

APPENDIX F

Errata to the Draft EIS/EIR

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APPENDIX F - ERRATA TO THE DRAFT EIS/EIR

F.1 INTRODUCTION

This Appendix presents the revisions made between the Draft EIS/EIR and the Final EIS/EIR documents. Throughout the document an “R#” appears in both the right and left margins next to a paragraph or section that has been edited. The following pages detail the substantive changes within the document as well as discuss any global changes that were made. Additions to the text are in a double underlined format while removed text is in a ~~strike-out~~ format. Text that is *italicized* is a comment about a change, and all unaltered text is as it appeared in the Draft EIS/EIR.

F.2 REVISIONS

F.2.1 GLOBAL REVISIONS

- G1 *Typographical errors for spelling, punctuation, and grammar as well as minor formatting problems have been corrected throughout the document and are not individually called out in the errata.*
- G2 *References to the “Draft EIS/EIR” have been updated to “Final EIS/EIR” where appropriate throughout the document.*
- G3 *Figures were renumbered throughout the document to accommodate the additional figures added. The figures were also corrected for typographical errors, as well as to change the date for the Final EIS/EIR.*
- Figures 2-6, 3-7, 3-18A and 3-18B are additions to the Final EIS/EIR.*
- G4 *Impacts to USACE jurisdictional features were clarified throughout the document as being: “73 discrete impacts to waters of the U.S.”*
- G5 *In the Draft EIS/EIR the impacts to resource areas were discussed for Alternative 1 and Alternative 2 jointly in a number of sections. For the Final EIS/EIR, these sections have been divided and are now discussed separately. This revision was made to Table ES-1 as well as in Sections 3.3.1, 3.3.2, 3.3.4, 3.3.5, 3.5.2, 3.5.3, 3.5.4, 3.5.5, 3.5.6, and Chapter 4.*
- G6 *The copies of the agenda meetings were removed from Appendix C of the Final EIS/EIR.*
- G7 *Chapters 7 and 8, the list of preparers and references, were updated as needed.*

F.2.2 REVISIONS TO THE ABSTRACT

- R1 *As part of this project, BNSF will ~~donate~~ contribute funds towards ~~for the purpose of~~ conserving ~~conservation of~~ approximately ~~6050+/-~~ acres in the Cleghorn Road ~~Canyon~~ underpass Area to help ensure that the ecological processes within the Cajon Pass are preserved. This EIS/EIR analyzes three alternatives: Alternative 1, which would construct a third main track adjacent to the existing BNSF Main Track 1 through Cajon Pass with environmentally sensitive design features (Reduced Footprint); Alternative 2,*

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which would construct a third main track adjacent to BNSF Main Track 1 without environmentally sensitive design features (Standard Engineering Design); and the No Action Alternative in which a third main track would not be constructed through Cajon Pass. Environmental consequences of the Proposed Action include minor loss of land used primarily as wildlife habitat, wetlands and other jurisdictional waters, an increase in noise and light levels and frequency, some impact to wildlife movement, an impact to threatened, endangered and sensitive species, and short-term degradation of air quality. Proposed mitigation measures include sound-proofing of sensitive receptors; off-site wildlife habitat enhancement; and the avoidance of wetlands, ~~and~~ sensitive plant and animal species and habitats. ~~The Environmentally Preferred Alternative will be selected by the USACE for inclusion in the Final EIS/EIR and the Record of Decision.~~

R2 *This paragraph is an addition to the Final EIS/EIR.*

F.2.3 REVISIONS TO THE EXECUTIVE SUMMARY

R3 ~~The Proposed Action includes activities (to lengthen existing culverts and some bridges), are expected to will result in the discharge of fill material into 73 discrete impacts to into waters of the U.S. There are approximately 30 crossings subject to Section 404 jurisdiction throughout the length of the project. Although additional federal permits would be required for project completion, the land subject to additional federal jurisdiction consists of less area and is more localized than the land under Section 404 jurisdiction. Therefore, the U.S. Army Corps of Engineers (USACE) has jurisdiction as the lead agency for completion of the environmental review process under the National Environmental Policy Act (NEPA). As lead agency, the USACE is responsible for issuance of a Section 404 Permit of the Clean Water Act (CWA) based on fill and discharge of materials into 30 jurisdictional waters of the United States. Another aspect of the Proposed Action requires the realignment of Swarthout Canyon Road. The U.S. Forest Service (USFS) is a cooperating agency under NEPA since a Special Use Permit is required for grading and other encroachments outside of the existing right-of-way (ROW). Since the County of San Bernardino (County) and BNSF require a ROW agreement for Swarthout Canyon Road and its realignment, the Proposed Action is subject to California Environmental Quality Act (CEQA) requirements and therefore the County is the lead agency under CEQA. The U.S. Forest Service (USFS) is a cooperating agency under NEPA since a Special Use Permit is required for grading and other encroachments outside of the existing right-of-way (ROW).~~

R4 BNSF proposes to install a third main track traversing the 15.9 miles (25.6 km) from Summit to Keenbrook within Cajon Pass to alleviate the bottleneck resulting from the slower operational speeds required by the steep grades and curvature, and to accommodate existing and future freight traffic demands. BNSF further proposes to contribute funding to the conservation of developable private land critical to long term ecological processes in Cajon Pass.

R5 With the Reduced Footprint Alternative, the project would construct a new third main track adjacent and parallel to Main Track 1 and minimize the environmental footprint of disturbance by placing retaining wall structures above existing riprap in sensitive environmental areas and enhancing existing drainage structures to provide for increased

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ease in wildlife movement through existing, but constrained, linkages. The new construction would begin on the north side of the existing Main Track 1 near Summit, transition to the south side to avoid wetland areas near Alray, then transition to the west side ~~(track north)~~ to avoid direct impacts to Cajon Creek. The applicant's Proposed Action would involve the discharge of approximately 23,797 cubic yards of fill material approximately 30 and permanent fills that would permanently impact, ~~discharge approximately 23,797 cubic yards of fill material, and permanently affect 2.95 acres of jurisdictional waters of the U.S, including wetlands.~~

- R6 The three alternatives carried forward for analysis in the EIS/EIR are discussed with respect to their impacts and proposed mitigation measures. There are a number of impacts and mitigation measures for the project, therefore in an effort to simplify the Executive Summary the mitigation measures have been included only in table format (Table ES-1). The mitigation measures are discussed in more detail in Chapters 3 and 4 of this document. ~~Impacts and mitigation measures for each resource are summarized below and in Table ES-1 for all of the considered alternatives.~~
- R7 Alternative 1 has been selected as the Environmentally Superior alternative under CEQA. The USACE has identified Alternative 1 as the Environmentally Preferred Alternative and Least Environmentally Damaging Practical Alternative under NEPA. ~~Alternative 1 has been selected as the Environmentally Superior alternative under CEQA. The Environmentally Preferred Alternative under NEPA will be determined by the USACE for inclusion in the Final EIS/EIR and the ROD.~~
- R8 No additional impacts to hydrology or water quality, however severe erosion on the downstream side of existing culverts would continue and the beneficial impacts resulting from stabilization would not be realized.
- R9 Under the No Action Alternative, no new construction would occur and no drainages would be impacted. However, under the No Action alternative, the OHV Off-Highway Vehicle (OHV) Barrier Implementation Plan will not be implemented. To that end, one of the long-term effects of the existing tracks in the Cajon Pass are the increased accessibility the ROW provides for OHV use into previously restricted or inaccessible areas. Increased accessibility results in adverse impacts to native vegetation and special status species (e.g., tens of acres a year of Riversidean Upland Sage Scrub and Riversidean Alluvial Fan Sage Scrub habitats are adversely impacted) within the Pass (Loe, 2007). To reduce OHV use of the ROW and within the Pass, BNSF has agreed to install blocking measures at certain important intersecting road or water features crossings their ROW. The expansion of BNSF's post-construction general operations and maintenance program to include mechanisms that reduce impacts to native vegetation and special status species that would ultimately enhance Riversidean Alluvial Fan Sage Scrub habitats within the Cajon Pass will not be realized. ~~No impacts to existing resources~~
- R10 Mammals: Nelson's big horn sheep, Mule deer, and mountain lion, among others (table 3.4.2). American badger, northwestern San Diego Pocket Mouse, and San Diego black-tailed jackrabbit.
Birds: Bewick's wren, California towhee, American goldfinch, house finch and song

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~~sparrow, among others (table 3.4.2), Bell's sage sparrow, California horned lark, Cooper's hawk, long-eared owl, southern California rufous-crowned sparrow, Swainson's hawk, Tricolored blackbird, and yellow warbler.~~

~~Fish: Santa Ana speckled dace.~~

~~Reptiles: Western fence lizard, western whiptail and side blotched lizard, among others (table 3.4.2) Belding's orange-throated whiptail, Coastal western whiptail, and San Diego horned lizard.~~

~~MIS: Mule deer, mountain lion, song sparrow, and arroyo toad~~

- R11 After appropriate permitting and mitigation, minor impacts would remain for the same wildlife species listed under Alternative 1, in addition to the special status species discussed ~~below~~ under Alternative 1.

Impacts to wildlife movement would be greater under this alternative due to the lack of culvert/bridge improvements, and increased fill to breeding habitat areas.

- R12 Minor Impacts. Benefits to the long-term ecological processes within Cajon Pass resulting from the acquisition of the Cleghorn Canyon underpass and surrounding habitat would not be realized.

- R13 San Bernardino kangaroo rat, ~~coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, arroyo toad, Santa Ana speckled dace, San Diego horned lizard, among others (Table 3.4.3), even with the implementation of appropriate mitigation.~~

In addition, there would be moderate impacts to the arroyo toad communities within Cajon Pass, even with the implementation of appropriate mitigation.

- R14 Construction of this alternative would require cut and fill along the whole length of the track, including the excavation and replacement of the tracks in the excavated area. Some structures that would be impacted are ~~listed on or are eligible for the National and California historic registers~~ Registers. Mitigation to reduce the level of impact to less-than-significant for these resources includes avoiding the resources through redesign, completion of Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) documentation, following the Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings, and/or completing a Historic Structures Investigation. ~~As such Historic American Building Survey/Historic American Engineering Report Record documentation would be completed prior to project implementation. Mitigation for these impacts would include proper monitoring of the construction area, and the collection and documentation of any cultural resources encountered during construction.~~

The creation of the high fill and sub-grade for the new track, support structures, and ancillary facilities would affect paleontological resources within the project area. Mitigation measures would include having a trained and experienced paleontologic monitor onsite full time in paleontologically sensitive areas during excavations and grading activities when native soils would be disturbed. All exposed vertebrate and

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~~representative samples of megainvertebrate and plant fossils will be collected. With the assistance of a Native American representative The monitor would be empowered to temporarily halt construction for the purposes of recovery; salvage of exposed fossils and fossiliferous matrix; preparation of recovered fossils to a point of identification; curation of specimens into an established institutional collection with retrievable storage; and preparation of a report of findings and significance, including an inventory of specimens recovered. Where productive sites are excavated, approximately 2,000 pound rock samples will be collected to process for microvertebrate fossil remains.~~

~~Fossils recovered will be prepared to the point of identification, analyzed, and curated into a Federally-recognized repository. A final report will be prepared that contains a summary of the mitigation monitoring and laboratory test methods performed, a description of the site geology and stratigraphy encountered, a faunal list of taxa recovered, as well as a discussion of the significance of fossil discoveries. Appended to the report shall be the applicable supporting documentation including: field notes, geologic maps, stratigraphic sections, and an itemized inventory of specimens.~~

F.2.4 REVISIONS TO CHAPTER 1

R15 BNSF proposes to install a third main track in an environmentally sensitive manner from Summit to Keenbrook within Cajon Pass to alleviate the bottleneck resulting from the slower operational speeds required by the steep grades and sharp curves, and to accommodate existing and future freight traffic demands. BNSF further proposes to contribute funding to the conservation of developable private land critical to long term ecological processes in Cajon Pass. See Section 2.0 for a further description of the proposed alternatives.

R16 The project purpose is to improve the BNSF rail system through Cajon Pass in order to efficiently sustain current levels of rail traffic as well as anticipated amounts of future freight traffic ~~address the increasing demand for goods movement to facilitate commerce, and do so in an environmentally sensitive way. To that end, the goals and objectives are:~~

- Increase the sustainable capacity of rail traffic through Cajon Pass;

R17 *The first two paragraphs in the Endangered Species Act section replace the following information from the Draft EIS/EIR*

~~The Endangered Species Act (ESA) facilitates the conservation of threatened and endangered plants and animals along with the habitats where they can be found. A list of threatened and endangered species is kept by the U.S. Fish and Wildlife Service (USFWS). Those threatened and endangered species that are within the project study area are discussed in detail in Section 3.4 of this EIS/EIR.~~

~~A biological assessment was prepared for the project to evaluate the impact on species protected under the ESA that may accompany construction, operation and maintenance~~

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~~of the applicant's Proposed Action. A formal Section 7 Consultation with the USFWS is required to assure protection of endangered or threatened species and wildlife. The presence of the Arroyo Toad in the project vicinity triggers the need for consultation.~~

R18 *The following sections are additions to the Final EIS/EIR*

California Environmental Quality Act, §21084.1: "Historical Resource; Substantial Adverse Change"

California Environmental Quality Act, §15064.5: "Determining the Significance of Impacts to Archeological and Historical Resources."

California Penal Code, §622.5

California Register of Historical Resources

R19 The Section on San Bernardino County Code is an addition to the Final EIS/EIR

R20 ~~In the event no comments are submitted prior to the close of this call for comments, it shall be assumed, absent a request for a specific extension of time, that any public agency or person has no comment to make. Further, failure Failure to respond to this call for comments exhausts exhausted one's opportunity to comment into the administrative record and may forfeit one's ability to pursue further action. However, under CEQA/NEPA procedures, the lead agency ~~may choose~~ chose to respond to several late comments. Following the public review period, received comments ~~will be~~ were considered, responded to, and ~~a~~ are included as Appendix C9 of this Final EIS/EIR will be published.~~

R21 ~~Following public review and consideration of comments received, the Final EIS/EIR will be prepared and filed with the EPA and certified by the County. Correspondence related to the review of the Draft EIS/EIR and Public Hearing will be are included as an appendix in Appendix C of this to the Final EIS/EIR. Substantive comments received on this Draft EIS/EIR will be were considered in finalizing the document and responses to comments will be were provided in an Appendix C9 to the of this Final EIS/EIR. Copies of the Final EIS/EIR will be were filed with the EPA and a NOA of the Final EIS/EIR will be was published in the *Federal Register* and local newspapers. Copies of the NOA will also be were sent to interested agencies, property owners, and other concerned parties announcing that the Final EIS/EIR will be is available for a 30-day public review period prior to signing a Record of Decision (ROD). The ROD will explain why the USACE has chosen a particular course of action. A summary of the selected alternative and mitigation measures to minimize or avoid environmental impacts will also be identified in the ROD. In addition, the USFS will also issue a separate ROD per NEPA and CEQ procedures.~~

The EIS/EIR is certified by the lead agency and any specific findings are made for any effects that remain significant after mitigation. CEQA does not require a public review period prior to certification and issuing the NOD; however, the filing of the NOD initiates

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~~a 30-day appeals statute of limitations period. At the conclusion of the appeals period, the EIR is certified by the lead agency and any specific findings are made for any effects that remain significant after mitigation.~~

F.2.5 REVISIONS TO CHAPTER 2

- R22 This entire paragraph is an addition to the Final EIS/EIR
- R23 The retaining walls through this area would be used primarily to allow for the realignment of Swarthout Canyon Road. None of the retaining walls are being constructed for sediment or erosion control, but for slope stability purposes. The retaining walls are relatively short in length (all under 500') and will not act as a barrier to wildlife movement. The retaining walls will be built above the stream channel and 100-year flood plains and will not divert storm water flows. All retaining walls would be of either a soldier pile or cast in place (CIP) design and all would be dyed to match the surrounding landscape.
- R24 All ramps would include erosion protection as part of the SWPPP. In addition to the ramps, a ~~diagnostic~~ multi-disciplinary team has reviewed all new and existing culverts, greater than 24 inches (61 centimeters [cm]) in diameter, to determine if the culverts needed to be modified to allow for wildlife movement in critical linkage areas. There are 49 bridges and culverts currently accessible to wildlife, which will remain accessible. An additional 8 culverts are proposed by the multi-disciplinary team to be improved to accommodate wildlife movement while minimizing downstream erosion. Core members of the ~~diagnostic~~ multi-disciplinary team include the USFS, USACE, and BNSF. All culverts identified for upgrade would be improved for wildlife access following the recommended design agreed to by the ~~diagnostic~~ multi-disciplinary team.
- R25 *This paragraph replaces the following information in the EIS/EIR*
- ~~The Environmentally Preferred Alternative will be determined by the USACE and included in either the Final EIS/EIR and the ROD. The Least Environmentally Damaging Practicable Alternative will also be determined by the USACE and identified in the ROD.~~
- R26 At these locations there are rock outcroppings that will need to be blasted out in order for the third main track to be built through the area. The blasting will be limited to the minimum amount needed and ~~is expected to be very limited.~~ will be performed in accordance with BNSF Standard Specifications. During blasting activities a window when trains will not be passing will be requested as part of each individual blast. A plan for each individual blast will be submitted to BNSF by the licenced contractor. All required federal, state and local permits will be obtained by the contractor. The blasted slopes will be excavated in such a manner that they will be left in a safe and stable condition. The slope will be excavated to remove all loose fragments and any overhangs that are a potential hazard. All slopes higher than 10 feet will be excavated using methods of controlled blasting. Delay charges, charge densities, and hole spacing will be designed to break the rock without heaving it onto the mainline track. Ground

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vibrations will not exceed 2 inches per second at the track structure. Blast mats will be required over any blast capable of producing fly rock or other debris that could reach the track.

- R27 However, use of the borrow pit as the primary site of disposal of surplus material is anticipated. ~~To the extent possible, the construction ROW will be used as a haul route to transport excess fill from the project area to the vacated borrow pit. When this is infeasible, existing paved or unpaved roads will be enhanced and utilized as alternate haul routes and will be restored to pre-construction conditions subsequent to project completion. Heavy equipment travel during construction will be limited to existing roads and the proposed and existing ROW.~~
- R28 shows the current tunnel configuration. ~~Based on the limited space within the project ROW and the topographic constraints, the existing tunnels must be removed to ensure the geotechnical stability of the area. It is impracticable to construct a new tunnel parallel to the existing tunnels given the limited space within the project ROW and the geotechnical, seismic, and constructability concerns. As can be seen on Figure 2-4, Tunnel 1 is at the base between two steep peaks, and Tunnel 2 passes through a single steep peak. The narrow passage between the tunnels limits the ability to bring in the necessary equipment for tunneling without incurring additional impacts outside the BNSF ROW. In addition, it is not feasible to widen existing tunnels without shutting down existing freight activity for several months. Given this, there are no practicable alternatives to the removal of the tunnels. Rather it is a requirement of the project.~~
- R29 *The section on the Borrow Pit is an addition to the Final EIS/EIR*
- R30 To meet this objective, BNSF will make a monetary contribution, based on a mutually agreed amount, to a responsible non-profit, non-government organization for the purpose of conserving approximately 6050+/- acres near the Cleghorn Road Canyon underpass area (Figure 2-6).
- R31 The TCP will include signage placement, ~~use of flagman, use and temporary closure (except for emergency vehicle access) of USFS roads,~~ and projected haul routes and will be approved by the County and coordinated with the USFS. The construction use of roads will allow for public use except during temporary closures

F.2.6 REVISIONS TO SECTION 3.3.1

- R32 The air monitoring stations in the vicinity of the Proposed Action are shown on Figure 3-1. The three criteria pollutant air monitoring stations (e.g., Hesperia, Victorville, and Phelan) closest to the project site are located in MDAB are in a desert environment similar to that at the project site and have the highest historical (O₃) concentrations. The more distant or isolated stations (e.g., Barstow, Twentynine Palms, and Trona) have much lower concentrations, and have recently been experiencing concentrations in attainment of the NAAQS. The Hesperia, Victorville, and Phelan monitoring stations are approximately 22 miles (35.4 km) northeast, 27 miles (43.5 km) northeast, and 17 miles (27.4 km) northwest of Keenbrook, respectively. Although the stations at and San

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~~Bernardino/4th Street are closest to the project area, the environments they monitor are not representative of the project area within the Cajon Pass. The air monitoring station at Crestline, about 8 miles (12.9 km) southeast of Keenbrook, is in an alpine environment in the San Bernardino Mountains in the SCAB. The air monitoring station at San Bernardino/4th Street, about 11 miles (17.7 km) southeast of Keenbrook, is in an urban environment. The air monitoring stations closest to the Proposed Action are shown on Figure 3-1.~~

R33 *Table 3.3.2 was updated with the information from the San Bernardino/4th street and Crestline monitoring stations.*

R34 Construction activities (e.g., site preparation and grading including transportation of excavated soil to a fill site within the project area, installation of track, and construction of infrastructure) would result in short-term emissions of fugitive dust and exhaust from equipment used in the construction process.

R35 *In Table 3.3-5, total emissions for VOCs in the SCAQMD was increased from 31 to 130 lbs/day and in the MDAQMD from 6 to 7 tons/year. Total emissions for NO_x and CO for the MDAQMD changed from 74 to 75 and 31 to 32 respectively.*

R36 Those mitigation measures are identified in the Air Quality Impact Analysis (URS 2006a) and include the following:

- During construction, maintain equipment and vehicle engines in good condition and in proper tune as per manufacturers' specifications;

R37 *The following foot note was added to Table 3.3-9*

¹ The maximum daily emissions in pounds per day were converted to tons per year based on the assumptions that site grading would take 228 days per year in the MDAB and 183 days per year in the SCAB; construction of infrastructure and track installation would take 91 days per year.

F.2.7 REVISIONS TO SECTION 3.3.2

R38 *This paragraph replaced the following paragraph from the Draft EIS/EIR*

~~Since there is no possibility to mitigate for landslide causing natural disasters, such as earthquakes, the potential impacts for landslides would remain. The effects of landslides are expected to be moderate to minor through Cajon Pass, as they would have localized effects that could potentially cause short-term disruption of activity.~~

F.2.8 REVISIONS TO SECTION 3.3.3

R39 These BMPs include, but are not limited to: outlet protection/velocity dissipation devices, stream bank stabilization, flow diversion, temporary stream crossings, tracking control, temporary sediment control, temporary and permanent soil stabilization, gravel bags, silt

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fences, and waste management and materials control.

R40 *This entire paragraph is an addition to the Final EIS/EIR*

F.2.9 REVISIONS TO SECTION 3.3.4

R41 Path modifications using a noise barrier (e.g., soundwall or berm) would effectively decrease the overall noise exposure at the ST-1 and ST-2 areas. For ST-1, a six-foot-tall (1.8 m) berm or wall between Main Track 1 and the residence would likely reduce noise to “no impact”, but its feasibility and reasonableness would need to be evaluated during ~~final engineering design of the project~~ discussions with the property owner where the berm or wall would be located.

R42 At locations ST-3, 4, 5, and 6, a barrier that could effectively reduce the rail-related noise was evaluated. Achieving substantial noise reduction for these locations would require sound barriers greater than 12-feet-high (3.7 m) and approximately 800 feet (243.8 m) long, ~~and are not reasonable or feasible mitigation~~. ~~Construction of soundwalls could be considered during final engineering design, but they are not likely to be found to be a reasonable or feasible mitigation measure.~~—Thus, based on the FRA General Noise Assessment methodology (Figure 3-5) used in this analysis, residual “Severe Impact” would remain at these residences.

Currently, BNSF is continuing its efforts in contacting the 6 individual property owners identified in the Noise Analysis to discuss potential mitigation measures to address noise issues. While source and path modifications are not effective mitigation at these locations, mitigation measures such as berms or sound walls on private property, or the acoustical upgrading of building components including windows, doors, and air conditioning, will be offered and may be implemented in accordance with agreements made with the property owners. A report from BNSF to the County documenting agreements made with property owners or attempts to reach reasonable agreements with property owners shall be submitted within a year of certification of the Final EIS/EIR. When source and path modifications are not effective for mitigation or where only interior noise exposure is important (such as inside a residence), sound attenuation of the dwelling unit itself could be considered an effective alternative mitigation measure. Prior to operation of the third main track, BNSF would meet with each property owner and determine the feasibility of noise reduction features that would be implemented, where appropriate, for each of the affected residences.

F.2.10 REVISIONS TO SECTION 3.3.5

R43 Some degree of ~~overspray and movement~~ dispersion by rolling stock onto the ballast is expected with the use of these devices. The origin of the waste oil used in these tanks is unknown. Solvents, polychlorinated biphenyls, and heavy metals can all be associated with waste oil. The highly viscous nature of the oil and graphite mixture used in the wayside oilers suggests that releases or accumulated ~~overspray~~ lubricant would

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be confined to shallow soils in the local area and would not result in large amount of contamination.

- R44 Furthermore, ~~the recent statistics demonstrate that the release of hazardous materials as a result of derailment is or petroleum products, as a result of derailment, will be unlikely rare and infrequent.~~
- R45 In addition to the Standard Operating Procedures, speckled dace individuals would be transplanted to a ~~pool pond and short section of stream~~ near MP 62.45 that is currently devoid of this species. ~~The pool pond and outlet stream are connected to Cajon Creek, and tributary stream connect to Cajon Creek upstream of several potential spill areas. Consequently, the potential impact is considered moderate. Establishing a population in this tributary would provide an off channel refugia from accidental spills in the main channel.~~

F.2.11 REVISIONS TO SECTION 3.4

- R46 *The first two paragraphs of the Ephemeral drainages section replace the following text from the Draft EIS/EIR:*

~~Arid climates, such as what is found in southern California, are dominated by low annual rainfall, low soil moisture, and very high evapotranspiration levels. Ephemeral drainages remain dry for most of the year with flow occurring only during and immediately after storm events. The presence of large amounts of alluvium beneath the majority of ephemeral drainages results in the loss of runoff volumes at the surface and contributes to groundwater recharge. These drainages typically have little riparian vegetation associated with them. Common in southern California, they have relatively minimal functions and values compared with the other aquatic resources described below.~~

~~Many of the drainages located within the project site are ephemeral drainages that support sparse riparian vegetation (see representative site photographs in Appendix B, Jurisdictional Delineation Report dated January 2006 and the Supplemental Jurisdictional Delineation Report dated July 2006). Common vegetation found in these areas include: mule fat, Mexican elderberry (*Sambucus mexicana*), and tree tobacco (*Nicotiana glauca*). Riparian habitat exists along many stream courses in southern California. The presence of moving water has some very important physical effects on the surrounding habitat in southern California's arid environment including providing habitat for sensitive species. Riparian habitats, especially in the arid southwest, exhibit the majority of the functions and values present in wetland systems. Their value to native wildlife in southern California could be greater than previously thought and recent studies have concluded that western riparian habitats could be more important, on an acre-for-acre basis, than wetlands in regions with greater precipitation (U.S. Department of the Interior, 1994). Many of the riparian areas in southern California are narrow, linear strips within the more arid habitats of chaparral and sage scrub located on the adjacent uplands. Along the coast of southern California, these riparian zones create a complex~~

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~~web of stream channels leading from hilltops down to the ocean and function as wildlife corridors and linear oases with respect to surrounding arid, upland regions. Water does not generally flow in these streams year-round, but the presence of groundwater below these riparian strips often allows vegetation to grow throughout the dry Mediterranean summer. The resulting microclimate within these areas provides habitat for species that would not otherwise survive the summer (Brode and Bury, 1984). In general, species diversity is higher in the riparian areas than in neighboring upland areas. Riparian habitat is an important aquatic habitat type in southern California and due to the substantial reduction in the last 200 years this habitat type is considered rare and fragile.~~

R47 *The Compensatory Mitigation section is an addition to the Final EIS/EIR.*

R48 *The sections on MIS species and Wildlife Corridors were completely replaced with respect to the Draft EIS/EIR. The updates are included as an attachment to this errata.*

R49 *The following text was removed from the Draft EIS/EIR*

~~In considering the impacts associated with the Proposed Action, the environmental commitments specified in the project description have been used along with specific mitigation measures to reduce the overall effects on the biological environment. Most substantial of these commitments is the contribution to conservation funding efforts to secure a few remaining private parcels within Cajon Pass and adjacent to the SBNF boundary. The Applicant's contribution is intended for use to help ensure that needed wildlife linkages and functional connectivity will be maintained in the Cajon Pass to benefit a wide variety of plant and wildlife species, including those protected by state and federal Endangered Species Act statutes (See Section 1.2 Proposed Action). To meet this objective, BNSF will make a monetary contribution toward the conservation of parcels totaling approximately 60 acres near the Cleghorn Road underpass. The parcels (Cleghorn property) are currently owned by Kane Ranch Land Stewardship and Cattle Company. A portion of the Cleghorn property has previously been permitted for gravel mining by the County and is eminently developable. The USFS has identified the Cleghorn property in its SBNF Land and Natural Resources Management Plan (USDA, 2006) as being of primary importance for conservation due to its position along a major wildlife migration corridor and its suitable habitat for endangered and threatened species. The Cleghorn property is also nestled within a broader nexus of preserved lands making its preservation important to the cohesiveness and quality of the surrounding land. Further, the Cleghorn property is immediately adjacent to the approximately 29-acre site proposed for use as off-site mitigation for project-related impacts.~~

R50 *This paragraph is an addition to the Final EIS/EIR.*

R51 • To the extent practical and appropriate as a result of project impacts, culverts sizes are to be modified to accommodate for wildlife access and minimize downstream

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- erosion/sedimentation. The culvert outlets as appropriate, will be modified to facilitate the above referenced objectives on a case-by-case basis.
- R52 • A Habitat Mitigation Monitoring Plan (HMMP) has been developed to summarize avoidance, restoration, enhancement, creation, and preservation commitments associated with vegetation communities that will serve as compensation for the loss of habitat resulting from the Project to be completed over a 5-year period. The HMMP details compensation for: permanent loss of: (1) “Waters of the U.S.,” including non-tidal wetlands; streambed habitat, and “Waters of the State” that results from Project activities authorized under Section 404 and 401 of the Clean Water Act (CWA), and California Fish and Game Section 1600 (et seq.) (URS, 2006d); (2) potential direct, indirect, and cumulative Project related effects on four federally threatened and endangered species and their designated critical habitat; and (3) required compliance with the substantive mitigation provisions for specific plant communities detailed in this EIS/EIR. BNSF will develop and implement an off-site mitigation and restoration plan for potential temporary and permanent habitat and vegetative community disturbances.
- Vegetation communities common to the region, including southern mixed chaparral, Riversidian upland sage scrub, ~~alluvial sage scrub~~ and semi-desert chaparral, will be mitigated at a 0.5:1 ratio.
 - Vegetation communities considered to be regionally sensitive, including ~~Riversidean upland sage scrub~~, ~~Riversidean alluvial fan sage scrub~~, southern willow scrub, riversidian alluvial fan sage scrub, southern cottonwood-willow riparian forest, California walnut woodland, ~~sandy river wash~~ and valley and foothill grassland will be mitigated at a 3:1 ratio.
- R53 ▪ Treatment will be according to instruction of the authorized officer. Any use of herbicides in California will be handled by properly-licensed county agricultural agents. Any use of herbicides on USFS lands will comply with the Sulfometuron Methyl and Glyphosate Human Health and Ecological Risk Assessment Final Report (USDA 2003 and USDA 2004).
- R54 • Wetlands would be mitigated at a 23:1 ratio. Mitigation would be implemented onsite where feasible, with the remainder occurring would be implemented offsite.
- R55 • During periods of precipitation within 0.6 miles (1 km) of arroyo toad habitat, vehicle speeds will be 20 mph (32 km/hour) or less within the work zone.
- R55 *The section on the “Disposal Site (Borrow Pit) with respect to Alternative 1 is an addition to the Final EIS/EIR.*
- R57 *The section on the “Disposal Site (Borrow Pit) with respect to Alternative 2 is an addition to the Final EIS/EIR.*
- R58 Under the No Action Alternative, no new construction would occur and no drainages would be impacted. However, under the No Action alternative, the OHV Off-Highway Vehicle (OHV) Barrier Implementation Plan will not be implemented. To that end, one of the long-term effects of the existing tracks in the Cajon Pass are the increased accessibility the ROW provides for OHV use into previously restricted or inaccessible areas. Increased accessibility results in adverse impacts to native vegetation and special status species (e.g., tens of acres a year of Riversidean Upland Sage Scrub and Riversidean Alluvial Fan Sage Scrub habitats are adversely impacted) within the Pass

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(USFS, 2007a). To reduce OHV use of the ROW and within the Pass, BNSF has agreed to install blocking measures at certain important intersecting road or water features crossings their ROW. The expansion of BNSF's post-construction general operations and maintenance program to include mechanisms that reduce impacts to native vegetation and special status species that would ultimately enhance Riversidean Alluvial Fan Sage Scrub habitats within the Cajon Pass will not be realized.

F.2.12 REVISIONS TO SECTION 3.5.4

R59 *These four paragraphs are additions to the Highways and Roads section of the Final EIS/EIR.*

F.2.13 REVISIONS TO SECTION 3.5.5

R60 These crossing points are at the following approximate milepost locations: MP 55.7, 56.5, 57x, 60x, 62x, 63x.5, 63x.9, 64.9, 65.2, 66.5, and 67.9. Figures 3-18A and 3-18B show the cut and fill lines for the project with respect to the Southern California Edison towers. Even the closest facility to the project ROW, the tower near Alray and the I-15, indicate that the cut and fill boundaries for the project will not impact the existing towers or their placements.

R61 Therefore, no impacts to electrical transmission lines are expected as a result of Alternative 1. Figure 3-18a and 3-18b show the cut and fill lines for the project with respect to the Southern California Edison towers. Even the closest facility to the project ROW, the tower near Alray and the I-15, indicate that the cut and fill boundaries for the project will not impact the existing towers or their placements.

F.2.14 REVISIONS TO SECTION 3.6

R62 The cultural resources investigation involved a multi-faceted approach, which included: the development of a cultural context to better understand the various cultural resources that could be encountered; a review of site records to identify previous cultural resources surveys, historic properties, and archaeological resources; an intensive pedestrian level survey to re-identify previously recorded sites and identify prehistoric and historic resources and assess their integrity; consultation with the Native American Heritage Commission (NAHC) and coordination with Native American groups to identify potential Sacred Sites or Traditional Cultural Properties that could be impacted; and consultation with USFS, USACE, and the County. For purposes of this EIS/EIR, the cultural resources study area is defined as the area within a quarter mile (0.4 km) of the centerline of the BNSF ROW. The project area is defined as the area within the BNSF ROW. The BNSF ROW has an approximate 100-foot radius on either side of the main track; however, in specific areas, the width of the ROW varies (i.e., wider or narrower) based on the site's topography and landscape features. This creates an approximate 200-foot ROW corridor for the project area. The project area also includes areas within the limits of the permanent cut or fill area plus 20 feet (6.1 m) for each build alternative;

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areas outside of the ROW which may be impacted through cut and fill activities; areas within the borrow pit (an excavated mound that was used as fill material for the construction of I-15), which will be re-filled with excavated material from the BNSF 3MT construction; and access roads, particularly along an old section of National Old Trails Highway/Route 66.

~~and a review of site records to identify previous cultural resources surveys, historic properties, and archaeological resources. The site records have also been used to develop an understanding of potential resources that may be encountered; an intensive pedestrian level survey to re-identify previously recorded sites and assess their integrity and also to record any previously unidentified resources, and coordinate with the Morongo band of Mission Indians to identify potential Sacred Sites or Traditional Cultural Properties that could be impacted. For purposes of this EIS/EIR, the cultural resources study area is defined as the area within a quarter mile (0.4 km) of the centerline of the BNSF ROW. The project area is defined as the area within the BNSF ROW or within the limits of the permanent cut or fill area plus 20 feet (6.1 m) for each build alternative.~~

- R63 The San Bernardino County Museum (SBCM) Archaeological Information Center's, the California Historical Resources Information Center for the County, records indicate that 26 cultural resources (e.g., historic structures and archaeological sites) have been recorded within the BNSF study area; ~~18-29~~ of these resources are historic and ~~eight~~²¹ are prehistoric. In addition, one National Register Archaeological District (Crowder Canyon) is within the study area. Within the actual project area, one proto-historic site prehistoric site, one prehistoric, the Crowder Canyon Archaeological District, (Table 3.5-16), and 11 historic structures (Table 3.5-17) archaeological district (Table 3.5-16), and 12 historic structures (Table 3.5-17) have been previously recorded.
- R64 *The section on "Previously Unrecorded Historic Architectural and Historic Structural Resources" in the Final EIS/EIR replaces the "Newly Recorded Historic architectural and Historic Structural Resources" section from the Draft EIS/EIR. The details of that update are included as an attachment to this errata.*
- R65 *The Environmental Consequences and Mitigations for Alternative 1 under Cultural Resources was rewritten for the Final EIS/EIR. The updates to the text are included as an attachment to this errata.*
- R66 A repository agreement with a Federally-recognized repository must be obtained prior to construction. Also prior to the start of construction, a Scientific Collecting Permit for recovery of Paleontological resources on Federal lands must be obtained by a qualified vertebrate paleontologist. A qualified paleontological monitor must be on-site in paleontologically sensitive areas during excavation and grading activities when native soils would be disturbed. Paleontological monitoring would be required in areas when native soil is being excavated. If a resource is discovered during construction, that resource would require assessment and possibly recovery by a Secretary of the Interior (SOI) qualified vertebrate paleontologist

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R67 Considered to have high sensitivity. The ~~vertebrate paleontologist~~ paleontologic supervisor and ~~paleontologic field technician~~ monitor will collect exposed fossils. All vertebrate and representative samples of megainvertebrate and plant fossils will be collected. ~~Where Productive~~ productive sites will be ~~are~~ excavated and, approximately 2,000 pound rock samples will be collected to process for microvertebrate fossil remains.

During any earth-moving activity including: preparation of the ROW ~~Project Area~~, excavations requiring moving large volumes of rock in pre-existing cuts, and tunnels, the ~~paleontologic field technician~~ monitor will monitor full time. Fossils recovered will be prepared to the point of identification, analyzed, and curated into a Federally-recognized repository. A final report will be prepared that contains a summary of the mitigation monitoring and laboratory test methods performed, a description of the site geology and stratigraphy encountered, a faunal list of taxa recovered, as well as a discussion of the significance of fossil discoveries. Appended to the report shall be the applicable supporting documentation including: field notes, geologic maps, stratigraphic sections, and an itemized inventory of specimens. ~~for 3 to 5 days per week.~~

F.2.15 REVISIONS TO CHAPTER 4

R68 The applicant, BNSF, would implement a variety of mitigation measures to offset the potential impacts of the ~~Action Alternative~~ Applicant's Preferred Alternative selected for the BNSF Cajon Third Main Track project. During the development of preliminary engineering, Alternative 1 was developed with a reduced footprint to avoid wetlands, wildlife, and cultural resources. Other specific environmental commitments and mitigation measures are discussed below by resource area. The environmental commitments made by the applicant are further discussed in the Project Description (Section 2.0) and mitigation measures are ~~also discussed in the Affected Environment and Environmental Consequences sections (Chapter 3.0). A Draft Impacts Analysis and A Mitigation Monitoring and Reporting Plan, which includes a summary of the environmental commitments and a mitigation measures along with~~ and monitoring requirements, is included as Appendix E of this EIS/EIR

R69

- During construction, maintain equipment and vehicle engines in good condition and in proper tune as per manufacturers' specifications;

R70

- When source and path modifications are not affective effective for mitigation or where only interior noise exposure is important (such as inside a residence), sound attenuation of the dwelling unit itself berms, or sound walls on private property could be considered an effective alternative mitigation measure. BNSF commits to the proposed or equivalent mitigation depending on the results of final engineering design and meetings with affected property owners. A report from BNSF to the County documenting agreements made with property owners or attempts to reach reasonable agreements with property owners will be provided within a year of certification of the Final EIS/EIR. However, a specific inspection of each dwelling would be necessary to determine feasibility of incorporating noise reduction features into each affected structure. The acquisition of a "noise easement" should be considered in exchange for any acoustical upgrades.

R71

- BNSF will install and maintain up to four temporary water sources for wildlife where access (at locations determined by USFS) to existing waters is blocked by

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- access (at locations determined by USFS) to existing waters is blocked by construction.
- R72
- BNSF will develop and implement a native vegetation restoration and monitoring plan for temporarily disturbed areas of the project. The restoration and monitoring plan will become part of BNSF's general operations and maintenance program for post construction activities
- R73
- A Habitat Mitigation Monitoring Plan (HMMP) has been developed to summarize avoidance, restoration, enhancement, creation, and preservation commitments associated with vegetation communities that will serve as compensation for the loss of habitat resulting from the Project to be completed over a 5-year period. The HMMP details compensation for: permanent loss of: (1) "Waters of the U.S.," including non-tidal wetlands; streambed habitat, and "Waters of the State" that results from Project activities authorized under Section 404 and 401 of the Clean Water Act (CWA), and California Fish and Game Section 1600 (et seq.) (URS, 2006d); (2) potential direct, indirect, and cumulative Project related effects on four federally threatened and endangered species and their designated critical habitat; and (3) required compliance with the substantive mitigation provisions for specific plant communities detailed in this EIS/EIR BNSF will develop and implement an off-site mitigation and restoration plan for potential temporary and permanent habitat and vegetative community disturbances.
 - Vegetation communities common to the region, including southern mixed chaparral, riversidian upland sage scrub, alluvial fan sage scrub, and semi-desert chaparral, will be mitigated at a 0.5:1 ratio.
 - Vegetation communities considered to be regionally sensitive, including Riversidean upland sage scrub, Riversidean alluvial fan sage scrub, southern willow scrub, riversidian alluvial fan sage scrub, southern cottonwood-willow riparian forest, California walnut woodland, sandy river wash, and valley and foothill grassland will be mitigated at a 3:1 ratio.
- R74
- Wetlands would be mitigated at a 23:1 ratio. Mitigation would be implemented onsite where feasible, with the remainder occurring would be implemented offsite.
- R75
- During periods of precipitation within 0.6 miles (1 km) of arroyo toad habitat, vehicle speeds will be 20 mph (32 km/hour) or less within the work zone.
- R76
- Mitigation for Cultural Resources listed in the Final EIS/EIR replace the following from the Draft EIS/EIR.*
- Level I HAER for the AT&SF Cajon Pass Historic Corridor according to the standards established by the SOI and Level III HABS for the Salt Lake-Santa Fe Trail and Brown Toll Road shall be conducted on these resources before any construction activities begin.
 - Archaeological monitoring by a qualified ESM, with the assistance of a Native American representative, in areas of archaeological sensitivity, including Muscupiabi and Crowder Canyon shall be conducted during project grading activities.
- R77
- An experienced vertebrate paleontologist or A trained paleontologic monitor must be onsite full time in paleontologically sensitive areas during excavations and grading activities when native soils would be disturbed. All exposed vertebrate and representative samples of megainvertebrate and plant fossils will be collected. With the assistance of a Native American representative (as needed), the The monitor

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would be empowered to temporarily halt construction for the purposes of recovery. Where productive sites are excavated, approximately 2,000 pound rock samples will be collected to process for microvertebrate fossil remains. Fossils recovered will be prepared to the point of identification, analyzed, and curated into a Federally-recognized repository. A final report will be prepared that contains a summary of the mitigation monitoring and laboratory test methods performed, a description of the site geology and stratigraphy encountered, a faunal list of taxa recovered, as well as a discussion of the significance of fossil discoveries. Appended to the report shall be the applicable supporting documentation including: field notes, geologic maps, stratigraphic sections, and an itemized inventory of specimens. salvage of exposed fossils and fossiliferous matrix; preparation of recovered fossils to a point of identification; curation of specimens into an established institutional collection with retrievable storage; and preparation of a report of findings and significance, including an inventory of specimens recovered.

R78 *Sections 6.2.1, 6.2.2, 6.2.3, 6.2.4 and 6.2.5 are additions to the Final EIS/EIR.*

Attachment R48

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R48 – Revisions to the Management Indicator Species and Wildlife Corridor text.

3.4.1.6 Management Indicator Species

Effects to Management Indicator Species (MIS) are summarized in the general vegetation and wildlife sections of this report. MIS were selected because their population changes are believed to indicate the effects of management activities (36 CFR [Code of Federal Regulations] 219.19(a)(1), 1982) and to serve as a focus for monitoring (36 CFR 219(a)(6), 1982).

Botanical MIS species include: Blue oak (*Quercus douglasii*), Engelmann Oak (*Quercus engelmann*), Valley Oak (*Quercus lobata*), Coulter pine (*Pinus coulteri*), bigcone Douglas-fir (*Pseudotsuga macrocarpa*), white fir (*Abies concolor*) and California black oak (*Quercus kelloggii*). None of these botanical species were detected within the project area. Wildlife MIS species known to be present in the project area include: mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), arroyo toad (*Bufo californicus*), and song sparrow (*Melospiza melodia*). Details regarding the status and distribution of these wildlife species are discussed below. Table 3.4-5 displays the MIS that were designated by the SBNF Forest Plan (USDA, 2005) and whether they are known to occur within the project area.

~~Management indicator species (MIS) are common species within the region whose population changes are believed to indicate the effects of management activities (36 CFR 219.19(a)(1), 1982) and to serve as a focus for monitoring (36 CFR 219(a)(6), 1982). Botanical MIS species identified within the region include: Blue oak (*Quercus douglasii*), Engelmann Oak (*Quercus engelmann*), Valley Oak (*Quercus lobata*), Coulter Pine (*Pinus coulteri*), bigcone Douglas-fir (*Pseudotsuga macrocarpa*), white fir (*Abies concolor*) and California black oak (*Quercus kelloggii*). None of these botanical species were detected within the study area.~~

~~Wildlife MIS species include: mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), arroyo toad (*Bufo californicus*), and song sparrow (*Melospiza melodia*). Details regarding the status and distribution of these wildlife species are discussed below. Table 3.4-5 displays the MIS that were designated by the SBNF Land and Natural Resources Management Plan (USDA, 2005) and whether they are known to occur within the study area.~~

**Table 3.4-5.
Management Indicator Species (MIS) Selection and Monitoring Information**

MIS	Habitat Type	Issue	Objective	Monitoring Method	Measure	Occur in Project Area
Mule Deer	All	Vegetation Diversity and Age Class Mosaics; Roads and Recreation Effects	Stable or increasing well-distributed populations	Herd composition in cooperation with CDFG; habitat condition	Trend in abundance and/or habitat condition	YES
Mountain Lion	All	Habitat Linkages/Habitat Fragmentation	Functional landscape linkages; species well-	Studies in cooperation with CDFG and USGS	Trend in distribution, movement, and/or habitat	Not observed, but likely

Table 3.4-5 (Continued).
Management Indicator Species (MIS) Selection and Monitoring Information

MIS	Habitat Type	Issue	Objective	Monitoring Method	Measure	Occur in Project Area
			distributed		conditions	
Arroyo Toad	Aquatic and Riparian	Ground Disturbance including trampling and compaction; spread of invasive nonnative species; mortality from collision; altered stream flow regimes	Stable or increasing populations; healthy riparian habitat	Riparian bird species point counts and/or habitat condition	Trend in abundance and/or habitat condition	YES
Song Sparrow	Aquatic and Riparian	Ground Disturbance including trampling and compaction; spread of invasive nonnative species; mortality from collision; altered stream flow regimes	Stable or increasing populations; healthy riparian habitat	Riparian bird species point counts and/or habitat condition	Trend in abundance and/or habitat condition	YES
Blue Oak	Oak Woodlands and Savannas	Oak Regeneration	Perpetuate habitat type	FIA data	Trend in sapling abundance	NO
Engelmann Oak	Oak Woodlands and Savannas	Oak Regeneration	Perpetuate habitat type	FIA data	Trend in sapling abundance	NO
Valley Oak	Oak Woodlands and Savannas	Oak Regeneration	Perpetuate habitat type	FIA data	Trend in sapling abundance	NO
Coulter Pine	Chaparral/Conifer Ecotone	Drought/beetle-related mortality and lack of fire	Maintain Coulter pine habitat	FIA data; aerial photo-monitoring	Trend in age/size class distribution	NO
Bigcone Douglas-fir	Chaparral/Conifer Ecotone	Altered fire regimes (fire severity and/or fire return interval)	Maintain bigcone Douglas-fir stands	FIA data; photo-monitoring	Trend in extent of vegetation type	NO
California black oak	Mixed Conifer Forests	Altered fire regimes (fire severity and/or fire return interval)	Maintain or increase numbers	FIA data	Trend in abundance, size class distribution	NO
White fir	Mixed Conifer Forests	Altered fire regimes (fire severity and/or fire return interval)	Pre-settlement age/size class distribution	FIA data	Trend in size class distribution	NO

Source: URS, 2006g

Mule deer: Mule deer are present throughout the project area, although population levels in the project area are relatively low compared to areas of the National Forest that are not subjected to high levels of anthropogenic disturbance. High road and train track density, human disturbance, and reduced habitat quality as a result of too frequent fire interval are thought to have limited mule deer populations within the Pass for many years. Disturbance factors include high road density, high levels of legal and illegal off-highway vehicle use, recreation use, and dogs from adjacent rapidly-growing communities. There are high levels of vehicle use on Forest system roads and on all of the maintenance roads for the various utilities. Deer in hunted populations (such as in the project area) avoid areas near roads where they are most vulnerable to both legal hunting and poaching. Maintenance roads parallel most of the existing and proposed tracks; consequently, deer will tend to avoid these and other traffic areas. The I-15 Freeway is a barrier to deer movement except under a few large bridges. State Highway 138 is a lesser barrier, but deer attempting to cross this highway are occasionally killed by vehicle collisions. The USFS is working with CalTrans to provide for future wildlife passage as these freeways and highways are improved through the construction of bridges, land bridges, and directional fencing.

Fires resulting from the use of roads and train tracks have caused the fire return interval to be more frequent than would otherwise naturally occur, resulting in a more open, disturbed habitat condition. Frequent fires have limited amount of important cover for deer in many areas and favored the proliferation of nonnative plant species. Much of the project area vicinity is being converted from mixed chaparral and chamise chaparral to nonnative grassland. As a result, forage and cover conditions have been adversely affected.

Within the project area, the highest deer densities occur away from roads and other human disturbances where there is adequate cover and water. In some areas on the north end of the project, construction of the train tracks has caused subsurface water to surface creating spring conditions. These features are attractive to deer and have become some of the most heavily used areas along the existing and proposed alignment. In the lower portion of the proposed alignment, water is not limited as Cajon Wash, Crowder, Cleghorn and Lone Pine Canyons have perennial flows.

Deer are assumed to be crossing over the tracks at the present time to access resources in their home range. The extent to which the existing rail-road tracks influence deer use is unknown. It is assumed that resident deer have become somewhat accustomed to the physical tracks and train traffic. Some deer crossing was noted on the existing tracks where water was present. Dispersing deer and bucks entering the project area in search of mates may be most influenced by unfamiliar tracks and train traffic. However, train-induced deer mortality is likely low due to low train velocities and the high levels of noise, which warn deer of oncoming trains, providing ample time for avoidance. The amount of noise and light from trains are a substantial disturbance during primary deer activity periods of mornings, evenings, and night. The San Bernardino-San Gabriel Connection is one of the most important landscape linkages in southern

California. Mule deer were chosen as one of the focal species for the linkage design because of their importance and need for landscape linkages.

~~Mule deer habitat on the SBNF is improving in some cases due to increased acreage of wildfire in recent years and improved management of conflicting uses in critical areas such as riparian habitats and meadows. In some ways, riparian habitat conditions on much of the SBNF have improved over the last century. Elimination of most grazing operations on National Forest Service lands in the San Bernardino Mountains has allowed riparian habitat to recover in many locations.~~

~~Likewise, timber harvesting operations in the SBNF have drastically changed over the past century. The closure of the last mill in southern California in the 1980s reduced the economic feasibility of large scale timber harvesting locally. As such, the extent of timber harvesting has been cut dramatically. Additionally, in current vegetation management efforts, technological advances and the need to protect rare habitats and species have resulted in lower impacts to riparian systems than have occurred in the past. The reduction of cattle grazing and more carefully planned vegetation treatment projects, have further allowed riparian systems to recover from the conditions they were in 50-100 years ago.~~

~~However, riparian habitat within the San Bernardino and San Jacinto Mountains on federal and non-federal lands has been affected by water diversions and extractions over the years, reducing the amount and quality of this habitat type. As such, impacts to deer populations likely have occurred due to reduction in habitat quality and quantity. Proposed and planned developments in and adjacent to the SBNF will likely result in increased recreational uses in riparian areas in the SBNF. Demands on water, and thus riparian habitat both on and off the SBNF, are likely continue to increase. The SBNF Land and Natural Resources Management Plan contains strong objectives and guidelines for protection of this habitat type.~~

~~Fire suppression is also having an impact on deer habitat on the Forest. Natural fires are not allowed to burn due to threats to the communities. In chaparral habitats, mule deer thrive on early successional vegetation during the first 10 years after a fire (Bowyer, 1981). The greatest effect on deer habitat from fire exclusion has been in the higher elevation forests and woodlands. In many areas, forest stands are becoming more dense, shrubs and herbs are being shaded out, and mast producing trees and shrubs and being replaced by shade-tolerant conifers. Some fuels management work is being done in these areas and the treatments mimic fire effects in many ways. There should be improved habitat conditions for deer as a result of this treatment, but it will be limited due to the fact that the treatment is primarily done adjacent to communities. Low elevation chaparral is burning too frequently and in many cases converting the shrublands to grasslands. This trend will, in the long term, result in the loss of habitat due to the lack of cover and forage. Annual grasses are important to deer when they are green, but the value declines quickly as they cure. Losing the shrub component due to type conversion removes a food source for much of the year. Type conversion also results in a loss of hiding~~

and thermal cover. Large areas adjacent to communities, highways, railroads, and freeways are being converted due to the number of human-caused fires.

As a result of these habitat modifications, the deer population in the San Bernardino Mountains appears to have declined in recent years. The severe drought in the early 2000s has undoubtedly affected this herd. Many streams and springs that had always been thought to be perennial dried up during this period. Forage quantity and quality was severely affected. Recent fires in the last decade have improved forage conditions, so that if normal rainfall occurs, deer productivity should increase for some time. A substantial amount of fuels work has taken place in the mountain range and this should benefit deer. The benefits are not as great as would be expected if the work were taking place further away from communities.

Unauthorized vehicle use has had an effect on deer populations in the San Bernardino Mountains. The effects have been greatest on the desert side of the mountain range where there are large areas of more gently terrain and habitat open enough to drive off road. Areas with high road densities (authorized and unauthorized) in the 1980s had only 10% of the deer densities that unroaded similar habitat had (Loe, 2006). The Forest has made a concerted effort to reduced unauthorized vehicle use and manage the OHV program to a higher level. Cooperative efforts with the OHV community have improved conditions for deer and other wildlife species.

The objective for mule deer is that there are stable or increasing well-distributed populations. Trends in abundance and/or habitat condition are to be used for measuring populations. Populations are to be monitored by herd composition counts in cooperation with CDFG, or by habitat condition. In southern California, habitat for deer is threatened by private development and urbanization adjacent to and within the National Forests.

Mountain lion: The project area contains a substantial amount of suitable mountain lion habitat. Prey density, largely consisting of mule deer, appears to be adequate to support resident lion use. In addition, recent telemetry data confirms that lions move through the Cajon Pass between the San Gabriel Mountains and the San Bernardino Mountains (USFS, 2007x), serving as an important dispersal linkage that helps maintain a healthy, genetically diverse population of lions on the San Bernardino and Angeles National Forests.

Mountain lion use of the Pass has undoubtedly been affected by the presence of linear barriers (i.e., highways, freeways, utility corridor access roads, and railroads), which increase the overall disturbance regime of the area. Mountain lions are sensitive to high-speed roads and human disturbance including off-highway vehicle use, although lions use highway and freeway underpasses while dispersing. For example, there are several major and smaller bridges and larger culverts under the I15 Freeway that are undoubtedly used by lions. In areas where mountain lions must cross over high-speed highways, mortality levels are increased due to vehicle collisions. Although railroads may provide a limited barrier to mountain lion dispersal, railroads are not as deadly for large mammals, especially at the relatively low speeds involved in Cajon Pass.

The San Bernardino-San Gabriel Connection is one of the most important landscape linkages in southern California. Mountain lion was chosen as one of the focal species for the linkage design because of their importance to the ecosystem and need for continued movement.

The SBNF has good habitat for the mountain lion. However, the drying of streams, meadows and riparian areas from diversion and pumping of water for human use; type conversion of some lower chaparral areas to annual grassland from too frequent wildfire; human development in the winter ranges; and high road densities in some prime deer habitat where unauthorized vehicle use has been severe, may all affect the mountain lion population.

Another area of concern has been the continued decline in permeability of the critical landscape linkages from the San Bernardino Mountains to the other adjacent mountain ranges that support mountain lions. The following connections are important to mountain lion survival and natural ecosystem function on the SBNF.

It is clear that the biggest threat to the mountain lion in southern California is the isolation and fragmentation of large blocks of suitable habitat by freeways, highways, urban, and agricultural development. The mountain lion was chosen as an indicator species in the plan revision process because of these threats and the importance of National Forests in providing for the long-term viability of this species in southern California.

Song sparrow: Song sparrows are present in the riparian habitat associated with Cajon Wash, Crowder, and Lone Pine Canyons. They are one of the most widely distributed riparian-dependent species on the Southern California National Forest. They were observed in the flycatcher and vireo surveys and were fairly common in the riparian bird point counts conducted by the USFS in the Pass. Habitat for song sparrows has been degraded from noise and light from freeways, highways, as well as the various train tracks and their use. In addition, illegal off-highway vehicle use has impacted riparian areas directly through disturbance effects. Nonetheless, there is still healthy riparian habitat that supports song sparrows and other riparian dependent species.

The song sparrow is identified by California Partners in Flight as a riparian focal species, and is considered one of the best indicators of riparian health in the western U.S. since over 90% of song sparrow nests are found in riparian vegetation (Big Sur Ornithological Lab, 2000). There are at least 17 subspecies of song sparrows in California. The resident song sparrow in southern California is *M. melodia cooperi*. In fall, the breeding resident song sparrows of southern California move to lowland areas. They are uncommon fall transients and winter visitors to eastern and southeastern deserts.

The song sparrow was selected as a MIS for riparian areas because its abundance is expected to be responsive to management actions and to indicate trends in the status of the riparian biological community, particularly for birds. The desired condition for song sparrows is that wildlife habitat conditions sustain healthy populations of native and desired non-native fish and game species. Wildlife habitat functions are also to be maintained or improved, including

primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages (USDA 2006).

The objectives for song sparrow are that there are stable or increasing populations and healthy riparian habitat. Trends in abundance and/or habitat conditions are to be used as measurements for evaluation. The monitoring method is to be riparian bird counts and/or habitat conditions (USDA 2006).

In some ways, riparian habitat conditions in much of the SBNF have improved over the last century. Elimination of most grazing operations on National Forest Service lands has allowed riparian habitat to recover throughout the San Bernardino, San Jacinto, and eastern San Gabriel Mountains. Currently, grazing in the SBNF is restricted to three active allotments in the San Jacinto Mountains and part of one allotment on the eastern edge of the San Bernardino Mountains. Even within those allotments, tighter control over cattle numbers and allotment management has reduced riparian habitat and aquatic system impacts.

Riparian habitat within the San Bernardino, San Jacinto, and eastern San Gabriel Mountains on federal and non-federal lands has been affected by water diversions and extractions over the years, reducing the amount and quality of this habitat type. As such, impacts to song sparrow populations likely have occurred. Proposed and planned developments in and adjacent to the SBNF will certainly result in increased recreational uses in riparian areas in the SBNF. Demands on water, and thus riparian habitat both on and off the SBNF, are likely continue to increase.

Arroyo toad: Arroyo toads are assumed to be present from the lower end of the project to SR-138. Their numbers are relatively low based on past survey results. Cajon Creek has been impacted somewhat by various transportation and utility projects, and there have been some hazardous spills that have impacted the wash. However, Cajon Creek is one of the only large drainages that hasn't been dammed or diverted; therefore, the stream functions in a near natural state. The highways and freeways result in some increased runoff as compared to the natural condition, and there are a number of dirt roads and illegal OHV use in the watershed, which results in increased erosion and sediment over natural levels. The culvert outfalls and access roads associated with the existing train tracks are eroding severely; however, the wash still supports toads, which are able to withstand frequent flooding and high levels of sedimentation.

The arroyo toad was selected as an MIS for low-elevation riparian and aquatic ecosystems. Arroyo toads were detected during the 2005 surveys (Figure 3-7). The desired condition for federally-listed species, such as arroyo toad, is that their habitats are conserved and that the species are conserved or moving toward recovery. Additionally, desired conditions have flow regimes in streams that provide habitat for threatened, endangered, proposed, candidate, and/or sensitive aquatic and riparian-dependent species that are sufficient to allow the species to persist and complete all phases of their life cycles (USDA, 2006). The desired condition for

riparian habitat is that watercourses are functioning properly and support healthy populations of native and desired non-native riparian-dependent species (USDA, 2006).

The desired condition for arroyo toad is that habitat functions sustain healthy populations of native and desired non-native fish and game species and that wildlife habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages (USDA, 2006).

The desired condition for watersheds is that they are healthy, dynamic and resilient, and are capable of responding to natural and human-caused disturbances while maintaining the integrity of their biological and physical processes (USDA, 2006). Long-term trends in population abundance, stream occupancy, and habitat condition are expected to reflect the effectiveness of management actions in protecting low-elevation riparian and aquatic habitat from disturbance and habitat degradation.

The objectives for arroyo toad are that there are properly-functioning streams and stable or increasing populations. Trends in abundance, distribution, and/or habitat conditions are to be used as measurements for evaluation. The monitoring method is population abundance and/or habitat condition in selected locations (USDA, 2006).

Predatory nonnative species are a significant threat to arroyo toads. Bullfrogs have been observed to eat juvenile and adult arroyo toads (Sweet, 1993). The bullfrogs may target calling adult males, leading to a skewed sex ratio and possible extirpation (Sweet and Sullivan, 2005). A number of warm water fishes (e.g., green sunfish, bluegill, largemouth bass, and black bullheads) and crayfish have been shown to feed on arroyo toad larvae and can cause high larval mortality in breeding pools (Sweet, 1992).

Invasive nonnative plants are also a problem in some areas. Species such as tamarisk and arundo colonize newly created flood terraces and can form dense masses of vegetation. These dense stands have higher rates of evapo-transpiration than do native vegetation, thereby decreasing the amount of available surface water. Tamarisk and arundo also stabilize stream terraces, deepening flood channels and resulting in unsuitable habitat for arroyo toads (Stephenson and Calcarone, 1999). Forests are involved in projects removing invasive nonnative plant and animal species where opportunities exist (Anderson, 2006). Dense patches of non-native grasses may also limit burrowing habitat on flood terraces during some years (Meyer, 2006).

Drought, repeated wildfires, and floods have probably adversely affected arroyo toad in the SBNF. Toads in the SBNF have been subject to severe sustained drought (4-5 years in length including the driest year on record). Wildfires have impacted arroyo toad populations in the SBNF and below the SBNF boundary heavily over the last 10-12 years. Some known occupied habitat has gone for several years with no surface water for breeding during the breeding season. The Devil Fire in 1994 burned portions of Deep Creek at Devil's Hole. The Willow fire in 1999 burned much of the lower and middle portions of Deep Creek impacting toads at the Hot

Springs, Warm Springs, and behind the Mojave Forks Dam at the Deep Creek/Mojave River confluence.

In 2001, the Louisiana and Bluecut fires burned together and burned habitat at Little Horsethief Creek and in Cajon Wash. The Grand Prix and Old Fires burned over 150,000 acres in the fall of 2003. These fires impacted toad population in Deep Creek, Little Horsethief, and Cajon Wash. Fires also impacted many populations outside of the SBNF on the north-facing slope of the San Bernardino Mountains and in Cucamonga Canyon in the San Gabriel Mountains (if that population is extant). Smaller fires in the Bautista Canyon area have also occurred. Dry fuels around that canyon make it at risk for a large-scale fire that could impact toads at that site.

Immediately following the wildfires in 2003, the SBNF experienced the most severe storm events in recorded history. The winters of 2003-2004 and 2004-2005 caused heavy debris flows in creeks in burned watersheds. Beaver dams in lower Deep Creek behind Mojave Forks Reservoir were blown out from the flooding. Dams are slowly returning, however flooding should improve the habitat for toads in the short term by clearing out and replenishing sandy benches and sandbars, as well as reducing the bullfrog populations that thrive in beaver dam ponds. The inordinate amount of precipitation in the winter of 2003/2004 and 2004/2005 should help recharge the streams that have had severely low flows, thus benefiting arroyo toads.

The SBNF is still in the process of conducting habitat inventories for arroyo toad. It is possible but unlikely that new populations of arroyo toads will be discovered as many of the areas likely to have suitable have already been visited. However, protocol surveys have not been conducted in all suitable habitats.

The known populations of arroyo toads on the SBNF are generally small, possibly because of the limited extent of low gradient habitat on the SBNF. Although routine monitoring has been a priority for the SBNF, population estimates and trends are not available for toad populations on the SBNF. Surveys have focused on inventory and determining continued toad presence as well as monitoring and correcting impacts to habitat rather than tracking trends though time.

3.4.1.7 Wildlife Corridors

The project area includes the Cajon Pass, which is known to contain one of the highest concentrations of Threatened and Endangered wildlife species within the San Bernardino National Forest (USFS, 2006x and 2006y). The Cajon Pass is also one of the most important landscape linkages in southern California as it connects two of the largest remaining blocks of natural open space essential for long-term wildlife viability (USFS, 2006x, and 2006y). Nonetheless, the environmental baseline for this assessment includes a substantial anthropogenic disturbance regime (e.g., operational BNSF train tracks, adjacent multiple lane highway, and other development). In 2005, 94 trains per day on average traveled through the Cajon Pass over a 24 hour period and the sustainable capacity was 102 trains per day. Environmental consequences of the addition of a Third Main Track will occur within an existing setting that has already been degraded and disturbed since the mid 1900's (URS, 2006a).

The Cajon Pass connects the San Bernardino and San Gabriel Mountains, serving as a habitat linkage that facilitates movement of wildlife and plants. For this reason, the Cajon Pass is crucial to the viability of wildlife traveling east and west between these core areas and is an important genetic linkage between the desert and coastal habitats. There are multiple routes that potentially accommodate wildlife movement within the Cajon Pass. Some of the areas with the greatest potential are shown in Figure 3-9.

Existing barriers to movement within the linkage are Interstate 15, State Highway 138, and Route 66. There are 249 km (154 mi.) of paved roads in the linkage area. Of them, Interstate 15 and State Route 138, are the roads that pose the most substantial barriers to wildlife movement because of the speed and volume of traffic, which is generally constant both day and night. Dirt roads are of much less concern and may even enhance wildlife movement through large areas of dense chaparral. There are also two major rail lines through Cajon Pass, roughly parallel to I-15. Two BNSF tracks run close together along a single raised bed in the lower Cajon Wash and separate into two beds in the upper areas of the Cajon pass. The Union Pacific Railroad line runs 200-400 meters (656 – 1312 feet) west of the BNSF track and only has 15-17 trains per day. In most areas of the Cajon Wash, the three rail lines run on the west bank, while Route 66 runs along the east bank. In the central areas of the project area, from Blue Cut to Cajon junction, the three rail lines, old Route 66, and the I-15 Freeway form a 500 meter (1640 foot) band of linear development that potentially constrains animal movement.

There are two tunnels in the northern portion of the project area east of Cajon Junction. These tunnels span one track and are covered by native soil and vegetation. The side of the hill that covers these tunnels is steep and provides little access to anything but the most sure-footed animals. Animals such as deer and mountain lion can potentially use these features to cross over the tracks. However, from evidence of animal tracks observed in the area, it appears that the highest density of tracks occur at the base of the tunnels and not over the top of them. This suggests that while animals may have the ability to use these feature to cross over the tracks, they do not do so on a regular basis.

~~Wildlife movement is essential to species and population survival. Movement is defined as dispersal, seasonal migration, and foraging as related to home range. Wildlife corridors link areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. These corridors include drainages, valleys, ridgelines, and mountain passes that allow animals to move between foraging and breeding habitats and promote genetic exchange between populations.~~

~~Cajon Pass connects two expansive core areas: the San Bernardino and San Gabriel Mountains. For this reason, the Cajon Pass habitat corridor is crucial to the viability of wildlife traveling east and west between these areas. There are several parallel routes that accommodate wildlife movement within Cajon Pass, as shown in Figure 3-8.~~

~~High-desert connections are characterized by habitat types that service species such as San Diego horned lizard (*Phrynosoma coronatum blainvillei*), metalmark butterfly (*Apodemia*~~

~~mormo), badger, and rock wren (*Salpinctes obsoletus*). These extend from the Upper North Fork of Lytle Creek, across Stockton flat, down into Lone Pine Canyon, across Cajon Pass to Horsethief Canyon, up into Summit Valley and then on to the West Fork of the Mojave River.~~

~~Higher elevation forest and shrub habitats best service species such as mountain lion (*Puma concolor*), mule deer (*Odocoileus Hemionus*), California spotted owl (*Strix occidentalis occidentalis*), mountain quail (*Oreortyx pictus*), and wrentit (*Chamaea fasciata*). These also serve as the best connection for bighorn sheep (*Ovis Canadensis*), pygmy nuthatch (*Sitta pygmaea*), tree frog (*Agalychnis sp.*), and speckled dace. Boundaries of these forest habitat routes are between Upper Lytle Creek Ridge, lower Lone Pine Canyon, Crowder and Cleghorn Canyons in the north and Cucamonga and Arrowhead Peaks in the south.~~

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Attachment R64

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R64 – Previously Unrecorded Historic Architectural and Historic Structural Resources .

Previously Unrecorded Historic Architectural and Historic Structural Resources Newly Recorded Historic Architectural and Historic Structural Resources

The cultural resource study identified 20 previously unrecorded historic structures within the 15.9-mile (25.6 km) BNSF project area and one site outside of but near the project area that could have potential indirect impacts caused by the proposed BNSF undertaking (Table 3.5-18). ~~The majority of t~~The newly recorded structures are culverts, bridges, tunnels, and features possibly associated with a rail worker’s camp, which ~~These resources~~ were constructed during the beginning of the 20th century and are associated with the AT&SF line. In addition to culverts, there were also a number of bridges recorded as well. In summary, recorded resources associated directly with the historic AT&SF included a total of 10 culverts, two tunnels, two bridges, one possible tool shed concrete foundation and one lime kiln, one possible worker’s cabin concrete foundation, one limekiln, one possible worker’s cabin concrete foundation, and one concrete-lined well associated with the possible worker’s cabin. Additional historic structures included a catwalk/gauging station structure, one stream diversion structure, concrete footings, and an historic bridge foundation.

Table 3.5-18.
List of Previously Unrecorded Historic Structures Within the Project Area

Site No.	Site Type	Site Date
BNSF-1	culvert	ca. 1938
BNSF-2	tunnel	1913
BNSF-3	tunnel	1913, 1921
BNSF-4	bridge	1934
BNSF-5	culvert	1939
BNSF-6	culvert	1938
BNSF-7	culvert	1938
BNSF-8	culvert	1938
BNSF-9	lime kiln	unknown, ca. late 19 th to early 20 th century
BNSF-10	culvert	1918
BNSF-11	culvert	1938
BNSF-12	culvert	1938
BNSF-13	culvert	1938
BNSF-14	culvert	1938
BNSF-15	structure	unknown, ca. early to mid-20 th century
BNSF-16	concrete bridge footer	unknown, ca. early 20 th century
BNSF-17	catwalk and gauging station	unknown, ca. mid-20 th century
BNSF-18	bridge	unknown, ca. early 20 th century
BNSF-19	possible stream diverter	unknown, ca. early to mid-20 th century
BNSF-20	possible worker’s cabin foundation	unknown, ca. early 20 th century

Site No.	Site Type	Site Date
BNSF-24	concrete-lined well	unknown, ca. early 20 th century

Source: URS, 2006h

<u>Primary No.</u>	<u>Site No.</u>	<u>Site Type</u>	<u>Site Date</u>
<u>P-36-012316</u>	<u>BNSF-1</u>	<u>culvert</u>	<u>ca. 1938</u>
<u>P-36-012317</u>	<u>BNSF-2</u>	<u>tunnel</u>	<u>1913</u>
<u>P-36-012318</u>	<u>BNSF-3</u>	<u>tunnel</u>	<u>1913, 1921</u>
<u>P-36-012319</u>	<u>BNSF-4</u>	<u>bridge</u>	<u>1931</u>
<u>P-36-012320</u>	<u>BNSF-5</u>	<u>culvert</u>	<u>1939</u>
<u>P-36-012321</u>	<u>BNSF-6</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012322</u>	<u>BNSF-7</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012323</u>	<u>BNSF-8</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012324</u>	<u>BNSF-9</u>	<u>limekiln</u>	<u>unknown, ca. late 19th to early 20th century</u>
<u>P-36-012325</u>	<u>BNSF-10</u>	<u>culvert</u>	<u>1918</u>
<u>P-36-012326</u>	<u>BNSF-11</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012327</u>	<u>BNSF-12</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012328</u>	<u>BNSF-13</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012329</u>	<u>BNSF-14</u>	<u>culvert</u>	<u>1938</u>
<u>P-36-012330</u>	<u>BNSF-15</u>	<u>Tool shed foundation</u>	<u>unknown, ca. early to mid-20th century</u>
<u>P-36-012331</u>	<u>BNSF-16</u>	<u>concrete bridge footer</u>	<u>unknown, ca. early 20th century</u>
<u>P-36-012332</u>	<u>BNSF-17</u>	<u>catwalk and gauging station</u>	<u>unknown, ca. mid-20th century</u>
<u>P-36-012333</u>	<u>BNSF-18</u>	<u>Bridge</u>	<u>unknown, ca. early 20th century</u>
<u>P-36-012334</u>	<u>BNSF-19</u>	<u>possible stream diverter</u>	<u>unknown, ca. early to mid-20th century</u>
<u>P-36-012618</u>	<u>BNSF-20</u>	<u>possible worker's cabin foundation</u>	<u>unknown, ca. early 20th century</u>
<u>P-36-012619</u>	<u>BNSF-21</u>	<u>concrete-lined well</u>	<u>unknown, ca. early 20th century</u>

Source: URS, 2006h

The following previously unrecorded resources are being recommended as contributing elements to a historic geographic district, known as the AT&SF Cajon Pass Historic Transportation District, which is eligible to the NRHP: P-36-012316 (Concrete Culvert); P-36-012317 (Railroad Tunnel); P-36-012318 (Railroad Tunnel); P-36-012319 (Railroad Bridge); P-36-012320 (Concrete Culvert); P-36-012321 (Concrete Culvert); P-36-012322 (Concrete Culvert); P-36-012323 (Concrete Culvert); P-36-012324 (Limekiln); P-36-012325 (Concrete Culvert); P-36-012326 (Concrete Culvert); P-36-012327 (Concrete Culvert); P-36-012328 (Concrete Culvert); P-36-012329 (Concrete Culvert); P-36-012330 (Vernacular Building Foundation); P-36-012333 (Railroad Bridge); P-36-012618 (Possible Worker's Cabin Foundation); and P-36-012619 (Concrete-Lined Well). Additionally, other contributing elements to the district include the previously recorded sites CA-SBR-70932 (Railroad Bridge) and the original AT&SF railroad bed (CA-SBR-6793H, which is recorded as eligible for the NRHP as #E-98-031).

The AT&SF Cajon Pass Historic Railroad District period of significance is from 1885-1939, and is eligible to the NRHP under:

Criterion A (Association with Events): for its association with the economic development and settlement of southern California; for its association with the patterns of events which connected southern California with the Midwest and East Coast—it was the final link for the Second Transcontinental Railroad.

Criterion C (Design and Construction): for its representation of technological advances which enabled railroad passage of the steep Cajon Pass, including deep gorges cuts, bridges, and tunnels, and the rail's subsequent reconstruction and rehabilitation following specific events in the twentieth century (i.e., 1938 floods).

In 1880, the AT&SF reorganized under a wealthy group of Bostonian investors with a new primary goal of extending the AT&SF railroad from the Missouri River to California. The group assumed control of several defunct railroad lines (i.e., Chicago, Cincinnati, and St. Louis Railways) and coordinated with struggling railroad lines (i.e., St. Louis and San Francisco Railroad) to expand railroad operations into the West and California.

The AT&SF met opposition from other railroad companies, such as Collis P. Huntington's Southern Pacific Railroad Company (which had a monopoly on railroading in California), and the rail company had difficulty obtaining the rights to a path across the Midwest and West Coast. In 1880, the AT&SF, after meeting with San Diego merchant Frank Kimball, choose San Diego as the new terminus for its railroad line. If the AT&SF selected San Diego, Kimball promised the AT&SF 17,356 acres of land, two miles of harbor frontage, 486 city lots for depots and terminal space (the land acreage, harbor frontage, and city lots were in National City), and \$25,410 cash-in-hand.

Construction began in 1881 in San Diego, and the line would then travel to Temecula, Riverside County with service through San Bernardino County and the Pass. However, the railroad did

not arrive to the Pass until 1885 (though grading began four years earlier in the area at Summit and was slowed by a torrential rainfall in 1884). Construction in Cajon Pass was difficult due to the steep terrains and this caused Mexican and Chinese laborers used distinctive construction techniques and methods. For example, instead of numerous tunnels, labor crews carved out the sides of gorges and created a 3 percent grade (-using few tunnels). On November 9, 1885, the line was completed and the first trains traversed the Pass only two days later, making the line part of the second transcontinental railroad.

By the beginning of the 20th century, the population of San Bernardino and Los Angeles increased dramatically, as did the real estate values of the area (Best 1988). The Western Assistant Secretary of AT&SF, G. Holterhoff, Jr. (1914:6), noted that the east coast investors now paid attention to the future possibilities of the economic expansion of this region and stated that “the Santa Fe was primarily instrumental in bringing about phenomenal growth of Southern California”. This sentiment was furthered by Herbert Deeming (1933:3), who stated that the “construction of the Santa Fe was mainly responsible for the colonization, development and permanent occupancy of the greater portion of the vast region included within the present limits of Kansas, Southern Colorado, Oklahoma, Texas, New Mexico, Arizona and much of California.”

With an increase in population of Southern California came the increasing need for commodities and a system to ship these goods. At the beginning of the 20th century, both train size and weight increased significantly in order to transport the larger volume of products. As such, the Cajon Pass, built for smaller trains of the late 19th century, and the only link between Los Angeles and Chicago, became a significant bottleneck. By 1910 plans were underway and construction began on a second track from San Bernardino to Summit (Walker 1985). During the 1920s, certain events caused slight extant alterations to the rail line. For example, two timber-lined tunnels were resurfaced with concrete following a fire. Additionally, in 1938, several culverts and bridges were reconstructed following several flooding episodes that plagued the County, and much of Southern California.

Between 1885 and 1938, the Cajon Pass alignment (and its distinctive design) continued improving transportation, communication, and settlement in the West. The railroad is part of a historic geographic district, whose components and features (i.e., tunnels, culverts) achieve significance as a whole within its historic context. These extant features are interrelated and enable the interpretation of the railroad's importance to the economic and demographic growth and development of Southern California in the late 18th and early 19th centuries.

~~The AT&SF alignment through Cajon Pass has undergone numerous modifications that are viewed as significant changes over time. However, those changes were necessary for the ongoing original function and safe operation of the railroad. In any case, the entire AT&SF alignment through Cajon Pass is being recommended eligible for both the NRHP pursuant to Criterion A (Event), for its association with the economic development and settlement of southern California and for its association with the patterns of events, which connected southern California with the midwest and East Coast, Criterion B (Significant People). The AT&SF was~~

~~founded by Cyrus Holliday, a leading visionary for the development of the railroad to the West Coast; Frank Kimball, leading merchant of San Diego and largest economic contributor and promoter of the AT&SF route through Cajon Pass to San Diego; Frank Nickerson, who was a leading East Coast railroad figurehead and President of AT&SF and Southern California Railroads at the time of construction through Cajon Pass; and Collis P. Huntington, head of the Southern Pacific Railroad (SPRR) and who tried in vain to block the construction of the AT&SF/SPRR through California and Cajon Pass, and Criterion C (Distinctive Design). Because Cajon Pass is one of the steepest grades in the West Coast, the railroad design was adapted to fit this incline, including many deep gorge cuts, many culverts and bridges and the two tunnels. Additionally, many of the features identified during the pedestrian survey are associated with the reconstruction of the railroad from the late 19th to early 20th centuries. Elements, features or structures associated with the AT&SF Cajon Pass Historic Corridor include: BNSF-1, BNSF-2, BNSF-3, BNSF-4, BNSF-5, BNSF-6, BNSF-7, BNSF-8, BNSF-10, BNSF-11, BNSF-12, BNSF-13, BNSF-14, BNSF-16, BNSF-18, BNSF-20, and BNSF-21. Other contributing and previously recorded features include: site CA-SBR-6793, recorded as a roadbed for the original AT&SF alignment and already listed eligible for the NRHP as #E-98-031; CA-SBR-7294H, an historic railroad bridge foundation, which has not been evaluated for eligibility for listing in the NRHP; and CPHI-86, a California Point of Historical Interest and the location of the original Cajon Summit Railroad Station.~~

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Attachment R65

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R65 – Environmental Consequences and Mitigations for Alternatives 1 and 2 under Cultural Resources.

3.5.7.3.1 Alternative 1 - Reduced Footprint

Cultural

The current alignment of Alternative 1 would affect a total of six previously recorded historic structures. These include: SBR-425/H, SBR-4253H, SBR-4272H, SBR-6793H, and SBR-7093H. ~~SBR-425H, SBR-4253H, SBR-4272H, SBR-6793H, SBR-7093H, SBR-7294H.~~ Resources recorded during the pedestrian survey that would likely be directly impacted by the Proposed Action include: P-36-012316, P-36-012317, P-36-012318, P-36-012319, P-36-012320, P-36-012321, P-36-012322, P-36-012323, P-36-012325, P-36-012326, P-36-012327, P-36-012328, P-36-012329, P-36-012330, and P-36-012333. ~~BNSF-1 through BNSF-8, BNSF-10 through BNSF-15 and BNSF-18.~~ All of these structures are associated with the historic development of the AT&SF, within the period of 1885 to 1955.

To mitigate potential impacts to cultural resources, The Lead Agencies recommend avoiding cultural resources through project redesign (as recommended in 40 CFR 1508.20). However, avoiding impacts to cultural resources is not always feasible. In those instances The Lead Agencies recommend that Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) may be completed in order to document buildings or structures that are eligible for or listed in the NRHP under Section 110b of the NHPA. There are four documentation levels of HABS/HAER (i.e., HABS Level 1-4), with each level requiring a different level of study and detail. The levels range from producing an inventory card for Level 4 to producing measured drawings, large-format negatives, and written data (e.g., context, construction history, significance evaluation, existing condition, physical description) for Level 1. The selection of the appropriate HABS/HAER documentation level is dependent on a number of factors, including a resource's significance, level of effect, condition, and level of research potential.

The most thorough and intensive HABS/HAER documentation level (i.e., Level I documentation) requires: 1.) Drawings: full set of measured engineering drawings depicting existing and historic conditions; 2.) Photographs: photographs with large-format negatives of the structure and historical views if possible; and 3.) Written Data: historic context and description of the significance. This information will be archived and preserved in the Prints and Photographs Division of the Library of Congress, where it is available for public use and research.

URS also recommends supplemental to HABS/HAER documentation, mitigation should include the preservation, rehabilitation, restoration, and/or reconstruction of the affected historic features and resources (per the *Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*). The Secretary of Interior treatment standards are outlined in 36 CFR part 68 Generally, projects which follow the *Secretary of Interior Standards for the Treatment of Historic*

Properties can be considered mitigated to a level of less than significant. For example, following the rehabilitation standards would require new construction to match historic materials, fabric, and design elements in-kind, and would minimize, rectify, and reduce the adverse effect (per definitions in 40 CFR §1508.20: Mitigation).

Another form of mitigation, conducted as an alternative to HABS/HAER documentation, may be the development of a Historic Structures Investigation (HSI). The HSI would be comparable to a Historic Structures Report, as suggested by the National Parks Service in *Preservation Brief 43: The Preparation and Use of Historic Structures Reports* (Slaton, 2005). Essentially, an HSI is an effective form of preservation planning, which identifies the appropriate treatment (i.e., preservation, rehabilitation, restoration, reconstruction) and documents the existing conditions of a historic property. The report would provide documentary, graphic, and physical information about the history and existing condition of the adversely affected features and resources.

The HSI has two sections: developmental history and treatment/work recommendations. The developmental history consists of a historical background and context; chronology of development and use; physical description; record photography; evaluation of significance; and condition assessment. The treatment/work recommendations consist of identifying the historic preservation objectives; selecting the treatments; requirements for work; work recommendations and alternatives.

The developmental history will also feature measured drawings and/or sketches of the features and resources; black-and-white photography accompanied by negatives; and a historic context which details the features and resources' relationship to the Cajon Pass. The developmental history will be consistent to the written data of HABS/HAER, and the treatment/work recommendations will be consistent to the *Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*. The HSI will be completed in consultation with any appropriate identified agency.

Supplemental to the mitigation outlined above, The Lead Agencies recommend that archaeological monitoring should occur in areas of archaeological sensitivity. Areas recommended for archaeological monitoring during construction include: the Crowder Canyon Archaeological District (Upper Cajon Pass); near the Davis Ranch and where the hearth feature (SBR-12430) was identified; the Muscupiabit Proto-Historic Site (SBR-425/H); in the area of SBR-12431, where several prehistoric sites have been previously recorded; and, in the area of the previously unrecorded sites of P-36-012324, P-36-012618 and P-36-012619 (this area may be the location of a railroad worker's camp, which if identified could contribute significantly to the historical interpretation of the railroad construction during the beginning of the 20th century). This monitoring program should include close coordination with the Native American community, particularly the group identified by the NAHC as the most likely contact: the Morongo Band of Mission Indians.

Although the BNSF ROW bisects the Crowder Canyon Archaeological District, there were no identified cultural resources associated with this district within the BNSF project area. However, the possibility exists that this district may be adversely impacted during the construction effort. As such, an SOI-qualified archaeologist and a Native American tribe representative will monitor construction activities in the location of the district. If cultural materials associated with the district are located during the monitoring effort, construction will be halted in the vicinity of the discovery so the resource can be evaluated. If specific resource is a contributing element to the district, or is CRHR or NRHP eligible of its own right, data recovery will be required.

In addition to archaeological monitoring in the location of SBR-12430, The Lead Agencies recommend archaeological testing to evaluate this site. Although, the site is outside of the BNSF project area, SBR-12430 was likely disturbed during construction of the original construction of the AT&SF railroad. Thus, BNSF in consultation and coordination with the USFS has agreed to have the site tested for significance. URS will work in concert with the USFS and the SHPO to develop a testing program for SBR-12430.

Although SBR-425/H recorded within the proposed BNSF project area (and study area), it was not re-identified during the cultural resources survey for this project. However, the possibility exists that it may be adversely impacted during the construction effort. The Lead Agencies recommends archaeological monitoring by a Secretary of the Interior (SOI)-qualified archaeologist, in coordination with a Native American representative from the list supplied by the NAHC; though URS does not make any recommendations, URS has had contact with the Morongo Band and they would most likely be the Native American group involved in the monitoring activities. If archaeological remains are identified during monitoring activities, because the site is of local significance, a data recovery of that portion of the site will be required. URS will coordinate with the San Bernardino County Museum, which owns the land on which Muscupiabit is located.

~~Historic American Buildings Survey (HABS) or Historic American Engineering Record (HAER) may be completed in order to document buildings or structures that are eligible for or listed in the NRHP under Section 110b of the National Historic Preservation Act. Level I HAER documentation for the AT&SF Cajon Pass Historic Corridor is proposed if eligibility is confirmed by State Historic Presentation Office. Level I documentation requires: 1.) Drawings: full set of measured engineering drawings depicting existing and historic conditions; 2.) Photographs: photographs with large-format negatives of the structure and historical views if possible; and 3.) Written Data: historic context and description of the significance. This information will be archived and preserved in the Prints and Photographs Division of the Library of Congress, where it is available for public use and research.~~

~~Level III HABS documentation would be completed for the Salt Lake-Santa Fe Trail and Brown Toll Road if required by State Historic Presentation Office. The lower level of documentation for these two resources would be employed because the potential for impact is low and the nature of the resource as trails limits the effectiveness of higher level documentation. Level III HABS~~

documentation is a simpler process than a Level I and requires a sketch of the trails, large-format photography, and a written historic context and description of the significance of each of these resources. Other mitigation measures recommended include posting historical interpretive signs along the trail's access points.

In areas of archaeological sensitivity where excavation or grading would occur where there is the potential of uncovering archaeological remains. A trained paleontologic monitor must be onsite in paleontologically sensitive areas during excavations and grading activities when native soils would be disturbed. With the assistance of a Native American representative (as needed), the monitor would be empowered to temporarily halt construction for the purposes of: recovery, salvage of exposed fossils and fossiliferous matrix, preparation of recovered fossils to a point of identification, curation of specimens into an established institutional collection with retrievable storage, and preparation of a report of findings and significance, including an inventory of specimens recovered. This would be required in the areas of the Crowder Canyon Archaeological District and the Muscupiabit proto-historic village. If archaeological remains are identified, the process of evaluating the identified resources for integrity and eligibility for NRHP would be initiated.

Impacts to cultural and paleontological resources associated with Alternative 1 are expected to be mitigated effectively and result in minor impacts