hummingbird was observed during 2022 focused surveys for yellow-billed cuckoo and least Bell's vireo very near the Hinkley Road Bridge. Suitable nesting and foraging habitat occur in trees and shrubs throughout the BIG footprint; therefore, Costa's hummingbird has moderate potential to nest within the BIG footprint.

Desert Kit Fox. Desert kit fox is protected as a CDFW fur-bearing mammal. The desert kit fox is an uncommon inhabitant of the Mojave and Colorado deserts in California where it prefers open scrub habitats such as creosote scrub and saltbush scrub. It digs burrow complexes for shelter and relies on areas that support abundant rodent population for prey.

Desert kit fox was detected with a wildlife camera during the 2024 wildlife movement study, and one individual was observed during 2024 field surveys. Additionally, desert kit fox tracks, burrow complexes,

and scat were detected during 2023 desert tortoise field surveys. Suitable habitat occurs throughout the BIG footprint, and desert kit fox is known to occur in the local area.

Ferruginous Hawk. Ferruginous hawk is a CDFW WL species found in open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats of California. In winter months, ferruginous hawks are often found in agricultural or grassland habitats in southwestern California. This species primarily hunts rodents, especially lagomorphs, by diving from open air or a perch, and occasionally consumes other small vertebrates such as lizards or birds. Ferruginous hawk is not known to nest in California; adult migration takes place mid-April to reach breeding grounds which span from Oregon to Canada. Development of wintering habitat has led to the decline of ferruginous hawks in southern California as this species tends to avoid anthropogenic structures and requires open, connected expanses of land.

Ferruginous hawk was not documented during field surveys; however, this species was documented foraging in the agricultural fields approximately one mile north of the BIG footprint during Swainson's hawk surveys in March and April 2025. Due to the presence of suitable habitat and the availability of prey species, ferruginous hawk has a high potential to winter within the BIG footprint. Ferruginous hawk is not expected to nest within the BIG footprint as it is not known to breed in California. The observations in March and April 2025 were likely migrating individuals.

Golden Eagle. Golden eagle is a CDFW FP and CDFW WL species. Golden eagle ranges from northern Mexico into Canada and Alaska in North America and is a year-round resident in most of California. The species generally inhabits open and semi-open habitats including prairie, sagebrush, alpine tundra, sparce woodland, and barren areas. Golden eagles are commonly observed soaring over rolling foothills, mountainous habitat, and arid flats. Prey items include mammals, birds, reptiles, and carrion, though lagomorphs and rodents are preferred. Golden eagles tend to move to lower elevations during winter and migrate to higher elevations following reproduction. They primarily nest on rock ledges and cliffs, but will also use trees, steep hillsides, electrical transmission structures, or the ground as a nesting substrate. Golden eagles are known to exhibit nest fidelity and to maintain alternative nest sites. Prey abundance is an important predictor of nesting territory occupancy (i.e., the use of one nest over another).

A pair of golden eagles was observed flying over the southwestern rail yard portion of the BIG footprint during 2023 focused burrowing owl surveys. The BIG footprint supports open, arid shrub habitat suitable for golden eagle foraging within allscale scrub and creosote bush scrub vegetation communities. Lagomorphic prey species (e.g., black-tailed jack rabbit [*Lepus californicus*] and Audubon cottontail [*Sylvilagus audubonii*]) were observed frequently during general and focused biological surveys. Suitable nesting habitat for golden eagle does not occur within the BIG footprint.

LeConte's Thrasher. LeConte's thrasher is designated a CDFW SSC and a USFWS BCC and is primarily found in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats with well-drained soils characteristic of alluvial fans. Though predominately insectivorous, LeConte's thrasher occasionally consumes seeds and small vertebrates. LeConte's thrasher hunts on the ground by prodding leaf litter or soils to flush prey. Nesting occurs in desert washes within dense cactus or spiny shrub cover approximately three feet above ground with sufficient shade.

LeConte's thrasher was observed throughout surveys between 2021 and 2025. Additionally, LeConte's thrasher is known to occur in the vicinity and is a resident of deserts in southern California. Suitable nesting habitat for LeConte's thrasher is present on the BIG footprint in the form of desert scrub containing suitable spiny shrubs such as saltbush (*Atriplex* sp.) and mesquite; therefore, this species has a moderate potential to nest within the BIG footprint.

Loggerhead Shrike. Loggerhead shrike is a CDFW SSC when nesting. This species is a non-migratory, year-round resident in southern California. Loggerhead shrike prefers open habitats, typically with short vegetation and scattered shrubs. This species consumes a diet mainly consisting of insects and also feeds on reptiles, birds, and small mammals. Loggerhead shrike uses a feeding technique where the bird impales prey on spines or thorns of shrubs. Therefore, loggerhead shrike suitable habitat requires vegetation with spines or thorns.

Several loggerhead shrikes were observed within the BIG footprint during various focused species surveys from 2022 to 2025. Loggerhead shrike is known to occur in the area and is a common resident in parts of southern California. Suitable loggerhead shrike nesting habitat occurs on the BIG footprint in the form of desert scrub containing suitable spiny shrubs; therefore, this species has a moderate potential to nest within the BIG footprint.

Long-eared Owl. Long-eared owl is a CDFW SSC that occurs year-round in California, although seasonal status varies regionally. Key habitat components for long-eared owl include dense cover for nesting and roosting, suitable nest platforms, and open foraging areas. Generally, the species nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. In the Mojave Desert region, long-eared owls are known to nest in tall riparian trees, such as Fremont cottonwood (*Populus fremontii ssp. fremontii*) and athel tamarisk (*Tamarix aphylla*), in ornamental yards, natural desert woodlands, and densely vegetated desert washes.

A long-eared owl nest was detected within the northeastern BIG footprint during a special-status plant species survey. On April 2, 2025, an unidentified owl was flushed from a tamarisk stand containing a stick nest; surveyors returned the following day and observed this nest occupied by an adult long-eared owl.

Lucy's Warbler. Lucy's warbler is a CDFW SSC primarily found in mesquite thickets and other riparian woodlands. This species arrives in California during summer months for breeding. Although mesquite is preferred, Lucy's warbler occasionally nests in blue palo verde (*Cercidium floridum*), willow, cottonwood, tamarisk, and ironwood (*Olneya tesota*). Nesting occurs in tree cavities and breeding has been documented within mesquite thickets associated with the Mojave River. This species' diet is almost exclusively comprised of insects.

Lucy's warblers were incidentally observed during 2022 focused willow flycatcher surveys and focused least Bell's vireo surveys. Suitable Lucy's warbler nesting and foraging habitat occurs within the BIG footprint and surrounding areas containing tamarisk thickets including the transload warehouse center footprint and southwestern portion of the rail yard footprint; therefore, potential for nesting on site and in the surrounding areas is moderate.

Merlin. Merlin is a CDFW WL species and uncommon winter migrant in the low elevations of California (i.e., less than 3,900 feet above msl). Merlin prefers coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, deserts, and herbaceous stage habitats. This species relies on a diet primarily comprised of small birds and occasionally preys on insects and small mammals. Shorelines act as particularly important hunting grounds during winter months.

Merlin was not observed within the BIG footprint. However, the BIG footprint supports grasslands and open desert scrub suitable for merlin foraging and is within the known elevational range of this species. This species is also known to occur in the area. Due to the presence of suitable habitat, the merlin has a moderate potential to occur on the BIG footprint. This species is not known to nest in California.

Mojave Fringe-Toed Lizard. The Mojave fringe-toed lizard is a CDFW SSC. This species is found in the desert regions of Inyo, San Bernardino, Los Angeles, and Riverside counties, at elevations from sea level to 3,000 feet above msl. Habitat for Mojave fringe-toed lizard consists of fine aeolian sand dunes and dry watercourses with low shrub cover.

Mojave fringe-toed lizard is largely insectivorous and consumes ants, beetles, spiders, and larvae. This species will also consume plant materials. It utilizes fine sands as cover by burrowing into the sand surface. This species is diurnal and activity levels fluctuate with seasonal temperatures. Mojave fringe-toed lizard breeds in the summer and deposits eggs into the sand.

Mojave fringe-toed lizard were observed throughout dune habitat within the transload warehouse center portion of the BIG footprint during focused surveys conducted in 2023. The highest concentration of Mojave fringe-toed lizard was observed in the central and northeastern portions of the BIG footprint. Additionally, the Mojave fringe-toed lizard population within the BIG footprint represents the western most extent of the current known range of the species. This sub-population could be of added ecological value if its members have unique genetic variation that may be beneficial to the species in allowing for adaptations to changing environmental conditions.

Northern Harrier. The northern harrier is a CDFW SSC and USFWS BCC when nesting. It breeds from sea level to 5,700 feet above msl in California's central valley. Typical habitats include meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. They are found in flat, open areas with tall dense grasses, shrubs, and edges used for nesting, cover, and foraging. Their nests are placed on the ground, usually at a marsh edge. While they usually nest in emergent wetlands or along rivers or lakes, they can nest in grasslands, grainfields, and sagebrush flats several miles from water; however, their home range usually includes fresh water.

Northern harrier was observed flying over the northeastern portion of the transload warehouse center footprint during 2023 focused burrowing owl surveys and suitable foraging habitat is present throughout the BIG footprint. However, suitable nesting habitat for northern harrier does not occur within the BIG footprint and this species is not anticipated to nest on-site.

Olive-sided Flycatcher. Olive-sided flycatcher is a CDFW SSC found along edges or within opening of semi-open to dense forest south from the Oregon to the Mexican border. Within its range, this species is associated with coniferous trees with open canopies. In California, olive-sided flycatchers primarily nest

in pines and occasionally in willows, oaks, alders, and eucalyptus. This species is considered a specialist as it primarily feeds on hymenopterous prey (i.e., wasps and bees). Olive-sided flycatchers require perches for hunting or calling and prefer to navigate open spaces within the upper third of the canopy.

Olive-sided flycatcher was documented during 2022 focused willow flycatcher surveys and during 2021 focused least Bell's vireo surveys. The BIG footprint supports suitable olive-sided flycatcher foraging habitat. However, suitable nesting habitat does not occur within the BIG footprint; therefore, this species has low potential to nest within the BIG footprint.

Osprey. Osprey is a CDFW WL species. Osprey exclusively nest near large bodies of water where fish, their primary prey, are available. Nests are made of sticks and placed on snags, dead-topped trees, cliffs, and anthropogenic structures. Open-branched trees or other perches are required near the nest for perching and landing, and nests are generally within 400 meters of fish-producing water.

Osprey was documented flying over the southwestern portion of the rail yard footprint during 2022 focused least Bell's vireo surveys. This species may also forage in the open areas surrounding the Mojave River. The section of the Mojave River which abuts BIG is intermittently inundated dependent on precipitation rates; it cannot continuously provide the quantity of fish needed to support nesting osprey. Marginally suitable nesting habitat is present only during heavy rain years; therefore, this species has a low potential to nest within the BIG footprint.

Pallid Bat. Pallid bat is a CDFW SSC and BLM-designated sensitive species. This species is a yearlong resident in California and occupies a wide variety of habitats, including grasslands, shrublands, woodlands, and mixed conifer forests. Occupied habitat areas are typically associated with the presence of rocky areas that are suitable for roosting. Pallid bats are highly sensitive to disturbances on roost sites. Pallid bats are colonial roosters and will select roosts that provide protection against high temperatures during daytime hours, including caves, mines, rock crevices, and occasionally buildings. Maternity roosts are formed in early April with young born (one to three per female) between April and July. Young are typically weaned between July and August. Pallid bats are insectivorous and forage over open ground for a wide variety of insect prey species.

Pallid bat was not observed on site during the initial bat habitat assessment and visual survey. Anabat data was collected at select locations in the BIG footprint, however review of the data and the identification of bat species was not completed. This species has moderate potential to occur on the BIG footprint due to the presence of potentially suitable roosting site (i.e., the Hinkley Road Bridge). The bridge is structurally capable of hosting roosting bats as it contains dark crevices and features suitable for pedal grasping. Additionally, the Hinkley Road Bridge occurs near seasonally mesic, riparian habitat adequate for foraging.

Prairie Falcon. Prairie falcon is a CDFW WL species when nesting. It ranges from southeastern desert northwest through the Central Valley. Typical habitats include annual grasslands, savannahs, agricultural fields, and desert scrub. They primarily nest in natural crevices or ledges on steep bluffs and cliffs up to 11,000 feet above msl.

Prairie falcon was observed flying over the northeastern portion of the transload warehouse center footprint during 2023 focused burrowing owl surveys. Suitable foraging habitat is present throughout the BIG footprint. However, suitable nesting habitat for prairie falcon is absent and this species is not anticipated to nest within the BIG footprint.

Sharp-shinned Hawk. Sharp-shinned hawk is a CDFW WL species when nesting. This species breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats in California. Sharp-shinned hawks prefer riparian habitats but are not restricted to these areas. North-facing slopes with perches are critical habitat requirements for this species. Nests are generally located near water in a dense, even-aged, single-layered forest canopy. They are considered the least common breeding accipiter in California.

Sharp-shinned hawk was observed flying over the northeastern portion of the rail yard footprint, approximately 1,700 feet northeast of Lenwood Channel during the 2020 least Bell's vireo habitat assessment. Suitable foraging habitat is present throughout the BIG footprint; however, this species does not breed in southern California and is not anticipated to nest within the BIG footprint.

Townsend's Big-eared Bat. Townsend's big-eared bat is a CDFW SSC. This species is distributed throughout California in all regions except alpine and subalpine habitats and is generally observed in areas with sufficient moisture. Historically abundant in California, Townsend's big-eared bat is now considered rare, likely due to the disturbance of roosting sites. Townsend's big-eared bat is a generally non-migratory species with high site fidelity; individuals remain within 20 miles of their roosts, even during periods of hibernation.

Roost site availability and small brood size (one offspring per litter) are limiting factors in terms of Townsend's big-eared bat population growth and maintenance. This species relies on anthropogenic structures such as abandoned buildings, mines, caves, and tunnels for roosting and hibernating. During reproduction, Townsend's big-eared bat forms maternal colonies composed of females and young; males remain near maternal roosts. Mating season occurs from November to February, with ovulation occurring in the spring. Lepidopteran prey, particularly small moths, compose the majority of this species' diet; beetles and other insects are occasionally consumed. Foraging occurs near vegetation on habitat edges or within foliage.

Townsend's big-eared bat was not observed on site during the initial bat habitat assessment and visual survey. Anabat data was collected at select locations in the BIG footprint. This species has moderate potential to occur within the BIG footprint due to the presence of a suitable roosting site (i.e., the Hinkley Road Bridge). The bridge is structurally capable of hosting roosting bats as it contains dark crevices and features suitable for pedal grasping. Additionally, the Hinkley Road Bridge occurs near seasonally mesic, riparian habitat adequate for foraging.

Yellow Warbler. Yellow warbler is a CDFW SSC when nesting. In southern California, yellow warbler nests in open-canopy lowland and foothill riparian woodlands dominated by cottonwoods, alders (*Alnus* spp.), or willows up to 8,000 feet above msl. The species is typically found in California from April to October where it holds a small territory for nesting and foraging. The yellow warbler forages for insects and spiders

in the upper canopy of deciduous trees and shrubs. It builds a cup nest 2 to 16 feet off the ground in in alders, cottonwoods, and willows and usually lays four to five eggs.

Yellow warbler was observed within the riparian habitat southwest of Hinkley Road during 2022 focused least Bell's vireo surveys. Suitable foraging habitat in the form of tamarisk thickets within the southwestern rail yard portion of the BIG footprint as well as within and surrounding Hinkley Road Bridge is present. This species has a moderate potential to nest within the BIG footprint.

Jurisdictional Aquatic Resources

The results of the formal aquatic resources delineations are presented in **Table 5.4-10: Summary of Jurisdictional Aquatic Resources Within the BIG Footprint**. Complete results of the delineations are presented in **Appendix 5.4 BIG-1**. As indicted in **Table 5.4-10: Summary of Jurisdictional Aquatic Resources Within the BIG Footprint**, the BIG footprint supports approximately 142.79 acres (259,504 linear feet) of potential non-wetland waters of the U.S. and State under USACE and RWQCB jurisdiction, respectively, and approximately 58.98 acres of vegetated streambed, 594.42 acres of unvegetated streambed (259,504 linear feet of vegetated and unvegetated streambed combined), and 62.97 acres of watercourse under CDFW jurisdiction. Further details for each aquatic resource are provided in **Appendix 5.4 BIG-1**.

In addition to the non-wetland waters, the BIG footprint contains 16 swales (S-1 through S-16) and 23 erosional features (EF-1 through EF-23) that are not expected to be jurisdictional by USACE, RWQCB, or CDFW because they did not display an observable OHWM or bed and bank, formed as a result of significant human disturbance (e.g., high-velocity sheet flow from adjacent impervious surfaces), and/or did not appear to convey flows to downstream aquatic resources via observed flow patterns, culverts, or other flow paths. Therefore, S-1 through S-16 and EF-1 through EF-23 do not provide nor affect aquatic resource functions and/or downstream beneficial uses.

Additionally, the BIG footprint contains five man-made basins (B-1 through B-5) that are not expected to be jurisdictional by USACE, RWQCB, or CDFW since they are man-made structures wholly constructed in uplands with no downstream connectivity. Consequently, B-1 through B-5 do not provide nor affect downstream aquatic resource functions and/or beneficial uses. Additionally, B-1 through B-5 lack association with a natural feature/streambed and did not support wildlife habitat.

Lastly, the project site contains one pit (P-1) which was determined to be a man-made depression within disturbed uplands containing a large amount of solid waste.

Table 5.4-10: Summary of Jurisdictional Aquatic Resources Within the BIG Footprint			
Agency	**Aquatic Resource Type**	**Acres**	**Linear Feet**
USACE	Non-Wetland Waters of the U.S.	142.79	259,504
	Total USACE Aquatic Resources	142.79	259,504
RWQCB	Non-Wetland Waters of the State	142.79	259,504
	Total RWQCB Aquatic Resources	142.79	259,504
CDFW	Unvegetated Streambed	594.42	259,504
	Vegetated Streambed	58.98	
	Watercourse	62.97	N/A[1]
	Total CDFW Aquatic Resources[2]	716.38	259,504

Note:
[1] Linear feet not calculated for watercourse to avoid redundant linear foot calculation where such areas overlap with streambed.
[2] Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus, the sum of the total rounded numbers may not directly add up in this table.

Wildlife Corridors

Wildlife corridors can consist of large, linear stretches of connected habitat (such as riparian vegetation) or as a sequence of stepping-stones across the landscape (discontinuous areas of habitat such as wetlands and ornamental vegetation), or corridors can be larger habitat areas with likely or known importance to local fauna.

Regional corridors are defined as those linking two or more large patches of habitat, and local corridors are defined as those allowing resident wildlife to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development. A viable wildlife migration corridor requires an unobstructed path between habitat areas, appropriate vegetation communities to provide food and cover for both transient species and resident populations of less mobile wildlife, and a sufficient lack of stressors and threats within and adjacent to the corridor for species to use it successfully.

Known Wildlife Corridors

Based on the desktop analysis, including review of the CDFW BIOS viewer data, the BIG footprint overlaps with five potential wildlife movement corridors: a Terrestrial Connectivity Area of Conservation Emphasis (ACE), California Desert Linkage Network, CEHC Essential Connectivity Area, and CEHC Potential Riparian Connection, and the Mojave River – Barstow/Camp Cody Linkage identified in the Missing Linkages project.

ACE. The ACE intersecting the southern portion of the BIG footprint is divided into three ranks. The southernmost portion of the ACE is ranked as an Irreplaceable and Essential Corridor (Rank 5). Rank 5 ACEs are of conservation concern considering the level of biodiversity that they support relative to the surrounding area and may represent the last available connection between two natural areas considering the surrounding land use and existing barriers in the region. The Rank 5 ACE that overlaps the BIG footprint is relatively undisturbed and contiguous with a CEHC-recognized natural landscape block that extends into the landscape beyond the western and northwestern portions of the BIG footprint.

The majority of the BIG footprint is mapped as a Rank 4 ACE which is a Conservation Planning Linkage but also contains a Rank 1 ACE over the northeastern portions of the BIG footprint. Rank 4 ACEs are still considered high quality habitat but have not yet been identified as a scarce as areas containing Rank 5 ACEs. Rank 1 ACEs are described as a Limited Connectivity Opportunity due to existing anthropogenic land use. A portion of the BIG footprint is located within a Rank 2 ACE, which is considered a Large Natural Habitat Areas.

CEHC. The CEHC California Desert Linkage Network overlaps the northern portion of the BIG footprint along the Mojave River. California Desert Linkage Network areas are determined based on size, habitat quality, nexus to adjacent ecoregions, seasonal wildlife movement, climate change resilience, aquatic resources, and potential ecological benefits of the proposed linkage. The Mojave River, which is unique to the region, provides a well-defined, open path of travel for wildlife species, allowing access to larger plots of natural habitat. Additionally, CEHC considers the Mojave River's floodplain a Potential Riparian Connection.

CEHC Essential Connectivity Areas of varying classes overlap with the northeastern portion of the BIG footprint. However, based on the field assessment, wildlife movement in this portion of the BIG footprint is highly constrained by existing residential and commercial development. This area does not provide suitable conditions for regional wildlife movement, and it is likely that this portion of the CEHC Corridor is not mapped accurately. The CEHC map was created at a state-wide scale and serves as a tool to be refined at the local and regional level. CDFW provides a disclaimer that the data provided in the CEHC varies in currentness, accuracy, scale, completeness, and extent of coverage. Based on field verification of the CEHC Essential Connectivity Area mapping, this corridor is likely much more functional outside of the BIG footprint to the east where there is considerably less development.

Missing Linkages. The Missing Linkages project identifies an approximately 79-mile Mojave River – Barstow/Camp Cody linkage that extends from Summit Terrace to Manix that is important for riparian birds, including least Bell's vireo and willow flycatcher, as well as sand transport to the Kelso Dunes. The BIG footprint overlaps with some riparian areas associated with the Mojave River, in particular the Hinkley Road Bridge improvements footprint, and also overlaps with dune habitat adjacent to the Mojave River, which could serve as a source of sand to the Kelso Dunes. As a result, BIG partially overlaps with the Mojave River – Barstow/Camp Cody linkage.

Wildlife Movement Study

The BIG footprint is also used by local wildlife populations of wildlife as a local corridor for movement, foraging, cover, and breeding as well as a corridor for movement between the larger regional blocks of habitat and regional connectivity areas beyond the BIG footprint, as described above. As documented during the general and focused species surveys conducted from 2021 to 2023, the BIG footprint provides suitable habitat for various wildlife species as a majority of the BIG footprint remains undeveloped and contains resources critical for survival. Approximately 4,600 acres within the BIG footprint contain natural habitat that allows largely unobstructed movement throughout the BIG footprint and into the surrounding areas. Additionally, wildlife may utilize the various culverts under BNSF's existing mainline track as local corridors to access the Mojave River, which allows them to safely cross below the existing mainline track

without entering the right-of-way. Therefore, open spaces south of the existing mainline track are linked to the Mojave River and viable habitat blocks to the north and beyond.

A wildlife movement study was conducted for the BIG footprint. The wildlife movement camera study was conducted over six study periods throughout the year in March, June, September, and November 2024, as well as January and March 2025. Between 26 and 35 infrared trail cameras were deployed for each study period in potential linear corridors within the BIG footprint, along habitat edges, and at structures/openings that connected two areas of natural habitat that are otherwise separated from each other by physical barriers. These areas included Lenwood Channel, railway vehicle crossings and culverts, various access/dirt roads, and along the Mojave River and the barrier of National Trails Highway. The southern boundary of the BIG footprint is marked by approximately 14 miles of National Trails Highway until the 33kV alignment moves eastward and continues along additional paved two-lane roads. A variety of medium-sized mammals, small reptiles, rodents and lagomorphs (hares and rabbits), and bird species were detected by use of wildlife cameras within BIG during the wildlife movement study. Other notable detections included desert tortoise and western toad (*Anaxyrus boreas*). A full list of all the wildlife species detected during the wildlife movement camera study is included in **Appendix 5.4 BIG-1**.

The wildlife movement camera study not only confirmed the presence of certain resident desert wildlife species on site, as well as some migrating bird species, but also confirmed the use of crossing structures such as Lenwood Channel and various culverts and crossings along the railway that may be used by medium-sized animals.

5.4.1 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

State CEQA Guidelines **Appendix G: Environmental Checklist Form** includes questions concerning biological resources. The issues presented in the Environmental Checklist Form have been used to formulate thresholds of significance in this section. Accordingly, the Project would have a significant effect concerning biological resources if it would:

- **Impact 5.4-1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- **Impact 5.4-2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- **Impact 5.4-3:** Have a substantial adverse effect on federal or state protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- **Impact 5.4-4:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- **Impact 5.4-5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- **Impact 5.4-6:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.4.2 PROJECT IMPACTS AND MITIGATION MEASURES

Applicable Proposed General Plan Policies

The proposed General Plan goals and policies relevant to biological resources are listed below.

Open Space Conservation Element

- **Policy OSC-5.1 State and federal regulations**. Implement state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.
- **Policy OSC-5.2 Coordination to protect resources**. Coordinate with public and nongovernmental agencies to protect high value habitat and protected wildlife through the establishment, restoration, and conservation of high-value habitat areas.
- **Policy OSC-5.3 Land banking.** Support the proactive assemblage of lands to protect high-value habitat and protected wildlife and facilitate development through private or public mitigation banking or other appropriate conservation measures. Require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.
- **Policy OSC-5.4 Corridors**. Coordinate with public and nongovernmental agencies to plan, design, and maintain drainage channels and utility easements to provide wildlife corridors and connectivity between open space areas in the community and surrounding desert.
- **Policy OSC-5.5 New development**. Require new development to minimize impacts to existing high-value habitat and protected wildlife to the extent practicable. Require revegetation of disturbed natural habitat areas with native or drought-tolerant noninvasive naturalized species.
- **Policy OSC-5.6 Federal lands**. Require that new development satisfy habitat conservation responsibilities without shifting conservation responsibilities onto military property or other federal lands.
- **Policy OSC-5.7 Native plant species**. Require the use of native and/or drought-tolerant noninvasive naturalized plant species in development projects to provide or enhance wildlife habitat.

Impact 5.4-1	***Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Proposed General Plan

Special Status Plant Species

A CNDDB search identified 21 special status plant species as occurring in the General Plan area (see **Table 5.4-4: Special-Status Plant Species Potentially Present in City and Sphere of Influence –Proposed General** Plan). Non-native and unvegetated biological communities, barren and/or urban areas in the City are unlikely to support special status plants. However, construction and operational activities within habitat communities could potentially result in significant impacts on special status plants. There are no federal or state-listed plant species known to occur in the General Plan area; however, the western Joshua tree is a candidate species under CESA. Although the 21 species are not federally or state-listed species, losses of these special status plants as a result of development pursuant to the proposed General Plan where plants are present would cause potentially significant impacts. However, compliance with applicable regulations and implementation of the proposed General Plan policies would reduce impacts to a less than significant level.

Special Status Wildlife Species

A CNDDB search identified 25 special status wildlife species (11 birds, 1 insect, 7 mammals, 3 reptiles, 1 fish, 1 mollusk, and 1 amphibian) that are known to occur or have the potential to occur in the General Plan area (see **Table 5.4-5: Special-Status Wildlife Species Potentially Present in the City and Sphere of Influence – Proposed General Plan**). Of those 25 special status species, there are 9 species (4 birds, 1 insect, 1 mammal, 1 reptile, 1 fish, and 1 amphibian) listed or considered federal and/or state-listed wildlife species known to occur in the General Plan area. Development within or near habitat for special status wildlife species could result in significant impacts on these species. However, compliance with applicable regulations and implementation of the proposed General Plan policies would reduce impacts to a less than significant level.

The proposed General Plan contains policies in the Open Space and Conservation Element that would preserve and enhance areas that may provide habitat for special status species. These include Policies OSC-5.1 and OSC-5.5, as identified above. These applicable policies would require all new development to comply with regulations under the FESA, MBTA, CESA, California Fish and Game Code, CWA, and California Native Plant Protection Act during construction and operations. Compliance with these regulations require preparation of site-specific analysis and circulation of the analysis as part of the CEQA process or directly to the regulating agency(ies) if a permit is required. For new development, where it is clear that because of previous development there is no existing habitat, there would be no requirement for some form of project-specific analysis. Examples of this would include tenant improvements interior to a building or redevelopment of a building or parking area.

Per Policy OSC-5.1, all projects must comply with applicable regulations pertaining to protected species through the development review, entitlement, and environmental clearance processes. Additionally, Policy OSC-5.5 would require new development to minimize impacts to habitat and wildlife to the maximum extent possible. If a biological analysis for a proposed project indicates a special status species exists, additional surveys would be required, and a mitigation plan would be developed in cooperation with the applicable resource agency such as CDFW or the USACE. While working through the permitting and agency review process, individual development projects may have a significant effect on a biological resource that would be required to be addressed for that project. For example, a project may be required to pay into a mitigation bank and/or be redesigned to ensure special status species and habitats are avoided. The City, permitting agencies, and other responsible agencies would ensure that effective mitigation is implemented to reduce, minimize, or avoid impacts to special status species. With implementation of Policies OSC-5.1 and OSC-5.5, which would reduce potential impacts to special status species associated with new development allowed under the proposed General Plan, impacts would be less than significant.

Impact 5.4-1: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-1: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-1: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

Special-Status Plant Species

No federally or state-listed endangered or threatened plant species were documented within the BIG footprint, and none have moderate to high potential to occur based on the lack of suitable habitat. Therefore, BIG construction would not have an adverse effect on federally or state-listed species.

Thirteen non-listed special status plant species were identified to have potential to occur based on the presence of suitable habitat and previously recorded observations within three miles of the BIG footprint. However, none of these special status species were observed during focused surveys and are either presumed absent from or have no or low potential to occur in the BIG footprint. As such, no impacts are anticipated to these species.

Special status plants regulated under the County of San Bernardino Development Code were observed within the BIG footprint. Removal of individuals of these species without approval of removal and replacement plans during the entitlement and development permit application process would be a significant impact. However, since BIG would undergo required review as part of the entitlement and development permit process, the construction impact to these species is less than significant.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-5, MM BIG BIO-6, MM BIG BIO-7, MM BIG BIO-33, and **MM BIG BIO-37** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological

resources, vehicle traffic restrictions, compliance reporting, weed control, delineation of BIG work limits to prevent work in un-surveyed areas, restrictions on staging, storage, stockpiles, and spoils, and preparation of a plant salvage plan. With **MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-5, and MM BIG BIO-6, MM BIG BIO-7, MM BIG BIO-33**, and **MM BIG BIO-37** incorporated, BIG's potentially significant construction impacts to special status plant species would be less than significant.

Thirty-three ornamentally planted western Joshua trees, a State Candidate for CESA listing, were observed within the BIG footprint. However, no demolition or ground disturbing activities are proposed by BIG that would directly or indirectly impact the observed western Joshua trees. Should construction work occur in areas that have not been previously surveyed and western Joshua tree occur in those areas, loss of individuals may occur. Loss of individual western Joshua trees would be a significant impact. **MM BIG BIO-7** and **MM BIG BIO-33** require delineation of BIG work limits to prevent work in unsurveyed areas and restrictions on staging, storage, stockpiles, and spoils. **MM BIG BIO-7** and **MM BIG BIO-33** would lessen BIG's potential construction impacts on western Joshua tree individuals outside the construction work limits and habitat. With **MM BIG BIO-7** and **MM BIG BIO-33** incorporated, BIG's potentially significant construction impacts on western Joshua tree would be less than significant.

Note that a number of mitigation measures may ultimately fall under the responsibility of the party that constructs or operates transload warehouses, thus, the following list of mitigation measures at times use the term "implementing entity" to refer to the responsible party (either BNSF, it's contractor, or a transload warehouse developer or their contractor).

Mitigation Measures: Special Status Plant Species, Western Joshua Tree

MM BIG BIO-1 **Worker Environmental Awareness Program and Training.** Prior to construction mobilization activities, 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, 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.

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 monitoring reports and the post-construction monitoring report summarizing compliance with 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, a General biological monitor 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.

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 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.
- 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.

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 will be reduced at the discretion of the designated biologist and as described in the Nighttime Construction and Lighting Plan to be prepared per **MM BIG 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 support 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.
- 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 does 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. Monitoring reports that document compliance status with the MMs shall be prepared by designated biologists and submitted quarterly 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.

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:

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.

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 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.

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.

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. 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, botanical preserves, museums and zoological societies, among other conservation organizations that provide adequate habitat and management of desert native plants.

Special-Status Wildlife Species

Five federally and/or state-listed or candidate wildlife species; desert tortoise, willow flycatcher, yellow-billed cuckoo, Swainson's hawk, and burrowing owl were documented within or adjacent to the BIG footprint during focused surveys conducted in 2022, 2023, and/or 2024. Additionally, state-listed tricolored blackbird was incidentally observed during various focused surveys in 2023.

Twenty-seven non-listed but special status species were either documented during BIG biological surveys or were determined to have a moderate to high potential to occur within the BIG footprint, see **Table 5.4-2: 2015 General Plan Relevant Goals, Strategies and** Policies.

Table 5.4-11: Summary of Potentially Impacted Special Status Wildlife Species Within BIG Footprint				
Species	**Listing Status**	**Observed in the Survey Area?**	**Potential to Occur in the BIG Footprint?**	**Potential to Occur in the Area?**
Federally and State-Listed Wildlife Species				
Desert tortoise	FT, ST	Yes	Yes	Yes
Willow Flycatcher	FE, SE	Yes	Yes	Yes
Western yellow-billed cuckoo	FT, SE	Yes	Yes	Yes
State Listed Wildlife Species				
Swainson's hawk	ST	Yes	Yes	Yes
Tricolored blackbird	ST	Yes	Yes	Yes
Western burrowing owl	SSC, BCC	Yes	Yes	Yes
Non-Listed Wildlife Species				
Mojave fringe-toed lizard	SSC, BLM	Yes	Yes	Yes
Raptors				
Cooper's hawk	WL	Yes	Yes	Yes
Ferruginous hawk	WL	No	Yes	Yes
Golden eagle	FP, WL	Yes	Yes	Yes
Merlin	WL	No	Yes	Yes
Northern harrier	SSC, BCC	Yes	Yes	Yes
Osprey	WL	Yes	Yes	Yes
Prairie falcon	WL	Yes	Yes	Yes
Sharp-shinned hawk	WL	Yes	Yes	Yes
Riparian Birds				
Lucy's warbler	SSC	Yes	Yes	Yes
Olive-sided flycatcher	SSC	Yes	Yes	Yes
Yellow warbler	SSC	Yes	Yes	Yes
Uplands Birds				
Bell's sparrow	WL	Yes	Yes	Yes
Black-tailed gnatcatcher	WL	Yes	Yes	Yes
California horned lark	WL	Yes	Yes	Yes
Costa's hummingbird	BCC	Yes	Yes	Yes
LeConte's thrasher	SSC, BCC	Yes	Yes	Yes
Loggerhead shrike	SSC	Yes	Yes	Yes
Mountain plover	SSC, BCC, BLM	No	Yes	Yes
Mammals				
American beaver	FBM	Yes	No	No
American badger	SSC	No	Yes	Yes
Desert kit fox	FBM	Yes	Yes	Yes

Table 5.4-11: Summary of Potentially Impacted Special Status Wildlife Species Within BIG Footprint				
Species	**Listing Status**	**Observed in the Survey Area?**	**Potential to Occur in the BIG Footprint?**	**Potential to Occur in the Area?**
Bats				
California leaf-nosed bat	SSC, BLM	No	Yes	Yes
Pallid bat	SSC, BLM	No	Yes	Yes
Townsend's big-eared bat	SSC	No	Yes	Yes

Note:
BCC: USFWS Bird of Conservation Concern
FBM: California Furbearing Mammal, protected from take (14 CCR § 460)
FC: Federal candidate for listing under ESA
FE: Federally Endangered
FP: CDFW Fully Protected
FT: Federally Threatened
SE: State Endangered
ST: State Threatened
BLM: Bureau of Land Management Sensitive Species
SSC: CDFW Species of Special Concern
WL: CDFW Watch List

Federally and/or State-Listed Wildlife Species

Desert Tortoise. The desert tortoise were documented within the BIG footprint during focused surveys in *Larrea tridentata – Ambrosia dumosa* shrubland alliance and *Atriplex canescens* shrubland alliance vegetation. Although desert tortoise, signs, or burrows were not observed in these vegetation communities during focused surveys, *Ambrosia dumosa* shrubland alliance, *Atriplex polycarpa* shrubland alliance, and *Larrea tridentata* shrubland alliance are considered moderately suitable habitat for desert tortoise. BIG construction could result in direct impacts to desert tortoise through harassment, injury, and/or death should they, their eggs, and/or their young be present within the BIG footprint or immediately adjacent. Harassment, injury, and/or mortality occurs most frequently during the stages of construction utilizing heavy equipment or vehicles as desert tortoise are slow moving and cannot safely avoid equipment. Further, increased noise, vibration, and dust generated by construction equipment may disrupt nearby individuals. BIG construction could also result in indirect impacts to desert tortoise during construction from habitat destruction or attraction of common raven to the BIG footprint. Indirect impacts on desert tortoise because of habitat destruction and possible increases in raven population are potentially significant due to elimination of desert tortoise food and water sources, burrows, and breeding grounds and increased predation, especially upon juveniles and hatchlings.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-5, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-10, MM BIG BIO-11, MM BIG BIO-12, MM BIG BIO-13, MM BIG BIO-14, MM BIG BIO-15, MM BIG BIO-16, and **MM BIG BIO-34** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, compliance reporting, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime lighting restrictions, entrapment avoidance, proper trash and debris disposal, proper dead wildlife disposal, no

domestic dogs on-site, desert tortoise exclusion fencing, proper desert tortoise relocation, common raven avoidance, desert tortoise compensatory mitigation, and security fencing. With the implementation of these mitigation measures, BIG's potentially significant construction impacts to desert tortoise would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Desert Tortoise

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-5, and **MM BIG BIO-7**, and the following measures are applicable.

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.

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.

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, coyotes, and feral dogs.

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.

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.

MM BIG BIO-13 **Desert Tortoise Clearance Surveys.** Prior to construction mobilization activities, desert tortoise exclusion fencing shall be installed and maintained 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 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 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 biological monitor for desert tortoise and to ensure the escape route is free of obstruction and debris.

Immediately following the installation of desert tortoise exclusion fencing, Species-Specific biological monitors approved by the agencies 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) 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. The survey(s) may be conducted any time of year, but preferably during the desert tortoise active period (i.e., early March through early June, and September through early November). Survey results shall be provided to the City.

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 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).

MM BIG BIO-14 **Desert Tortoise Relocation and Translocation.** Prior to start of construction mobilization activities, a designated biologist 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), H*ealth 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. A designated biologist shall provide the BIG-specific Desert Tortoise Translocation Plan to the USFWS and CDFW for review and approval prior to start of translocation. At a minimum, the Desert Tortoise Translocation Plan shall include the following measures:

- The Species-Specific biological monitor shall implement the Desert Tortoise Translocation Plan during BIG construction.

- Only Species-Specific biological monitors authorized by the USFWS 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.
- Species-Specific biological monitor 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 the Species-Specific biological monitor moving desert tortoise out of the construction work area, the biological monitor 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.
- 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.
- 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.

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 provided.
- 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 of fee title or 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 the applicable regulatory agency. 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, and the conservation easement shall identify applicable

regulatory agencies as third-party beneficiaries with a right of access to the easement areas.

- Payment to an existing in-lieu fee program.

- A summary of the estimated direct permanent and temporary impacts on desert tortoise and desert tortoise habitat.
- A description of the process that shall 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.
- Adjustments to impact estimates and compensatory mitigation shall occur in the following circumstances:
  - Impacts on desert tortoise (typically measured as habitat loss) are reduced or increased as a result of changes in BIG design;
  - Pre-construction site assessments indicate that desert tortoise habitat features are absent (e.g., because of errors in land cover mapping or land cover conversion);
  - The desert tortoise habitat is determined to be unoccupied based on negative species surveys; or
  - Impacts initially categorized as permanent qualify as temporary impacts.
- An overview of the strategy for mitigating effects on desert tortoise. The overview shall include the ratios to be applied to determine mitigation levels and the resulting mitigation totals.
- A description of habitat restoration or enhancement projects, if any, that would contribute to compensatory mitigation commitments.
- A description of the success criteria that shall be used to evaluate the performance of habitat restoration or enhancement projects, and a description of the types of monitoring that shall be used to verify that such criteria have been met.
- A description of the management actions that shall be used to maintain the habitat on the mitigation sites, and the funding mechanisms for long-term management, if applicable.
- A description of adaptive management approaches, if applicable, that shall be used in the management of species habitat.
- A description of financial assurances that shall be provided to demonstrate that the funding to implement mitigation is assured.

Final compensatory mitigation shall be determined in consultation with USFWS and CDFW. The CMP shall be submitted to the City.

MM BIG BIO-34 **Permanent Security Fencing.** Prior to final construction design, the designated biologist shall review and approve the fencing plans for portions of the BIG Specific Plan Area 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.

The specific design and method for installation method of an apron or barrier may vary as required by regulatory permits issued under the FESA or CESA. Prior to start of operations then quarterly, 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 the City.

Willow Flycatcher. Willow flycatcher were observed within the survey area and have low-to-moderate potential to forage and nest in riparian habitat within the BIG footprint and adjacent to the BIG footprint along the Mojave River. BIG construction could result in direct impacts to willow flycatcher as a result of conflict with construction vehicles or vegetation trimming that harasses, injures, damages, or destroys an active nest and/or adults, young, and/or eggs within the nest. Further, direct impacts to existing nests and indirect impacts to suitable nesting habitat could result from increased noise that may be generated during construction activities. Construction noise could elevate nesting willow flycatcher stress levels and impair communication that could lead to reduced parental care for young willow flycatcher, increased risk of nest abandonment, and decreased perception of alarm calls by young willow flycatcher. Construction noise could also deter willow flycatcher from nesting activities in potentially suitable habitat, indirectly affecting willow flycatcher through impacts to suitable habitat. **MM BIG BIO-1, MM BIG BIO-2, MM BIG**

BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-17, and **MM BIG BIO-35** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, willow flycatcher surveys and avoidance measures, and avian safe design. With implementation of these mitigation measures, BIG's potentially significant construction impacts to willow flycatcher would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Willow Flycatcher

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, and **MM BIG BIO-8** and the following measures are applicable.

MM BIG BIO-17 **Willow Flycatcher and Western Yellow-billed Cuckoo Construction Requirements.** Construction activities within suitable willow flycatcher and western yellow-billed cuckoo nesting habitat should occur outside of the breeding season (generally May 1 through August 31) 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 riparian habitat (i.e., near the Mojave River) and within the nesting season for willow flycatcher and western yellow-billed cuckoo, 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 biological monitor shall conduct pre-construction surveys for Willow Flycatcher and western yellow-billed cuckoo within 30 days prior to start of construction activities that occur within 500 feet of suitable habitat. The Species-Specific biological monitor shall hold a USFWS recovery permit and be authorized by the agency to conduct pre-construction willow flycatcher surveys and/or western yellow-billed cuckoo surveys.

If willow flycatcher or western yellow-billed cuckoo is documented 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 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 willow flycatcher or western yellow-billed cuckoo.

If willow flycatcher or western yellow-billed cuckoo 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 Wildlife Noise Study and Monitoring Plan to be implemented with designated biologist oversight. Prior to and during construction, noise monitoring shall be conducted within suitable riparian 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 riparian vegetation determined to be part of the nesting territory. Noise monitoring shall be conducted by a qualified noise specialist in coordination with a Species-Specific biological monitor. While conducting noise monitoring, the biological monitor 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 willow flycatcher and western yellow-billed cuckoo unless authorized by the appropriate regulatory authorities (i.e., CDFW and 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 willow flycatcher and/or western yellow-billed cuckoo 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 willow flycatcher and/or western yellow-billed cuckoo 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 USFWS). A noise level verification report shall be submitted by the implementing entity to CDFW and USFWS every two weeks during work that required noise monitoring for listed species as described above.

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.
- 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.

Western Yellow-billed Cuckoo. One yellow-billed cuckoo was observed within the survey area. Further, low-to-moderately suitable foraging and nesting habitat for yellow-billed cuckoo exists within the BIG footprint and adjacent to the BIG footprint along the Mojave River. BIG construction could result in direct impacts to yellow-billed cuckoo as a result of conflict with construction vehicles or vegetation trimming that harasses, injures, damages, or destroys an active nest and/or adults, young, and/or eggs within the nest. Further, direct impacts to existing nests and indirect impacts to suitable nesting habitat could result from increased noise that may be generated during construction activities. Construction noise could elevate stress levels of nesting yellow-billed cuckoo and impair communication that could lead to reduced parental care for young yellow-billed cuckoo, increased risk of nest abandonment, and decreased perception of alarm calls by young yellow-billed cuckoo. Construction noise could also deter yellow-billed cuckoo from nesting activities in potentially suitable habitat, indirectly affecting yellow-billed cuckoo through impacts to suitable habitat. that requires would lessen BIG's potential direct and indirect

construction impacts to yellow-billed cuckoo but impacts would remain potentially significant, thus, requiring mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-17, and **MM BIG BIO-35** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, yellow-billed cuckoo surveys and avoidance measures, and avian safe design. With implementation of mitigation, BIG's potentially significant construction impacts to willow flycatcher would be less than significant.

Mitigation Measures: Special Status Wildlife Species Western Yellow-billed Cuckoo

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-17, and **MM BIG BIO-35** are applicable.

State Listed Wildlife Species

Swainson's Hawk. During focused surveys conducted in 2024 and 2025, a Swainson's hawk pair was confirmed nesting approximately one mile north of the BIG footprint. Swainson's hawk was observed flying over the BIG footprint and foraging in the survey area in earlier surveys. Further, suitable nesting habitat for Swainson's hawk is present within the BIG footprint and adjacent within riparian habitat along the Mojave River. BIG construction could result in direct impacts to fledged Swainson's hawk from conflict with construction vehicles or direct impacts to nesting Swainson's hawk through harassment, injury, and/or death of adults, eggs, and/or young if construction activities remove or disturb active nest trees or come near active nests. Further, direct impacts to existing nests and indirect impacts to suitable nesting habitat could result from increased noise that may be generated during construction activities. Elevated construction noise levels could disturb nests and impair communication between adult and young individuals or cause previously suitable nesting habitat to become unsuitable.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-18, MM BIG BIO-19, MM BIG BIO-20, and **MM BIG BIO-35** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, avoidance of construction during nesting season and nesting bird surveys, equipment use restrictions, Swainson's hawk surveys and avoidance measures, and avian safe design. With implementation of these measures, BIG's potentially significant construction impacts to Swainson's hawk would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Swainson's Hawk

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, and **MM BIG BIO-35**, and the following measures are applicable.

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 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.

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.

MM BIG BIO-20 **Swainson's Hawk Construction Requirements.** Swainson's hawk nest surveys shall be conducted and provided to the City for the breeding season immediately prior to start of construction. Surveys shall be conducted within the annual area of BIG construction 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.

Tricolor Blackbird. One tricolor blackbird was observed flying over the BIG footprint during surveys. Further, some potentially suitable foraging habitat exists within the BIG footprint. Suitable nesting habitat for tricolor blackbird within the BIG footprint is limited and tricolored blackbird is not anticipated to nest on-site. As tricolor blackbird nesting is not anticipated within the BIG footprint, no direct impacts to the species are anticipated during construction and impacts would be less than significant. Indirect impacts to the species as a result of foraging habitat loss could occur. However, given the low number of individuals observed during surveys and the proximity to remaining suitable agricultural fields outside of the BIG footprint, indirect impacts as a result of removal of potential foraging habitat for tricolored blackbird during construction would be less than significant, and no mitigation is required.

Mohave Ground Squirrel. No Mohave ground squirrel were documented within the BIG footprint during any surveys. As such, the BIG footprint is considered unoccupied by Mohave ground squirrel. However, suitable habitat for Mohave ground squirrel exists within and adjacent to the BIG footprint. Increased noise, vibration, and dust generated by construction equipment may disrupt nearby individuals. With incorporation of **MM BIG BIO-7** that requires fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint would lessen BIG's potential indirect impacts to Mohave ground squirrel. Impacts would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Mohave Ground Squirrel

MM BIG BIO-7 is applicable.

Western Burrowing Owl. Burrowing owl individuals, their sign, and suitable burrows were observed within the BIG footprint during the non-breeding season of 2021-2022 as well as incidentally in the 2024-2025 non-breeding season. Although no burrowing owl were observed during the focused breeding season surveys in 2022 and 2023, suitable burrows and signs were observed within the BIG footprint. As suitable burrows are present within the BIG footprint, there is moderate low-to-moderate potential for breeding burrowing owl to occur within the BIG footprint. BIG construction could result in direct impacts to burrowing owl through harassment, injury, and/or death if individuals are present within burrows in ground-disturbance areas during active construction. Further, increased noise, vibration, and dust generated by construction equipment and, should any be required, the use of nighttime lighting may disrupt nearby breeding individuals and burrows.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MMBIG BIO-7, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-12, MM BIG BIO-21, and **MM BIG BIO-22** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, entrapment avoidance, no domestic dogs on-site, and surveys, avoidance measures, and compensatory mitigation for burrowing owl

and habitat. With implementation of these measures, BIG's potentially significant construction impacts to burrowing owl would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Western Burrowing Owl

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-9, and **MM BIG BIO-12**, and the following measures are applicable.

MM BIG BIO-21 **Western Burrowing Owl Construction Requirements**. No less than 14 days prior to start of construction mobilization activities within suitable habitat, a Species-Specific biological monitor 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.

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 are not observed during the pre-construction surveys, no additional conditions shall be required to avoid direct impacts on burrowing owl 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) unless an agency-approved Species-Specific biological monitor 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 biological monitor shall establish exclusion buffers to protect active nests in accordance with the recommendations included in CDFW's *Staff Report on Burrowing Owl Mitigation* (2012). A Species-Specific biological monitor 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 Species-Specific biological monitor in accordance with the recommendations included in the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012).

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 mitigation measures. Survey reports shall also be submitted to the City.

If avoidance is not possible, either directly or indirectly, an Incidental Take Permit (ITP) under CESA shall be obtained from CDFW and a Burrowing Owl Plan shall be prepared and submitted for approval by CDFW. The plan shall also be submitted to the City. Once approved, the plan shall be implemented to relocate non-breeding burrowing owls from BIG. The plan shall detail 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:

- 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 birds 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 when temperatures exceed 95 degrees Fahrenheit or 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.

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 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 provided.
- 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 approved mitigation bank).
  - Protection of burrowing owl habitat through acquisition of fee title or 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 the applicable regulatory agency. In circumstances where the implementing entity protects habitat through a conservation easement, the

terms of the conservation easement shall be subject to approval of the applicable regulatory agencies, and the conservation easement shall identify applicable regulatory agencies as third-party beneficiaries with a right of access to the easement areas.

- Payment to an existing in-lieu fee program.

- A summary of the estimated direct permanent and temporary impacts on burrowing owl and burrowing owl habitat.
- A description of the process that shall be used to confirm impacts. Actual impacts on burrowing owl and burrowing habitat could differ from estimates. Should this occur, adjustments shall be made to the proposed compensatory mitigation in consultation with CDFW.

The burrowing owl CMP and mitigation requirements shall be submitted to the City 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 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.

Non-Listed Wildlife Species

Mojave Fringe-toed Lizard. Mojave fringe-toed lizard was documented within the BIG footprint. Further, *Dicoria canescens – Abronia villosa – Panicum urvilleanum* Sparsely Vegetated Alliance, *Dicoria canescens – Abronia villosa – Panicum urvilleanum* Sparsely Vegetated Alliance – Disturbed/Stabilized, and *Dicoria canescens – Abronia villosa – Panicum urvilleanum* Sparsely Vegetated Alliance – Partially Stabilized vegetation communities within the BIG footprint comprise dune habitat and are thus considered suitable habitat for Mojave fringe-toed lizard. BIG construction could result in direct impacts to Mojave fringe-toed lizard through harassment, injury, and/or death if individuals are present during BIG construction. Further, increased noise, vibration, and dust generated by construction equipment may disrupt nearby individuals present in dunes habitat. These direct impacts are potentially significant.

Indirect impacts to Mojave fringe-toed lizard from dune habitat destruction or degradation could occur. Increased noise, vibration, and dust generated by construction equipment could cause previously suitable habitat to become unsuitable. However, suitable habitat for Mojave fringe-toed lizard exists in the areas surrounding the BIG footprint. Specifically, BIG would place an area comprising approximately 500 feet on either side of the Mojave River within the BIG footprint under a conservation easement. This conserved area would provide suitable, adjacent Mojave fringe-toed lizard habitat that individuals potentially disturbed by construction activity could access. However, indirect impacts would remain potentially significant and would require mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-9, MM BIG BIO-12, MM BIG BIO-23, and **MM BIG BIO-24** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological

resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, entrapment avoidance, no domestic dogs on-site, pre-construction surveys and relocation should individuals or habitat be detected during pre-construction surveys, and compensatory mitigation for habitat. With implementation of mitigation, BIG's potentially significant construction impacts to the Mojave fringe-toed lizard would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Mojave Fringe-toed Lizard

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-9, and **MM BIG BIO-12**, and the following measures are applicable.

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.

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 1:1 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;
- 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-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.

American Beaver. One American beaver was incidentally observed swimming upstream in the Mojave River near the BIG footprint. No other American beaver sign, including tracks, cut vegetation, lodges, or dams, were observed. The species is not anticipated to dwell within the section of the Mojave River immediately adjacent to BIG since the river does not contain permanent water throughout the year. Further, BIG would place an area comprising approximately 500 feet on either side of the Mojave River within the BIG footprint under a conservation easement. This conserved area would provide a buffer between where American beaver would be expected to occur (i.e., within the Mojave River) and BIG construction activities. However, should an individual be present during BIG construction activities, BIG construction could result in direct impacts to American beaver through harassment, injury, and/or death. Increased noise, vibration, and dust generated by construction equipment could also result in indirect impacts related to habitat disturbance. Indirect impacts would be potentially significant and would require mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-10, MM BIG BIO-11, MM BIG BIO-12, and **MM BIG BIO-25** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, nighttime work restrictions, entrapment avoidance, proper trash and debris disposal, proper dead wildlife disposal, no domestic dogs on-site, and clearance surveys and buffers should individuals or dens be detected during clearance surveys. With the implementation of mitigation, BIG's potentially significant construction impacts to American beaver would be less than significant.

Mitigation Measures: Special Status Wildlife Species, American Beaver

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-10, MM BIG BIO-11, MM BIG BIO-12, and the following measures are applicable.

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

American Badger and Desert Kit Fox. Neither the American badger nor desert kit fox were observed within the BIG footprint; however, suitable habitat and burrowing substrate for both species exists within the BIG footprint. Therefore, the American badger and desert kit fox have a moderate-to-high potential to occur and burrow within the BIG footprint. BIG construction could result in direct impacts to American badger and desert kit fox through harassment, injury, and/or death if individuals are present within dens in ground-disturbance areas during active construction or come into conflict with construction vehicles. Further, increased noise, vibration, and dust generated by construction equipment and, should any be required, the use of nighttime lighting may disrupt nearby individuals. Potentially fatal canine distemper could also be introduced to American badger and desert kit fox within the BIG footprint by domestic dogs brought to the site or coyotes attracted to the site by trash and roadkill. These direct impacts are potentially significant.

Indirect impacts to American badger and desert kit fox from habitat destruction or degradation could occur. Increased noise, vibration, and dust generated by construction equipment and, should any be required, the use of nighttime lighting could cause previously suitable habitat to become unsuitable. However, suitable habitat for these species exists in the areas surrounding the BIG footprint and elsewhere in the Mojave desert. BIG's potential indirect impacts to American badger and desert kit fox would be potentially significant and require mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-10, MM BIG BIO-11, MM BIG BIO-12, MM BIG BIO-26, and **MM BIG BIO-33** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, entrapment avoidance, proper trash and debris disposal, proper dead wildlife disposal, no domestic dogs on-site, clearance surveys and buffers should individuals or dens be detected during clearance surveys, and restrictions on staging, storage, stockpiles, and spoils. With the implementation of mitigation, BIG's potentially significant construction impacts to American badger and desert kit fox would be less than significant.

Mitigation Measures: Special Status Wildlife Species, American Badger and Desert Kit Fox

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-10, MM BIG BIO-11, MM BIG BIO-12, and following measures are applicable.

MM BIG BIO-26 **American Badger and Desert Kit Fox Construction Requirements.** Prior to start of construction mobilization activities within suitable habitat, biological monitors familiar with American badger and desert kit fox shall conduct surveys within the limits of the BIG construction footprint for occupied natal dens. The survey(s) shall occur no more than 48 hours prior to start of ground-disturbing activities in suitable habitat for American badger and desert kit fox within the potential impact footprint. Survey results shall be provided to CDFW and the City.

If American badger or desert kit fox natal dens are documented within the survey area, a biological monitor shall establish a no-work exclusion buffer around the den

and natal 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 the natal den are foraging independently and capable of independent survival.

A biological monitor shall monitor the natal den during construction activities approximately every other day. The definitive frequency and duration of monitoring shall be dependent upon the age and behavior of the 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 burrows will be developed in coordination with CDFW.

Bats: California Leaf-nosed Bat, Pallid Bat, and Townsend's Big-eared Bat. The California leaf-nosed bat, pallid bat, and Townsend's big-eared bat were not observed within the BIG footprint during biological surveys. However, suitable foraging and roosting habitat for these bat species is present within the BIG footprint. Direct and indirect impacts to bats could occur during BIG construction through harassment, injury, and/or death if individuals come into conflict with construction vehicles or construction activities impact bat occupied roost structures or potential roost structures. Further, the use of nighttime lighting may disrupt typical bat behavior or attract predators to roost sites resulting in direct impacts. Indirect impacts may also occur should nighttime lighting cause previously suitable habitat to become unsuitable. Direct and indirect impacts to bats would be potentially significant and require mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-7, MM BIG BIO-8, and **MM BIG BIO-27** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, fencing that prevents BIG construction activities from affecting areas outside the analyzed BIG footprint, nighttime work restrictions, and bat clearance surveys and avoidance measures. With the implementation of mitigation, BIG's potentially significant construction impacts to bats would be less than significant.

Mitigation Measures: Special Status Wildlife Species, Bats

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-9, and **MM BIG BIO-8**, and the following measures are applicable.

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 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 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 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.

Operations

As ground-disturbing activities would occur during BIG construction, BIG operations would not result in direct or indirect impacts to special status wildlife and plant species.

Should individuals of special status wildlife species with moderate to high potential occur within the BIG footprint enter the operational BIG and conflict with vehicles or trains could result in direct impacts. Further, an increase in noise, dust, and human activity from BIG operation could indirectly impact species by making previously suitable habitat unsuitable. **MM BIG BIO-34** and **MM BIG BIO-36** require the installation of permanent fencing to exclude wildlife from the operational BIG and places restrictions on nighttime lighting. With the incorporation of **MM BIG BIO-34** and **MM BIG BIO-36** as part of BIG, BIG operational impacts to special status wildlife would be less than significant.

Mitigation Measures: Operations

MM BIG BIO-34 and the following measure is applicable.

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.

Impact 5.4-1: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Impact 5.4-1: BIG Mitigation Measures: MM BIG BIO-1 through **MM BIG BIO-27** and **MM BIG BIO-33** through **MM BIG BIO-37**.

Impact 5.4-1: BIG Level of Significance After Mitigation: Less than Significant With Mitigation Incorporated.

Impact 5.4-2	***Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Proposed General Plan

The General Plan area contains sensitive natural communities, including special status plant species (see **Table 5.4-4: Special-Status Plant Species Potentially Present in City and Sphere of Influence –Proposed General Plan**). Additionally, the General Plan area contain riparian communities which are found along and within the Mojave River, where the main channels are mostly sandy and typically devoid of vegetation (see **Figure 5.4-3: Vegetation Communities and Land Covers – Proposed General Plan**) and dunes habitat (active desert dunes, active desert dunes – disturbed, stabilized/ partially stabilized desert dunes) considered sensitive habitat by CDFW. Construction projects in the General Plan area would have the potential to affect riparian habitats by spreading or introducing invasive plant species to currently uninfected areas, and dunes habitats through habitat destruction or crushing and clearing of habitats

(Webb et al., 2001). Invasive species spread aggressively and crowd native species, potentially altering the species' composition of natural communities. A predominance of invasive species reduces the overall habitat quality for native plants and wildlife.

However, the Open Space and Conservation Element of proposed General Plan includes goal and policies that would reduce potential impacts on natural communities, including riparian and dunes habitat. These policies would include Policy OSC-5.1 and Policy OSC-5.2, which include the coordination with State, federal, and nongovernmental agencies to protect biological resources.

Additionally, disturbance or alteration of streams, lakes, non-federally protected (non-jurisdictional) wetlands, or sensitive habitat would require a regulatory agency permit, which would include conditions to protect these sensitive natural communities. A Section 1602 Lake or Streambed Alteration Agreement would be needed from the CDFW prior to start of project construction activities that would divert, obstruct, or change the natural flow of a river, stream or lake, or that would use material from a streambed. Non-jurisdictional wetlands include wetland features that are not hydrologically connected to navigable waters in rivers and are not under USACE jurisdiction. These wetlands would still be considered waters of the State and would be regulated according to waste discharge requirements that would be issued by the RWQCB for on-site and off-site disturbance. Additionally, permitting agencies may require a mitigation plan to be developed in order to reduce impacts to waters, riparian habitat, or dunes habitat. Such mitigation may include paying into a mitigation bank and/or redesigning the project to ensure impacts to sensitive natural communities are reduced, minimized, or avoided. A project applicant would be required to meet all conditions imposed by the resource agency, City, and/or other responsible agencies prior to start of construction.

Implementation of the proposed General Plan goals and policies, with conditions associated with streambed alteration agreements and waste discharge requirements, would reduce potential impacts on riparian corridors and other sensitive natural communities to a less than significant level. No mitigation is required.

Impact 5.4-2: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-2: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-2: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

There are approximately 18 acres of riparian habitat comprised of tamarisk thickets within the BIG footprint. Tamarisk thickets primarily consist of tamarisk (*Tamarix ramosissima*), a non-native species, and other ruderal plant species. Tamarisk thickets observed within the BIG footprint appeared associated with road runoff rather than potentially jurisdictional aquatic resources. As the riparian habitat within the BIG footprint comprises non-native and ruderal species and is not associated with potentially jurisdictional

aquatic resources, the riparian habitat is not anticipated to be regulated the CDFW or USFWS and is therefore not further analyzed.

Three land cover types located within the BIG footprint are considered sensitive by the CDFW: active desert dunes, active desert dunes – disturbed and stabilized/partially stabilized desert dunes. BIG construction would impact approximately 1,007.3 acres of these desert dune communities (active desert dunes; 550.7 acres, partially stabilized desert dunes; 7.0 acres, and disturbed/stabilized desert dunes; 449.6 acres). BIG construction would result in direct impacts to these habitats through destruction or crushing and clearing of vegetation with heavy equipment where habitat exists within the BIG footprint. This direct impact to these sensitive communities is a potentially significant impact.

BIG includes the preservation of approximately 500 feet on either side of the Mojave River under a conservation easement. This area contains dune habitat and the preservation of the area would lessen BIG's potential impacts to sensitive habitat. However, impacts would remain potentially significant and require mitigation.

To mitigate potentially significant direct impacts to active desert dunes, active desert dunes – disturbed, stabilized/partially stabilized desert dunes, BNSF would implement **MM BIG BIO-28** that requires land acquisition and preservation of dune habitat. In compliance with CDFW permit requirements, preserved land would be high quality, relatively undisturbed, habitat and preserved in perpetuity. As the CDFW requires mitigation ratios that fully mitigate all direct and indirect impacts to sensitive habitats, with implementation of **MM BIG BIO-28**, BIG construction impacts to sensitive vegetation communities would be less than significant.

Operations

BIG operation would occur within the disturbed footprint impacted by construction. Therefore, BIG would not result in impacts to riparian habitat or other sensitive natural communities once the Project is operational. BIG operations would have a less than significant impact.

Impact 5.4-2: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Mitigation Measures

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 for permanent impacts of up to 1,009.1 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 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.

Impact 5.4-2: BIG Level of Significance After Mitigation: Less than Significant With Mitigation Incorporated.

Impact 5.4-3	***Would the Project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

Proposed General Plan

The General Plan area contain waters of the U.S. and State, which include jurisdictional wetlands and other waters (USFWS, 2023). Construction activities could potentially have direct and indirect impacts on waters of the U.S. and State. The Open Space and Conservation Element of the proposed General Plan contains policies that address potential impacts to wetlands, including Policy OSC-5.2 that requires the coordination with public and non-governmental agencies to protect aquatic and wetland resources through the establishment, restoration, and conservation of high-value habitat areas, including wetlands.

In addition, a formal delineation of waters of the U.S. and State would need to be conducted prior to start of construction activities in the General Plan area where potential jurisdictional features are present, according to the federal Clean Water Act and/or Porter-Cologne Water Quality Control Act. The results of the delineation, including a report and map, would be submitted to the Los Angeles District of the United States Army Corps of Engineers for verification. If the United States Army Corps of Engineers determines that no waters of the U.S. are present, a Clean Water Act Section 404 permit would not be required, although waste discharge requirements from the RWQCB might be required pursuant to the Porter-Cologne Water Quality Control Act. If the USACAE determines that waters of the U.S. are present, a Section 404 permit from the USACE for placement of fill within waters of the U.S. and a Section 404 water quality certification from the RWQCB would be required. Placement of fill materials into waters of the U.S. would require compensation to ensure no net loss of aquatic resources. Required compensation for the loss of degraded habitat could be less than that for undisturbed habitat, but compensation ratios would ultimately be determined by the resource agencies and be stated in the permit conditions.

Implementation of proposed General Plan goals and policies, conditions associated with Section 404 permits and Section 404 water quality certifications, and Porter-Cologne Water Quality Control Act permits, and additional mitigation protection of wetlands that may be required by permitting agencies during construction activities would reduce potential impacts on federally protected wetlands to a less than significant level.

Impact 5.4-3: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-3: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-3: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

Construction of BIG would fill, excavate, or dredge up to approximately 31.57 acres (216,252 linear feet) of non-wetland waters of the U.S./State under USACE and RWQCB jurisdiction[4] as well as 7.97 acres of vegetated streambed, 38.71 acres of unvegetated streambed and 57.86 acres of CDFW jurisdictional watercourse (104.54 acres; 216,252 linear feet in total). BIG construction work that would fill or excavate or dredge these jurisdictional waters constitutes a potentially significant direct impact.

To mitigate potentially significant impacts to jurisdictional waters, **MM BIG BIO-29, MM BIG BIO-30**, and **MM BIG BIO-31** which require BNSF to obtain permits from the applicable agencies, implement aquatic resource best management practices, and properly dispose of vegetation, would be implemented. The implementing entity would be responsible for acquiring the necessary permits and complying with all permit requirements. As required by the applicable permits, compensatory mitigation to offset impacts on jurisdictional aquatic resources would be implemented through the purchase of mitigation bank credit purchase (e.g., purchase of enhancement and/or preservation credits at an agency-approved mitigation bank), off-site permittee responsible mitigation, or a combination of these options depending on availability. Final mitigation ratios and credits would be established by the permits issued from the USACE, RWQCB, and CDFW. Therefore, with implementation of best management practices and compliance with USACE, RWQCB, and/or CDFW permit requirements, including compensatory mitigation, BIG construction would result in a less than significant impact on jurisdictional aquatic resources.

Operations

Operation of BIG would occur within the areas disturbed and developed during construction. Operation of BIG would not result in impacts to jurisdictional resources beyond those resulting from construction. Therefore, operation of BIG would not result in impacts to jurisdictional waters.

Impact 5.4-3: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Mitigation Measures

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

[4] All waters that would be impacted by construction of BIG are anticipated to be both waters of the United States and State. Should waters be determined not to be waters of the United States, permits pursuant to the Porter-Cologne Water Quality Control Act from the RWQCB would be required for fill, excavation, or dredge in waters.

(CDFW) for impacts on vegetated 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 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 planting 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.

MM BIG 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 storm water 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 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.

MM BIG 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 excess vegetation shall be removed from the BIG footprint.

Impact 5.4-3: BIG Level of Significance After Mitigation: Less than Significant With Mitigation Incorporated.

Impact 5.4-4	***Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

Proposed General Plan

The General Plan area contains essential movement corridors for native resident, migratory fish, and wildlife species; development allowed by proposed General Plan could potentially have adverse impacts on such species. The Mojave River and associated riparian corridors represent migratory bird, fish, and wildlife corridors through the General Plan area. The Mojave River is identified as a riparian corridor providing habitat connectivity through the General Plan area, and adjacent areas (parks, open space, etc.). Other wildlife movement corridors in the General Plan area include a Terrestrial Connectivity Area of Conservation Emphasis, California Desert Linkage Network, California Essential Habitat Connectivity Area, and California Essential Habitat Connectivity Potential Riparian Connection. While some portions of these wildlife movement corridors are developed, and therefore may impede movement for the portions of these wildlife movement corridors that are currently undeveloped, future development along these areas could occur and could impede movement of native or migratory species. Construction and/or operational activities may temporarily or permanently impact migratory species and/or corridors through the alteration of and development on undeveloped lands. Compliance with the Migratory Bird Treaty Act, which prohibits the take or possession of any migratory nongame bird and their active nests, would ensure that future development does not result in adverse effects on migratory bird species.

The Open Space and Conservation Element of the proposed General Plan contains policies that address potential impacts to native residents or migratory fish or wildlife species and corridors. One of the policies

would include Policy OSC-5.4, would require any new development to coordinate with public and non-governmental agencies to provide and maintain wildlife corridors. To reduce impacts to wildlife corridors, regulatory agencies may require additional surveys to be conducted, and if needed, a mitigation plan would be developed in cooperation with the applicable regulatory agency. The City, permitting agency, and other responsible agencies would ensure that effective mitigation is implemented to reduce, minimize, or avoid impacts to migratory species and wildlife movement corridors. The proposed General Plan goals and policies, in combination with other federal and State policies and regulations, would reduce potential impacts to migratory species to a less than significant level, and no mitigation is required.

Impact 5.4-4: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-4: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-4: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

The BIG footprint serves as a corridor facilitating movement between larger blocks of natural habitat in the region in conjunction with existing wildlife corridors. However, existing barriers to movement limit the ability for many species to move through the BIG footprint to surrounding areas of natural habitat. As previously addressed, the southern boundary of the BIG footprint is marked by approximately 14 miles of National Trails Highway until the 33kV alignment moves eastward and continues along additional paved two-lane roads. Additionally, approximately 13 miles of existing railway runs through the middle of the BIG footprint, which is built on raised ballast and fill and bridge structures. Due to these existing obstructions, the natural habitat in the BIG footprint is fragmented from larger blocks of natural habitat to the southeast and northwest. The presence of vehicles and the potential for collisions along National Trails Highway and the existing railway may also prevent wildlife moving into and throughout the BIG footprint to forage, disperse, and/or seek cover. However, select areas of the BIG footprint may facilitate wildlife movement.

Within the Terrestrial Connectivity ACE dataset, the northeastern portion of the BIG footprint is modeled as less valuable (Rank 1), likely due to the existing semi-rural and suburban development, and would not offer substantial conservation value. Southwestward, portions of the Big footprint are modeled as Rank 3 and Rank 4 and are considered connections with implementation flexibility and conservation planning linkages, respectively. However, this area of the BIG footprint already has limited value as a conservation area between larger blocks of habitat beyond the site because of obstructions from the existing railway and National Trails Highway. A portion of the BIG footprint occurs within a Rank 5 Irreplaceable and Essential Corridor; however, the proposed lead track extension in that area occurs within the rail right-of-way and does not impact additional lands planned for conservation or lands with conservation value within areas mapped as Rank 5. BIG construction impacts would not reduce the function of the corridor areas beyond existing conditions and impacts would be less than significant.

Portions of the mapped California Desert Linkage Network also overlap with the BIG footprint: the Mojave River and the southwestern portion of the BIG footprint. Potential impacts to the Mojave River are discussed below. For the southwestern portion of the BIG footprint, the connectivity of mapped areas north and south of the railway proximate to the southwestern lead track extension are already constrained by the existing railway. BIG construction impacts would not reduce the function of the corridor areas beyond existing conditions and impacts would be less than significant.

The northern portion of the BIG footprint occurs along the Mojave River, which flows during high precipitation years and is also mapped as a wildlife corridor/linkage. Even as an ephemeral feature, wildlife may still use the linear corridor to travel between large expanses of natural habitat along the river year round, including between other core desert habitat regions. However, the proposed Hinkley Road bridge would be constructed to span a greater distance across the river, and impacts associated with bridge improvements are considered temporary for the purposes of wildlife corridor impacts. The Mojave River corridor would remain unobstructed following construction and its function as a wildlife corridor and linkage (as mapped) would remain. Further, BIG includes the preservation under a conservation easement of a portion of the BIG footprint that surrounds the Mojave River. With the establishment of this conservation easement, BIG construction impacts would not reduce the function of the Mojave River within the BIG footprint as a wildlife corridor and impacts would be less than significant.

Culverts and vehicular crossings underneath the railway may also facilitate the movement of wildlife. Five existing culverts and crossings along the railway at Mile Posts 10.9, 10.06, 8.9, 8.2, and 7.0 occur in areas where development would severely limit their function as wildlife crossings. Construction of BIG could result in direct and indirect impacts to these crossings and the movement of local wildlife within the BIG footprint as a result of degradation from increased noise, dust, and human activity. BIG construction impacts to these crossings' function as wildlife corridors are potentially significant.

MM BIG BIO-32 requires BIG construction to include a wildlife crossing at Mile Post 12.5 to facilitate wildlife movement through the BIG footprint. Through the establishment of a wildlife crossing, **MM BIG BIO-32** would ensure that existing wildlife movement through the BIG footprint would continue. With **MM BIG BIO-32** incorporated, BIG's potentially significant construction impacts to wildlife movement corridors would be less than significant.

As riparian and scrub habitats exist within the BIG footprint, the BIG footprint has potential to support protected avian nests (e.g., nests for willow flycatcher, Bell's sparrow, black-tailed gnatcatcher, California horned lark, and Costa's hummingbird). BIG construction could result in potentially significant direct impacts to avian nests through destruction and potential death, injury, or harassment of nesting birds, their eggs, and/or their young and indirect impacts from elevated noise, dust, and human activity should nests be present during construction. BIG's potential construction impacts on nesting birds would be potentially significant, thus, requiring mitigation.

MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-8, MM BIG BIO-18, MM BIG BIO-19, and **MM BIG BIO-35** require worker awareness training for special status species avoidance, approval of designated biologists and biological monitors, work stoppage for biological resources, vehicle traffic restrictions, nighttime lighting restrictions, work window restrictions with clearance surveys

regardless of when work occurs, construction noise limitations, and avian safe design. With the implementation of mitigation, BIG's potentially significant construction impacts to nesting birds would be less than significant.

Operations

While some areas of BIG that could serve as wildlife corridors are already obstructed by existing conditions, BIG operations that cross the wildlife corridors would obstruct wildlife movement through the corridors through on-going activity and introduction of elevated noise, dust, and lighting. This obstruction is a potentially significant impact. As discussed above, **MM BIG BIO-32** requires that a wildlife crossing be installed and maintained by BIG. By allowing safe access across the operational BIG footprint, incorporation of **MM BIG BIO-32** would reduce the impacts from BIG operation to less than significant as wildlife would use the crossing rather than cross BIG.

BIG operations could result in impacts on nesting birds within the vicinity. Increased noise near avian nests can elevate stress levels and impair normal vocal communication between territorial males, the mated pair, and parents and their young, which could lead to increased physical encounters between territorial males, reduce parental care of young. Impacts could also include an increase in nest abandonment, and a decrease in the perception of alarm calls signaling the presence of predators. BIG noise modeling showed noise level increases as a result of BIG operation. However, these increases were modest and generally within the range accepted to not affect normal avian vocal communication (i.e., less than 60 dBA). Refer to **Section 5.12: Noise and Vibration** of this EIR which addresses the anticipated noise levels associated with BIG operations. As such, potential impacts are anticipated to be less than significant.

Impact 5.4-4: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Mitigation Measures

MM BIG BIO-1 through MM BIG BIO-4, MM BIG BIO-8, MM BIG BIO 18 through MM BIG BIO 19, MM BIG BIO-35, and the following measure are applicable.

MM BIG BIO-32 **Wildlife Crossings.** As part of BIG construction, a wildlife crossing shall be constructed at the Unnamed Stream (Milepost 12.5) below the BNSF tracks and Main Street to facilitate wildlife movement between areas of natural habitat on either side of the railway and road. The railway crossing 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). Design features for facilitating wildlife culvert usage shall include installing inlet and outlet points.

A long term management plan for the wildlife crossing shall be submitted to the City for review and approval 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 mouths, and invasive plant removal.
- Routine clearing of debris and trash from the culvert shall be completed on a quarterly basis and following large storm events to allow ample space is available for wildlife travel.
- Access points to the culvert shall contain rocks or woody refuge sites to attract subterranean wildlife. Habitat quality (i.e., the percentage of invasive versus native plants and level of anthropogenic degradation) within a 200-meter radius surrounding the culvert access points shall be monitored quarterly by a qualified biologist to confirm wildlife corridor functionality.
- A mitigation entity responsible for the implementation of the long-term management plan.

Impact 5.4-4: BIG Level of Significance After Mitigation: Less than Significant With Mitigation Incorporated.

Impact 5.4-5	***Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

Proposed General Plan

The proposed General Plan would not conflict with any local policies or ordinances protecting biological resources. The policies in the CWP would remain intact following implementation of the proposed General Plan; the proposed General Plan would neither change nor conflict with the policies of the CWP as land annexed into the City would be required to comply with the proposed General Plan's policies. The CWP provides a comprehensive strategy to conserve and protect State and federally listed species, as well as other special status species and their habitats. The West Mojave Habitat Conservation Plan provides a comprehensive strategy to conserve and protect State and federally listed species, as well as other special status species and their habitats through the conservation of federal lands. The County Code includes Chapter 88.01, Plant Protection and Management Ordinance, which provides regulations and guidelines for the management of plant resources in the unincorporated areas of the County, on property or combinations of property under private or public ownership. The Barstow Code Chapter 19.20, Open Space and Government Districts Ordinance, provides regulations pertaining to natural resources in the Open Space District. Future projects would be required to comply with all applicable policies and plans pertaining to biological resources and would not conflict with such policies and ordinances.

Additionally, the proposed General Plan includes Policy OSC-5.5, which requires new development to minimize impacts to existing habitat and wildlife to the maximum extent practicable. Therefore, the proposed General Plan would not conflict with any local policies or ordinances protecting biological resources. Impacts would be less than significant, and no mitigation is required.

Impact 5.4-5: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-5: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-5: General Plan: Level of Significance After Mitigation: No significant impact would occur.

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Construction

The BIG footprint is within the San Bernardino County Burrowing Owl Overlay Zone. Therefore, construction and operation of BIG is subject to the applicable requirements established for that zone. Non-compliance with any applicable requirements would be a potentially significant impact. Proposed projects located within this zone are conditioned to submit a biological resources report including the results of burrowing owl surveys, and if present, mitigation measures to avoid or minimize impacts on burrowing owl. Focused burrowing owl surveys have been conducted for BIG and the results of surveys are included in **Appendix 5.4 BIG-1**. BIG would also incorporate **MM BIG BIO-1, MM BIG BIO-2, MM BIG BIO-3, MM BIG BIO-4, MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-12, MM BIG BIO-21, MM BIG BIO-22,** and **MM BIG BIO-33** to address potential impacts to burrowing owl as required of projects within the zone. Therefore, BIG construction would meet the requirements for projects within the San Bernardino County Burrowing Owl Overlay Zone and impacts would be less than significant with mitigation.

The San Bernardino County General Plan and the City of Barstow 2015 General Plan and proposed General Plan contains goals and policies relevant to BIG. A primary objective is to maintain natural resources and enhance biological diversity within the plan area, aiming to conserve suitable habitat for threatened and endangered species and facilitate mitigation through consultation with State and federal agencies. BIG was evaluated for consistency with both plans. Through consultation with the USFWS and CDFW and implementation of mitigation measures, BIG would be consistent with the goals and policies in the San Bernardino County General Plan and the City of Barstow 2015 General Plan and proposed General Plan that address biological resources. Therefore, the impact would be less than significant.

The County Code includes §§ 88.01 which provides regulations and guidelines for the management of plant resources in the unincorporated areas of the County. Under this ordinance, removal or relocation of regulated trees or plants requires the issuance of a tree or plant removal permit. Should the portions BIG within unincorporated San Bernardino County result in removal or relocation of regulated trees or plants, BIG would be required to obtain a tree or plant removal permit and comply with all applicable permit requirements. With compliance with all permit requirements, BIG would not conflict with the ordinance and result in less than significant impacts.

Operations

As discussed above, BIG would be reviewed for compliance with all applicable local policies or ordinances protecting biological resources prior to start of construction. As operation of BIG would not include habitat disturbance beyond that which occurs during construction and construction of BIG would not conflict with any local policies or ordinances protecting biological resources, operation of BIG would also not conflict

with any local policies or ordinances protecting biological resources. Impacts would be less than significant.

Impact 5.4-5: BIG: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-5: BIG Mitigation Measures: MM BIG BIO-1 through **MM BIG BIO-4**, **MM BIG BIO-8, MM BIG BIO-9, MM BIG BIO-12, MM BIG BIO-21, MM BIG BIO-22**, and **MM BIG BIO-33** are applicable.

Impact 5.4-5: BIG Level of Significance After Mitigation: Less than Significant With Mitigation Incorporated.

Impact 5.4-6	***Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?***

Proposed General Plan

The West Mojave Habitat Conservation Plan allows projects that qualify as "covered activities" to obtain federal and State incidental take authorization for listed species. As part of receiving take authorization, West Mojave Habitat Conservation Plan participants can expedite their mitigation and compensation requirements through the West Mojave Habitat Conservation Plan, which would be consistent with federal and State recommendations and requirements.

The proposed General Plan includes Open Space and Conservation Element Policies OSC-5.1 and OSC-5.2 which address requirements for future development project within West Mojave Habitat Conservation Plan areas. Policy OSC-5.1 would require the implementation of State and federal regulations through any new development and Policy OSC-5.2 would require coordination with public agencies, including the BLM who is the lead agency of the West Mojave Habitat Conservation Plan.

Therefore, future development under the proposed General Plan would be required to comply with applicable policies and plans governing biological resources in the General Plan area, and impacts would be less than significant, and no mitigation is required.

Impact 5.4-6: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.4-6: General Plan: Mitigation Measures: No mitigation required.

Impact 5.4-6: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

The BIG footprint is located within the boundary of the West Mojave Habitat Conservation Plan which encompasses 9.3 million acres of land within the counties of San Bernardino, Kern, Los Angeles, and Inyo. The plan provides a comprehensive strategy to conserve and protect federally and state-listed species, as

well as other special status species and their habitats. Currently, the approved plan is only applicable to federal lands. As the BIG footprint is located within private lands, the habitat plan is not applicable to BIG. Therefore, BIG construction would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. There would be no impact.

Operations

As stated above, the approved plan is only applicable to federal lands. As the BIG footprint is located on private lands, the habitat plan is not applicable to BIG. Therefore, BIG operation would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. There would be no impact.

Impact 5.4-6: BIG: Level of Significance Before Mitigation: No Impact.

Impact 5.4-6: BIG Mitigation Measures: No mitigation required.

Impact 5.4-6: BIG Level of Significance After Mitigation: No impact would occur.

5.4.3 SIGNIFICANT UNAVOIDABLE IMPACTS

Proposed General Plan

The proposed General Plan would result in no significant unavoidable impact concerning biological resources.

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No significant and unavoidable impacts would occur with the implementation of BIG.

5.4.4 REFERENCES

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