Attachment D: Cultural Resources Technical Report

1.0 Introduction

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

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

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

This technical report describes the potential changes to cultural resource impacts resulting from the Project design modifications. Concurrently with this Reevaluation, FRA is completing the Section 106 process in accordance with the National Historic Preservation Act (NHPA). This entails FRA complete a formal identification and evaluation of historic properties, assess effects on those historic properties, and resolve any adverse effects through avoidance, minimization, and mitigation. In addition, FRA is preparing technical reports that identify and evaluate archaeological and built environment historic properties and will generate findings of effects reports. These reports will be submitted for the appropriate notification, consultation, and concurrence as required by Section 106 and 36 CFR Part 800, and adherence to this process would in effect be similar to the process set forth in the DesertXpress FEIS and ROD. Refer to Section 6.0 and Section 7.0 below for further discussion of the Section 106 process.

2.0 Regulatory Updates

The regulatory environment for cultural resources is described in Section 3.7.1 of the DesertXpress DEIS and Section 3.7.1.2 of the 2011 DesertXpress FEIS. Changes to the regulatory environment since FRA's issuance of the DesertXpress ROD are described below.

On June 7, 2019, the Advisory Council on Historic Preservation (ACHP) produced a memorandum that refines its interpretation of "direct" and "indirect" effects analyzed under the NHPA. These refinements change how effects should be characterized. Previously, physical alterations to a resource's location, design, materials, and workmanship were typically understood to be "direct," while visual and auditory alterations that most commonly affect a resource's setting, feeling, and association were typically considered "indirect." The new ACHP guidance states that the difference between direct and indirect effects relates to the proximate cause of the effect. Specifically, under this new guidance, a direct effect occurs as an immediate result of a project activity, whereas an indirect effect occurs due to an

intervening cause (ACHP 2019).[1] As reflected in Section 3.1, this interpretation has been incorporated into the methodology for this Reevaluation and ongoing Section 106 process. However, this change in approach does not result in a substantial change to the evaluation of cultural resources of the DesertXpress EIS.

3.0 Methodology

The methods for the evaluation of cultural resources are described in Section 3.7.2 of the DesertXpress DEIS. For this Reevaluation, FRA generally followed a similar approach, but as further described below, the Reevaluation also reflects refinements to methodology from the ongoing Section 106 consultation process. The methods used in this Reevaluation included the following:

- Refinement of the cultural resources study area or Area of Potential Effect (APE) (consisting of an Archaeological APE and an Above-Ground APE] in accordance with the method described in Section 3.1 below, including changes to both as a result of additional design changes identified between February to June 2020.
- Records searches at the South Central Coastal Information Center in California and the Nevada Cultural Resources Information System.
- Consultation with Federally-Recognized Native American Tribes that attach significance to historic properties in both California and Nevada who provided valuable input regarding locations of cultural resources and areas on the landscape to which they attach religious or cultural significance.
- Development of an Archaeological Survey Methodology Memo to document procedures for conducting pedestrian archaeological field surveys and attendant Tribal monitoring. FRA made this memo available to the consulting parties for review and comment prior to the start of fieldwork.
    - For the DesertXpress EIS (completed 2011), pedestrian archaeological surveys were similarly conducted by qualified archaeologists. However, the survey methodology was not circulated for review in advance, nor was Tribal monitoring part of the pedestrian survey.
- Pedestrian field survey, with input from and the presence of monitors from the above-mentioned Federally-Recognized Native American Tribes, to identify any archaeological resources within the current Archaeological APE. This includes: archaeological resources that were not previously identified due to changes in the Archaeological APE, age-eligibility, and/or evolving perspectives on historic significance; confirming presence/absence of previously identified/documented sites; and updating known site locations.
- Desktop analysis of tax assessor data, including cross-referencing with Google Earth Pro imagery to identify any resources that have become age-eligible since the DesertXpress ROD (2011).
- Identification of the built environment reconnaissance survey population, including any resources newly included in the Above-Ground APE based on the modified Project description, resources that have become age-eligible since the DesertXpress ROD, and newly recorded resources.

[1] Advisory Council of Historic Preservation (ACHP). 2019. *Memorandum Re: Recent Court Decision Regarding the Meaning of "Direct" in Sections 106 and 110 (f) of the National Historic Preservation Act*. June 7. Washington, DC. Available: http://shpo.nv.gov/uploads/documents/OGC_memo_to_ACHP_staff_re_meaning_of_direct_6-7-19.pdf

- Reconnaissance built environment field surveys to identify any historic properties within the revised Above-Ground APE that were not previously identified due to changes, age-eligibility, and/or evolving perspectives on historic significance

3.1 CULTURAL RESOURCES STUDY AREA

Section 3.7.2.1 of the DesertXpress DEIS and Section 3.7.1.1 of the DesertXpress FEIS included a discussion of the cultural resources study area. FRA's revised cultural resources study area (current as of September 2020) using the methods described in Section 3.0, to include Project modifications and changes in the regulatory environment.

In its methodology to define the cultural resources study area, FRA gives heavy consideration to the Project's proximity or co-location within the exiting Interstate (I)-15 freeway transportation corridor, but is also cognizant of newly introduced elements such as emergency crossovers and elevated guideway portions. FRA interprets alterations as a result of the Project, in the definition of Area of Potential Effects in 36 CFR Part 800.16(d), to be equivalent to effects to historic properties. Therefore, FRA clarified its approach to defining the lateral extent of the Above-Ground APE to be the area where the Project features would not alter the visual character and quality of the viewshed from historic properties, cultural resources and/or landscapes. In other words, the lateral extent is defined where alterations would likely not result in adverse effects to historic properties.

The APE for the Project continues to consist of both direct ground disturbance (Archaeological APE) and a larger Above-Ground APE, containing properties of religious and cultural significance, including Traditional Cultural Properties (TCPs), historic trails, buildings, structures and historic districts. The Archaeological APE has been defined both horizontally and vertically and is intended to account for the area where ground disturbing and construction activities may physically alter historic properties.

For archaeological properties, an APE is typically established based on an undertaking's potential for direct effects from ground-disturbing activities. On occasion, archeological sites may also have qualities that could be affected indirectly. The Archaeological APE is the limits of ground disturbance (LOD) or area of ground proposed to be disturbed during construction of the undertaking, including grading, cut-and-fill, easements, staging areas, utility relocation, borrow pits, and biological mitigation areas, if any.

FRA recognizes that, on occasion, archaeological sites outside of the Archaeological APE may possess qualities that can be affected by noise, vibration, and/or visual alterations. These archaeological sites include historic properties that are eligible under other National Register Criteria aside from Criterion D and may have religious and cultural significance to Tribes. These archaeological sites will be considered within the Above-Ground APE.

Traditional cultural properties and cultural landscapes are more likely to be subject to indirect, as well as direct, effects, thus the APE for such properties is usually broader than the Archaeological APE in order to include the potential for such effects. For instance, the first row of potential properties beyond the right-of-way may be subject to such effects and thus included in an indirect APE when warranted.

The Above-Ground APE, which also has horizontal and vertical limits, is larger is size and accounts for physical effects within the extent of the Archaeological APE in addition to visual, noise, and vibratory effects to historic properties which may extend beyond the Archaeological APE, or the immediate area of ground disturbance and construction activities.

Project-specific details describing the two parts of the APE (Archaeological APE and Above-Ground APE) are discussed below.

3.1.1 ARCHAEOLOGICAL APE

The Archaeological APE is 3,637.0 acres and 177.6 linear miles. The Archaeological APE includes the footprint of the alignment, facility features, and ancillary features. Facility features consist of station locations; substations; and operations, maintenance, and service facilities. Ancillary features include temporary construction easements, staging areas, roadway reconstruction locations, utility corridors, and paralleling sites. The Archaeological APE also includes all areas proposed for eventual double-tracking.

The Archaeological APE for the Project takes into consideration the vertical depth of ground disturbance. FRA defined the vertical depth of the Archaeological APE based upon revised plan and profile designs prepared for the Project. It accounts for the final depths necessary to construct rail bed, and footings or foundations of structural components. Depth of the archaeological APE is expected to range from a few feet for at-grade work, up to 8 feet below grade to account for support pilings, and more than 100 feet for footings associated with waterway crossings. To account for varying depths of Project components and to provide flexibility for minor Project changes, FRA delineated the depth of the Archaeological APE as up to 120 feet below current grade. Table 3.1-1 sets forth the distances of the Archaeological APE.

Table 3.1-1 Final Archaeological APE

Project Component	Final APE Delineation – September 2020	Initial APE Delineation – September 2019
Limits of Disturbance (alignment, highway improvements only, interchange modifications) (CA, NV)	**Project footprint**	Project footprint
Vertical depth of Project components (CA, NV)	**Down to 120 ft from current grade**	Down to 120 ft from current grade

3.1.2 ABOVE-GROUND APE

The Above-Ground APE, as proposed, is 44,377.4 acres and 177.8 linear miles. The Above-Ground APE encompasses the Archaeological APE where the Project may cause physical changes and additional areas in which the Project may cause changes in pattern of use, or changes in historic character through visual interventions, noise and/or vibration. Additionally, the Above-Ground APE accounts for historic properties of religious or cultural significance to Tribes that extend past the Archaeological APE delineation parameters, described above, to account for potential effects to these historic properties.

FRA revised the Above-Ground APE, by setting standard horizontal and vertical buffers around Project components sufficient to capture potential effects from physical, vibration, noise, and visual changes. The Above-Ground APE is variable based on each type of Project component and the landscape setting. Table 3.1-2 summarizes the delineation methodology for the Above-Ground APE.

The Above-Ground APE includes the vertical height of various Project components, such as catenary poles, elevated segments, and emergency crossovers. The vertical height of the Above-Ground APE

varies from at-grade to approximately 86 feet above grade for one location of elevated rail segments with associated catenary poles. To account for varying vertical dimensions of Project components and to provide flexibility for minor Project changes, the vertical height of the Above-Ground APE is delineated as up to 65 feet above current grade with the exception of the one location of 86 feet (located in Barstow, CA).

Table 3.1-2 sets forth the distances of the Above-Ground APE.

Table 3.1-2 Final Proposed Above-Ground APE (September 2020)

Project Component		**Final Proposed APE Delineation – September 2020**	**APE Delineation Progress – February 2020**	**Initial APE Delineation – September 2019**
Urban Alignment (CA, NV)	Trenched and At-Grade	***450 ft from centerline***	450 ft from centerline	200 ft from centerline, 400 ft total for all profile types
	Elevated At-Grade	***750 ft from centerline***	550 ft from centerline	
	Elevated Guideway (includes emergency crossovers)	***1000 ft from centerline***	900 ft from centerline	
Rural/ Desert Alignment (CA, NV)	Trenched and At-Grade	***1000 ft from centerline***	450 ft from centerline	200 ft from centerline, 400 ft total for all profile types
	Elevated At-Grade	***1500 ft from centerline***	550 ft from centerline	
	Elevated Guideway (includes emergency crossovers)	***1500 ft from centerline***	900 ft from centerline	
Utility corridors (CA only)		***200 ft on either side of footprint (400 ft total)***		100 ft from centerline, 200 ft total
Station areas (CA, NV)		***1000 ft from edge of footprint***		200 ft from edge of footprint
Ancillary facilities (substations, auto-transformers, temporary construction easements) (CA, NV)		**100 ft from edge of footprint**		100 ft from edge of footprint
Access roads (CA, NV)		**100 ft from centerline, 200 ft total**		100 ft from centerline, 200 ft total
Historic Properties of Religious or Cultural Significance to Tribes (as described above)		**Included in Above-Ground APE**		Varies depending on resource
Vertical height of Project components (CA, NV)		**Up to 65 ft above current grade; 86 feet in Barstow CA only**		Up to 65 ft above current grade

*Italicized font indicates revised APE boundaries compared to previously delineated APEs.

4.0 Affected Environment

The affected environment for the Project modifications is generally similar to the affected environment described in Section 3.7.3 of the DesertXpress DEIS and Section 3.7.1 of the DesertXpress SEIS.

The modified Project alignment follows the I-15 freeway and is primarily located within the I-15 freeway median. The Project modifications exclude Segments 4a, 4b, or 4c, which diverged from the I-15 freeway near Mountain Pass, and followed routings around the Brightsource solar energy site to the north, or through the Mojave National Preserve to the south. In addition, the modified Project does not include Segments 6c and 7. Segment 6c would have run within or immediately adjacent to the Union Pacific railroad right-of-way (ROW) from the Sloan, Nevada, area into a Las Vegas strip area station at Flamingo Road. Segment 7 traversed the Las Vegas Strip area, terminating at the proposed downtown Las Vegas station.

As the Project modifications generally relocate more of the alignment within the I-15 freeway median and do not include segments that diverge substantially from the freeway area, the affected environment for the Project modifications is generally similar to the affected environment described in the DesertXpress EIS, but more concentrated within the existing transportation corridor (i.e. the I-15 freeway). The affected environment for the Project modifications identified in this Reevaluation does not include any substantially new or different land use types or geography than the affected environment analyzed in the DesertXpress EIS. Table 4.1-1 below summarizes the property types known and/or assumed to be present within the cultural resources study area.

The previous APE included a new utility corridor that would have connected the Victorville Operations, Maintenance, and Storage Facility (OMSF) to a substation in Victorville. Project modifications between February and June 2020 replace the utility corridor with two electrical substations in Barstow, CA and Ivanpah, CA. The Barstow substation would be immediately adjacent to the I-15 freeway corridor and proposed rail alignment. The Ivanpah substation would be connected to the alignment via a redundant utility corridor along existing roads near the Brightsource Solar Energy site.

Table 4.1-1 Property Types in the APE as of September 2020

Property Type/Category	Example
Archaeological Properties – Prehistoric Property Types	
Habitation	• Village sites • Camp sites
Resource Extraction/ Production	• Districts • Quarries • Lithic reduction sites and artifacts • Milling features and artifacts • Isolated lithic artifacts
Artwork	• Petroglyphs • Intaglio
Linear Features	• Trail segment
Archaeological Properties – Historic Period Property Types	
Settlement	• Townsites • Commercial enterprise

Property Type/Category	Example
	• Domestic habitation • Ranching • Miscellaneous foundations/pads
Consumer Waste	• Multi-episode refuse dumps • Refuse scatters
Utility	• Telegraph/phone alignment
Transportation	• Road and trail segments • Highway (decommissioned) • Unimproved road • Railroad grades/alignments/features • Railroad camps
Mining	• Mining complexes • Mining camps • Flume • Adits, shafts, markers • Prospecting pits
Historic Built Environment Properties	
Electrical transmission–related	• Transmission lines and towers • Wooden utility poles • Substations
Transportation-related	• Highway • Highway (decommissioned) • Paved collector roads • Engineered unpaved roads • Unengineered unpaved roads • Streets • Overpasses • Railroad tracks/rights-of-way
Housing-related property types	• Mobile home parks • Manufactured housing • Single family residences • Multi-family residences
Commercial and industrial property types	• Motels • Restaurants • Warehouses • Gas stations
Other property types	• Churches • Infrastructure maintenance sheds (highway/electrical/antennae) • Billboards • Water conveyance features (canals and engineered ditches) • Corral

5.0 Records Search Results

Section 3.7.3 of the DesertXpress DEIS and Section 3.7.1 of the DesertXpress SEIS summarized the cultural resources identified within the previous APE. A records search was conducted to identify cultural resources within the cultural resource study area of the Project modifications.

For archaeological resources, FRA conducted a records search in 2019 and a supplemental record search in early 2020 to capture Project changes initiated by DesertXpress Enterprises, LLC. These record searches investigated a half-mile buffer around the modified Project in California and a mile buffer in Nevada.

As shown in Table 5.1-1 , this records search identified a total of 61 archaeological resources within the Archaeological APE.[2] Of the 61 resources identified, nine were previously recommended, assumed, or determined eligible for listing in the National Register of Historic Places (NRHP); 20 resources were isolated artifacts and are not NRHP-eligible; 14 resources were previously determined or recommended as ineligible for listing on the NRHP; and 18 resources had no data relating to eligibility and have not been evaluated.

For this Reevaluation, and concurrent Section 106 process, all 41 resources (that are not isolated artifacts) are assumed eligible pending formal evaluation in compliance with Section 106. As such, for this Reevaluation, 41 of the archaeological resources identified in the previous records search were assumed to be historic properties subject to Section 106. These assumptions will be refined as FRA continues to consult with Federally-Recognized Native American tribes through the ongoing Section 106 consultation process and as archaeological sites undergo formal Section 106 evaluation. FRA will document changes to the identification of archaeological historic properties in compliance with Section 106.

For NRHP-built environment properties, Table 5.1-1 shows that the 2019 and 2020 records searches yielded 45 inventory forms identifying NRHP-eligible built environment properties that are present within or intersect the APE). Of the 45 resources identified, 10 were previously recommended or determined eligible for listing in the NRHP; 24 resources were previously determined or recommended as ineligible for listing on the NRHP; and 11 resources were not previously evaluated for NRHP eligibility. All 10 built environment resources that were previously recommended or determined NRHP eligible are linear features, segments of which cross into the Above-Ground APE. None of these resources have been assessed comprehensively for integrity across their entire length.

FRA has preliminarily determined that the segments within the APE of five NRHP-eligible built environment resources retain integrity and are subject to Section 106 (pending concurrence with the

[2] Archaeological properties identified within the Above-Ground APE will be identified in the forthcoming Archaeological Technical Reports (separate reports for California and Nevada). The analysis here is focused on archaeological properties that could be physically disturbed by the modified Project, in other words, those within the Project's Archaeological APE.

respective State Historic Preservation Officers (SHPO) in accordance with the ongoing Section 106 consultation process). [3,4]

Table 5.1-1 Cultural Resources Identified within the 2020 Cultural Resources Study

Site Number	Age	Description	Identified/ Recorded in 2009/2011 Records Search and Surveys?
Archaeological Properties			
CA-SBR-223 P-36-000223	Multicomponent	Multicomponent site: Prehistoric quarry and lithic production, cairns, and formal tools. Historic foundations, wooden claim markers, and a mine shaft.	Yes
CA-SBR-541 P-36-000541	Prehistoric	Prehistoric quarry and lithic reduction site	Yes
CA-SBR-562 P-36-000562	Prehistoric	Prehistoric quarry and lithic workshop	Yes
CA-SBR-885/H P-36-000885	Multicomponent	Multicomponent site: Prehistoric bedrock milling, ground stone, and stone circles. Historic Valley Wells Station site and refuse deposits.	Yes
CA-SBR-2283 P-36-002283	Prehistoric	Prehistoric campsite, including stone circles and a lithic scatter	Yes
CA-SBR-3694 P-36-003694	Multicomponent	Multicomponent site: Prehistoric lithic reduction site with ground stone and a stone circle. Historic foundation and refuse scatter.	Yes
CA-SBR-4085H P-36-004085	Historic	Historic Waterloo Mine railroad grade and alignment	Yes
CA-SBR-4198	Prehistoric	Habitation site with pottery, lithics, fire-affected rock, faunal remains, and ground stone	Yes
CA-SBR-6020 P-36-006020	Prehistoric	Prehistoric lithic reduction site	Yes
CA-SBR-6023 P-36-006023	Historic	Trash dump	Yes

[3] These inventory forms document linear features, including transmission lines, railroads, paved roads, and unpaved roads. Several of these forms document different segments of the same historic property. For example, multiple inventory forms document the San Pedro, Los Angeles, and Salt Lake Railroad as it appears at different locations in California and Nevada. Geographically separated segments of the Arrowhead Trail/U.S. 91 are documented as CK7212 and CK4958

[4] These inventory forms include language indicating that the documented property is NRHP-eligible. In the case of California inventory forms, a "2S2" code is included implying that SHPO concurred with the eligibility determination. However, documentation of that concurrence is not attached to the inventory form. Accordingly, FRA is seeking written confirmation of any past eligibility determinations. For the purposes of this analysis, FRA will assume that these resources are NRHP-eligible.

Site Number	Age	Description	Identified/ Recorded in 2009/2011 Records Search and Surveys?
CA-SBR-6950 P-36-006950	Prehistoric	Prehistoric lithic scatter, quarry; component of Sidewinder Quarry Archaeological District	Yes
CA-SBR-7699 P-36-007699	Prehistoric	Prehistoric lithic scatter, including debitage and a core	Yes
CA-SBR-8923 P-36-008923	Prehistoric	Prehistoric lithic quarry, reduction site, and modern or historic rock cairns	Yes
CA-SBR-9357 P-36-009357	Prehistoric	Prehistoric stone circles	Yes
CA-SBR-9359H P-36-009359	Historic	Historic Fearnot Mine complex	Yes
CA-SBR-10873 P-36-010873	Historic	Historic-era refuse scatter	No
CA-SBR-11598 P-36-11598	Historic	Historic multiepisodic refuse disposal site	No
P-36-14499	Historic	Isolate (Ceramic insulator)	No
P-36-020375	Prehistoric	Sidewinder Quarry Archaeological District, with 45 identified contributing elements	Yes
P-36-021787	Historic	Isolate (can)	No
P-36-23116 CA-SBR-14544	Historic	Historic-era refuse scatter	No
P-36-024307	Multicomponent	Multicomponent site, including a historic multiepisodic refuse disposal site and redeposited prehistoric lithics	No
P-36-025432	Historic	Isolate (can)	No
P-37-028507 CA-SBR-28507	Multicomponent	Multicomponent site: historic refuse scatter and a prehistoric lithic scatter	No
P-36-031565	Historic	Isolate (can)	No
P-36-031566	Historic	Isolate (can)	No
P-36-031567	Historic	Isolate (can)	No
P-36-062495	Prehistoric	Isolate (flake)	Yes
PSBR-52[5]	No data	No data	Yes

[5] Not a real site. The SCCIC inherited these "potential" sites from the previous Information Center and does not deal with them anymore.

Site Number	Age	Description	Identified/ Recorded in 2009/2011 Records Search and Surveys?
P2273-1[6]	No data	No data	Yes
2284-6H[7]	Historic	Town site	Yes
Iso 58	Historic	Isolate	No
Iso 59	Historic	Isolate	No
CA-SBR-13923/H[8] P-36-21757	Multicomponent	Prehistoric petroglyphs, bedrock milling, rock alignments, artifacts scatters, and historic rock rings (Halloran Springs rock art site)	Yes
CK3436	Prehistoric	Lithic isolate	Yes
CK3538	Prehistoric	Lithic isolate	Yes
CK3540	Historic	Campsite associated with railroad construction	No
CK3543	Historic	Historic trash scatter	No
CK3808	Prehistoric	Lithic isolate	Yes
CK3817	Prehistoric	Possible intaglio	No
CK3820	Prehistoric	Lithic scatter	Yes
CK3828	Prehistoric	Lithic isolate	Yes
CK3829	Prehistoric	Lithic isolate	Yes
CK3830	Prehistoric	Lithic isolate	Yes
CK3831	Prehistoric	Lithic isolate	Yes
CK3832	Prehistoric	Lithic isolate	Yes
CK3833	Prehistoric	Lithic scatter	Yes
CK3834	Prehistoric	Lithic isolate	Yes
CK3835	Prehistoric	Lithic isolate	Yes
CK3836	Prehistoric	Lithic isolate	Yes
CK5371	Prehistoric	Lithic scatter	Yes
CK5372	Prehistoric	Lithic scatter	No
CK5374	Prehistoric	Lithic scatter	Yes

[6] Not a real site. The SCCIC inherited these "potential" sites from the previous Information Center and does not deal with them anymore.

[7] Not a real site. The SCCIC inherited these "potential" sites from the previous Information Center and does not deal with them anymore.

[8] The identifier P-2272-2H had been used in the Archaeological Survey Methodology memo to describe this site. The official CA-SBR number has been used in its place. Although out of the Archaeological APE, this site is within the Above-Ground APE and is considered to be of special concern to area Tribes.

Site Number	Age	Description	Identified/ Recorded in 2009/2011 Records Search and Surveys?
CK6715	Multicomponent	Railroad construction camp and ground stone scatter	Yes
CK7166	Multicomponent	Habitation site	Yes
CK7181	Prehistoric	Lithic and ground stone scatter	Yes
CK7189	Prehistoric	Lithic and ground stone scatter	Yes
CK7225	Historic	New Borax Road	Yes
CK8273	Historic	Prospecting site	No
CK8498	Historic	Can dump	No
JSA-RN-S-5[9]	Historic	Flume	Yes
Built Environment Properties			
P-36-001910	Historic	San Pedro, Los Angeles and Salt Lake Railroad	No
P-36-002910	Historic	US Route 66/National Old Trails Road/National Old Trails Highway	Yes
P-36-006793; P-36-006693H	Historic	Atchison, Topeka and Santa Fe Railway	Yes
P-36-007689	Historic	Arrowhead Trail/US Highway 91	Yes
P-36-007694	Historic	Los Angeles Department of Water and Power Boulder Dam to Los Angeles Transmission Lines	Yes
P-36-008313	Historic	Juniper fence line	No
P-36-009361	Historic	Sidewinder Road	Yes
P-36-010315	Historic	Southern California Edison Company Boulder Dam–San Bernardino Electrical Transmission Line	Yes
P-36-010802	Historic	Barnwell Stage Route	No
P-36-010803	Historic	Stateline Well and Corral	No
P-36-010806	Historic	Ivanpah-Providence Road	Yes
P-36-012658	Historic	Interstate 15 freeway	No
P-36-013416	Historic	Unnamed dirt road	No
P-36-021629	Historic	Yermo Road	No
P-36-021631	Historic	Mountain Pass Post Office	No
P-36-021633	Historic	Stuckey's Restaurant and Service Station	No

[9] All site components were found to be outside of the Archaeological APE, therefore this site is not addressed in the archaeological technical report.

Site Number	Age	Description	Identified/ Recorded in 2009/2011 Records Search and Surveys?
P-36-021768	Historic	Colosseum Road	No
P-36-023426	Historic	Yermo Mutual Water Company Irrigation Canal	No
P-36-026464	Historic	Unnamed dirt road	No
P-36-026530	Historic	Crestview	No
P-36-028521	Historic	Southern California Edison Baroid 33kV Line	No
P-36-028522	Historic	Southern California Edison Inn 12kV Line	No
P-36-029386	Historic	Community of Yermo	No
B8185	Historic	Newman residence	No
B8186	Historic	Castro residence	No
B9107	Historic	Romersa house	No
B9111	Historic	Hughes homestead	No
B9113	Historic	Hauswurz house and farm	No
B9114	Historic	13ansky house	No
CK4429/26CK5685/S1623	Historic	San Pedro, Los Angeles, and Salt Lake Railroad	Yes
CK4958/CK7212	Historic	Arrowhead Trail/US Highway 91	Yes
CK6237/CK5180	Historic	Los Angeles Bureau of Power and Light Boulder Line 2	Yes
CK6238/CK5180	Historic	Los Angeles Bureau of Power and Light Boulder Line 1	Yes
CK6242/CK5180	Historic	Los Angeles Bureau of Power and Light Boulder Line 3	Yes
CK7223	Historic	Unnamed Utility Line	Yes
S597	Historic	Erie Overpass, Bridge Number G-662N	No
S598	Historic	Erie Overpass, Bridge Number G-662S	No
S646	Historic	Henderson Interchange, Bridge Number I-663	No
S651	Historic	Sloan Interchange, Bridge Number I-674N	No
S652	Historic	Sloan Interchange, Bridge Number I-674S	No
S653	Historic	Arden Interchange, Bridge Number I-675	No
S665	Historic	State Line Interchange, Bridge Number I-707N	No
S666	Historic	State Line Interchange, Bridge Number I-708S	No
S667	Historic	Jean Interchange, Bridge Number I-711N	No
S668	Historic	Jean Interchange, Bridge Number I-711S	No

5.1 ARCHAEOLOGICAL PEDESTRIAN FIELD SURVEY FINDINGS

In addition to the records search, archaeological pedestrian field survey was conducted to identify historic properties within the Archaeological APE of the modified Project cultural resources study area. Since the 106 process is proceeding concurrently with this Reevaluation, FRA incorporated these fieldwork findings into its cultural resources evaluation for the modified Project.

Based on the approach set forth in the Archaeological Survey Methodology Memo, Secretary of the Interior professionally qualified archaeologists conducted intensive pedestrian field surveys of the Archaeological APE in two periods – from November 2019 to January 2020 and in August 2020. All intensive pedestrian field survey work was observed by Tribal Monitors from seven Federally-Recognized Tribes.[10] All portions of the Archaeological APE were investigated either through intensive pedestrian or reconnaissance survey, with the exception of a single private parcel in Victorville, California (along the proposed utility corridor) where permission to enter could not be obtained.

Summary details of fieldwork are presented by state below.

Nevada

- First wave of fieldwork initiated November 19, 2019 and completed December 21, 2019
- Second wave of fieldwork initiated August 18, 2020 and completed on August 21, 2020
- Survey included approximately 1,127 acres along approximately 35 linear miles of the I-15 freeway and ancillary areas
- 29 newly discovered archaeological sites documented within the Archaeological APE
    - 22 historical period sites
    - 6 prehistoric sites
    - 1 multi-component site
- 38 isolated artifacts identified within the Archaeological APE
    - 28 historical period
    - 10 prehistoric
- 38 previously recorded archaeological sites were identified through the records search conducted through the Nevada Cultural Resource Information System
    - These were updated as part of the survey
    - In some cases, the boundaries and components of previously recorded sites were expanded, while in other cases there was no visible surface expression of previously recorded sites within the Archaeological APE.

California

- First wave of fieldwork initiated November 13, 2019 and completed on January 13, 2020
- Second wave of fieldwork initiated on August 3, 2020 and completed on August 13, 2020
- Surveys included approximately 2,500.5 acres along approximately 136 linear miles of the I-15 freeway and ancillary areas

[10] Tribal monitors participated from the following Tribes: San Manuel Band of Mission Indians, Morongo Band of Mission Indians, Twentynine Palms Band of Mission Indians, Soboba Band of Luiseño Indians, Timbisha Shoshone, Colorado River Indian Tribes, and Moapa Band of Paiutes.

- 25 newly discovered archaeological sites documented within the Archaeological APE
    - 14 historic period sites
    - 11 prehistoric sites
- 35 isolated artifacts identified within the Archaeological APE
    - 4 historic period
    - 29 prehistoric
    - 2 of undetermined age
- 51 previously recorded archaeological sites were identified within the Archaeological APE through the records search conducted at the South Central Coastal Information Center
    - These were updated as part of the survey
    - In some cases, the boundaries and components of previously recorded sites were expanded, while in other cases there was no visible surface expression of previously recorded sites within the Archaeological APE.

5.2 BUILT ENVIRONMENT PEDESTRIAN FIELD SURVEY FINDINGS

The built environment field survey effort began with desktop research and preparation. Qualified individuals (QIs)[11] reviewed all legal parcels within the currently defined APE using GoogleEarth Pro and tax assessor data to determine which contain buildings or structures constructed on or before 1970, and coded those properties for intensive-level survey.

To inform this effort, QIs researched historic property or resource planning documents, assessor data, historic U.S. Geological Survey topographic maps, and historic aerial photograph. Properties constructed after 1970, properties currently vacant, and I-15 freeway properties exempt from Section 106 review were coded as such.

QIs conducted the intensive-level field survey on October 27–31, 2019; March 2–5, 2020; and May 27–29, 2020, recording all relevant properties from the public ROW.[12] Properties constructed in 1970 or earlier were identified and documented. The documentation consisted of location mapping in ArcGIS, high-resolution photography from the public ROW, and written notes regarding alterations or other property characteristics as necessary. QIs noted exempt properties in the field but did not otherwise document them. Such properties were not documented on California or Nevada form sets or evaluated under NRHP criteria. Pre-survey research efforts did not allow for accurate identification of build dates for every property in the APE. In cases of unknown build dates, QIs estimated a construction year based on their professional judgment, taking into account the property type and its design, character-defining features, and historic context. When such properties appeared to be 50 years old or older, QIs included them among the population of properties to be evaluated for NRHP eligibility.

Based on the above methods, surveys to date have yielded the following results. QIs recorded (photographed) 613 resources in the field. QIs determined that nine other previously recorded properties have been demolished, one previously recorded resource consists of an archaeological site

[11] "Qualified" individuals must meet the Professional Qualifications Standards of the Secretary of the Interior.

[12] An additional round of intensive level survey is scheduled for September 2020 to capture properties within the Above-Ground APE as expanded per September 2020 modifications (refer to Table 3-2 above).

with built environment elements outside the APE, and two other previously recorded areas of the APE do not constitute properties requiring NRHP evaluation.

FRA's forthcoming technical reports (described in Section 7.0) will focus on these resources, including resources identified in fieldwork scheduled for September 2020.

5.3 ANALYSIS OF ENVIRONMENTAL CONSEQUENCES

For this Reevaluation, FRA considered the cultural resources investigations described in Section 3.7.2 of the DesertXpress DEIS. Similar to this approach, FRA collaborated with consulting parties and Federally-Recognized Native American tribes to identify cultural resources.

As previously noted, pedestrian archaeological survey for this Reevaluation and the concurrent Section 106 process differs from the earlier efforts insofar as all pedestrian surveys were monitored by Tribal monitors. Moreover, a full pedestrian survey approach was applied, including within the I-15 freeway ROW and I-15 freeway median. The earlier efforts did not include Tribal monitors nor pedestrian survey of the fenced I-15 freeway ROW area.

Section 3.7.1.1. of the DesertXpress DEIS described the process FRA took to develop a PA for the Project in compliance with Section 106. Consistent with provisions at 36 CFR 800.4(b)(2), the PA established a phased identification and evaluation process, which deferred portions of the cultural resources evaluation until after the completion of environmental documentation. The PA was fully executed with signatures by FRA and cooperating agencies and was attached to the DesertXpress ROD. However, the PA expired prior to the start of this Reevaluation.

For the modified Project, FRA in collaboration with the consulting parties, State Historic Preservation Officers (SHPO), the Advisory Council on Historic Preservation, and Federally-Recognized Native American tribes, has been continuing the Section 106 process concurrently with this Reevaluation. Therefore, the following assessment of environmental consequences reflects the analysis of cultural resources completed to date, and acknowledges the ongoing Section 106 process.

6.0 Preliminary Assessment of Effects

In accordance with Section 106, FRA will consult with the appropriate parties to assess the effects of the Project modifications on historic properties. The DesertXpress ROD included a PA that outlined the process by which formal eligibility determinations would be made on archaeological resources and detailed how adverse effects on such resources would be avoided, minimized, or mitigated; however, an assessment of effects was not included in that document. For the Project modifications, FRA is continuing the Section 106 process concurrently with this Reevaluation. Through the Section 106 process, FRA will complete a formal identification and evaluation of historic properties, assess effects on those historic properties, and resolve any adverse effects through avoidance, minimization, and mitigation.

Table 7.1-1 summarizes the prospective types of effects that would be expected to be addressed and resolved in forthcoming documents (described in Section 7.0). This information will be updated as the Section 106 process progresses.

In addition, regarding certain types of built environment properties, FRA notes the following potential for impacts. This will also be updated as warranted within the ongoing Section 106 process. Eligible transmission lines, which crisscross the alignment, are present in several locations within the Above-Ground APE. Project construction would not result in removal of, physical destruction of, or damage to the historic transmission towers or the electricity lines strung between the towers, which are situated above the proposed railroad alignment and its associated features. Although the setting of the transmission lines would be altered in several locations, the change to the setting is anticipated to be minor and would thus be expected to affect a small percentage of the overall area occupied by the transmission lines.

Proposed changes in the vicinity of historic properties in the Above-Ground APE are not anticipated to prevent the properties from conveying significance.

7.0 Completion of the Section 106 Process

Currently, FRA is preparing technical reports that identify and evaluate archaeological resources and built environment properties as well as findings of effects reports. These reports will be submitted for the appropriate notification, consultation, and concurrence as required by Section 106 and 36 CFR Part 800. To the extent adverse effects are identified, FRA expects to execute an agreement document, with the appropriate parties, to resolve any identified adverse effects, consistent with 36 CFR Part 800. Adherence to this process would in effect be similar to the process set forth in the DesertXpress FEIS and ROD.

Table 7.1-1 Types of Potential Effects

Type of Effect	Construction Activity	Operation Activity	Potentially Affected Built Environment Property Types	Potentially Affected Archaeological Property Types
Physical destruction of or damage to all or part of the property	Clearing or altering land to allow for staging and construction of railroad and associated facilities/infrastructure	Potential for storm-related flooding resulting from or exacerbated by newly paved areas; potential for damage associated with increased water flows	• Any property types that may be in the path of construction or staging • Property types that are subject to damage from increased water flows or flooding	• Any property types that may be in the path of construction or staging ○ All prehistoric and historic period property types Linear features (e.g., roads, trails) • Properties for which setting contributes to significance ○ Districts ○ Artwork ○ Linear features (e.g., roads, trails)
Alteration of a property…that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines	Railroad and associated facility construction and staging; creation of new roads or removal of existing roads	Not applicable for operations	• Districts • Linear features (e.g., roads, trails) • Properties for which setting contributes to significance	• Any property types that may be in the path of construction or staging • All prehistoric and historic period property types • Any property whose setting contributes to its significance ○ Districts ○ Artwork ○ Linear features (e.g., roads, trails) • All types sensitive to visual, noise, vibration, or atmospheric elements ○ Artwork ○ Traditional Cultural Properties

Type of Effect	Construction Activity	Operation Activity	Potentially Affected Built Environment Property Types	Potentially Affected Archaeological Property Types
Removal of the property from its historic location	Clearing land in the railroad ROW for construction; existing road relocation	Not applicable for operations	All moveable buildings, structures, and objects that are in the path of construction or staging	n/a
Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance	Existing road/trail alteration or relocation; property acquisition; construction of new building/facilities	Permanent change of setting based on introduction of new railroad infrastructure and associated facilities	• Any property whose setting contributes to its significance • All types sensitive to visual, noise, or vibration elements	• Any property types that may be in the path of construction or staging • All prehistoric and historic period property types • Any property whose setting contributes to its significance ○ Districts ○ Artwork ○ Linear features (e.g., roads, trails) • All types sensitive to visual, noise, vibration, or atmospheric elements ○ Artwork ○ Traditional Cultural Properties
Introduction of visual or auditory elements that diminish the integrity of the property's significant historic features	Pile driving or heavy construction equipment movement and usage that generate temporary noise or vibration	Visual intrusion created by introduction of railroad and associated structures (e.g., tracks, sidings, overpasses, electrical and communications ancillary features); noise associated with train operations	Buildings or structures that include viewshed or quiet setting as significant character-defining features	• Districts • Artwork • Linear features (e.g., roads, trails) • Traditional Cultural Properties

Type of Effect	Construction Activity	Operation Activity	Potentially Affected Built Environment Property Types	Potentially Affected Archaeological Property Types
Neglect of a property which causes its deterioration	Not applicable for construction	Change in land use that results in abandonment; access limitation that results in abandonment	Buildings or structures if their continued use is no longer possible due to access or land use issues	n/a
Transfer, lease or sale out of Federal ownership or control	Property acquisition, lease, or easement	Not applicable for operations	All types on Federal lands	All property types on Federal lands