Attachment H: Biological Resources Technical Report

1.0 Introduction

The DesertXpress Enterprises, LLC XpressWest High-Speed Train Project (Project) entails construction and operation of a high-speed passenger train system between Apple Valley, and Las Vegas, Nevada. The Project was originally evaluated in the following documents (collectively referenced as the DesertXpress Environmental Impact Statement [EIS]):

- March 2009 *Draft Environmental Impact Statement and 4(f) Evaluation for the proposed DesertXpress High-Speed Passenger Train* (DesertXpress DEIS)
- April 2010 *Supplemental Draft Environmental Impact Statement and 4(f) Evaluation for the proposed DesertXpress High-Speed Passenger Train* (DesertXpress SEIS)
- March 2011 *Final Environmental Impact Statement and 4(f) Evaluation for the proposed DesertXpress High-Speed Passenger Train Victorville, California to Las Vegas, Nevada* (DesertXpress FEIS)

The Federal Railroad Administration (FRA) issued the Record of Decision DesertXpress High-Speed Passenger Train (DesertXpress ROD) in July 2011.

This technical report describes the potential changes to biological resource impacts with the Project modifications.

2.0 Regulatory Updates

The regulatory environment for biological resources is described in detail in Section 3.14.1.1-3 of the DesertXpress DEIS and Section 3.14.1.2 of the DesertXpress FEIS. Land use designations and the regulatory status of each species evaluated in the DesertXpress EIS were verified during this analysis and any changes are included in the applicable section of this report. Below are changes to the regulatory environment since the issuance of the DesertXpress ROD.

On September 14, 2016, the Bureau of Land Management (BLM) issued the ROD for the Desert Renewable Energy Conservation Plan (DRECP), which amended the California Desert Conservation Area (CDCA) Plan, the Bishop Resource Management Plan (RMP), and the Bakersfield RMP in the Mojave and Colorado/Sonoran Desert regions of southern California. The DRECP covers 22.5 million acres in seven California counties — Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego — and includes 10.8 million acres of public lands administered by the BLM. The DRECP identifies priority areas for renewable energy development while setting aside areas for conservation and recreation. The plan also designated new Areas of Critical Environmental Concern (ACEC), as part of the BLM's Land Use Plan Amendment for the DRECP. The modified Project is located within the DRECP Plan Area and intersects with five new ACECs (discussed in Section 4.2.6).

On August 27, 2019, the U.S. Fish and Wildlife Service (USFWS) published three final rules that change the implementation of the Endangered Species Act (ESA) (16 United States Code [U.S.C.] § 1531 et. seq.). The final rules apply to Section 4 (listing and de-listing of endangered and threatened species; effective September 26, 2019) and Section 7 (consultation with Federal agencies; effective October 28, 2019) of the ESA.

Concurrently with the preparation of this Reevaluation, FRA submitted a letter to the USFWS on July 20, 2020 seeking concurrence that the Project modifications do not require reinitiation of formal

consultation under Section 7. As described in the letter, FRA determined this approach was appropriate because impacts to species listed as threatened or endangered and critical habitat have been substantially reduced, and no new impacts would occur as a result of the Project modifications that were not previously addressed in the Biological Opinion issued for the Project.

3.0 Methodology for Biological Field Surveys

3.1 VEGETATION MAPPING

For the DesertXpress DEIS, the Project footprint, including associated buffers to evaluated alternatives, was mapped during 2006-2010 field surveys. Most of the modified Project footprint is included in the area that was mapped as part of associated buffers. For areas of the modified Project footprint that were not included in the 2006-2020 field surveys, ICF biologists (Brad Haley and Phil Richards) conducted reconnaissance-level vegetation mapping of the modified Project footprint on September 24 through 26, 2019, following the methods described in Section 3.14.2.3 of the DesertXpress DEIS. For consistency, vegetation was identified using the same classification scheme (Mojave Desert Ecosystem Program: Central Mojave Vegetation Database [USGS 2004]). Details of the weather conditions during the survey are shown in Table 3.1-1.

Table 3.1-1 Weather Conditions during Modified Project Footprint Vegetation Mapping

Dates of Survey	Weather Conditions	Approximate Temperatures During Survey
09/24/19	Clear with winds from 0–8 miles per hour (mph)	70–94 degrees Fahrenheit
09/25/19	15–50 percent cloud cover with winds from 0–8 mph	71–96 degrees Fahrenheit
09/26/19	60–100 percent cloud cover with winds from 0–15 mph; light rain	82–94 degrees Fahrenheit

Between January 2020 and May 2020, further design modifications were incorporated into the Project footprint that required additional vegetation mapping. Since the modified footprint is immediately adjacent to areas previously evaluated during the 2019 field reconnaissance, updated vegetation mapping was completed through review of site photographs and associated desktop aerial imagery interpretation.

As part of updating the vegetation mapping within the modified Project footprint, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) list of sensitive vegetation community occurrences was refreshed and included in Attachment H1.

3.2 SPECIAL-STATUS PLANTS

The appropriate survey window for special-status plants is between March and August. An evaluation was conducted where the modified Project footprint could provide suitable habitat for special-status plants; however, focused or protocol-level surveys for special-status plants were not conducted within the modified Project footprint. Based on the modified Project footprint, a query of the CNDDB (Attachment H2), California Native Plant Society Inventory of Rare and Endangered Plants (CNPS; Attachment H3), and USFWS Information for Planning and Consultation (IPAC; Attachment H4) was conducted for a list of special-status plant occurrences within the Project footprint and vicinity.

3.3 SPECIAL-STATUS WILDLIFE

An evaluation was conducted where the modified Project footprint could provide suitable habitat for special-status wildlife; however, focused or protocol-level surveys for special-status wildlife were not conducted within the modified Project footprint. Based on the modified Project footprint, a query of the CNDDB (Attachment H5) and the USFWS IPAC (Attachment H4) was conducted for a list of federally designated critical habitats and federally listed wildlife species within the Project footprint and vicinity.

Several additional special-status wildlife species and resources were evaluated for suitable habitat within the modified Project footprint but did not have focused or protocol-level surveys conducted. These include the following: burrowing owl, Mojave fringe-toed lizard, Clark County Habitat Conservation Plan-covered reptile species, banded Gila monster, roosting bats, American badger, desert bighorn sheep, nesting raptors, migratory birds, and wildlife movement corridors.

3.3.1 DESERT TORTOISE (THREATENED)

The Mojave population of the desert tortoise is Federally and California state-listed as a threatened species. In Nevada, desert tortoises are classified as a state protected and threatened species. This species is a covered species under the West Mojave Plan, which encompasses approximately 9.4 million acres of public land managed by the BLM.

Based on USFWS and CDFW consultation from 2007 to 2011, no desert tortoise surveys were required within the Interstate (I)-15 freeway right-of-way (ROW). However, the Preferred Alternative included 29 drainage crossings under the I-15 freeway that were surveyed for desert tortoise in 2007. The results of the survey were positive for desert tortoise signs and were included in the BA. In Nevada, it was determined that all areas outside the existing I-15 freeway ROW and outside the urbanized development in Primm, Jean, and Las Vegas Metropolitan area were occupied desert tortoise habitat. Tortoise surveys were not required in Nevada as part of the DesertXpress EIS and ESA Section 7 process.

While no focused surveys were conducted as part of the habitat assessment, the vegetation mapping (described above) was conducted by biologists that are experienced in identifying desert tortoise signs and habitat. Focused surveys were not completed because of the following considerations: the existing BO calculated take and prescribed mitigation requirements, suitable habitat will be considered occupied, and impacts on suitable habitat would be significantly reduced relative to the footprint evaluated in the DesertXpress EIS.

Meandering survey transects were walked by each biologist throughout the Dale Evans Station and Operations Maintenance and Storage Facility (OMSF), the Warm Springs Station, Frias Substation, and temporary construction areas in search of desert tortoise and their signs. These surveys were not focused or protocol-level. For areas that were not subject to meandering transects, habitat was evaluated.

3.3.2 SOUTHWESTERN WILLOW FLYCATCHER (ENDANGERED), LEAST BELL'S VIREO (ENDANGERED), AND WESTERN YELLOW-BILLED CUCKOO (THREATENED)

The southwestern willow flycatcher and least Bell's vireo are Federally and California state-listed as endangered species. The western yellow-billed cuckoo is Federally listed as threatened and California state-listed as an endangered species. Based on the 2007 habitat assessment for southwestern willow flycatcher and least Bell's vireo, the only portion of the Preferred Alternative that provided suitable habitat was Segment 1 over the Mojave River. USFWS protocol surveys were conducted for

southwestern willow flycatcher and least Bell's vireo in the 2011 Project study area. The vegetation mapping described above was conducted by biologists experienced in identifying habitats for these species. Survey results were negative for both species. Suitable habitat for the western yellow-billed cuckoo was not identified in the 2011 Project study area. The Project component (Southern California Edison Utility Corridor in Victorville) that was proposed to cross the Mojave River is no longer a part of the modified Project.

3.3.3 MOHAVE GROUND SQUIRREL (THREATENED)

This species is a state-listed threatened species and a BLM Sensitive species. This species is a covered species under the West Mojave Plan. Because of its BLM status, the habitat for this species was evaluated within the modified Project footprint by a qualified biologist (described above) during the habitat assessment using the methods described in Section 3.14.2.1 of the 2011 DesertXpress FEIS.

4.0 Effects Analysis for Biological Resources

For this Reevaluation, the methodology described in Section 3.14.2.2 of the DesertXpress DEIS and Section 3.14.2 of the DesertXpress SEIS were used to evaluate impacts of the modified Project on biological resources. Similarly, the thresholds for determining impacts on vegetation and wildlife from Section 3.14.4.2 of the DesertXpress DEIS were used to evaluate effects from the modified Project footprint. The biological study area for the modified Project was reduced in size compared to the 2011 study area, because the modified Project footprint is primarily located within the existing I-15 freeway ROW. Based on the field survey and desktop analysis, areas of the modified Project footprint that were not previously evaluated were determined to contain biological resources of similar type, quality, and quantity, relative to the areas evaluated in the DesertXpress EIS. The following sections compare the previously evaluated biological resource impacts to those associated with the modified Project.

4.1 VEGETATION MAPPING

The field survey of the modified Project footprint added a "Disturbed" classification to Creosote Bush Shrubland and Saltbush Complex communities throughout Segment 1 through Segment 6 within the I-15 freeway corridor. The characteristic features described in Table 3.14-1 of the DesertXpress DEIS and Table 2 of the Special-Status Plant Survey Report for Segment 4C (ICF 2010) for all vegetation types were reviewed and found to be consistent with the vegetation types mapped within the modified Project footprint. Table 4.1-1 shows the overall impacts (permanent and temporary impacts combined) on vegetation communities within the modified Project footprint. Table 4.1-2 and Table 4.1-3 separate the permanent and temporary impacts associated with the modified Project footprint. Table 4.2-4 shows total vegetation impacts, by impact type, for the original and modified Project footprints.

Table 4.1-1 Modified Project Footprint Overall Vegetation Impacts (acres)

Vegetation Type	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Total**
Barren/Developed	246.9	294.2	582.1	242.6	189.6	211.6	1,766.8
Blackbrush Shrubland	-	-	19.9	-	-	-	19.9
Creosote Bush Shrubland	382.7	24.5	44.3	303.7	405.9	128.9	1,283.9
Disturbed Creosote Bush Shrubland	2.1	27.9	185.1	2.1	18.3	11.5	246.9

Vegetation Type	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Total**
Desert Wash Scrub	-	1.0	7.5	0.2	-	5.7	14.4
Joshua Tree Wooded Shrubland*	-	-	6.6	-	-	-	6.6
Mojave Mixed Woody Scrub	-	-	21.6	23.7	-	0.3	45.6
Ruderal	5.4	-	0.5	-	13.2	14.4	32.7
Saltbush Complex	-	5.4	16.3	2.9	-	-	24.7
Disturbed Saltbush Complex	3.6	26.0	136.5	-	-	15.7	181.7
Sparse Vegetation	-	3.1	1.2	-	-	-	4.3
Total per Segment**	**640.7**	**382.1**	**1,021.5**	**575.2**	**626.9**	**388.0**	**3,634.4**

*Sensitive Vegetation Community
**Totals generated prior to rounding and therefore may not add precisely.

Table 4.1-2 Modified Project Footprint Permanent Vegetation Impacts (acres)

Vegetation Type	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Total**
Barren/Developed	232.8	215.4	458.6	121.6	41.2	66.4	1,136.0
Blackbrush Shrubland	-	-	7.1	-	-	-	7.1
Creosote Bush Shrubland	382.6	12.0	33.5	74.3	169.3	91.4	763.1
Disturbed Creosote Bush Shrubland	2.1	12.5	155.5	0.9	-	4.5	175.4
Desert Wash Scrub	-	0.9	5.4	0.2	-	5.7	12.1
Joshua Tree Wooded Shrubland*	-	-	4.9	-	-	-	4.9
Mojave Mixed Woody Scrub	-	-	15.4	5.3	-	0.3	21.0
Ruderal	5.4			-	9.7	12.3	27.4
Saltbush Complex	-	3.0	7.1	-	-	-	10.0
Disturbed Saltbush Complex	3.3	6.0	121.8	-	-	10.6	141.7
Sparse Vegetation	-	0.2	-	-	-	-	0.2
Total per Segment**	**626.2**	**250.0**	**809.1**	**202.3**	**220.1**	**191.1**	**2,299.2**

* Sensitive Vegetation Community
**Totals generated prior to rounding and therefore may not add precisely.

Table 4.1-3 Modified Project Footprint Temporary Vegetation Impacts (acres)

Vegetation Type	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Total**
Barren/Developed	14.1	78.8	123.6	121.0	148.4	145.2	631.1
Blackbrush Shrubland	-	-	12.9	-	-	-	12.9
Creosote Bush Shrubland	0.1	12.4	10.8	229.4	236.6	37.6	525.5
Disturbed Creosote Bush Shrubland	-	15.4	29.6	1.2	18.3	6.9	71.5
Desert Wash Scrub	-	0.2	2.1	-	-	-	2.3
Joshua Tree Wooded Shrubland*	-	-	1.7	-	-	-	1.7
Mojave Mixed Woody Scrub	-	-	6.2	18.4	-	-	24.5
Ruderal	-	-	0.5	-	3.5	2.1	6.0
Saltbush Complex	-	2.5	9.2	2.9	-	-	14.6
Disturbed Saltbush Complex	0.3	19.9	14.7	-	-	5.1	40.0
Sparse Vegetation	-	2.8	1.2	-	-	-	4.0
Total per Segment**	**14.5**	**132.0**	**212.5**	**373.0**	**406.8**	**196.9**	**1,335.7**

* Sensitive Vegetation Community
**Totals generated prior to rounding and therefore may not add precisely.

4.2 ENVIRONMENTAL CONSEQUENCES

4.2.1 INTRODUCTION OR SPREAD OF INVASIVE, NON-NATIVE WEED SPECIES INTO NATURAL VEGETATION COMMUNITIES

The effects related to the introduction and spread of invasive, non-native weed species, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. The implementation of Mitigation Measure BIO-4 (avoid dispersal) from the DesertXpress EIS would be implemented to reduce or mitigate adverse effects from noxious weeds, and the Project modifications would not result in substantial changes in the evaluation of invasive, non-native weed species impacts of the DesertXpress EIS.

4.2.2 LOSS OF OR DAMAGE TO NATIVE VEGETATION COMMUNITIES

The effects related to the loss of or damage to native vegetation communities, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. Acreages of native vegetation communities that would be permanently or temporarily affected by the alignments, stations, and operations and maintenance facilities are presented in Table 4.2-4. The modified Project would result in substantially reduced acreages of permanent and temporary impacts on these vegetation communities relative to the DesertXpress EIS. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 1,135 acres and temporarily affect approximately

695 acres of native vegetation communities, whereas the DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 1,500 acres and temporarily affect 4,500 acres of native vegetation communities. In addition, most of the modified Project impacts now occur within the I-15 freeway ROW, which contains degraded quality native vegetation communities. Mitigation Measures BIO-5 (confine equipment), BIO-6 (revegetation), BIO-7 (retain topsoil), BIO-8 (restore topography), BIO-9 (erosion control), BIO-18 (Nevada compensatory mitigation), and BIO-18 (California compensatory mitigation) from the DesertXpress EIS (restated below) would be implemented to avoid, minimize or mitigate adverse effects from loss of or damage to native vegetation communities. Thus, the Project modifications would not result in substantial changes in the evaluation of native vegetation community impacts of the DesertXpress EIS.

Table 4.2-4 Comparison of Native Vegetation Community Impacts (acres)

Biological Resources	DesertXpress EIS (2011)				Modified Project (2020)
	Preferred Alternative	Alternative A	Alternative B	Option C	
Native Vegetation Communities[1] -- Permanent Impact	1,432.3 to 1,556.6[2]	611.9 to 747.1[3]	1,473.6 to 1,604.6[4]	40.2[5] 38.0[5]	1,135.3
Native Vegetation Communities -- Temporary Impact	4,584.8	2,108.6	4,558.4	232.4[6]	694.6

[1] Native Vegetation Communities include: Blackbrush Shrubland, Creosote Bush Shrubland, Disturbed Creosote Bush Shrubland, Desert Wash Scrub, Joshua Tree Wooded Shrubland, Mojave Mixed Woody Scrub, Saltbush Complex, and Disturbed Saltbush Complex.

[2] 2011 Preferred Alternative total ranges from 1,432.3 acres with Victorville Station 1 and OMSF 1 to 1,566.6 acres with Victorville Station 2 and OMSF 2.

[3] Alternative A totals range from 611.9 acres (Victorville Station 1 and OMSF 1) with the Wigwam Avenue Maintenance Storage Facility (MSF) to 747.1 acres (Victorville Station 2 and OMSF 2) with the Sloan Road MSF.

[4] Alternative B totals range from 1,473.6 acres (Victorville Station 1 and OMSF 1) with the Wigwam Avenue MSF to 1,604.6 acres (Victorville Station 1 and OMSF 2) with the Sloan Road MSF.

[5] Option C would add an additional 40.2 acres to the 2011 Preferred Alternative and Alternative B totals or 38 acres to the Alternative A total.

[6] Option C would add an additional 232.4 acres to the Preferred Alternative, Alternative A, and Alternative B totals.

4.2.3 SENSITIVE VEGETATION COMMUNITIES

The effects related to the loss of sensitive vegetation communities, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. A previously evaluated sensitive plant community, Joshua Tree Wooded Shrubland, is present within Segment 3 of the modified Project footprint. However, as outlined in Table 4.2-5 the acreage of permanent and temporary impacts on this sensitive vegetation community has been reduced substantially relative to the DesertXpress EIS analysis because the modified Project footprint is now primarily located within the I-15 freeway ROW. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 84 acres and temporarily affect 194 acres of Joshua Tree Wooded Shrubland. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 4.9 acres and temporarily affect 1.7 acres of Joshua Tree Wooded Shrubland.

The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 2 acres and temporarily affect 13 acres of Mesquite Shrubland. The modified Project footprint is no longer anticipated to affect Mesquite Shrubland.

Mitigation Measures BIO-5 (confine equipment), BIO-6 (revegetation), BIO-7 (retain topsoil), BIO-8 (restore topography), BIO-9 (erosion control), BIO-10 (tree removal permit), BIO-11 (compensatory mitigation), and BIO-13 (pre-construction surveys) from the DesertXpress EIS (restated below) would be implemented to reduce or mitigate adverse effects from loss of sensitive vegetation communities. Thus, the Project modifications would not result in substantial changes in the evaluation of sensitive vegetation community impacts of the DesertXpress EIS.

Table 4.2-5 Comparison of Sensitive Vegetation Community Impacts (acres)

Biological Resources	DesertXpress EIS (2011)				Modified Project (2020)
	Preferred Alternative	Alternative A	Alternative B	Option C	
Sensitive Plant Community –Permanent Impact (Joshua Tree Wooded Shrubland)	83.8	-	83.8	-	4.9
Sensitive Plant Community –Permanent Impact (Mesquite Shrubland)	1.9	-	1.9	-	0.0
Sensitive Plant Community –Temporary Impact (Joshua Tree Wooded Shrubland)	194.4	-	194.7	-	1.7
Sensitive Plant Community –Temporary Impact (Mesquite Shrubland)	13.4	4.6	13.4	-	0.0

4.2.4 POTENTIAL EFFECTS ON SPECIAL-STATUS PLANT POPULATIONS

The effects related to construction and operational activities on special-status plant populations, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. Table 3.14-2 through Table 3.14-7 in the DesertXpress DEIS, which provided a list of special-status plants with potential to occur in each Segment, were evaluated during this assessment. The modified Project footprint minimizes adverse impacts on sensitive species identified in the DesertXpress EIS because most of the Project footprint is now within the I-15 freeway ROW, which provides little habitat for sensitive species. The biological resources are degraded within the modified Project footprint due to the proximity to existing maintained roadway infrastructure. Special-status plant surveys have not been conducted in California or reconducted in Nevada within the modified Project footprint. The implementation of Mitigation Measures BIO-5 (confine equipment), BIO-14 (avoid known populations), and BIO-15 (mitigation) from the DesertXpress EIS would be implemented to reduce or mitigate adverse effects on sensitive plant populations, and the Project modifications would not result in substantial changes in the evaluation of special-status plant population impacts of the DesertXpress EIS.

4.2.5 POTENTIAL EFFECTS ON SPECIAL-STATUS WILDLIFE

The modified Project footprint is now primarily located within the I-15 freeway ROW, which provides little to no habitat for special-status wildlife due to the proximity to existing maintained roadway infrastructure. As described below, the modified Project footprint would result in fewer acres of permanent and temporary impacts to wildlife habitat relative to the impacts evaluated in the DesertXpress EIS. Therefore, the Project modifications would not result in substantial changes in the evaluation of special-status wildlife impacts of the DesertXpress EIS.

DESERT TORTOISE AND DESERT TORTOISE HABITAT

The effects related to construction and operational activities on desert tortoise individuals and desert tortoise habitat, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. Acreages of desert tortoise habitat (native vegetation communities) that would be permanently or temporarily affected by the alignment, stations, and operations and maintenance facilities are presented in Table 4.2-4 of this report. For comparison, the impacts evaluated in the DesertXpress EIS have been included in Table 4.2-4. The modified Project would result in fewer acres of permanent and temporary impacts, as compared to the impacts evaluated in the DesertXpress EIS.

The greatest permanent impacts associated with the modified Project footprint are bound by the I-15 freeway fencing. Tortoise exclusion fencing is present in California along the I-15 freeway from just north of the proposed Dale Evans Station and OMSF site in Segment 1 to just north of Yermo, then again near Baker through Mountain Pass. The fencing is also consistently present from Primm, Nevada, to Las Vegas, Nevada. In the 2011 BO for the Project, the USFWS determined that the loss of potential desert tortoise habitat close to the I-15 freeway was unlikely because the existing freeway facility severely fragments the habitat, the proposed habitat losses extended only a short distance from the I-15 freeway, and habitat adjacent to freeways is often degraded for some distance from the edge of the road because of trash, routine maintenance, and predation by common ravens, raptors, coyotes, and feral animals. Additionally, because the habitat loss is distributed in such a linear manner along I-15 freeway, those areas would not be considered essential for the survival and recovery of the species or to provide any important habitat linkages.

The Dale Evans Station and OMSF site (300 acres) and the Warm Springs Station (109 acres) would be located in areas that consist primarily of Creosote Bush Shrubland and make up nearly 50 percent of the permanent impacts on desert tortoise habitat from the modified Project. The Dale Evans Station and OMSF site is approximately the same size as the previously evaluated Victorville Station 3B and OMSF 2 and is in approximately the same location, except on the east side of I-15 freeway rather than the west side. The Warm Springs Station in Las Vegas is within desert tortoise habitat; however, the area is not designated critical habitat and is surrounded by urban and commercial development, as well as the I-15 freeway and other major roads, making it unlikely for tortoises to be present.

The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 1,510 acres and temporarily affect 4,135 acres of desert tortoise habitat. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 818 acres and temporarily affect approximately 582 acres of desert tortoise habitat. Implementation of Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), BIO-5 (confine equipment), BIO-15 (prepare translocation plan), BIO-16 (final monitoring plan), BIO-18 (Nevada compensatory mitigation), BIO-18 (California compensatory mitigation), and BIO-19 (exclusion fencing and culverts) from the DesertXpress EIS, as well as additional minimization and compensatory mitigation measures included in the new BO (Section 3.2.8), would reduce or mitigate adverse effects on desert tortoise and desert tortoise habitat.

MOHAVE GROUND SQUIRREL

Mohave ground squirrel is listed as threatened under the California Endangered Species Act. The effects related to construction and operational activities on Mohave ground squirrel, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. Segment 1 and the southern portion of Segment 2 (Barstow/Yermo) provide suitable habitat for this species. The

DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 447 acres and temporarily affect 562 acres of Mohave ground squirrel habitat. Based on the habitat assessment, the modified Project footprint would permanently convert 398 acres and temporarily affect 20 acres of Mohave ground squirrel habitat. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys), BIO-3 (monitoring), BIO-5 (confine equipment), and BIO-20 (MGS compensatory mitigation) would be implemented to reduce or mitigate adverse effects on Mohave ground squirrel.

MOJAVE FRINGE-TOED LIZARD

The Mojave fringe-toed lizard is a California species of special concern and is a BLM sensitive species. The species is known from within five miles of the Project area (CNDDB 2020). A habitat suitability model for the Mojave fringe-toed lizard was developed as part of the DRECP. The modified Project footprint occurs in areas that have been modeled as suitable habitat for this species. This habitat suitability model was developed in 2016 and was not available as a reference for the analysis of the Preferred Alternative in 2011. However, the effects related to construction and operational activities on Mojave fringe-toed lizard, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. The use of this habitat suitability model merely confirms that the habitat assessment completed in 2011 is consistent with the habitat assessment conducted for the modified Project. Segments 1, 2, and 3 provide suitable habitat for this species. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately four acres and temporarily affect eight acres of Mojave fringe-toed lizard habitat. Based on the DRECP suitable habitat model, nearly 85 acres of suitable habitat occurs within the modified Project footprint, with approximately 63 acres of permanent impacts and 22 acres of temporary impacts. However, over 70 acres of impacts would occur within the I-15 freeway median, which does not appear to provide adequate habitat for the species due to its disturbed conditions. Therefore, based on the habitat assessment and species distribution model, the modified Project footprint would permanently convert four acres and temporarily affect 11 acres of Mojave fringe-toed lizard habitat. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), and BIO-5 (confine equipment) would be implemented to reduce or mitigate adverse effects on Mojave fringe-toed lizard.

NESTING RAPTORS AND MIGRATORY BIRDS

The modified Project would be located within suitable nesting habitat for special-status and migratory birds and raptors. Regulations under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act would apply to minimize the modified Project's effects to nesting raptors and migratory birds. The DesertXpress DEIS Sections 3.14.1 includes a detailed description of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.

Effects related to construction and operational activities on nesting raptors and migratory birds, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. The modified Project would result in fewer permanent and temporary impacts, in terms of acreage, on vegetation communities that provide potential habitat for nesting raptors and migratory birds, compared to the impacts previously evaluated. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 1,500 acres and temporarily affect 4,500 acres of native vegetation communities which provide suitable nesting bird and raptor habitat. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 1,135

acres and temporarily affect nearly 695 acres of native vegetation communities. Those totals include a reduction in impacts to Joshua Tree Wooded Shrubland (278 acres down to 6.6 acres) and Mesquite Shrubland (15 acres down to zero acres), which provide important nesting substrate for migratory birds and raptors. In addition, the majority of the I-15 freeway ROW does not provide suitable nesting habitat for migratory birds and raptors, with certain exceptions including existing electrical transmission line towers, Mountain Pass, and freeway overpasses. The modified Project footprint also no longer includes tunneling through the Clark Mountains. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), and BIO-5 (confine equipment) would be implemented to reduce or mitigate adverse effects on nesting raptors and migratory birds.

BANDED GILA MONSTER

The banded Gila monster is a California species of special concern and is a BLM sensitive species. Banded Gila monster are known from within five miles of the modified Project (CNDDB 2020). In Nevada, the banded Gila monster is classified as state protected.

Effects related to construction and operational activities on banded Gila monster, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint**.** Segment 4 (Mountain Pass) provides suitable habitat for this species. The DesertXpress EIS did not provide an estimate on the quantity of impacts to banded Gila monster habitat. The Preferred Alternative passed through the Clark Mountains (north of Mountain Pass) which were the location of the closest records for the species in the area. The modified Project footprint no longer includes the Clark Mountains, and is now within the I-15 freeway median through the Mountain Pass area which provides lower quality habitat than the Clark Mountains. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), and BIO-5 (confine equipment) would be implemented to avoid direct mortality of banded Gila monster.

CLARK COUNTY HABITAT CONSERVATION PLAN-COVERED REPTILE SPECIES

The effects related to construction and operational activities on the Clark County HCP-covered reptile species, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. These species include banded gecko, Great Basin collard lizard, desert iguana, large-spotted leopard lizard, desert tortoise, chuckwalla, western red-tailed skink, sidewinder, speckled rattlesnake, Mojave green rattlesnake, glossy snake, California king snake, western leaf-nosed snake, western long-nosed snake, and Sonoran lyre snake. The modified Project would result in fewer permanent and temporary impacts, in terms of acreage, on suitable Clark County HCP-covered reptile species habitat, as compared to the impacts previously evaluated in the DesertXpress EIS. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 248 acres and temporarily affect 821 acres of suitable habitat. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 267 acres and temporarily affect nearly 274 acres of suitable habitat. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), and BIO-5 (confine equipment) would be implemented to avoid direct mortality of Clark County HCP-covered reptile species.

BURROWING OWL

Burrowing owls are a California species of special concern and a BLM sensitive species. Effects related to construction and operational activities on burrowing owl, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint. The modified Project would result in

fewer permanent and temporary impacts, in terms of acreage, on vegetation communities that provide potential habitat for burrowing owls, as compared to the impacts previously evaluated in the DesertXpress EIS. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 1,510 acres and temporarily affect 4,135 acres of burrowing owl habitat. Based on the habitat assessment, the modified Project footprint would permanently convert 1,163 acres and temporarily affect 704 acres of burrowing owl habitat. The temporary and permanent impacts on burrowing owl habitat are slightly larger as for the native vegetation communities listed in Table 4.2-4 because suitable owl habitat includes non-native vegetation communities as well. MMs BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), BIO-5 (confine equipment), and BIO-21 (avoid or passively relocate owls) would be implemented to minimize or avoid potential loss or disturbance of burrowing owls.

ROOSTING BATS

The effects related to construction and operational activities on roosting bats, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint, though in a greatly reduced capacity now that the modified Project alignment would run parallel to the I-15 freeway primarily within the I-15 freeway corridor. The DesertXpress EIS specifically mentioned caves and mines in the Clark Mountains as potential bat roosting and nursery sites, which the modified Project footprint no longer includes. Bridges throughout the I-15 freeway corridor along Segment 1 through Segment 6 provide potential roosting and nursery sites for bats. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), and BIO-5 (confine equipment) would be implemented to minimize or avoid potential loss or disturbance of roosting bats.

AMERICAN BADGER

The American badger is a California species of special concern. Effects related to construction and operational activities on American badger, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint, though in a greatly reduced capacity now that the modified Project alignment would run parallel to the I-15 freeway within the I-15 freeway corridor. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 1,510 acres and temporarily affect 4,135 acres of badger habitat. Based on the habitat assessment, the modified Project footprint would permanently convert approximately 1,135 acres and temporarily affect nearly 695 acres of badger habitat. Mitigation Measures BIO-1 (worker education program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), BIO-5 (confine equipment), and BIO-19 (construct culverts) would be implemented to minimize or avoid potential loss or disturbance of American badger.

DESERT BIGHORN SHEEP

Desert bighorn sheep are a fully protected species under CDFW code and a BLM sensitive species. Effects related to construction and operational activities on desert bighorn sheep, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint, though in a greatly reduced capacity now that the modified Project alignment would run in the median of the I-15 freeway corridor. Segment 4 (Mountain Pass) is where the I-15 freeway median contains the Wheaton Springs Wash. The modified Project footprint would be directly adjacent to the northbound interior lane of the I-15 freeway. The rail alignment in the Mountain Pass area would no longer involve tunnels and would be elevated over the wash in the same locations as the I-15 freeway. Therefore, the previous effects related to tunnels causing direct mortalities and the rail creating a movement barrier to bighorn sheep have been substantially reduced or eliminated. Mitigation Measures BIO-1 (worker education

program), BIO-2 (pre-construction surveys and fencing), BIO-3 (monitoring), BIO-5 (confine equipment), and BIO-19 (wildlife crossings) would be implemented to minimize or avoid direct effects on desert bighorn sheep.

SOUTHWESTERN WILLOW FLYCATCHER, LEAST BELL'S VIREO, AND WESTERN YELLOW-BILLED CUCKOO

The Project modifications would not encounter suitable habitat for southern willow flycatcher, least Bell's vireo, or western yellow-billed cuckoo. The modified Project footprint no longer includes the SCE Utility Corridor that was proposed to cross the Mojave River south of Victorville. Based on the modified Project footprint, the closest suitable habitat for these species are now over six miles south of the Dale Evans Station and OMSF site. As no suitable habitat occurs within the Project area, no impacts on suitable habitat are anticipated to occur. Based on the 2011 BO, the Project would incorporate avoidance measures through the design and construction schedule approved by the USFWS in their acknowledgement of FRA's *no effect* determination for these species. These avoidance measures, along with Mitigation Measure BIO-13 (pre-construction surveys) are no longer necessary for these species.

WILDLIFE MOVEMENT

The effects related to construction and operational activities on wildlife movement, as described in Section 3.14.2.3 of the DesertXpress DEIS, still apply to the modified Project footprint, though in a greatly reduced capacity now that the modified Project would be within the I-15 freeway corridor, which is itself an existing barrier to wildlife. The Dale Evans Station and OMSF site and Warm Springs Station are unlikely to isolate individuals or fragment habitat because they are adjacent to the I-15 freeway corridor and, for Warm Springs, already surrounded by urban and industrial land uses. Habitat fragmentation or isolation as a result of the modified Project footprint is not anticipated. Existing culverts and wildlife crossing locations under the I-15 freeway corridor would remain in place. The implementation of Mitigation Measures BIO-3 (monitoring) and BIO-19 (exclusion fencing, culverts, and wildlife crossings) from the DesertXpress EIS, as well as minimization and mitigation measures outlined in the BO, would be implemented to reduce or mitigate adverse effects on wildlife movement.

4.2.6 POTENTIAL EFFECTS ON SPECIAL MANAGEMENT LANDS

The effects related to construction and operational activities on Special Management Lands, as described in Section 3.14.2.3 of the DesertXpress EIS, still apply to the modified Project footprint, though in a greatly reduced capacity now that the modified Project footprint would primarily be within the I-15 freeway corridor. The modified Project would affect two types of Special Management Lands: USFWS critical habitat and BLM ACECs. Table 4.2-6 and Table 4.2-7 show the permanent and temporary impacts from the DesertXpress EIS and the modified Project footprint on Special Management Lands.

Although the modified Project footprint would intersect USFWS critical habitat and BLM ACECs, most of the areas where impacts would occur no longer provide the habitat or unique value for which the area was designated. Each of these Special Management Lands are bound by I-15 freeway on one side or are bisected by I-15 freeway. Most of the modified Project footprint is within the I-15 freeway ROW, which is relatively degraded and subject to trash, routine maintenance, and disturbances from vehicles leaving the freeway.

Table 4.2-6 Comparison of Permanent Impacts to Special Management Lands (acres)

Special Management Lands	DesertXpress EIS (2011)				Modified Project (2020)
	Preferred Alternative	Alternative A	Alternative B	Option C	
Desert Tortoise Critical Habitat	575.6	60.9	555.0	-	291.2
Superior-Cronese ACEC	-	-	-	-	3.8
Cronese Basin ACEC	3.6	-	3.6	-	1.9
Ivanpah ACEC	-	-	-	-	64.9
Northern Lucerne Wildlife Linkage ACEC	-	-	-	-	8.5
Shadow Valley ACEC	-	-	-	-	91.6
Soda Mountains Expansion ACEC	-	-	-	-	110.3
Halloran Basin ACEC	-	-	-	-	-
NPS Mojave National Preserve	13.8	13.8	-	-	-
Total*	**593.0**	**74.7**	**558.6**	**0**	**572.2**

*Totals generated prior to rounding and therefore may not add precisely.

Table 4.2-7 Comparison of Temporary Impacts to Special Management Lands (acres)

Special Management Lands	DesertXpress EIS (2011)				Modified Project (2020)
	Preferred Alternative	Alternative A	Alternative B	Option C	
Desert Tortoise Critical Habitat	1,703.6	264.0	1,598.9	-	107.1
Superior-Cronese ACEC	-	-	-	-	3.5
Cronese Basin ACEC	16.6	-	16.6	-	0.4
Ivanpah ACEC	-	-	-	-	194.9
Northern Lucerne Wildlife Linkage ACEC	-	-	-	-	-
Shadow Valley ACEC	-	-	-	-	30.8
Soda Mountains Expansion ACEC	-	-	-	-	21.6
Halloran Basin ACEC	25.5	-	25.5	-	-
NPS Mojave National Preserve	59.9	59.9	-	-	-
Total*	**1,805.6**	**323.9**	**1,641.0**	-	**358.3**

*Totals generated prior to rounding and therefore may not add precisely.

CRITICAL HABITAT

Critical habitat is defined in Section 3(5)(A) of the ESA (16 U.S.C. § 1532(5)(A)) as "specific areas within the geographic area occupied by the species, at the time it is listed in accordance with the provisions of

Section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require specific management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of Section 4 of this Act upon a determination by the Secretary [of the Interior] that such areas are essential for the conservation of the species." The designation of critical habitat for a listed species helps focus conservation activities by identifying areas that contain essential habitat features regardless of whether they are currently occupied by the listed species.

Designated critical habitat for desert tortoise is present within the modified Project footprint; the impacts are described below. Based on modified Project construction and operation activities as well as the modified Project footprint occurring within the I-15 freeway median, the modified Project footprint is not expected to change the intended conversion purpose or inhibit the ability of the Primary Constituent's Elements (PCE) to be functionally established within the critical habitat. The Project modifications would not result in substantial changes in the evaluation of critical habitat impacts of the DesertXpress EIS.

Desert Tortoise Critical Habitat

Impacts on the Superior-Cronese and Ivanpah Critical Habitat Units were previously evaluated in the DesertXpress EIS. Based on the modified Project footprint, impacts have been substantially reduced in terms of acreage and quality of habitat being affected. The DesertXpress EIS estimated that the Preferred Alternative would permanently convert approximately 576 acres and temporarily affect 1,704 acres of desert tortoise critical habitat. The 2020 modified Project footprint would permanently convert approximately 291 acres and temporarily affect 107.1 acres of desert tortoise critical habitat (Table 4.2-6 and Table 4.2-7). Permanent impacts on the Superior-Cronese Critical Habitat Unit include 39.8 acres in Segment 2 and 37.3 acres in Segment 3. Temporary impacts on this unit include 28.2 acres in Segment 2 and 9.4 acres in Segment 3. Permanent impacts on the Ivanpah Critical Habitat Unit include 212 acres in Segment 3 and 2.1 acres in Segment 4. Temporary impacts on this unit include 57.7 acres in Segment 3 and 11.7 acres in Segment 4.

In addition, the DesertXpress EIS evaluated a median-running alignment for Segments 2 and 3; therefore, the impacts on critical habitat in these Segments have already been evaluated. Due to the presence and operation of the roadway, the PCEs that define the Desert Tortoise Critical Habitat Units (sufficient space to support populations, sufficient quality and quantity of forage species, suitable substrates for burrowing, and habitat protected from disturbance and human-caused mortality) are not present or are severely degraded in the areas where the modified Project footprint occurs in critical habitat.

Southwestern Willow Flycatcher Critical Habitat

The SCE Utility Corridor previously crossed the Mojave River in Victorville, which is designated as critical habitat for the southwestern willow flycatcher. This component is no longer a part of the modified Project; therefore, the Project would not affect Southwestern willow flycatcher critical habitat.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

An ACEC is a BLM designation that indicates areas with significant values that must be accommodated when BLM considers future management actions and land use proposals. Each ACEC is assigned a disturbance cap to quantify the maximum allowable acreage of permanent disturbance within the ACEC. Only permanent impacts that occur on land under BLM management within the ACECs are subject to the

ACEC disturbance caps. Temporary impacts on lands managed by BLM within ACECs are subject to restoration requirements but do not count towards disturbance caps. Coordination with BLM is ongoing to determine the status of ACEC disturbance caps relative to the modified Project.

Impacts on the Cronese Basin and Halloran Wash ACECs were evaluated in the DesertXpress EIS. In September 2016, the BLM issued the ROD for the DRECP, which added five new ACECs within the modified Project footprint (discussed below); therefore, impacts to these ACECs were not previously evaluated in the DesertXpress EIS. Table 4.2-8 summarizes the modified Project-related impacts to lands under BLM management within ACECs and their associated disturbance caps.

Table 4.2-8 Modified Project Footprint Impacts to Lands Under BLM Management within ACECs

ACEC	BLM Acres within ACEC	ACEC Disturbance Cap % (acres)	Permanent (acres)	Temporary (acres)	Total Project Impacts (acres)
Cronese Basin	8,470	1% (85)	1.9	0.4	2.3
Halloran Basin	1,740	0.5% (9)	-	-	-
Superior-Cronese	330,670	0.5 % (1,653)	3.8	3.5	7.4
Ivanpah	78,190	1% (781)	64.9	194.9	259.8
Shadow Valley	197,530	0.5% (988)	91.6	30.8	122.4
Northern Lucerne Wildlife Linkage	21,900	0.5% (110)	8.5	-	8.5
Soda Mountains Expansion	16,720	1% (167)	110.3	21.6	131.9
Total	**655,220**	**N/A**	**281.0**	**251.2**	**532.2**

Cronese Basin ACEC

Impacts on this ACEC were previously evaluated in the DesertXpress EIS, and based on modified Project footprint impacts, have been substantially reduced in terms of acreage because the footprint and associated ACEC impacts are now within the I-15 freeway corridor. The total size of this ACEC is 8,470 acres, and the ACEC disturbance cap is one percent of total acreage, which would be 85 acres. Within this ACEC, the BLM manages approximately 2.3 acres of land where the modified Project footprint (1.9 acres permanent and 0.4 acre temporary) is located within the I-15 freeway corridor.

Halloran Basin ACEC

The Preferred Alternative from DesertXpress EIS included temporary impacts on this ACEC. Based on the modified Project footprint, impacts on this ACEC are no longer expected.

Superior-Cronese ACEC

This ACEC was established because it provides high density desert tortoise habitat, provides critical tortoise habitat connectivity, and corresponds to the general boundaries identified by the Desert Tortoise (Mojave Population) Recovery Plan. The majority of this ACEC overlaps with the boundary of the Superior-Cronese Critical Habitat Unit. The impacts on this ACEC occur in Segments 2 and 3 primarily where the modified Project rail alignment occurs within the I-15 freeway, overpass interchanges, and temporary construction areas associated with an autotransformer site evaluated in the DesertXpress EIS. As stated previously, the natural resources are degraded within the modified Project footprint due

to the proximity to existing maintained roadway infrastructure, and they are unlikely to support special-status wildlife. The total size of this ACEC is 330,670 acres and the ACEC disturbance cap is 0.5 percent, which would be 1,653 acres. Within this ACEC, the BLM manages approximately 7.3 acres of land where the modified Project footprint (3.8 acre permanent and 3.5 acres temporary) is proposed.

Ivanpah ACEC

This ACEC was established because it is a highly rich ecosystem that provides habitat for desert tortoise, desert bighorn sheep, American badger, Bendire's thrasher, and several BLM sensitive plants. It also provides a critical tortoise habitat linkage between the Mojave National Preserve and land managed by the Las Vegas BLM Field Office. The 2002 Northern and Eastern Mojave (NEMO) Desert Plan designated the Ivanpah Valley Tortoise Management Area. The majority of this ACEC overlaps with the boundary of the Ivanpah Critical Habitat Unit. The boundary of this ACEC extends into the north and west shoulder of the southbound I-15 freeway corridor, which has been degraded due to its proximity to the I-15 freeway. Impacts on this ACEC occur primarily in the Mountain Pass area and Nipton Road interchange where the ACEC encompasses the entire I-15 freeway corridor. The total size of this ACEC is 78,190 acres, and the ACEC disturbance cap is 1 percent, which would be 781 acres. Within this ACEC, the BLM manages approximately 259.8 acres of land where the modified Project footprint (64.9 acres permanent and 194.9 acres temporary) is proposed.

Shadow Valley ACEC

This ACEC was established because the area provides habitat and supports regionally important populations of desert bighorn sheep and desert tortoise, it is an important east-west migration corridor for bats and a Bat Conservation Area (under the 2002 NEMO Plan), and it provides important wildlife landscape connections. In addition, many culturally significant features occur within this ACEC. The impacts on this ACEC from the modified Project footprint are entirely within the Segment 3 of the I-15 freeway corridor between Baker and Mountain Pass, mostly related to the facilities near the I-15 freeway interchanges. The natural resources in this ACEC are degraded within the modified Project footprint due to the proximity to existing maintained roadway infrastructure and are unlikely to support special-status wildlife. The total size of this ACEC is 197,530 acres, and the ACEC disturbance cap is 0.5 percent, which would be 988 acres. Within this ACEC, the BLM manages approximately 122.4 acres of land where the modified Project footprint (91.6 acres permanent and 30.8 acres temporary) is proposed.

Northern Lucerne Wildlife Linkage ACEC

This ACEC was established because it is considered a regionally significant area—providing habitat for bighorn sheep, golden eagles, desert tortoise, prairie falcons, and numerous sensitive plant populations and because the area provides critical links for wildlife populations to the north and south.

The modified Project footprint (including the Dale Evans Station and OMSF site) is within the Stoddard/Johnson Valley Special Recreation Management Area (SRMA) and the Granite Mountains Recreation Management Zone (RMZ). The SRMA and Granite Mountains RMZ were established to provide long-term recreation opportunities along the urban interface with adjacent communities. This includes a range of different types of trails and day use experiences ranging from Off-Highway Vehicle (OHV) touring to family hiking excursions.

The land within the Dale Evans Station and OMSF site was included in the ACEC because of its potential to meet the desired future condition objectives in the ACEC Special Unit Management Plans. However,

the BLM does not own or manage the land where the Dale Evans Station and OMSF site would be located, and the habitat and wildlife movement value is degraded and of lower quality than other areas of the ACEC because of its adjacency to the I-15 freeway and previous grazing land uses. The natural resources in the I-15 freeway corridor portion of the ACEC are degraded within the modified Project footprint due to the proximity to existing maintained roadway infrastructure, and they are unlikely to support special-status wildlife. The total size of this ACEC is 21,900 acres, and the ACEC disturbance cap is 0.5 percent, which would be 110 acres. Within this ACEC, the BLM manages approximately 8.5 acres of land where the modified Project footprint (8.5 acres permanent and 0 acres temporary) is located within the I-15 freeway corridor.

Soda Mountains Expansion ACEC

This ACEC was established because the area provides important plant and wildlife connectivity between surrounding Wilderness and Wilderness Study Areas, which encompass large blocks of intact habitat. The modified Project footprint included nearly 144 acres of permanent impacts and 45 acres of temporary impacts because of the rail alignment and facilities in Segment 3, which are entirely within the I-15 freeway corridor. The I-15 freeway corridor acts as the southern/eastern boundary of this ACEC. The natural resources in the ACEC are degraded within the modified Project footprint due to the proximity to existing maintained roadway infrastructure, and they are unlikely to support special-status plants and wildlife. The amount of BLM acres within this ACEC is 16,720 acres, and the ACEC disturbance cap is one percent, which would be 167 acres. Within this ACEC, the BLM manages approximately 131.9 acres of land where the modified Project footprint (110.3 acres permanent and 21.6 acres temporary) is located within the I-15 freeway corridor.

5.0 Mitigation Measures

The mitigation measures from the DesertXpress ROD are included below and have been separated into two sections based on where they originated: the USFWS BO (Desert Tortoise-Specific Measures from The Biological Opinion), and the DesertXpress EIS (General Mitigation Measures).

DESERT TORTOISE-SPECIFIC MEASURES FROM THE BIOLOGICAL OPINION

As discussed in Section 2.0, FRA submitted a letter to the USFWS on July 20, 2020 seeking concurrence that the Project modifications do not require reinitiation of formal consultation under Section 7. This letter proposed revised BO mitigation measures based on the Project modifications; for example, by specifying that such mitigation measures would only apply on suitable desert tortoise habitat outside of the I-15 freeway ROW. These updated mitigation measures will be confirmed through consultation with the USFWS and documented in accordance with Section 7 of the ESA. Revisions that may occur through this coordination process are discussed in **bold** following the applicable BO measures listed below.

Mitigation Measure DT-1

Prior to the commencement of grading activities, ~~the Applicant~~ DesertXpress Enterprises, LLC shall ensure all personnel working within the Project area attend an environmental awareness training program. The program will be presented by biologists authorized by the United States Fish and Wildlife Service (USFWS; hereafter "authorized biologists") and include information on the life history of the desert tortoise, the legal protection it is afforded by the Endangered Species Act, the definition of take for listed species, measures to protect the desert tortoise, reporting requirements, specific measures that each worker will need to employ to avoid adverse impacts on desert tortoises, a detailed description of environmental Project commitments as described in the decision records (i.e., record of

decision), right-of-way grants, and biological opinion, and penalties for violation of Federal and state environmental laws.

Mitigation Measure DT-2

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure an authorized biologist will be on site during any construction activity within or near desert tortoise habitat to ensure the implementation and compliance of environmental commitments and avoidance measures.

Mitigation Measure DT-3

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure the authorized biologists have the authority to stop work if dangers to desert tortoises arise, and to allow work to proceed after the hazard has been removed. ~~The Applicant~~ DesertXpress Enterprises, LLC shall notify the Southern Nevada and Ventura USFWS Offices, BLM Offices, and the California Department of Fish and Game of any desert tortoise injury or death resulting from Project-related activities.

Mitigation Measure DT-4

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure, as part of the monitoring, that an authorized biologist checks construction areas immediately before construction activities each day to ensure that no desert tortoise has moved into the construction area. If desert tortoises are discovered within the construction area, the authorized biologist shall relocate the desert tortoises to adjacent habitat approximately 300 feet from the limit of disturbance (i.e., beyond the 162.5-foot temporary construction area).

Mitigation Measure DT-5

~~The Applicant~~ DesertXpress Enterprises, LLC will ensure the authorized biologists properly implement protective measures, records and reports desert tortoise and sign observations in accordance with approved protocol, reports incidents of noncompliance in accordance with the biological opinion and other relevant permits and authorizations, and moves desert tortoises from harm‘s way and place these animals in adjacent habitat approximately 300 feet of the limit of disturbance.

Mitigation Measure DT-6

~~The Applicant~~ DesertXpress Enterprises, LLC shall confine all construction activities to the designated work areas. Grubbing of vegetation will only be done to the extent necessary for construction and will be limited to areas designated for that. Overnight parking and storage of equipment and materials will be limited to previously disturbed areas or areas identified in the BLM right-of-way grant.

Mitigation Measure DT-7

~~The Applicant~~ DesertXpress Enterprises, LLC shall restrict all vehicle traffic to existing paved roads and the Project alignment within the permanent or temporary construction area. Disturbance beyond the construction area would be prohibited except in emergency situations.

Mitigation Measure DT-8

~~The Applicant~~ DesertXpress Enterprises, LLC shall not allow speeds in excess of 15 miles per hour for construction vehicles within sensitive species habitat.

Mitigation Measure DT-9

~~The Applicant~~ DesertXpress Enterprises, LLC shall implement a litter-control program during construction. The program will include the use of covered, common raven-proof trash receptacles, daily removal of trash from work areas to the trash receptacles, and proper disposal of trash in a designated solid waste disposal facility. Precautions will also be taken to prevent trash from blowing out of construction vehicles.

Mitigation Measure DT-10

~~The Applicant~~ DesertXpress Enterprises, LLC will promptly remove all road-killed animals within the Project construction area and the permanent rail alignment to reduce the adverse effects associated with predation of desert tortoise by common ravens (*Corvus corax*).

Mitigation Measure DT-11

~~The Applicant~~ DesertXpress Enterprises, LLC will not permit pets or firearms in the work area.

Mitigation Measure DT-12

~~The Applicant~~ DesertXpress Enterprises, LLC shall take both pre- and post-construction photographs to document sensitive habitat conditions within the limits of Project disturbance.

Mitigation Measure DT-13

During construction, ~~the Applicant~~ DesertXpress Enterprises, LLC will perform weekly inspections and weed removal/control during the growing season of all construction areas, rail alignment, and facilities. Following the completion of construction activities, from March through August, ~~the Applicant~~ DesertXpress Enterprises, LLC will continue monitoring and removal monthly during the first 2 years of operation and quarterly for the life of the facility. Weed removal and control will consist of physical control methods (e.g., hand pulling, hoeing, etc.) or herbicide application. A provision of this measure requires preparation of an invasive weed monitoring and treatment plan that would be applicable to all lands affected by the proposed action. This weed control plan will be developed in cooperation with FRA and BLM to ensure that weed control and removal activities do not affect desert tortoises. The use of herbicides to control weeds within the Project construction and operation area will be coordinated with biologists of the BLM, the California Department of Fish and Game, and the Nevada Department of Wildlife (NDOW) to ensure the application does not affect desert tortoises. In instances where desert tortoises may come into contact with herbicide, the plan will require manual removal of individual plants. The FRA will ensure the same methods and caution will occur on lands within the action area that are outside of those managed by the BLM.

Mitigation Measure DT-14

~~The Applicant~~ DesertXpress Enterprises, LLC shall develop and implement a vegetation and topsoil removal and restoration plan to reduce impacts on biological resources. The plan shall include a requirement for ~~the Applicant~~ DesertXpress Enterprises, LLC to remove and stockpile construction area topsoil prior to initiating construction and replaced within areas of temporary disturbance once construction is complete. Any permanent topsoil stabilization measures will be constructed and maintained within the permanent right-of-way. These measures may include, but are not limited to, the use of geo-textile mats or rip-rap to in areas of high erosion potential.

Mitigation Measure DT-15

~~The Applicant~~ DesertXpress Enterprises, LLC shall install and maintain rice wattles, straw wattles, and silt fencing along all construction areas to prevent sediment from being transported off of the right-of-way during construction. ~~The Applicant~~ DesertXpress Enterprises, LLC shall employ permanent stabilization measures upon completion of construction along washes and in other areas of potential erosion.

Mitigation Measure DT-16

To minimize adverse effects to the desert tortoise, ~~the Applicant~~ DesertXpress Enterprises, LLC fence the boundary of the ~~Victorville Passenger Station and the Victorville~~ Dale Evans Station and OMSF site with permanent desert tortoise exclusion fencing. ~~The Applicant~~ DesertXpress Enterprises, LLC shall install desert tortoise guards at gated entries to prevent desert tortoises from gaining entry to the Project sites. ~~The Applicant~~ DesertXpress Enterprises, LLC shall also fence the temporary construction areas, ~~the Baker MOW facility, autotransformers~~ paralleling sites and substations, the construction areas for the utility corridors, and the rail alignment's temporary construction area, with temporary desert tortoise fencing prior to clearance surveys and ground disturbance. Proposed construction sites along the alignment that are not located in desert tortoise habitat (i.e., within Barstow, Baker, and Las Vegas) will not be fenced.

- **The locations requiring permanent or temporary desert tortoise fencing will be updated during Section 7 coordination with the USFWS. Most of the modified Project footprint is within the I-15 freeway median, which the USFWS considers unsuitable desert tortoise habitat.**

Mitigation Measure DT-17

To ensure the clearance of all desert tortoises from all potential habitat areas, ~~the Applicant~~ DesertXpress Enterprises, LLC shall conduct clearance surveys using service-authorized desert tortoise biologists as required by the Service.

- **The locations requiring preconstruction clearance surveys will be defined during Section 7 coordination with the USFWS. Most of the modified Project footprint is within the I-15 freeway median, which the USFWS considers unsuitable desert tortoise habitat.**

Mitigation Measure DT-18

~~The Applicant~~ DesertXpress Enterprises, LLC shall include the installation of temporary desert tortoise fencing around the perimeter prior to the commencement of on-site construction as part of desert tortoise relocation from the Project area. Installation of the fencing will be monitored by an authorized biologist to ensure that desert tortoises are not killed or injured during this activity. Temporary desert tortoise fencing will be installed in areas of construction that are beyond the perimeter of the right-of-way or in areas where construction staging will occur. Desert tortoise guards will be installed at construction area entry points and permanent rail alignment maintenance access points. After installation, the fence will be regularly inspected to ensure its integrity. ~~The Applicant~~ DesertXpress Enterprises, LLC will ensure that cross-country travel for construction purposes outside of the areas of desert tortoise fencing is prohibited.

Mitigation Measure DT-19

In areas where high vehicular construction traffic is expected (such as temporary construction areas), desert tortoise exclusionary fencing may require the supplemental use of a desert tortoise guard. Locations of such guards will be determined by an authorized biologist. This device resembles a cattle

guard and is positioned at ground level and connected to the exclusionary fencing to prohibit desert tortoise from crossing into the construction area but allowing the passage of construction vehicles. The guard would be maintained throughout its use during the construction process by ~~the Applicant~~ DesertXpress Enterprises, LLC. Such maintenance would require the presence of an authorized desert tortoise biologist. The guard would have a clear escape route away from construction activity for any desert tortoise that should fall into the guard. The guard would be inspected daily for desert tortoise and to ensure the escape route is free of obstruction. The guard would also be cleared of debris that may allow desert tortoise passage across the guard and into a construction area.

Mitigation Measure DT-20

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure only biologists authorized by the USFWS will handle desert tortoises and follow the guidelines within the Desert Tortoise Field Manual. Desert tortoises found within the Project area will be removed and relocated to undisturbed suitable habitat beyond the construction site and within their own territory, where they may be familiar with alternate burrows. If no burrows are available, ~~the Applicant~~ DesertXpress Enterprises, LLC shall create artificial burrows following the guidelines within the Desert Tortoise Field Manual.

Mitigation Measure DT-21

After installation of the temporary fencing, ~~the Applicant~~ DesertXpress Enterprises, LLC shall survey the entire Project area for desert tortoises. The survey shall be conducted by an authorized biologist. Following the procedures and precautions outlined in the Desert Tortoise Field Manual, all desert tortoise pallets and burrows within the survey areas will be examined and excavated by hand, either by or under the direct supervision of an authorized biologist, and collapsed to prevent re-entry.

Mitigation Measure DT-22

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure an authorized biologist will be present during all initial top soil removal, blading, or grading activities within the Project area. During Project implementation, ~~the Applicant~~ DesertXpress Enterprises, LLC shall ensure all workers will inform the authorized biologist if a desert tortoise is found within or near Project areas. All work in the vicinity of the desert tortoise, which could injure or kill the animal, will cease and it will be observed until it is moved from harm‘s way by the authorized biologist.

Mitigation Measure DT-23

The authorized biologist or ~~W~~workers will inspect for desert tortoises under vehicles and equipment before such equipment is moved. If a desert tortoise is present, the worker will wait for it to move out from underneath the vehicle or the authorized biologist will be contacted to remove it.

Mitigation Measure DT-24

~~The Applicant~~ DesertXpress Enterprises, LLC will replace any previously installed permanent desert tortoise exclusionary fencing along Interstate 15 that is removed during Project construction.

~~**Mitigation Measure DT-25**~~

~~The Applicant shall implement minimization measures for potential impacts to downstream habitat from Segment 4C (if constructed), which may include the use of tunnels, aerial crossing structures, at-grade overcrossing structures, and culverts. At a minimum, the Applicant shall avoid all ephemeral drainages equal to or greater than 4 feet wide with these types of structures. Where tunnels and aerial crossing structures would be used, drainages less than 4 feet in width would also be avoided. If support piles or~~

~~piers are necessary to support over crossing structures these structures would be located outside of the drainage being over crossed. Authorized biologists would be present during construction to ensure impacts to drainages are avoided or, where an impact is unavoidable, ensure the impact is minimized and the natural substrate of the drainage that has been disturbed is re-established to original grade and with natural substrate materials within the drainage channel. In addition to the ephemeral drainages over crossed, drainages established (created) or re-established as part of the Project's compensatory mitigation for replacement of affected waters of the United States or State of California would be monitored by an agency-approved biologist for a minimum of 5 years to ensure that agency-approved performance standards are met.~~

- **This mitigation measure no longer applies to the Project as the modified Project does not carry forward Segment 4C and would follow the I-15 freeway median through Mountain Pass.**

Mitigation Measure DT-26

In addition to habitat restoration, ~~the Applicant~~ DesertXpress Enterprises, LLC will compensate for habitat disturbance through payment of a per-acre fee for disturbance of desert tortoise habitat in California and Nevada. These funds will be paid to the BLM and used for management actions expected to provide a benefit to the desert tortoise over time. Actions may involve habitat acquisition, population or habitat enhancement, increasing knowledge of the species' biological requirements, reducing loss of individual animals, documenting the species' current status and trends, and preserving distinct population attributes. Specific actions to be funded will be determined during annual meetings between the BLM and the USFWS to identify and prioritize management actions, which may include implementation of range wide monitoring of desert tortoises.

TERMS AND CONDITIONS OF THE BIOLOGICAL OPINION SPECIFIC TO DESERT TORTOISE

Mitigation Measure DT-27

To ensure that the measures proposed by the FRA and ~~the Applicant~~ DesertXpress Enterprises, LLC are effective and are being properly implemented, the FRA or ~~the Applicant~~ DesertXpress Enterprises, LLC must contact USFWS immediately if it becomes aware that a desert tortoise has been killed or injured by Project activities. At that time, ~~the Applicant~~ DesertXpress Enterprises, LLC, in coordination with the FRA, must review the circumstances surrounding the incident with the USFWS to determine whether additional protective measures are required. Project activities may continue during the review, provided that the proposed protective measures in the Project description and any appropriate terms and conditions of this biological opinion have been and continue to be fully implemented.

If five desert tortoises are injured or killed as a result of construction of the Project, the FRA shall re-initiate consultation on the Project, pursuant to the implementing regulations for section 7(a)(2) of the Endangered Species Act at 50 Code of Federal Regulations 402.16.

- **The amount of take may be modified based on Section 7 consultation.**

Mitigation Measure DT-28

If two desert tortoises are injured or killed as a result of operation and maintenance of the Project in any calendar year, the FRA shall re-initiate consultation on the Project, pursuant to the implementing regulations for Section 7(a)(2) of the Endangered Species Act at 50 Code of Federal Regulations 402.16.

- **The amount of take may be modified based on Section 7 consultation**.

Mitigation Measure DT-29

~~The Applicant~~ DesertXpress Enterprises, LLC shall monitor, during construction and operation, the integrity of all desert tortoise exclusion fencing on a regular basis and following any rain events that result in surface flow of water in washes within the action area.

Mitigation Measure DT-30

~~The Applicant~~ DesertXpress Enterprises, LLC shall use culverts that allow effective passage of desert tortoises but are large enough that desert tortoises are unlikely to use the culverts as burrows. The USFWS has estimated that any box culvert must be 3 feet on a side and pipe culverts 3 feet in diameter and recommends that box culverts be used because desert tortoises are less likely to use them as burrows. At a minimum, culverts would need to be large enough. ~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure regular maintenance of the culverts so desert tortoises do not use accumulated debris to construct burrows. If a culvert under the rail line is tied to an existing culvert under Interstate 15 or the Union Pacific Railroad, ~~the Applicant~~ DesertXpress Enterprises, LLC, with approval from the FRA, may forego these specifications if they are incompatible with the existing culverts.

Mitigation Measure DT-31

~~The Applicant~~ DesertXpress Enterprises, LLC shall use culverts that will not entrap desert tortoises or block their passage. Specifically, all erosion control devices must be constructed and maintained in a manner that allows desert tortoises to enter and leave them freely.

~~**Mitigation Measure DT-32**~~

~~The Applicant shall install a sufficient number of culverts in Segment 2C where it deviates from Interstate 15 (excluding on the dry lake bed), to ensure any desert tortoise whose home range occurs across the action area could continue to access both sides easily. In general, the distance between culverts must be no greater than 0.25 mile unless topography is an obstacle.~~

- **This measure is no longer applicable because Segment 2C is no longer a part of the modified Project.**

Mitigation Measure DT-33

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure authorized biologists survey areas that could become isolated from the main body of habitat where the alignment deviates slightly from the freeway (e.g., at off-ramps). If desert tortoises are present and construction of the Project may disrupt their behavior or if a culvert or other access to the main body of habitat does not exist or will not be provided, the authorized biologist must relocate them to the side of the rail line that is adjacent to the main body of habitat. In any event of uncertainty, the authorized biologist must contact the Service for guidance prior to moving the desert tortoise; during this time, the authorized biologist may install fencing around the area of the desert tortoise's burrow so he or she may find it again.

Mitigation Measure DT-34

~~The Applicant~~ DesertXpress Enterprises, LLC shall design all new utility lines and ancillary structures associated with the Project in a manner that will reduce the likelihood of nesting by common ravens. ~~The Applicant~~ DesertXpress Enterprises, LLC, as appropriate, must monitor these utility lines and ancillary structures to ensure the effectiveness of their measures and implement adaptive management, in coordination with the Service, if the initial measures are unsuccessful. ~~The Applicant~~ DesertXpress

Enterprises, LLC must ensure that any common ravens nests established on new utility lines and ancillary structures are removed within one year at a time when they are inactive.

~~**Mitigation Measure DT-35**~~

~~During construction of the Segment 4C rail line (if constructed), if desert tortoises that have been translocated from the Ivanpah solar plant site need to be moved from harm's way, the Applicant shall coordinate their capture and movement with the BLM to ensure that the health and welfare of these animals is not compromised. Prior to the onset of construction, the Applicant must contact the BLM to establish appropriate protocols to follow in the event these animals are encountered.~~

- **This measure is no longer applicable because Segment 4C is no longer part of the modified Project.**

Mitigation Measure DT-36

By January 31 of any year the proposed action is under construction and during its operation, the FRA must provide a report to USFWS) that provides details on the effects of the action on the desert tortoise. Within 60 days of the completion of the proposed action, the FRA must provide a summary report that provides, in addition to the following information, a complete overview of the amount of habitat disturbed and the number of desert tortoises that were taken. ~~The Applicant~~ DesertXpress Enterprises, LLC shall furnish all of these reports to the FRA no less than 15 days prior to the required USFWS submittal. These reports shall include information on any instances when desert tortoises were killed, injured, or handled, the circumstances of such incidents, and any actions undertaken to prevent similar instances from re-occurring. In addition, the reports should include any recommendations that would facilitate the implementation of the protective measures while maintaining protection of the desert tortoise and the names of any monitors who assisted the authorized biologist and an evaluation of the experience they gained on the Project.

Mitigation Measure DT-37

Within 3 days of locating any dead or injured desert tortoises, ~~the Applicant~~ DesertXpress Enterprises, LLC, in coordination with the FRA, shall notify the Ventura Office of USFWS by telephone (805 644-1766) and by facsimile (805 644-3958) or electronic mail. The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Mitigation Measure DT-38

~~The Applicant~~ DesertXpress Enterprises, LLC shall take care in handling dead desert tortoises to preserve biological material in the best possible state for later analysis. If desert tortoises are killed by Project activities, USFWS will instruct ~~the Applicant~~ DesertXpress Enterprises, LLC regarding the final disposition of the carcass.

GENERAL MITIGATION MEASURES FROM THE DESERTXPRESS EIS

Revisions to these General Mitigation Measures provided in the DesertXpress EIS are included as ~~strikeout~~ underline following the applicable measure.

Mitigation Measure BIO-1: Conduct Mandatory Environmental Awareness Training Program

Prior to the commencement of Project-related activities, ~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure all personnel working within the Project area attend an environmental awareness training program. ~~The program shall be presented by authorized biologists and include information on the life history of special-status species that may be encountered during construction activities, the legal~~

~~protection for each species, the definition of "take" for listed species, measures to protect special-status species, reporting requirements, specific measures that each worker shall need to employ to avoid adverse effects to individual sensitive species,~~ The program will be prepared by biologists approved by the USFWS and/or the "authorized biologist" and can be presented in-person or digitally (i.e. Microsoft PowerPoint or similar means). Temporary personnel (including delivery drivers, concrete truck drivers, mechanics/refueling trucks, port-a-toilet pump trucks, etc.) will not be required to attend the training program such that they are instructed by trained Project personnel not to operate or enter into areas designated as desert tortoise habitat, defined below. Each person attending the training will be required to sign a training sheet, which will be kept on file in the Project trailer. The program will include information on the life history of the desert tortoise, the legal protection it is afforded by the Endangered Species Act, the definition of take for listed species, measures to protect the desert tortoise, reporting requirements, specific measures that each worker will need to employ to avoid adverse impacts on desert tortoises, a detailed description of environmental Project commitments as described in the decision records (i.e., Record Of Decision), ROW grants, and biological opinion, and penalties for violation of federal and state environmental laws.

Mitigation Measure BIO-2: Conduct Preconstruction Surveys and Install Environmental Fencing

~~The Applicant~~ DesertXpress Enterprises, LLC shall undertake preconstruction surveys for special-status species; these surveys shall be conducted by qualified biologists (i.e., one or more third party contractor(s) approved by the USFWS) prior to the start of construction. Preconstruction surveys shall be tailored for specific species based on the species biology, natural history, suitable habitat, and regulatory requirements. The locations for any individual or population of sensitive species within the limit of disturbance shall be documented with a GPS unit and reported to the state and federal regulatory agencies.

Mohave ground squirrel surveys are only valid for 12 months. Therefore, they shall be done no more than 12 months prior to the start of construction within suitable habitat in a particular area. If no Mohave ground squirrels are found during the surveys, no additional mitigation would be required.

Mojave fringe-toed lizard surveys shall occur no more than 24 hours prior to the start of construction. Surveys shall be conducted within suitable habitat within the work area and a 100-foot buffer. Any Mojave fringe-toed lizards observed in the work area shall be allowed to move out of the work area. Those that become trapped in the work area shall be captured and moved to nearby suitable habitat outside of the work area.

Qualified biologists shall conduct preconstruction surveys for banded Gila monsters no more than 24 hours prior to the start of construction within all suitable habitat in Segments 3 and 4. Surveys shall be conducted within suitable habitat within the work area and a 100-foot buffer. Any Gila monsters observed within the work areas shall be allowed to move out of the work area and those that become trapped within the work area shall be carefully moved to nearby suitable habitat by a qualified biologist. The handler shall have the applicable and necessary permit to handle and move lizards. Qualified biologists shall conduct preconstruction surveys for BLM-sensitive and Clark County Multiple-Species Habitat Conservation plan (HCP) covered reptile species no more than 48 hours prior to the start of construction in areas of suitable habitat. Surveys shall be conducted within the work area and include a 100-foot buffer. Any sensitive reptile species observed within the work areas shall be allowed to move out of the work area and those that become trapped within the work area shall be very carefully moved to nearby suitable habitat by a qualified biologist.

~~The Applicant~~ DesertXpress Enterprises, LLC shall implement the following measures, to avoid disturbance of tree, shrub- or ground-nesting special-status and migratory birds and raptors:

- If construction activities are scheduled to occur during the breeding season (generally between February 15~~March 1~~ and September 1~~August 15~~), a qualified wildlife biologist shall conduct focused nesting surveys within the appropriate habitat and an appropriate buffer distance up to 0.25 mile from the limit of Project disturbance for nesting raptors.
- The focused surveys shall include tree- and shrub-nesting birds, ground-nesting birds, and cliff-nesting birds. The surveys shall be conducted within the two-week period before initiation of construction activities in a particular area between February 15~~March 1~~ and September 1~~August 15~~. If no active nests are detected, then no additional mitigation would be required.
- Follow-up surveys shall be required on a monthly basis during the breeding season. If surveys indicate that active nests are present in any areas that would be directly affected by construction activities, a no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until after a wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers shall be determined by a wildlife biologist in consultation with the CDFW in California and the NDOW in Nevada and will depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors shall be analyzed to make an appropriate decision on buffer distances.

A qualified biologist shall conduct preconstruction surveys for active burrows according to the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). ~~guidelines for burrowing owl (1993 and 1995).~~ The preconstruction surveys shall be conducted by a qualified biologist 14 days and 24 hours before initiation of construction activities to locate active burrowing owl burrows within the work area and include a 250-foot buffer ~~and within the 2-week period before initiation of construction activities to locate active burrowing owl burrows. The preconstruction surveys shall include a nesting season survey and a wintering season survey the season immediately preceding construction~~. If no burrowing owls are detected, no further mitigation would be required.

Focused surveys for the presence of sensitive bat species shall be conducted in areas that provide suitable roosting or nursery habitat including trees, rock outcrops, and bridges. If a roosting site is active and cannot be avoided, ~~the Applicant~~ DesertXpress Enterprises, LLC shall consult with a bat expert in conjunction with the CDFW in California and the NDOW in Nevada to develop appropriate exclusion methods. If it is determined that a nursery sites is active and cannot be avoided, construction activities that would disturb the nursing bats shall be delayed until the breeding cycles for the bats are completed. ~~The Applicant~~ DesertXpress Enterprises, LLC shall consult with a bat specialist in order to determine the breeding cycle for bats. ~~The Applicant~~ DesertXpress Enterprises, LLC shall document the results of any exclusion or avoidance of roosting/nursery sites for bats.

Qualified biologists shall conduct preconstruction surveys for American badger no more than 48 hours prior to the start of construction. Surveys shall be conducted within the work area and a 100-foot buffer. Any American badgers observed in the work area shall be allowed to leave the work area.

Construction activities conducted within suitable desert bighorn sheep habitat in the Mountain Pass area of the Project shall not occur during the period of the year when desert bighorn sheep are lambing (from January 1 to April 30). If construction activities must occur during the desert bighorn sheep lambing period, pre-construction surveys for lambing desert bighorn sheep shall be conducted prior to

construction. If lambing desert bighorn sheep are found, then ~~the Applicant~~ DesertXpress Enterprises, LLC shall consult with the BLM and the CDFW to identify appropriate avoidance measures.

Qualified botanists shall conduct preconstruction surveys for sensitive botanical species and invasive, non-native weed species prior to initiating construction of the Project. If sensitive botanical species are observed within the temporary construction area of effect, avoidance and minimization measures shall be applied by ~~the Applicant~~ DesertXpress Enterprises, LLC.

Temporary environmental fencing shall be installed around sensitive biological and botanical resources prior to the commencement of on-site Project construction in order to avoid unnecessary adverse effects to the resource. These areas shall be signed for avoidance by construction equipment and personnel. USFWS- and BLM-approved desert tortoise exclusionary fencing shall be erected under supervision by an authorized biologist within portions of the Project that occur in desert tortoise habitat. Temporary desert tortoise fencing shall be installed in areas of construction that are beyond the perimeter of the right-of-way or in areas where construction staging would occur. This includes fencing all work areas, temporary equipment and vehicle yards, and material staging and storage areas, as defined in the biological opinion. Desert tortoise exclusionary fencing and clearance surveys shall be undertaken no more than 10 days prior to initiating construction activities. After installation of the temporary fencing, the entire Project area shall be surveyed for desert tortoises by an authorized biologist. Following the procedures and precautions outlined in the Desert Tortoise Council's guidelines, all desert tortoise pallets and burrows within the survey areas shall be examined and excavated by hand, either by or under the direct supervision of an authorized biologist, and unoccupied features collapsed to prevent re-entry. After installation, the fence shall be regularly inspected to ensure its integrity. Desert tortoise encountered during preconstruction surveys shall be relocated off the Project based on a USFWS and BLM approved Project-specific Desert Tortoise Relocation Plan. At a minimum, the Desert Tortoise Relocation Plan shall require the desert tortoises found within the Project area be removed to undisturbed areas beyond the construction site and relocated within their own territory where they may be familiar with alternate burrows. If no natural burrows are available, artificial burrows shall be created following the Desert Tortoise Council's guidelines. Only biologists authorized by the USFWS shall handle desert tortoises and shall follow the guidelines established by the Desert Tortoise Council.

~~The Applicant~~ DesertXpress Enterprises, LLC shall install and maintain permanent exclusionary fencing along the open portion of the rail alignment in areas of suitable bighorn sheep habitat. The fencing shall be constructed to ensure that bighorn sheep cannot access the ~~rails~~ rail corridor. ~~or any culverts/tunnels. In addition, prior to initiating construction, temporary exclusionary fencing shall be placed around all sensitive botanical species that occur within the temporary construction areas. These areas shall be signed for avoidance by construction equipment and personnel.~~

Mitigation Measure BIO-3: Conduct Construction Monitoring

~~The Applicant~~ DesertXpress Enterprises, LLC shall implement the following measures during Project construction:

- Qualified biologists shall be on site during any construction activity within or near special-status species habitat to ensure the implementation and compliance of environmental commitments and avoidance measures.
- The qualified biologist shall have the authority to stop work if dangers to desert tortoises or other special-status wildlife species arise and allow work to proceed after the hazard has been removed. The USFWS Southern Nevada and Ventura Ecological Services Offices, BLM Field Offices and the CDFW must be notified of any desert tortoise injury or death resulting from Project-related

activities. In addition, the USFWS Division of Law Enforcement shall also be notified in accordance with reporting requirements. As part of the monitoring, the biologists shall check construction areas immediately before construction activities each day to ensure that no special-status wildlife species have moved into the construction area. If tortoises are discovered within the construction area they shall be relocated by an authorized biologist based on the Desert Tortoise Relocation Plan.

- All construction activities shall be confined to the designated work areas. Grubbing of vegetation shall only be to the extent necessary for construction and shall be limited to areas designated for that. A~~n authorized~~ qualified biologist(s) shall be present during all initial brushing or grading activities within the Project area. Overnight parking and storage of equipment and materials would be limited to previously disturbed areas or areas identified in the BLM right-of-way grant.
- All vehicle traffic shall be restricted to existing roads or land management agency approved newly constructed roads. ~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure that cross-country travel for construction purposes outside of the areas of desert tortoise fencing is prohibited.
- Construction vehicles within sensitive species habitat shall not exceed 15 miles per hour.
- A litter-control program shall be implemented during construction. The program shall include the use of covered, raven-proof trash receptacles, daily removal of trash from work areas to the trash receptacles, and proper disposal of trash in a designated solid waste disposal facility. Precautions shall also be taken to prevent trash from blowing out of construction vehicles.
- No pets or firearms shall be permitted in the work area.
- Both pre- and post-construction photographs shall be taken to document sensitive habitat conditions within the limits of Project disturbance.
- Trenches and holes shall be completely and securely covered by end of the workday. If the hole or trench is too large to be covered, then wildlife escape ramps shall be built such that any entrapped wildlife can escape on their own. Prior to the start of work on the next day, the approved biologist shall inspect any holes and trenches that have been covered or ramped to determine if wildlife have fallen in overnight. If non-listed wildlife is discovered within the hole or trench, the approved biologist will remove and relocate the individual out of the Project limits. If a listed species is discovered within a hole or trench, DesertXpress Enterprises, LLC will allow the animal to escape out of harm's way. If the animal is not able to escape in its own, DesertXpress Enterprises, LLC shall stop work within the immediate vicinity and notify the appropriate resources agency before construction proceeds.

Mitigation Measure BIO-4: Avoid the Dispersal of Invasive, Non-Native Weed Species into Uninfested Areas

To avoid the introduction or spread of invasive, non-native weed species into uninfested areas, ~~the Applicant~~ DesertXpress Enterprises, LLC shall incorporate the following measures into the Project plans and specifications:

- Use only certified, weed-free, imported erosion-control materials (or rice straw in upland areas).
- Coordinate with BLM field offices ~~and the NPS~~ to ensure that the appropriate best management practices (BMPs) are implemented.
- Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of invasive, non-native weed species.
- ~~Clean equipment at designated wash stations before and after entering the Project construction area.~~ Equipment shall be cleaned prior to entry to the Project site and upon demobilization.

- An invasive, non-native weed species survey of the Project right-of-way, including temporary work areas, shall be completed prior to initiating Project construction. All areas disturbed by the Project shall be surveyed using approximately 30-foot meandering transects. Populations of invasive, non-native weed species shall be identified and mapped using global positioning systems (GPS).
- Develop an approved Invasive Weed Species Monitoring and Treatment Plan to detect and treat any noxious invasive, non-native weed species in the construction area. The plan shall include methods for monitoring, treating and reporting invasive, non-native weed species infestations within the construction area. The Invasive Weed Species Monitoring and Treatment Plan shall be drafted and submitted to the BLM prior to initiating construction as part of the BLM ROW grant requirements.

Mitigation Measure BIO-5: Confine Construction Equipment to a Designated Work Zone (Including Access Roads) at Each Project Site

~~The Applicant~~ DesertXpress Enterprises, LLC shall clearly stake and flag the work zone prior to construction within areas of suitable habitat. During the environmental training program, construction personnel shall be informed about the importance of avoiding ground-disturbing activities outside the designated work area. During construction, the construction monitors and resource monitors shall ensure that construction equipment and associated activities avoid any disturbance of native vegetation and sensitive resources outside the designated work zones. Contaminant run-off shall be contained within the temporary construction boundaries and clean-up efforts shall be initiated immediately. Clean-up procedures shall be coordinated with the responsible agency to ensure additional resource damage does not occur.

Mitigation Measure BIO-6: Reestablish Preconstruction Site Conditions to Allow Revegetation

~~The Applicant~~ DesertXpress Enterprises, LLC shall restore disturbed areas of native vegetation to preconstruction site conditions. To ensure that effects on native plant species and communities are not long-term, ~~the Applicant~~ DesertXpress Enterprises, LLC shall stockpile and immediately replace native topsoil within the Project right-of-way, and reestablish natural site topography (including necessary amendments to soil structure) to allow natural colonization of plant species.

In both California and Nevada, ~~the Applicant~~ DesertXpress Enterprises, LLC shall relocate all succulents within the limits of disturbance to undeveloped BLM-administered public lands or maintain them within a temporary nursery (located within the right-of-way) and replant within the ROW as part of site restoration activities.

In areas that require immediate stabilization, non-vegetative techniques that allow native species to reestablish can be used, including use of weed- and disease-free mulch, erosion blankets, or rolled organic fiber material.

Erosion control seed mixes may be necessary on selected sites. If sites need to be stabilized through seeding, the seed mix would be composed entirely of native and locally occurring species appropriate for stabilizing local site conditions. All seed mixes shall be approved by the BLM, ~~NPS,~~ NDOT and Caltrans prior to initiating restoration activities. Special attention shall be given to erosion control near ephemeral drainages and within playas. ~~The Applicant~~ DesertXpress Enterprises, LLC shall determine site-specific erosion control measures (non-vegetation or mechanical techniques) in consultation with a vegetation specialist and Project engineer.

Mitigation Measure BIO-7: Retain and Stockpile Topsoil

~~The Applicant~~ DesertXpress Enterprises, LLC shall remove native topsoil from areas of permanent disturbance outside of the Interstate 15 freeway ROW and stockpile within the Interstate 15 freeway ROW~~right-of-way~~. To avoid altering local hydrologic conditions or flood flows, spoils materials shall not be placed in sensitive habitat areas or within or adjacent to ephemeral drainages. Prior to disturbance, native topsoil shall be excavated and stockpiled for later reapplication in native vegetation areas. Separate stockpiling areas shall be identified and clearly marked for each different vegetation type as appropriate. The exact depths shall be determined for each native vegetation type and depend upon the stratigraphy and soil profiles (estimated to be 6-12 inches in depth). The excavated soil depths shall exceed the restored soil depths to allow for soil compaction during placement. The stockpiled soil shall not be covered to minimize damage to propagation material from heated soil conditions but it shall be protected from construction activity and signed to identify it as a protected resource.

Mitigation Measure BIO-8: Restore Natural Site Topography

~~The Applicant~~ DesertXpress Enterprises, LLC shall be responsible for restoring the natural site topography of temporarily disturbed areas to pre-Project contours. The restored topography shall mimic the pre-Project condition to the greatest extent possible. Minor modifications may be required to conform with post-Project site condition. Construction area soil compaction shall be treated using grubbing, raking, and other BLM-approved soil decompaction techniques as part of the Project restoration. Proper compaction of the subsurface material and plow furrows is necessary to help prevent surface and subsurface migration of water along the plow or trench furrow, and to prevent trench settlement. The reapplied topsoil in the ~~right-of-way~~ temporary disturbance areas outside of the ROW shall be left in roughened condition to facilitate the establishment of vegetation and reduce the potential for erosion. Excessive passes of finish grading equipment that would compact topsoil shall be avoided. Upon completion of the grading operations, no further vehicular traffic shall be allowed, other than necessary mitigation planting equipment.

Mitigation Measure BIO-9: Implement Erosion Control Measures as Appropriate

~~The Applicant~~ DesertXpress Enterprises, LLC shall prepare and implement an erosion control and restoration plan to control short-term and long-term erosion and sedimentation effects and to restore soils and native vegetation in areas temporarily affected by construction activities. The plan shall include requirements of applicable erosion control ordinances and grading permits and shall implement BMPs for erosion and sediment control as necessary. The erosion control plan shall be drafted and submitted to the BLM prior to initiating construction as part of the BLM ROW grant requirements.

In areas that require immediate stabilization, non-vegetative techniques that allow native species to reestablish can be used, including use of weed- and disease-free mulch, erosion blankets, or rolled organic fiber material. The use of such measures shall be identified in the Stormwater Pollution and Prevention Plan (SWPPP) for the Project or recommended by a soil or civil engineer based on slope, soil type, or other site factors as necessary and may be required later in the design phase.

Mitigation Measure BIO-10: Obtain a Tree or Plant Removal Permit from San Bernardino County and the Nevada Division of Forestry

~~The Applicant~~ DesertXpress Enterprises, LLC shall obtain a Tree or Plant Removal Permit from San Bernardino County and the Nevada Division of Forestry. This permit is issued in compliance with San Bernardino County Development Code Subsection 88.01.050 for removal of regulated plants. ~~The~~

~~Applicant~~ DesertXpress Enterprises, LLC shall comply with all provisions of the Permit. A permit shall be required from the Nevada Division of Forestry and/or the BLM in order to relocate succulents within the Project alignment. ~~The Applicant~~ DesertXpress Enterprises, LLC shall also comply with the California Desert Native Desert Plants Act, consistent with pertinent BLM regulations.

Mitigation Measure BIO-11: Compensate for the Loss of Sensitive Vegetation Communities

~~The Applicant~~ DesertXpress Enterprises, LLC shall compensate for the loss of Sensitive Vegetation Communities prior to initiating construction. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (Caltrans, NDOT, the United States Army Corps of Engineers (USACE) and the BLM). This site-specific information will supplement the executed studies for the Project, ~~including the 2010 botanical survey in California near Mountain Pass investigating the area where Segment 4C, if constructed, would be located.~~ Compensation should be provided at a minimum 1:1 ratio (1 acre restored or created for every 1 acre removed/disturbed) and may be a combination of onsite restoration/creation, offsite restoration, or mitigation credits. ~~The Applicant~~ DesertXpress Enterprises, LLC shall develop and implement a restoration and monitoring plan that describes enhancement of sensitive communities, creation, and monitoring over a select time period.

Mitigation Measure BIO-12: Conduct Preconstruction Surveys and Identify Sensitive Areas

~~The Applicant~~ DesertXpress Enterprises, LLC shall mark specific areas of important riparian vegetation with orange fencing and the limits of disturbance narrowed to reduce effects to sensitive vegetation ~~where the rail alignment crosses the Mojave River~~in the Mountain Pass area.

Mitigation Measure BIO-13: Avoid Known Special-Status Plant Populations during Project Design

To the extent possible, ~~the Applicant~~ DesertXpress Enterprises, LLC shall design the Project to avoid special-status plant populations, updating design-build Project plans accordingly. ~~The Applicant~~ DesertXpress Enterprises, LLC shall comply with the minimum survey and mitigation standards as required by BLM Manual 6840-1. Where avoidance is infeasible, ~~the Applicant~~ DesertXpress Enterprises, LLC shall focus on minimizing the width of construction work areas in and around special-status plant populations. Before construction, special-status plant populations shall be demarcated with temporary orange construction fencing and posted as a restricted area. Depending on the proximity of the populations to the construction work area, populations shall be monitored to ensure adverse effects on special-status plant populations are avoided. If effects on special-status plant populations are unavoidable, ~~the Applicant~~ DesertXpress Enterprises, LLC shall implement Mitigation Measure BIO-14.

Mitigation Measure BIO-14: Compensate for Adverse Effects on Special-Status Plant Populations

If effects on a special-status plant population are unavoidable, ~~the Applicant~~ DesertXpress Enterprises, LLC shall coordinate with the USFWS to determine the appropriate mitigation strategy. If affected plants are listed under the federal ESA, the appropriate take permits would be obtained from USFWS. Currently accepted mitigation of effects on special-status plants includes acquisition and preservation of nearby occupied habitat, or habitat creation at a ratio determined by the regulatory agency. Transplantation of affected populations is not considered a viable mitigation option. Creation of habitats with high levels of endemism, such as vernal pools, is effective only with stringent agency management guidelines. ~~The Applicant~~ DesertXpress Enterprises, LLC shall coordinate with the USFWS to develop an effective mitigation and monitoring plan for specific ~~vernal pool~~ plants in conjunction with the construction of compensatory ~~vernal pool~~ habitat. Alternatively, ~~the Applicant~~ DesertXpress Enterprises,

LLC could acquire and preserve nearby high-quality occupied habitat, with ~~the Applicant~~ DesertXpress Enterprises, LLC responsible for the long-term habitat management.

Mitigation Measure BIO-15: Prepare a Desert Tortoise Relocation Plan

~~The Applicant~~ DesertXpress Enterprises, LLC shall develop a Desert Tortoise Relocation Plan in conjunction with USFWS Southern Nevada and Ventura Ecological Services Offices and the BLM~~, the NPS~~. The relocation plan shall outline procedures and protocols to follow when tortoises need to be relocated out of the areas of disturbance. The relocation plans shall include:

- Clearance procedures for construction areas;
- Relocation procedures;
- Procedures for determining the health of tortoises;
- Relocation areas;
- Methods that shall be used to manage and protect relocation areas;
- Monitoring for short-and long-term success of the plan; and
- Permitted activities.

Mitigation Measure BIO-16: Prepare Final Mitigation Monitoring Report

~~The Applicant~~ DesertXpress Enterprises, LLC shall ensure that no more than 90 days after the completion of construction, the monitoring biologists prepare a report for USFWS, the BLM, and appropriate state agencies. The report shall include the effectiveness of mitigation measures, the results of preconstruction and construction monitoring including the number of desert tortoises excavated and moved.

Mitigation Measure BIO-17: Implement Mitigation Measures Outlined by the Regional USFWS Ecological Services Office to Protect Desert Tortoises

~~The Applicant~~ DesertXpress Enterprises, LLC, in accordance with USFWS guidance, shall pay mitigation fees for disturbance to desert tortoise habitat on BLM administered public lands in Nevada.

Mitigation Measure BIO-18: Compensate for the Permanent Loss of Desert Tortoise Habitat

~~The Applicant~~ DesertXpress Enterprises, LLC shall provide compensation for the permanent loss of desert tortoise habitat. Compensation for loss of habitat in California shall be provided by ~~the Applicant~~ DesertXpress Enterprises, LLC according to requirements of the BLM and USFWS. Current requirements for loss of desert tortoise habitat are based on a formula of 5:1 ~~inside Desert Wildlife Management Areas (DWMAs)~~ inside desert tortoise designated critical habitat and 1:1 outside of desert tortoise ~~DWMAs~~ designated critical habitat. For the purposes of the Project, changes to the compensation formula must be reviewed and approved by the USFWS and ~~the NPS,~~ BLM.

For Project-related loss of habitat in Nevada, ~~the Applicant~~ DesertXpress Enterprises, LLC shall follow the mitigation measures outlined by the Regional USFWS Ecological Office for the protection of desert tortoises.

Mitigation Measure BIO-19: Construct Exclusion Fencing, Culverts, and Wildlife Crossings

~~The Applicant~~ DesertXpress Enterprises, LLC shall install culverts under the proposed railroad line that match existing I-15 or Union Pacific Railroad (UPRR) culverts. ~~Where the Project deviates from existing transportation facilities, the Applicant shall install culverts adequately designed to serve as wildlife crossings at natural drainage features and at appropriate intervals to allow for wildlife passage,~~

~~including, but not limited to, desert tortoises and other wildlife to pass under the proposed rail alignment.~~ The Project design shall mimic existing conditions (in-line piers, height, and width) to ensure flow for natural drainages equal to or greater than four feet in width (as measured by the distance between the ordinary high water mark on each side of the drainage) during Project construction or operation in order to reduce potential effects to wildlife movement, including, but not limited to, desert tortoise and desert bighorn sheep. The bridges, culverts and fencing would be designed ~~and spacing determined~~ through coordination with the USFWS, BLM, Caltrans, and NDOT ~~the NPS, the BLM, the California Department of Fish and Game (CDFG), the Nevada Department of Wildlife (NDOW), and the United States Environmental Protection Agency (EPA~~ to ensure they meet agency wildlife standards. Where ~~E~~exclusion fencing is installed, it would be designed in such a way to ~~would be constructed parallel to the rail line and would~~ direct tortoises and other wildlife species to the culverts. Recommendations for wildlife crossings can be found in *Wildlife Crossing Structure Handbook Design and Evaluation in North America,*[1] *California Essential Habitat Connectivity Project*[2]*,* and *Areas of Conservation Emphasis*[3]*.*

Mitigation Measure BIO-20: Compensate for the Permanent Loss of Mohave Ground Squirrel Habitat

If Mohave ground squirrels are determined to be present in the Project area outside of the I-15 right-of-way, ~~the Applicant~~ DesertXpress Enterprises, LLC shall mitigate for the permanent loss of suitable habitat. Acreage of suitable habitats outside of the I-15 right-of-way that could be permanently affected by the project.

Mitigation Measure BIO-21: Avoid Active Burrows or Passively Relocate Owls

If burrowing owls are detected within 250 feet of proposed construction within the Project area, ~~the Applicant~~ shall implement the following measures:

- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31).
- If avoidance is the preferred method of dealing with potential effects, no disturbance shall occur within 160 feet of occupied burrows during the non-breeding season or within 250 feet during the breeding season.
- If destruction of occupied burrows is unavoidable during the non-nesting season (September 1–January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) shall be used instead of trapping and active relocation. At least one week will be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows. Unsuitable burrows that will not be destroyed in the vicinity of the Project shall be enhanced (enlarged or cleared of debris).

[1] *Wildlife Crossing Structure Handbook Design and Evaluation in North America: Chapter 4*. Designs, Toolboxes, Guidelines, and Practical Applications. Prepared by Western Transportation Institute for Federal Highway Administration Planning. 224 pages. Available at: https://www.fhwa.dot.gov/clas/ctip/wildlife_crossing_structures/ch_4.aspx

[2] Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California.* Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

[3] California Department of Fish and Wildlife (CDFW). 2018. *Areas of Conservation Emphasis (ACE) Version 3.0 Model*. Website https://map.dfg.ca.gov/ace/