Draft Environmental Impact Report

Arrow Maintenance Facility Hydrogen Fuel Upgrade Project

State Clearinghouse No. 2021030063

May 2021

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Acronyms and Abbreviations

AB	Assembly Bill
ACM	asbestos-containing materials
ACS	American Community Survey
AMF	Arrow Maintenance Facility
APE	Area of Potential Effects
API	Area of Physical Impacts
APN	Assessor Parcel Numbers
AQMP	air quality management plan
AT&SF	Atchison, Topeka & Santa Fe
BLEVE	boiling-liquid-expanding-vapor explosion
BNSF	Burlington Northern Santa Fe
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CalGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CIWMB	California Integrated Waste Management Board
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
DMU	diesel multiple unit
DPM	diesel particulate matter
DSBPRP	Downtown San Bernardino Passenger Rail Project
DTSC	Department of Toxic Substances Control

EA	Environmental Assessment
EIR	environmental impact report
EIS	environmental impact statement
EMF	Eastern Maintenance Facility
EO	Executive Order
EPA	Environmental Protection Agency
ESA	environmental site assessment
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GVCE	gas vapor cloud explosion
GWP	global warming potential
H2	hydrogen
HAP	hazardous air pollutant
HFC	hydrofluorocarbon
I-215	Interstate 215
ID	identification
IEMF	Inland Empire Maintenance Facility
IS	Initial Study
KOP	key observation point
LST	localized significance threshold
LUST	leaking underground storage tank
LVCE	liquid vapor cloud explosion
MLD	most likely descendant
MT	metric tons
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
No.	number
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places

O_3	ozone
PM_{10}	particulate matter less than 10 micron diameter
$PM_{2.5}$	particulate matter less than 2.5 micron diameter
ppm	parts per million
PRC	Public Resources Code
Project	Arrow Maintenance Facility Hydrogen Fuel Storage Project
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
ROG	reactive organic gases
ROW	right-of-way
RPRP	Redlands Passenger Rail Project
RTP	Regional Transportation Plan
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SBCTA	San Bernardino County Transportation Authority
SBMWD	San Bernardino Municipal Water Department
SBTC	San Bernardino Transit Center
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCH	State Clearinghouse
SCRRA	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigations, and Cleanup
SMBMI	San Manuel Band of Mission Indians
SO_2	sulfur dioxide
SO_x	sulfur oxide
SRA	source receptor area
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
TCR	tribal cultural resource

U.S.	United States
UST	underground storage tank
VCE	vapor cloud explosion
ZEMU	zero-emission multiple unit

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ES Executive Summary

ES.1 Introduction

The San Bernardino County Transportation Authority (SBCTA) as the lead agency under the California Environmental Quality Act (CEQA) has prepared this environmental impact report (EIR) in compliance with Public Resources Code (PRC) Section 21000 et seq. and the CEQA Guidelines (Section 15000 et seq) for the Arrow Maintenance Facility (AMF) Hydrogen Fuel Upgrade Project (Project). The purpose of this environmental document is to assess the potential direct and indirect environmental effects associated with the Project and to propose mitigation measures, where required, to reduce significant impacts.

SBCTA is proposing the Project to facilitate the integration of a hydrogen (H2) powered, zero-emission multiple unit (ZEMU) rail vehicle into SBCTA's planned Arrow service. SBCTA is currently constructing the AMF which would service SBCTA's diesel multiple unit (DMU) rail vehicle fleet for the Arrow service that will commence non-revenue operations in 2021. The Southern California Regional Rail Authority (SCRRA) will operate and dispatch the Arrow service in coordination with SCRRA's existing Metrolink service.

ES.2 Project Location and Study Area

The Project site is located at the existing AMF site (under construction) at 958 West 3rd Street in the City of San Bernardino, San Bernardino County, California. Figure ES-1 shows the Project's regional location. For the purposes of this EIR, SBCTA defined a study area, which comprises the Project's physical improvements footprint within the confines of the previously approved AMF (or Project) site. AMF is located within the southwestern part of San Bernardino, near the intersection of North J Street and 3rd Street. The Project site is located west of the Interstate 215 (I-215) freeway and east of the existing San Bernardino Santa Fe Depot (Depot) and Metrolink Station Platforms. As shown in Figure ES-2, the Project study area abuts existing railroad track infrastructure to the north, west, and south. Vacant, industrial-zoned land borders the AMF site to the east and an intermodal freight yard owned by the Burlington Northern Santa Fe (BNSF) Railway to the north. A small residential community is located to the south of the AMF site and 3rd Street along North J Street and Kendall Avenue.

ES.3 Project Objectives

SBCTA's goal for the proposed Project is to construct the required infrastructure to support integration of a ZEMU rail vehicle into the Arrow passenger rail service fleet. As part of Assembly Bill (AB) 398, the state's greenhouse gas (GHG) reduction goals were extended to 2030, and the reduction goal was increased to 40 percent of 1990 emissions. The goal of the Project is to construct the required H2 refueling infrastructure to demonstrate the feasibility of operating zero-emission railway technology consistent with state guidelines.

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Figure ES-1. Regional Location

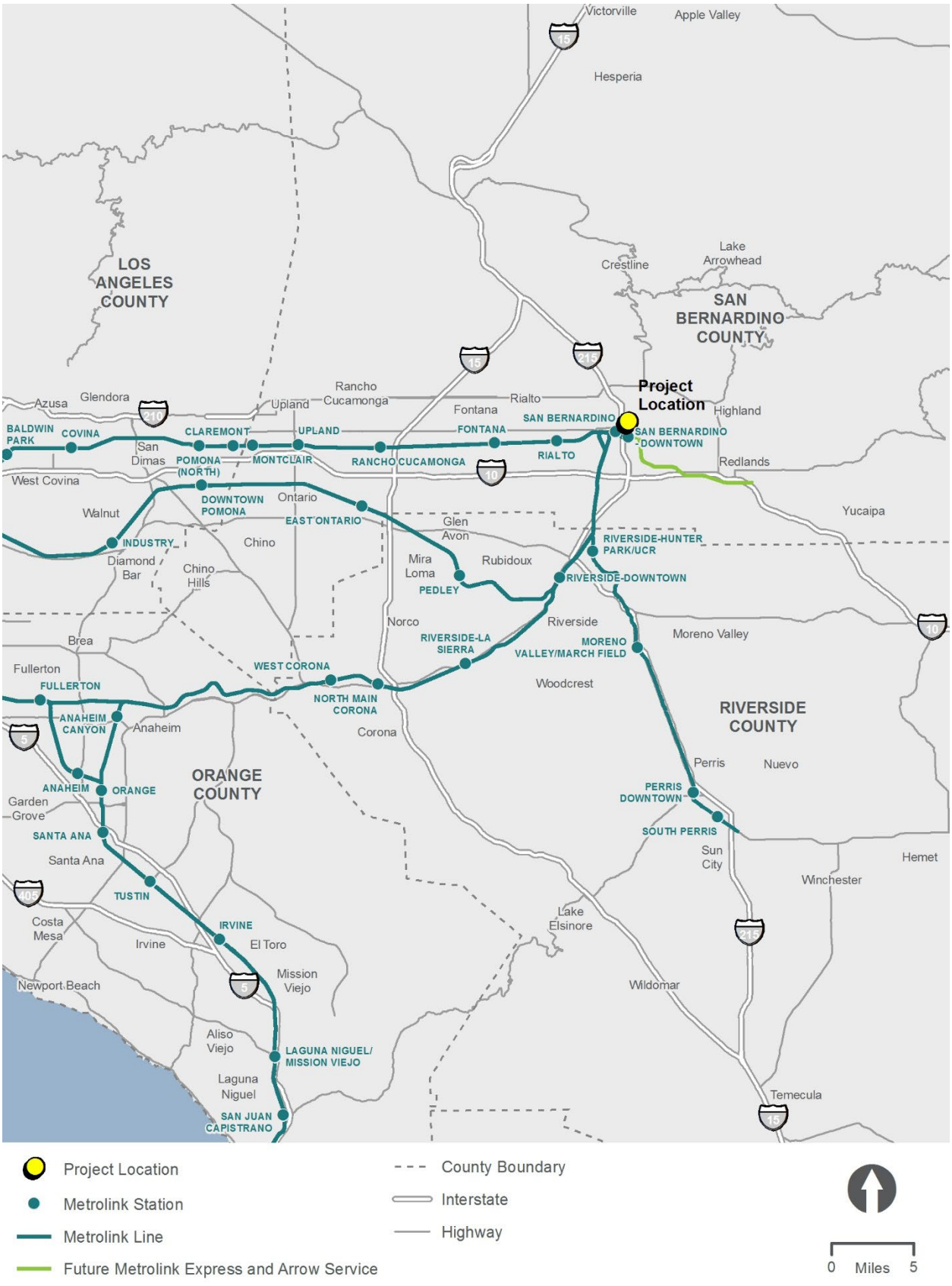

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Figure ES-2. Project Study Area

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The Project includes the following objectives:

- Construct H2 storage and fueling infrastructure at AMF to support the efficient integration of zero-emission technologies into the Arrow's service fleet.
- Enhance the Arrow's service operational flexibility and reliability through the provision of a ZEMU rail vehicle to supplement SBCTA's DMUs.
- Support state cap-and-trade programs through the provision and implementation of low- or zero-emission technology for transit corridors traversing disadvantaged communities.
- Integrate safety improvements for H2 fuel use at the AMF.

ES.4 CEQA Responsible and Trustee Agencies

SBCTA is the lead agency under CEQA. The information in this EIR may also be used by other agencies involved with the project that have a responsibility under CEQA, including, but not limited to, the following:

- City of San Bernardino
- County of San Bernardino
- California Department of Transportation (Caltrans)
- SCRRA
- California Air Resources Board (CARB)
- California Department of Toxic Substances Control (DTSC)
- State Historic Preservation Officer (SHPO)
- California Public Utilities Commission
- California State Water Resources Control Board
- South Coast Air Quality Management District (SCAQMD)
- Santa Ana Regional Water Quality Control Board

ES.5 Anticipated Permits, Discretionary Actions, and Agency Approvals

The Project may require the following approvals and permits:

- Section 106 Consultation under the National Historic Preservation Act with the SHPO
- Regional Water Quality Control Board, General Construction Permit and Amended General Industrial Permit, as applicable
- City of San Bernardino: Roadway encroachment, sanitary sewer discharge, water quality, grading, etc.
- Southern California Edison (SCE): Onsite electrical modifications and upgrades
- SCAQMD: Fugitive dust and operating permits

ES.6 Summary of Impacts and Mitigation Measures

Table ES-1 summarizes Project-related environmental impacts, mitigation measures, and level of significance after implementation of the proposed mitigation, if applicable. Detailed analyses of these topics are provided in Section 3.2 through Section 3.8 of this EIR. Based on the Notice of Preparation (NOP) and Initial Study (IS) prepared for the proposed Project (Appendix A of this EIR), SBCTA has determined that the proposed Project would not have the potential to cause significant adverse effects associated with the topics identified below.

- Agricultural and Forest Resources
- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Mineral Resources
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Wildfires

Therefore, these topics are not addressed in this EIR. SBCTA's rationale for excluding these topics from the EIR are discussed in Chapter 7, Other CEQA Considerations, and in the NOP/IS (Appendix A of this EIR).

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.2, Aesthetics				
In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	The proposed Project is located in an urbanized area of San Bernardino. The San Bernardino General Plan contains goals and policies governing aesthetics and visual quality within the City. The existing setting of the proposed Project is anticipated to have a moderately low to moderate visual quality. Implementation of the proposed Project is anticipated to result in similar industrial features within an existing industrial area and would not affect the visual quality within the Project site and surrounding area. The City's General Plan identifies goals and policies that would need to be considered during final design of the Project to incorporate aesthetic features, as applicable.	Potentially Significant Impact	**AES-1 Comply with aesthetic guidelines in the San Bernardino General Plan.** During final design, SBCTA will apply the design elements regarding aesthetic enhancements, landscaping, streetscapes, materials, colors, and signage as defined in the City's General Plan and applicable to the Project's final design.	Less than Significant Impact with Mitigation Incorporated.
Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Existing lighting planned for the AMF site would be modified or relocated to accommodate the H2 fueling pad and storage area as a result of the proposed Project. The modified or relocated lighting may result in substantial light or glare on to adjacent properties.	Potentially Significant Impact	**AES-2 Prepare a lighting plan.** During final design, lighting fixtures will be selected and installed to minimize glare on adjacent properties. Lighting fixtures shall be shielded with non-glare hoods and focused within the Project site.	Less than Significant Impact with Mitigation Incorporated.
Section 3.3, Air Quality and Greenhouse Gas Emissions				
Conflict with or obstruct implementation of the applicable air quality plan.	The proposed Project is not anticipated to exceed the SCAQMD daily threshold or cause a significant impact on air quality (SCAQMD 2016). As discussed in Section 3.3, Air Quality and Greenhouse Gas Emissions, the	Less than Significant Impact	No mitigation measures are proposed.	—

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
	proposed Project would result in localized and regional emissions as a result of the Project's construction and operation. The proposed Project's short-term construction and long-term operational emissions would not exceed the SCAQMD's significance thresholds.			
Result in cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or state ambient air quality standard.	As discussed in Section 3.3, Air Quality and Greenhouse Gas Emissions, the proposed Project would not exceed the SCAQMD thresholds during construction and would result in a net reduction of emissions of criteria air pollutants during operations.	Less than Significant Impact	No mitigation measures are proposed.	—
Expose sensitive receptors to substantial pollutant concentrations.	The closest sensitive receptors to the Project are located approximately 400 feet to the south. As discussed in Section 3.3, Air Quality and Greenhouse Gas Emissions, maximum daily particulate emissions during construction would be relatively low. Construction is anticipated to last a relatively short time frame, approximately six months. As a result, the Project would not expose sensitive receptors to substantial emissions of hazardous air pollutants. During operation, the Project would result in a net reduction of emissions compared to the existing conditions.	Less than Significant Impact	No mitigation measures are proposed.	—
Result in other emissions (such as those leading to	During construction, emissions from construction equipment could affect nearby sensitive receptors. These potential impacts would be temporary,	Less than Significant Impact	No mitigation measures are proposed.	—

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
odors) affecting a substantial number of people.	during construction. In the event of a leak, H2 is odorless, colorless, and tasteless; thus, would not have any effect on nearby sensitive receptors			
Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	During construction, GHG emissions would be emitted through the operation of construction equipment, which typically uses fossil-based fuels to operate. During operations, the proposed Project would allow for the replacement of a standard DMU with a ZEMU train vehicle, resulting in a net decrease of operational GHG emissions.	Less than Significant Impact	No mitigation measures are proposed.	—
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	Construction of the proposed Project would not substantially increase GHG emissions in the Project area. During operations, greenhouse emissions would be reduced with the operation of a ZEMU train vehicle.	Less than Significant Impact	No mitigation measures are proposed.	—
Section 3.4, Cultural Resources				
Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	Two historical resources were identified within the area of potential effects: the AT&SF Railroad Depot (P 36-017975) and 981 West 3rd Street. The Project would have no physical impact on the Depot. Furthermore, there would be no visual impact to the Depot from the proposed Project's above ground structures as structures associated with the Project are relatively small scale and compatible with the existing surrounding development. The	Less than Significant Impact	No mitigation measures are proposed.	—

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
	proposed Project would not convert, rehabilitate, or physically alter the 3rd Street building or the location of the rail line located approximately 250 feet north-northwest.			
Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	No archaeological sites have been identified within the area of potential impacts. Only one historic archaeological site (P-36-008695/CA-SBR-8695) and no prehistoric sites were identified within 0.25 miles of the area of potential impacts. Ground disturbances during construction may result in the discovery of a historic archaeological resource, especially given the discovery of resources within 3rd Street during the construction of DSBPRP.	Potentially Significant Impact	**CUL-1 Stop work if unanticipated archaeological resources are encountered.** In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 50 feet of the find will immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can assist Project personnel in avoiding the newly discovered resources and implement management measures to evaluate the significance of the find and determine whether additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR Section 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, the work area shall be secured from additional disturbance; additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted and shall be carried out at	Less than Significant with Mitigation Incorporated

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			the attending archaeologist's discretion and in consultation with the Project proponent and the lead agency.	
Disturb any human remains, including those interred outside of formal cemeteries.	Ground-disturbing activities as a result of construction have the potential to damage or destroy buried human remains, although no documented cemeteries or burial sites occur within the proposed Project limits.	Potentially Significant Impact.	**TCR-1 Stop Work and Consult the Tribes consulted under AB 52 if Cultural Resources or Human Remains are Encountered.** In the event that any cultural resources are encountered during Project construction, SBCTA will: • Cease all work in the immediate vicinity of the find (within a 60-foot buffer) and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, the Tribes consulted under AB 52 shall be contacted regarding any pre-contact and/or historic-era finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment. • If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended), are discovered and avoidance cannot be ensured, the	Less than Significant with Mitigation Incorporated

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to the Tribes consulted under AB 52 for review and comment. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly. • If any previously unrecorded human remains are inadvertently discovered during construction, all work within the immediate vicinity of the discovery must cease immediately and a 100-foot-wide buffer will be established around it to secure it from further disturbance. California State law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99) will be followed on state, county, and private land. This law specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered. The lead agency and the county coroner will be immediately notified of the discovery. The coroner has 2 working days to examine the remains after being notified by the lead agency. If the remains are determined to be Native American, the coroner has 24 hours to notify NAHC, who will	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			determine the MLD. The NAHC will immediately notify the identified MLD, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 48 hours, the area of the property must be secured from further disturbance. If no recommendation is given, the lead agency or its authorized representative will re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance. • The Tribes consulted under AB 52 shall be contacted of any pre-contact and/or historic-era cultural resources discovered during project implementation and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended), a cultural resources Monitoring and Treatment Plan shall be created by the archaeologist, in	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			coordination with the Tribes consulted under AB 52, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents a tribe for the remainder of the project, should any of the Tribes consulted under AB 52 elect to place a monitor on-site. • Any and all archaeological/cultural documents created as a part of the Project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to the Tribes consulted under AB 52. The Lead Agency and/or applicant shall, in good faith, consult with Tribes consulted under AB 52 throughout the life of the project.	
Section 3.5, Energy, Utilties, and Service Systems				
Potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	Construction-related activities, such as grading or excavation, would require the consumption of energy through use and operation of construction equipment which typically uses fossil-based fuels. Additional construction-related energy consumption would occur in the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Construction activities would be	Less than Significant Impact	No mitigation measures are proposed.	—

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
	temporary and last approximately six months. Energy sources for construction vehicles and equipment are not in short supply and use of construction equipment would not have a significant impact on the availability of these resources. During operation, fuel consumption would be required to transport the H2 fuel to the Project site. However, the transportation would be short-term and temporary once additional local production sites are implemented.			
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	The proposed Project is anticipated to reduce fuel and energy consumption by improving the rail/transit service and connectivity between the different modes of transportation. These enhancements would encourage more individuals to use public transit services, directly reducing the number of personal vehicles on the roads. The proposed Project would be consistent with state and local plans for renewable energy.	Less than Significant Impact	No mitigation measures are proposed.	—
Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause	During construction, water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. No new drainage facilities would be required beyond connection to the existing storm drain system onsite. Existing electrical and natural gas utility services would be maintained throughout the construction of the Project. No additional distribution,	Less than Significant Impact	No mitigation measures are proposed.	—

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
significant environmental effects.	transmission lines, or substations would be required to construct the proposed Project.			
Section 3.6, Hazards and Hazardous Materials				
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Five REC or historically REC sites were identified within 0.25 miles of the Project study area. Ground-disturbing activities during construction would generally be limited to the approved AMF site limits. Contaminants from the various REC and historic RECs could be disturbed during Project construction.	Potentially Significant Impact	**HM-1** **Comply with Hazards and Hazardous Materials Recommendations.** The proposed Project will comply with all recommendations provided in the Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, and associated Technical Memorandum of Additional Findings prepared for the Project. This includes recommendations related to subsurface activities, additional investigations, and proper handling and removal of previously unknown wastes and soils affected by lead. **HM-2** **Plan and Monitor for Hazardous Materials.** Prior to the start of ground-disturbing activities, the contractor will be provided with a copy of the Phase I Environmental Site Assessment and advised that hazardous wastes may be present anywhere along the rail corridor. The contract specifications will require the contractor to be responsible for appropriate handling, storage, and disposal of any hazardous wastes encountered on the site or generated during project-related construction and demolition	Less than Significant Impact with Mitigation Incorporated.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			activities, in accordance with applicable local, state, and federal laws. Prior to the demolition of any structures within the Project Study Area, a survey shall be conducted for the presence of hazardous building materials such as asbestos-containing materials, lead-based paints, and other materials falling under universal waste requirements. The results of this survey shall be submitted to SBCTA and the City of San Bernardino's Community Development Department. If any hazardous building materials are discovered, a plan for their proper removal shall be prepared in accordance with applicable requirements of the California Division of Occupational Safety and Health and the County of San Bernardino Environmental Health Services. The contractor performing the work will be required to have a license in the State of California and possess a C-21, A or B classification. Further, and if required, the contractor or its subcontractor will be required to possess a California State Contractor License (asbestos) to perform any asbestos-related work. Prior to any demolition activities, the contractor will be required to secure	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			the site and ensure the disconnection of utilities.	
Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	The storage of gas or liquid H2 is considered a hazardous risk due to the explosive nature of the fuel in a gas or liquid state. Two explosion types were identified: (1) VCEs, which can occur under a gaseous or liquid state and (2) BLEVE. VCE and BLEVE explosions were analyzed and determined to result in significant damage to buildings, overhead roadways (I-215), and people in close, proximity. Detonation of a liquid H2 vapor cloud explosion (upper bound LVCE) would result in the most catastrophic damages to buildings and roadways, while the BLEVE for liquid H2 also resulted in additional damages of flying debris which could cause both lethal and non-lethal injuries.	Potentially Significant Impact.	**HM-3** **Prepare a hazards operations and emergency response plan.** Prior to construction of the Project, SBCTA will evaluate methods to minimize operational hazards associated with the transportation, storage, and use of H2 fuel on site, in accordance with the Department of Energy guidance, applicable National Fire Protection Association, International Fire Code, and process safety codes, standards, and industry best practices. These measures will be integrated into the Project's final design to maximize operational safety, system redundancy, and other design features.	Less than Significant with Mitigation Incorporated.
Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	A portion of the Project limits intersect with a portion of the historic Santa Fe Depot. The Santa Fe Depot is listed on the Historic Hazardous Waste and Substances Sites (Cortese) List, which lists the site for a historic underground storage. As a result, the risk-ranking for this site, which crosses into the Project study area, is identified as high and may pose a significant hazard.	Potentially Significant Impact	**HM-1** **Comply with Hazards and Hazardous Materials Recommendations.** **HM-2** **Plan and Monitor for Hazardous Materials.**	Less than Significant with Mitigation Incorporated.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Section 3.7, Land Use and Planning				
Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	The Project would introduce a new use at an existing maintenance facility site on land zoned for heavy industrial uses. The Project would be consistent with the goals and policies of the City of San Bernardino's General Plan, SCAG's 2020-2045 RTP/SCS, and the State's Rail Plan. The proposed Project would also be constructed and operated within a disadvantaged community, as identified by CalEPA's CalEnviroScreen 3.0. During construction, temporary disruptions to traffic, increased noise from equipment, and localized construction emissions may result in effects to the identified disadvantaged community.	Potentially Significant Impact.	**T-1** **Prepare and Implement a Traffic Management Plan.** Prior to initiating construction, SBCTA will ensure that the construction contractor prepares a Traffic Management Plan that includes construction detour plans and designates construction truck access routes for each phase of construction. During each phase of construction, the construction contractor will provide signage indicating the construction limits, access routes, detour routes, and entrances to individual business sites. In addition, the construction contractor will supply "open for business" signs to encourage normal business activity during construction. **NOI-1** **Employ Noise Reducing Measures during Construction.** The project sponsor will require its construction contractors to employ measures to minimize and reduce construction noise. Measures that will be implemented to reduce construction noise to acceptable levels include the following: • Comply with local noise regulations and limit construction hours to the extent practicable (i.e., between the hours of 7:00 a.m. and 8:00 p.m.).	Less than Significant with Mitigation Incorporated.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			• Use available noise suppression devices and techniques, including: • Equipping all internal combustion engine driven equipment with mufflers, air inlet silencers, and any shrouds, shields, or other noise reducing features that are in good operating condition and appropriate for the equipment (5 to 10 decibel reduction possible). • Using "quiet" models of air compressors and other stationary noise sources where such technology exists. • Using electrically-powered equipment instead of pneumatic- or internal combustion-powered equipment, where feasible. **AQ-1 Implement Air Quality Best Management Practices during Construction.** During clearing, grading, earthmoving, or excavation operations, excessive fugitive dust emissions will be controlled by regular watering or other dust preventive measures using the following procedures, as specified in the SCAQMD Rule 403. All material excavated or graded will be watered in sufficient quantities to prevent the generation of visible dust plumes. Watering will occur at least twice daily with complete coverage,	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			preferably in the late morning and after work is done for the day. All material transported on-site or off-site will be securely covered to prevent excessive amounts of dust. The area disturbed by clearing, grading, earth moving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in Project specifications. In addition, where feasible, the following measures will be implemented to reduce construction emissions: • Minimize land disturbance; • Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas; • Suspend grading and earth moving when wind gusts exceed 25 miles per hour, unless the soil is wet enough to prevent dust plumes; • Cover trucks when hauling dirt; • Stabilize the surface of dirt piles if not removed immediately; • Limit vehicular paths on unpaved surfaces and stabilize any temporary roads;	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			• Minimize unnecessary vehicular and machinery activities; • Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway; • Revegetate disturbed land, including vehicular paths created during construction, to avoid future off-road vehicular activities; • Ensure that all construction equipment is properly tuned and maintained; • Minimize idling time to 5 minutes; this saves fuel and reduces emissions; • Provide an operational water truck on-site at all times. Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas; • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators; and • Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
			parking areas with a shuttle service. Schedule operations affecting traffic for off peak hours. Minimize obstruction of through traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.	
Section 3.8, Tribal Cultural Resources				
Cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074, that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k).	During construction, ground-disturbing activities may result in a significant effect to archaeological materials that would require consultation with local Native American tribes.	Potentially Significant Impact.	**TCR-1 Stop Work and Consult the Tribes consulted under AB 52 if Cultural Resources or Human Remains are Encountered.**	Less than Significant with Mitigation Incorporated.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Threshold	Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074, that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1? In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	During construction, ground-disturbing activities may result in a significant effect to archaeological materials or may result in the discovery of human remains.	Potentially Significant Impact.	**CUL-1 Stop work if unanticipated archaeological resources are encountered.** **TCR-1 Stop Work and Consult the Tribes consulted under AB 52 if Cultural Resources or Human Remains are Encountered.**	Less than Significant with Mitigation Incorporated.

Notes:

AB=Assembly Bill; AMF=Arrow Maintenance Facility; BLEVE=boiling-liquid-expanding-vapor explosion; CALEPA=California Environmental Protection Agency; CCR=California Code of Regulations; CEQA=California Environmental Quality Act; DSBPRP=Downtown San Bernardino Passenger Rail Project; DMU=diesel multiple unit; GHG=greenhouse gas; H2=hydrogen; I-215=Interstate 215; LVCE=liquid vapor cloud explosion; MLD=most likely descendant; NAHC=Native American Heritage Commission; PRC=Public Resources Code; REC=recognized environmental condition; ROW=right-of-way; RTP=Regional Transportation Plan; SBCTA=San Bernardino County Transportation Authority; SCAG=Southern California Association of Governments; SCAQMD=South Coast Air Quality Management District; SCS=Sustainable Communities Strategy; TCR=tribal cultural resource; VCE=vapor cloud explosion; ZEMU=zero-emission multiple unit

ES.7 Environmentally Superior Alternative

As required by CEQA, SBCTA considered multiple alternatives to the Project. This includes identifying the environmentally superior alternative among the alternatives considered in this EIR. As provided in Table 5-1 of Chapter 5, the No Project Alternative would avoid the construction impacts identified for the proposed Project. As discussed in Chapter 5, a range of alternatives required in an EIR is governed by a rule of reason that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. Given the existing setting and current construction of AMF, and its proximity to the Arrow service line, the only reasonable alternative to consider is the No Project Alternative.

However, as discussed in Chapter 5, the No Project Alternative does not meet the Project objectives and is inconsistent with the 2020–2045 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (Southern California Association of Governments [SCAG] 2020) and *California State Rail Plan* (Caltrans 2018). Although the No Project Alternative would, for the most part, have fewer impacts than the proposed Project, including the avoidance of additional risks associated with storage and refueling of H2, the No Project Alternative would preclude SBCTA's pursuit of a zero-emission technology for passenger rail service and the corresponding benefits to communities along the existing rail line. Additionally, the No Project Alternative results in inconsistencies with local, regional, and State planning priorities.

CEQA Guidelines Section 15126.6(e)(2) states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Given the Project's infill location, compatible heavy industrial zoning, placement within the existing AMF site, and location along the existing Arrow service line, the Project is considered environmentally superior to available alternatives.

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1 Introduction

This environmental impact report (EIR) was prepared by the San Bernardino County Transportation Authority (SBCTA) for the Arrow Maintenance Facility (AMF) Hydrogen Fuel Upgrade Project (Project) located in the City of San Bernardino, California. This Draft EIR was prepared by SBCTA in compliance with the California Environmental Quality Act (CEQA) as promulgated in Public Resources Code (PRC), Section 21000 et seq. and the CEQA Guidelines (Section 15000 et seq.), as amended. The purpose of this Draft EIR is to disclose the potential environmental impacts associated with the construction and operation of the proposed Project.

1.1 Project Overview

SBCTA is proposing the AMF H2 Fuel Upgrade Project to facilitate the integration of an H2 fuel zero-emission multiple unit (ZEMU) rail vehicle and further reduce or eliminate emissions of criteria air pollutants produced by the operation of diesel passenger rail vehicles as part of Metrolink's planned Arrow Service. The proposed Project includes modifications and upgrades to the AMF to accommodate H2 storage, refueling, and required safety improvements. Operations of the proposed ZEMU vehicle on Southern California Regional Rail Authority's (SCRRA) San Gabriel subdivision would follow Federal Railroad Administration (FRA) safety regulations and overlay with diesel multiple unit (DMU) and Metrolink passenger train service.

Refer to Chapter 2 for a detailed description of the proposed Project.

1.2 Project Background

SBCTA is currently constructing the AMF, previously referred to as the Inland Empire Maintenance Facility (IEMF), which was environmentally cleared in 2012 (State Clearinghouse [SCH] Number [No.] 2011051024). In 2019, SBCTA renamed the facility from "IEMF" to "AMF" to correspond with the branding of the planned Arrow service. The AMF will service SBCTA's DMU rail vehicle fleet for the Arrow service and start pre-revenue operations in 2021. SCRRA (or Metrolink) will operate and dispatch the Arrow service in coordination with SCRRA's existing Metrolink service.

The maintenance facility, currently under construction, is a component of the previously approved Downtown San Bernardino Passenger Rail Project (DSBPRP). SBCTA certified a Final EIR for DSBPRP in September 2012 (SCH No. 2011051024). The Federal Transit Administration (FTA), Region 9, issued a Finding of No Significant Impact for DSBPRP in October 2012. The previously approved DSBPRP included multiple features to support the implementation of passenger rail service between the San Bernardino Santa Fe Depot (Depot) and San Bernardino Transit Center (SBTC) and E Street Platform in downtown San Bernardino. In addition to the installation of approximately 1 mile of double track between the Depot and SBTC, the DSBPRP included a new pedestrian overcrossing and platform north of the Depot, reconfiguration of IEMF, new positive train control towers, the closure of 3rd Street, and implementation of quiet zones (west of SBTC). IEMF was renamed the AMF as part of SBCTA's branding process for the Redlands Passenger Rail Project (RPRP), which will extend the Arrow DMU rail service nine miles east of SBTC to the City of Redlands.

At the time of SBCTA's release of the Notice of Preparation (NOP) on March 1, 2021, the AMF is nearing construction completion. Pre-revenue operations and testing will commence in the second half of 2021. SCRRA will begin operation of the Arrow line with overlapping Metrolink service in 2022,

serving passengers in San Bernardino, Redlands, and Loma Linda. The AMF will accommodate the cleaning, maintenance, and refueling of the DMUs.

SBCTA environmentally cleared the Redlands Passenger Rail Project (RPRP) under CEQA in 2015 (SCH No. 2012041012). FTA issued a Record of Decision for RPRP in March 2015 (FTA No. 20150052). RPRP, combined with DSBPRP, will provide passenger rail service between Los Angeles Union Station and Redlands. RPRP will enable Metrolink to provide local transit and express passenger rail service between Redlands and SBTC through the construction of new single-track infrastructure along a nine-mile railroad right-of-way (ROW) with an approximately 10,000-foot-long section of passing track or siding. Passenger rail service will extend from SBTC (and E Street Station) to four new stations at Tippecanoe Avenue, New York Street (at Environmental Systems Research Institute), Downtown Redlands (Eureka and Orange Street) and University Street (at University of Redlands). RPRP will operate on 30-minute headways during the peak morning and evening periods, and on one-hour headways during off-peak hours and weekends. Metrolink express trains will operate westbound in the AM peak period and eastbound in the PM peak period, originating/terminating at the Downtown Redlands Station.

The existing infrastructure at AMF is not equipped to support the operation and maintenance of H2-powered train vehicles. The proposed Project improvements would enable Metrolink to augment the existing DMU service with ZEMU train vehicles and allow for the integration of alternative fuels into the public transportation fleet consistent with State climate action and environmental justice planning goals and objectives.

1.3 EIR Intended Uses

All discretionary projects in the State of California are required to comply with CEQA if implementation of the project has the potential to result in either a direct physical change to the environment or a reasonably foreseeable indirect physical change to the environment. More specifically, a project requires environmental review if it incorporates a discretionary action undertaken by a public agency. Discretionary actions are activities that are supported in whole, or in part, by a public agency through contracts, grants, subsidies, etc.; or activities requiring a public agency to issue a lease, permit, license, certificate, or other entitlement. If the project may have a “significant” impact on any environmental resource, an EIR must be prepared. In accordance with Section 15121(a) of the CEQA Guidelines (California Administrative Code, Title 14, Division 6, Chapter 3), the purpose of an EIR is as follows:

> An EIR is an informational document, which will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

Pursuant to the CEQA Guidelines, SBCTA, as the CEQA lead agency, has identified an accurate, stable, and finite description of the “project” in this EIR to facilitate a consideration of reasonably foreseeable direct and indirect changes to the environment and public and agency comment at the local and state level. SBCTA is preparing this focused EIR to provide information to public agencies, the general public, and decision makers regarding the Project-specific and cumulative environmental impacts of the Project. This EIR also identifies required mitigation measures that would avoid or reduce significant impacts resulting from implementation of the Project.

This EIR will be used by SBCTA’s Board of Directors to inform decisions regarding Project approval and implementation. The EIR may also be used by CEQA responsible and trustee agencies (i.e., local

jurisdictions and state agencies) for anticipated permits and approvals from these agencies, as required for the Project.

1.3.1 CEQA Responsible and Trustee Agencies

The information in this EIR may also be used by other agencies involved with the Project that have a responsible agency role under CEQA, including but not limited to the following:

- City of San Bernardino
- County of San Bernardino
- FRA
- SCRRA
- Regional Water Quality Control Board, Santa Ana Region
- Affected utility providers, including but not limited to Southern California Edison (SCE) and Southern California Gas

1.4 Document Organization

The content and format of this EIR meet the current requirements of CEQA and the CEQA Guidelines. This EIR is organized into the following chapters with supporting technical appendices, so that the reader can easily obtain information about the Project and its specific issues.

Executive Summary: This chapter provides a summary of the potential impacts, mitigation measures of the Project and impact conclusions, and a summary of alternatives to the Project. Areas of controversy and issues to be resolved are discussed.

Chapter 1 – Introduction: This chapter describes the purpose and use of the EIR and the organization of the EIR. This chapter provides a description of the NOP and scoping process. A list of environmental topics addressed in the EIR is provided.

Chapter 2 – Project Description: This chapter provides a detailed description of the Project, Project components, discretionary actions, and identifies the overall objectives for the Project.

Chapter 3 – Environmental Analysis, Impacts and Mitigation: For each environmental issue, this chapter presents the existing environmental setting and conditions before Project implementation; regulatory environment, methods and assumptions used in the impact analysis; thresholds for determining significance; impacts that would result from the Project; mitigation measures that would eliminate or reduce significant impacts; and the level of significance of each impact area after implementation of mitigation.

Chapter 4 – Cumulative Impacts: This chapter identifies cumulative impacts.

Chapter 5 – Alternatives: This chapter describes the range of alternatives considered by SBCTA and provides a comparative analysis of the Project's environmental impacts to the No Project Alternative. Additionally, this chapter identifies an environmentally superior alternative.

Chapter 6 – Economic, Social and Growth Inducing- Effects: This chapter identifies growth-inducing impacts.

Chapter 7 – Other CEQA Considerations: This chapter identifies significant irreversible environmental changes, impacts found not to be significant, and significant and unavoidable environmental impacts.

Chapter 8 – References: This chapter identifies the documents (printed references) and individuals (personal communications) consulted in preparing this EIR and lists the individuals involved in preparing this EIR.

Chapter 9 – Preparers: This chapter identifies the individuals involved in preparing this EIR and the organizations and persons consulted.

Technical Appendices: Refer to table of contents.

1.5 Notice of Preparation

SBCTA began the environmental review process pursuant to CEQA by sending out an NOP (Appendix A of this EIR). The NOP was first distributed locally to interested local public agencies and the general public, and then to the SCH for distribution to state responsible and trustee agencies. The CEQA-required 30-day NOP review period began March 1, 2021 and identified that SBCTA intended to prepare a focused EIR for the Project. The NOP provided the general public and public agencies with an opportunity to comment on the scope of the Project and on the content of environmental issues to be examined in the EIR.

The NOP was distributed to the public by canvassing and providing flyers to residents and property owners within 0.25 mile of the Project, west of Interstate 215 (I-215). Copies of the NOP in English and Spanish were made available on the Project website (www.gosbcta.com/zemu). Both the English- and Spanish-language copies are included in Appendix A.

1.6 Environmental Topics Addressed

This EIR addresses the potential environmental impacts of the Project and was prepared following input, through the EIR scoping process, from the public and the responsible and affected agencies as discussed previously. The contents of this EIR were established based on public and agency input. The following environmental topics are analyzed in Chapter 3, Environmental Analysis, Impacts, and Mitigation, of this EIR:

- Aesthetics
- Air Quality and Greenhouse Gas (GHG) Emissions
- Cultural Resources
- Energy, Utilities, and Service Systems
- Hazards and Hazardous Materials
- Land Use and Planning
- Tribal Cultural Resources (TCR)

An analysis of potential cumulative impacts is included in Chapter 4, Cumulative Impacts. The potential for growth-inducing impacts of the Project is considered in Chapter 6. Environmental topical areas determined to have no or less than significant impacts are identified and briefly discussed in Chapter 7, Other CEQA Considerations.

1.7 Documents Incorporated by Reference

The following environmental documents and supporting environmental analysis are incorporated by reference into this Draft EIR per Section 15150 of the CEQA Guidelines:

- DSBPRP Revised Environmental Assessment (EA) and Final EIR (SCH No. 201105024). The DSBPRP Revised EA and Final EIR is incorporated by reference based on its previous consideration of the environmental effects of implementing IEMF. SBCTA adopted overriding considerations for operational noise and impacts to historic properties, excluding the Depot. This EIR also provides an analysis of the cumulative impacts associated with construction and operation of a maintenance facility, including those related to operational noise, air quality and local health risks, and water quality.

  SBCTA adopted a mitigation monitoring and reporting program in conjunction with its certification of the Final EIR. This EIR incorporates by reference the adopted mitigation monitoring and reporting program, which is now fully implemented.

- RPRP Final Environmental Impact Statement (EIS) and EIR (SCH No. 2012041012). This EIR incorporates by reference the combined Final EIS/EIR prepared for RPRP, which evaluates the environmental effects of implementing passenger rail service along a nine-mile railroad corridor owned by SBCTA and constructing the supporting rail infrastructure. This EIR does not revisit the operation of FRA-compliant train vehicles along the Redlands Corridor, which is now part of Metrolink's San Gabriel Subdivision.

1.8 EIR Processing

This Draft EIR is being distributed to interested agencies, stakeholder organizations, and individuals for review and comment. This distribution starts a 45-day comment period where interested parties have an opportunity to express their views regarding the environmental impacts of the Project. During this period, public agencies may offer information pertinent to potential Project permits, authorizations, and approvals, and inform SBCTA of their CEQA-responsible and trustee agency role for the Project. This document is available for review by the public by appointment at SBCTA's office at 1170 West 3rd Street, 2nd Floor, San Bernardino, California 92410, during normal business hours or hours posted in response to operating changes caused by the COVID-19 Pandemic. The document will also be available on SBCTA's website (https://www.gosbcta.com/zemu).

1.9 Comments Requested

This Draft EIR is being distributed for a 45-day period that will begin May 7, 2021, and end June 21, 2021. Written comments should be sent to the following address:

Carrie Schindler, Director of Rail and Transit
1170 West 3rd Street, 2nd Floor
San Bernardino, CA 92410

Comments may be provided via email to zemu@gosbcta.com. Please include the Project title in the subject line, attach comments in Microsoft Word format, and include the commenter's United States (U.S.) Postal Service mailing address. SBCTA will respond to comments received on the Draft EIR. All public comments must be received by 5:00 p.m., June 21, 2021, to facilitate incorporation into the Final EIR.

Once all comments have been assembled and reviewed, responses will be prepared to address significant environmental issues that have been raised in the comments. The responses will be included in the Final EIR.

2 Project Description

2.1 Project Overview

The SBCTA is proposing the Project to facilitate the integration of a H2-powered, ZEMU rail vehicle into SBCTA's planned Arrow service. SBCTA is currently constructing the AMF to service and maintain SBCTA's DMU rail vehicle fleet for the Arrow service. The SCRRA will operate and dispatch the Arrow service in coordination with SCRRA's existing Metrolink service and start operations in 2021. The proposed Project includes integration of the ZEMU rail vehicle into the Arrow service in 2024, and associated modifications and upgrades to the AMF. The modifications and upgrades to the AMF would facilitate H2 storage and refueling and ensure compliance with required safety improvements.

Project operations of the proposed ZEMU vehicle on SCRRA's San Gabriel subdivision would follow FRA safety regulations and overlay with the planned DMU and Metrolink passenger train service.

2.2 Project Location

For the purposes of this EIR, SBCTA defined a study area, which comprises the Project's physical improvements footprint within the confines of the previously approved AMF (or Project) site. AMF is located within the City of San Bernardino, California, near the intersection of North J Street and 3rd Street. The AMF site is located to the east of the existing San Bernardino Santa Fe Depot and Metrolink Station Platforms. The Project study area abuts existing railroad track infrastructure to the north, west, and south. Vacant, industrial-zoned land borders the AMF site to the east and an intermodal freight yard owned by the Burlington Northern Santa Fe (BNSF) Railway borders the AMF site to the north. A small residential community is located south of the AMF site, along North J Street and Kendall Avenue south of 3rd Street.

Much of the work would occur within the southern portion of SBCTA's existing AMF site (Assessor Parcel Numbers [APN]: 013823113 and 013823114). Figure 2-1 shows the regional location of the Project. Figure 2-2 shows the Project's location in San Bernardino, the extent of the proposed improvements, and the Project study area.

2.3 Goals and Objectives

SBCTA's goal for the proposed Project is to construct the infrastructure required to support integration of a ZEMU rail vehicle into the Arrow passenger rail service fleet. As part of Assembly Bill (AB) 398, the state's greenhouse gas (GHG) reduction goals were extended to 2030, and the reduction goal was increased to 40 percent of 1990 emissions. The goal of the Project is to construct the required H2 refueling infrastructure to demonstrate the feasibility of operating zero-emission railway technology consistent with state guidelines.

The Project includes the following objectives:

- Construct H2 storage and fueling infrastructure at AMF to support the efficient integration of zero-emission technologies into the Arrow's service fleet.
- Enhance the Arrow's service operational flexibility and reliability through the provision of a ZEMU rail vehicle to supplement SBCTA's DMUs.

- Support state cap-and-trade programs through the provision and implementation of low- or zero-emissions technology for transit corridors traversing disadvantaged communities.
- Integrate safety improvements for H2 fuel use at the AMF.

2.4 Project Components

The Project would include construction of a new hydrogen refueling pad and supporting infrastructure improvements within the limits of the AMF site. Figure 2-3 shows the proposed location of the H2 refueling pad. Existing wet and dry utilities (above and below grade) within the Project study area would also be protected in place or relocated, pending final engineering design and final placement of the proposed infrastructure.

2.4.1 Physical Improvements

The Project would include multiple improvements to the AMF site, including additional insulation and venting at the maintenance building (or shed) to facilitate the use of H2 fuel, construction of a hydrogen refueling pad for the refueling of ZEMU train vehicles, and fuel storage. These improvements are described in more detail below.

Arrow Maintenance Facility Maintenance Building

In conjunction with the H2 fueling improvements, multiple retrofits to the AMF maintenance building would be required to facilitate the use of H2 fuel for the ZEMU trains. These retrofits include ventilation improvements (e.g., modified electrical equipment, fans, etc.), spark-proofing on electrical wiring, new battery charging stations outside of the maintenance building, and installation of a H2 detection system. These improvements would be confined to the interior and exterior of the maintenance building.

Hydrogen Refueling Pad

As part of the Project, SBCTA would construct a new H2 refueling and storage pad in the southern portion of the AMF to facilitate the layover and operation of a ZEMU train vehicle. The pad would be constructed to include space for three ZEMU-battery charging stations, a H2 storage tank, new piping, and associated paving. Storage and use of the H2 fuel for the ZEMU trains would be required to comply with federal and state regulations and guidelines standard for H2 fuel technology.

To provide flexibility for final design, SBCTA is considering the use of H2 as either a gas or liquid. For the purposes of analysis, SBCTA is considering the use and storage of liquid H2 due to the larger storage tank footprint when compared to gas. The typical storage tank would be approximately 14 feet in height and approximately 40 feet in length, as shown on Figure 2-4. The storage tank would be a temporary fixture that would, once empty, be hauled off site and replaced with a full tank. The tank would connect with on-site control systems, compressors, evaporators, and fueling hoses. Each tank would remain on site for approximately two weeks prior to being replaced. If required, a liquid to gas conversion container may also be installed in the refueling pad area.

Minor track work modifications within the AMF site may be completed to provide direct connectivity to a dedicated H2 fueling pad.

Figure 2-1. Regional Location

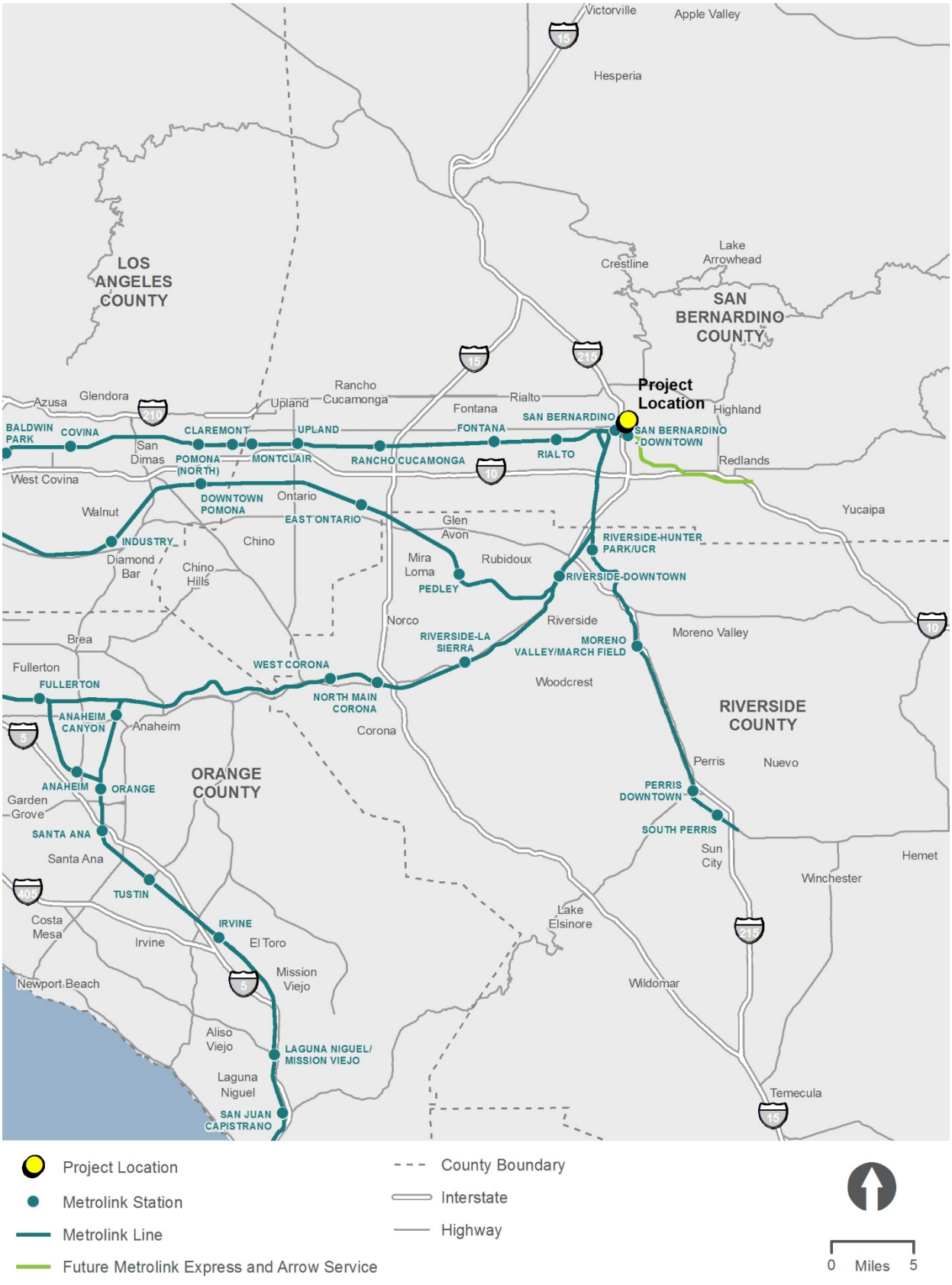

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Figure 2-2. Project Location

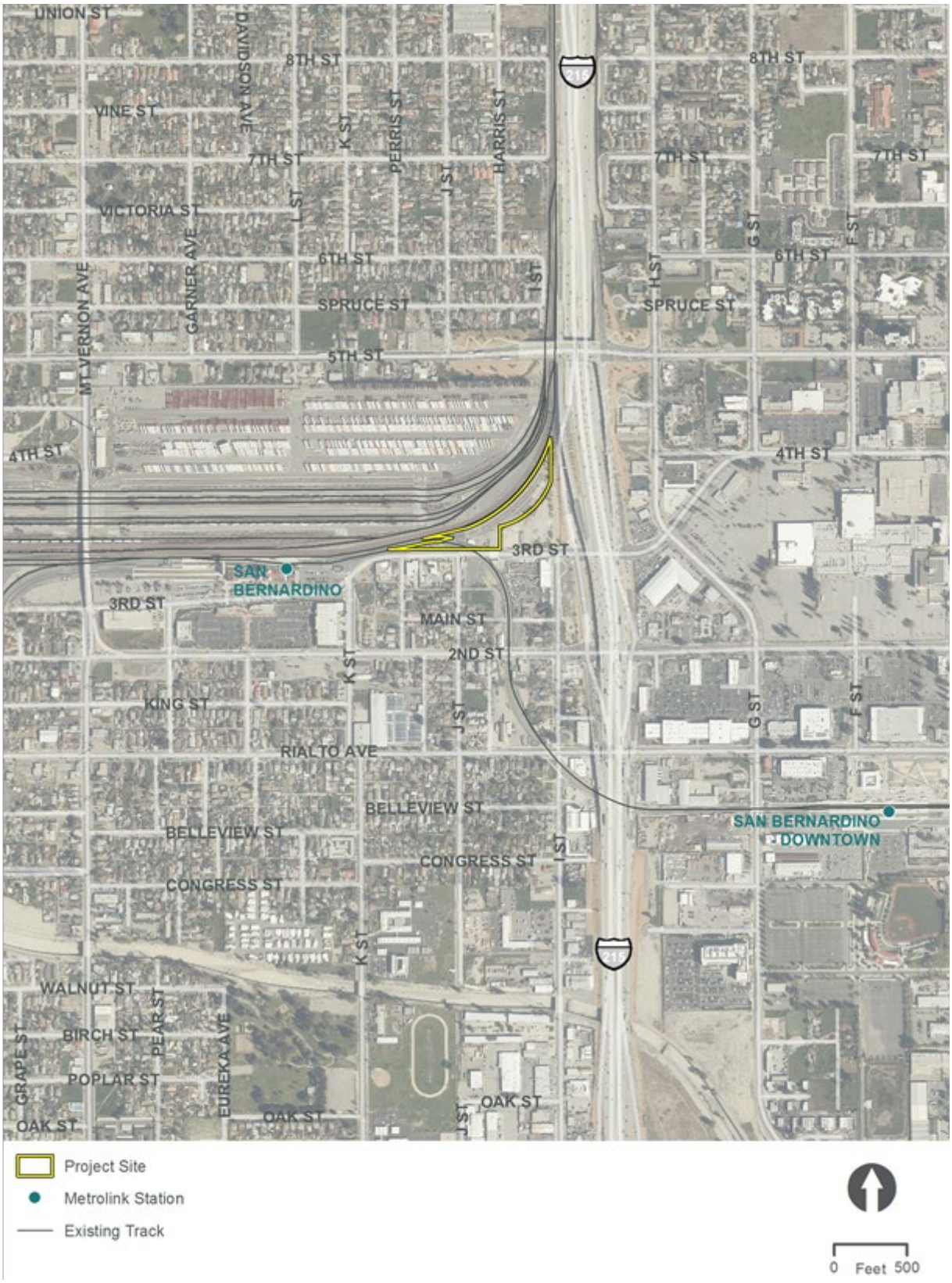

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Figure 2-3. Project Detail Map

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Figure 2-4. Example Hydrogen Fuel Storage Tank

Utilities

Utilities within the Project study area include gas lines, electrical power lines, communications/fiber optic lines, and municipal water and sewer pipes. The Project would require improvements or relocations of existing utilities, including storm drains, oil and grease separators, water (and fire) lines, and sanitary sewer lines. Existing drainage infrastructure will be utilized; tie-in to existing, however, may require modifications to existing drainage connections. Additionally, the Project would connect with the following utilities, which are currently under construction as part of AMF:

- Construct sewer laterals to an existing 27-inch sanitary sewer line
- Install new concrete-encased electrical conduit (underground) to connect with existing underground electrical conduit
- Construct new water supply lines, as necessary to connect with the existing 12-inch water main

An existing petroleum line and oil/-gas water separator would be protected in place and avoided along with the other newly constructed utility infrastructure for AMF.

2.4.2 Construction

Project construction is anticipated to commence in 2022 and would last for approximately 6 months. As previously discussed in Section 2.2, the Project would be located entirely within the existing AMF site as shown on Figure 2-3.

The City of San Bernardino Noise Ordinance allows construction between the hours of 7:00 a.m. and 8:00 p.m. Most construction would coincide with the hours specified in the Noise Ordinance, unless construction exemptions are obtained for the Project. Additionally, limited nighttime work may be required during non-revenue service hours to avoid conflicts with Arrow and Metrolink operations. For certain stages, limited construction during weekend and federal holidays may be required. Construction activities would be scheduled during time frames that allow for exclusive track occupancy by construction crews to minimize effects on Metrolink/SBCTA operations. The Project may also include weekend work when Metrolink service is reduced.

Construction vehicles and vehicles hauling equipment or materials would access the Project site from 3rd Street, utilizing the existing driveway access to the AMF site. Construction staging would be located within the southern portion of the AMF site. The final location of the construction staging area will be determined during final design.

Ground disturbance associated with Project construction would be limited to the Project. Ground disturbing activities would include removal of asphalt, minor grading, and limited excavation and trenching. Excavation for the refueling pad and utilities could extend up to five feet in depth. Temporary lighting may be required during nighttime work.

2.4.3 Operations

The AMF is an approved facility and currently under construction. SBCTA's Arrow service is planned to start testing in 2021 and revenue service in 2022 with two DMUs in operation and a third for backup. The proposed Project would maintain the same number of trains in service; however, one of the two DMU trains would be replaced with a ZEMU train vehicle. Project operations would commence in 2023 during non-revenue service with future revenue service starting on or after 2024.

Replacement of one DMU with the ZEMU rail vehicle would remove 25 average daily DMU round trips per day (or 50 one way). As previously described, the ZEMU train vehicles would be refueled in the southern portion of the Project site and serviced in the maintenance shed.

Site access for employees would continue to be provided from 3rd Street, on the southern side of the Project site near the I-215 off ramp.

2.5 Permits and Approvals

SBCTA, as the CEQA lead agency, has determined that the Project may require the following approvals and permits:

- Section 106 Informal Consultation under the National Historic Preservation Act with the State Historic Preservation Officer (SHPO)
- Applicable permits (e.g., traffic safety, floodplain, and roadway encroachment) from the City of San Bernardino and/or County of San Bernardino
- Permits from or agreements with affected utility providers

- Santa Ana Regional Water Quality Control Board: National Pollutant Discharge Elimination System (NPDES) General Construction Permit (Waste Discharge Identification [ID] No. 8 36C383747) and Amended General Industrial Permit, as applicable
- City of San Bernardino: Roadway encroachment, sanitary sewer discharge, water quality, grading, etc.
- SCE: On-site electrical modifications and upgrades
- South Coast Air Quality Management District (SCAQMD): Fugitive dust and operating permits

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3 Environmental Analysis, Impacts, and Mitigation

3.1 Introduction to Environmental Analysis

This chapter provides an overview of the environmental analysis and presents the format for the environmental analysis in each topical section.

3.1.1 Environmental Topics Included in the Analysis

For each environmental issue area, this chapter presents the existing environmental setting and conditions before Project implementation; the regulatory setting; methods and assumptions used in the impact analysis; thresholds for determining significance; impacts that will result from the Project; and mitigation measures that will eliminate or reduce significant impacts. The following environmental issue areas are analyzed in this chapter:

- Section 3.2, Aesthetics
- Section 3.3, Air Quality and Greenhouse Gas Emissions
- Section 3.4, Cultural Resources
- Section 3.5, Energy, Utilities, and Service Systems
- Section 3.6, Hazards and Hazardous Materials
- Section 3.7, Land Use and Planning
- Section 3.8, Tribal Cultural Resources

Chapter 4, Cumulative Impacts, provides the analysis of cumulative impacts based on the project-level findings and determinations in Sections 3.2 through 3.8.

3.1.2 Format and Content Used in the Analysis

For each environmental issue area considered in Chapter 3, Environmental Analysis, Impacts, and Mitigation, the basic format for the environmental analysis is as follows:

- Introduction
- Environmental Setting
- Regulatory Setting
- Impact Analysis
- Mitigation Measures
- CEQA Significance Conclusions After Mitigation

The content for each of these sections is described below.

Introduction

This section provides a brief summary of the environmental issue area to be analyzed. Documents incorporated by reference into the EIR analysis are identified in this sub-section, as applicable, for each environmental resource topic. The introduction also notes any previously certified environmental documentation that is incorporated by reference for the purposes of the resource-specific analysis.

Environmental Setting

This discussion provides a description of the existing physical environment and baseline setting for each environmental issue area. For the purpose of this document and pursuant to the CEQA Guidelines (Section 15125(a)), the environmental setting is used to determine the impacts associated with the Project and is based on the environmental conditions that existed at the time the NOP was published (March 2021).

In distinguishing between the geographic areas considered in the environmental analysis, it is important to note that the existing conditions for most environmental issue areas within Chapter 3, Environmental Analysis, Impacts, and Mitigation, of this EIR are characterized in terms of the Project site and surrounding area. For some environmental issue areas, the study areas vary to properly analyze impacts of that specific resource. For example, in addition to considering the Project site, the air quality analysis considers the Project's regional impacts on the South Coast Air Basin.

Regulatory Setting

This discussion describes the regulatory context of the environmental issue area being analyzed, including any applicable federal, state, and local regulations, plans, policies, programs, and/or laws relevant to the Project.

Impact Analysis

For each threshold considered, the discussion is subdivided, as appropriate, to differentiate between environmental impacts that could occur. Each resource-specific impact analysis includes discussion of the methodology employed as part of the analysis and any previously certified environmental documentation incorporated by reference. Subheadings and sub-numbering are used, where appropriate, for transitions between major topics and distinctions in impact determinations for sub-issues covered by the threshold. The environmental analysis places emphasis on distinguishing between temporary construction and long-term operational impacts.

Changes that would result from the Project were evaluated relative to existing environmental conditions within the Project site, as defined in Chapter 2, Project Description.

The Thresholds of Significance subsection lists the thresholds used to determine the significance of each Project impact and is based on CEQA Guidelines, Appendix G. This EIR uses the following terminology to denote the significance of environmental impacts of the Project:

- No Impact indicates that the construction and operation of the Project would not have any impacts on the environment. It means no change from existing conditions. This impact level does not need mitigation.
- A Less than Significant Impact is one that would not result in a substantial or potentially substantial adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.

- A Significant Impact is defined by CEQA Section 21068 as one that would cause "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." Levels of significance can vary by project, based on the change in the existing physical condition. Under CEQA, mitigation measures or alternatives to the project must be provided, where feasible, to reduce the magnitude of significant impacts.
- An Unavoidable Significant Impact is one that would result in a substantial or potentially substantial impact on the environment, and that could not be reduced to a less than significant level even with any feasible mitigation. Under CEQA, a project with significant and unavoidable impacts could proceed, but the lead agency would be required to prepare a "statement of overriding considerations" in accordance with CEQA Guidelines Section 15093, explaining why the lead agency would proceed with the project understanding the potential for significant impacts.

In circumstances where the applied threshold is irrelevant to the project and no impact will result, this fact is noted, and the associated threshold is eliminated from further analysis. This includes the provision of SBCTA's supporting rationale.

Mitigation Measures

This discussion identifies proposed mitigation measures to avoid, minimize, rectify, reduce, or compensate for Project-related impacts in accordance with the CEQA Guidelines (Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]), where feasible.

CEQA Significance Conclusions After Mitigation

This section includes an explanation of how the applied mitigation measure(s), if required, reduces the impact. If the impact remains significant, additional discussion is provided to indicate why no mitigation is available or why the applied mitigation is not effective in reducing the significant impact to a level less than significant.

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3.2 Aesthetics

This section provides a description of the existing visual and aesthetic resources within the project area and relevant state and local plans and policies regarding the protection of scenic resources.

3.2.1 Environmental Setting

This section summarizes the existing environmental setting related to aesthetics of the Project study area. This section incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024), which considered the impacts of constructing and operating AMF (previously referred to as IEMF) with regards to the visual and aesthetics and is included in Appendix A.

The proposed Project is located north of 3rd Street and west of I-215 in the City of San Bernardino, San Bernardino County, California. The Project limits are defined as the extent of the previously certified AMF (or IEMF) site limits, as show in Figure 2-3, in Chapter 2, Project Description. The land use within and adjacent to the Project site is primarily urban, consisting of transportation (rail and road), industrial, residential, and commercial land uses. The broader study area contains low-lying vegetation, scattered street-trees, and streetscaping at the 3rd Street Off-Ramp at I-215.

According to the Natural Resources and Conservation Element of the City's General Plan (City of San Bernardino 2005a), no scenic resources exist within the Project limits. However, the San Bernardino Mountains are identified as a scenic resource within that element and are visible from the Project site. Additionally, the historic Santa Fe Depot is located less than a quarter mile to the west of the proposed Project and is visible from portions of the Project study area. The proposed Project is not located within a designated State Scenic Highway as identified by the California Scenic Highway Mapping System (California Department of Transportation [Caltrans] 2011).

Existing Conditions

The Federal Highway Administration methodology outlined in the *Visual Impact Assessment for Highway Projects* (2015) was used for establishing the existing visual resource and for the visual assessment. Per Federal Highway Administration guidelines, the aesthetic quality of an area is determined through the variety and contrasts of the area's visual features, the character of those features, and the scope and scale of the scene.

The aesthetic quality of an area depends on the relationship between its features and their importance in the overall view. Evaluating the visual resource is defined and identified below by assessing visual character and visual quality. Because it is not feasible to analyze all the views in which the proposed Project would be seen, it is necessary to select a number of key observation points (KOP) within the Project corridor that would most clearly demonstrate the change in the project's visual resources. KOPs also represent the viewer groups that have the highest potential to be affected by the proposed Project, considering exposure and sensitivity.

Visual Character

Visual character includes attributes such as form, dominance, diversity, and continuity (as described below) in a manner that describes, rather than evaluates, visual character; that is, these attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character are identified by how visually compatible a project would be with the existing condition, using visual character attributes as an indicator. For this Project, the following characters or attributes were considered:

- Form – visual mass or shape
- Line – edges or linear definition
- Color – reflective brightness (light, dark) and hue (red, green)
- Texture – surface coarseness
- Dominance – position, size, or contrast
- Diversity – pattern elements, as well as the variety among them
- Continuity – uninterrupted flow of form, line, color, or textural pattern

The existing visual character of the Project site and railroad corridor is dominated by industrial uses. Existing features within the Project corridor contributing to the existing visual form include industrial buildings, rail operations maintenance facility, the Santa Fe Depot, residential homes (south of 3rd Street), transportation elements including I-215, overhead utility lines, and the San Bernardino Mountains in the background. The constructed features created a repetitive pattern with smooth surfaces contrasting with the rough features in the backgrounds of the views to the north and east. The line features are primarily created by the roads, utility lines, and structures within the Project corridor. The Project site and railroad corridor lack continuity due to the visual intrusions created by the built features. The San Bernardino Mountains to the north and east create visual forms within the background. The Santa Fe Depot also creates a dominant feature within the Project corridor, west of the Project site.

Visual Quality

Both natural and created features in a landscape contribute to its visual quality. Landscape characteristics influencing visual quality include geologic, hydrologic, botanical, wildlife, recreation, and urban features. Several sets of criteria have been developed for defining and evaluating visual quality.

According to these criteria, none of these is itself equivalent to visual quality; all three must be considered high to indicate high quality. The visual quality terms are defined as follows:

- Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

There is limited diversity of visual patterns within the Project limits due to the repetitive nature of the industrial and commercial buildings and built vertical intrusions. As a three-story mission style structure bearing four Moorish domes in its center and featuring a 380-foot long arch colonnade, the historic Santa Fe Depot, located just west of the Project limits, lends contrast and diversity to the Project corridor. This feature adds a unique and diverse element to the scene. However, the Santa Fe Depot is only visible from the western portion of the Project corridor and can be seen from limited portions of the Project site itself. Therefore, the diversity within the Project limits is moderately low due to the limited view of the historic Santa Fe Depot. The scale of the San Bernardino Mountains dominates the landscape features and adds continuity to the viewshed when looking north and east.

To further characterize the existing visual character of the Project site and surrounding area, following construction of DSBPRP and as depicted on Figure 3.2-1, two KOPs were selected and are described further below.

Key Observation Points 1 – View from the Historic Santa Fe Depot

KOP 1 is located on West 3rd Street in front of the Santa Fe Depot parking lot with views to the north-northeast. Figure 3.2-2 shows the existing view to the Project study area from the historic Santa Fe Depot. As shown on Figure 3.2-2 the existing visual character within KOP 1 is dominated by the linear features of the Santa Fe Depot that extend from the foreground into the middle-ground. The foreground and middle ground are dominated by the smooth gray asphalt parking lots for the 3rd Street and Santa Fe Depot. Linear intrusions are present throughout the view. These include three different types of light poles as well as fences, street signs, billboard, utility poles, and commercial or industrial buildings. The background is comprised of the San Bernardino Mountains, which are considered a scenic resource, as defined in the City's General Plan. The existing AMF site has a newly constructed maintenance building that is slightly visible in the middle ground and middle of the image in KOP 1.

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Figure 3.2-1. Key Observation Points

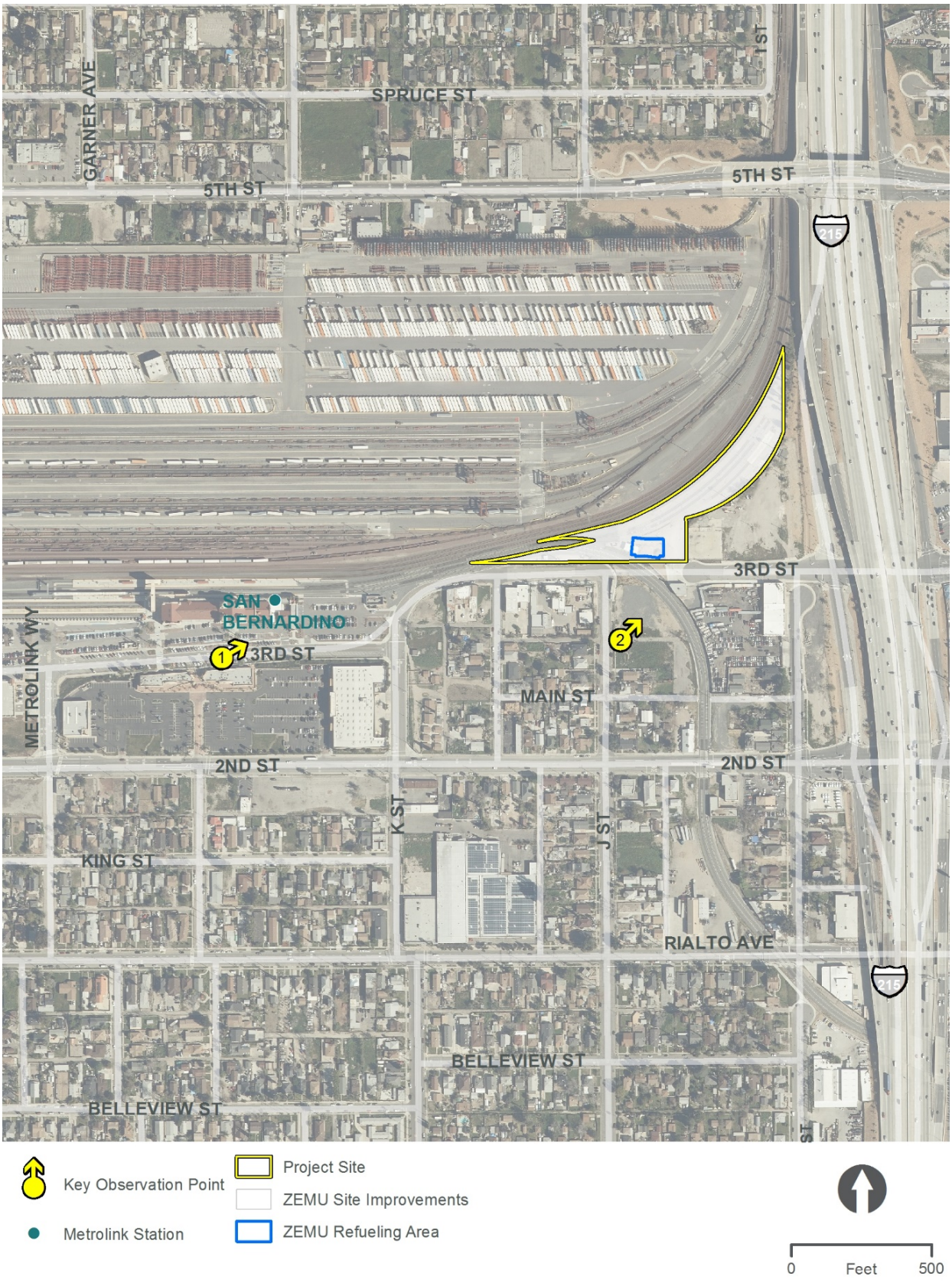

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Figure 3.2-2. Key Observation Points 1 – Existing Condition

The scale of the street, street parking and the Santa Fe Depot overwhelms in the fore- and middle ground of the view and causes the viewers to focus attention on the building. The San Bernardino Mountains dominate the background of the view and draw the viewer's attention to the contrasting natural elements in the background and the urban areas in the fore- and middle ground, resulting in a moderately low unity. The San Bernardino Mountains bring contrast in textures and colors to the view and present a memorable feature for the viewer. Although views of the mountains are visible throughout the City, the view from KOP 1 provides viewers with views of two scenic resources: the historic Santa Fe Depot and the San Bernardino Mountains. These two features present a memorable viewpoint and create a moderately high vividness. Intactness of the view is considered moderately low due to the predominant urban elements and numerous visual intrusions, such as the light poles, within the view. The visual quality of KOP 1 is considered moderate.

Key Observation Points 2 – View from South of 3rd Street

KOP 2 is located on North J Street just north of West Broadway Street with views to the north. Figure 3.2-3 shows the existing view to the Project study area from the residential neighborhood south of the Project site. As shown on Figure 3.2-3, the existing visual character of KOP 2 shows a stark visual pattern with rough gray rock and green grass comprising the foreground, industrial features with smooth textured buildings and industrial elements in the middle ground, and the San Bernardino Mountains in the background. Utility poles and lighting create linear features and visual encroachments throughout the middle ground. The existing AMF site and maintenance shed are present in the center of the view. This building creates a visual intrusion that blocks views of the lower portions of the San Bernardino Mountains, as do other industrial buildings present in the middle ground.

Figure 3.2-3. Key Observation Points 2 – Existing Condition

The scale of the AMF site and surrounding rail facility and industrial uses dominate the middle ground of the view. The fore- and background provide contrasting textures and colors compared to the smooth, gray nature of the elements present in the middle ground. The rail features and industrial elements separate, entirely, the natural elements within the view, and creates a low unity in the view. The integrity of the view is compromised by the industrial intrusions into the natural elements, resulting in a low intactness. The San Bernardino Mountains in the background and vacant land in the foreground provide contrast in textures and colors and present a memorable feature for the viewer. However, as previously mentioned, the views of the San Bernardino Mountains are typical throughout the City and are not limited to this location. As a result, vividness for the view is considered moderate. The visual quality of KOP 2 is considered moderately low.

3.2.2 Regulatory Setting

This section identifies and summarizes state and local laws, policies, and regulations that are applicable to the project.

State

California Department of Transportation – State Scenic Highway Program

Caltrans manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the scenic corridor.

Local

City of San Bernardino General Plan

The City of San Bernardino General Plan (City of San Bernardino 2005a) contains policies for the protection and conservation of scenic resources and guidance for maintaining and enhancing the aesthetic and visual quality within the City.

3.2.3 Impact Analysis

This section describes the potential for environmental impacts related to aesthetics as a result of the proposed Project. This section identifies the thresholds pursuant to CEQA used to determine if implementation of the proposed Project would result in a significant impact, as well as any measures to mitigate potentially significant impacts.

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, Project impacts related to aesthetics would be considered significant if the project would:

A. Have a substantial adverse effect on a scenic vista.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

C. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Thresholds Requiring No Further Analysis

The following identified thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the Project:

A. Have a substantial adverse effect on a scenic vista.

   - There are no scenic vistas or corridors present within the Project study area or Project site nor the surrounding area. The proposed Project would modify the previously approved AMF to allow for H2 fuel powered ZEMU train maintenance, operations, and storage. No impacts would result from the proposed Project.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway.

   - The proposed Project is located within an industrial, urbanized area. No scenic corridors or state scenic highways are located within the vicinity of the proposed Project. No impacts would result.

Threshold C. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Project is located in an urbanized area within the City of San Bernardino, California. The City of San Bernardino adopted the General Plan on November 1, 2005, which contains goals and policies to enhance and maintain the existing aesthetic features and visual quality within the City. Table 3.2-1 identifies Project consistency with the applicable goals and policies of the City's General Plan. As provided, the Project would be consistent with the City's General Plan and underlying zoning.

Table 3.2-1. Consistency with Applicable City of San Bernardino Goals and Policies

Goals and Policies	Project Consistency
Policy 2.2.1: Ensure compatibility between land uses and quality design through adherence to the standards and regulations in the Development Code and policies and guidelines in the Community Design Element.	**Consistent.** The proposed Project would be constructed in compliance with applicable design guidelines outlined in the San Bernardino Development Code as well as the Community Design Element.
Goal 2.5: Enhance the aesthetic quality of land uses and structures in San Bernardino.	**Consistent.** The proposed Project would augment the existing AMF site to allow for the use and storage of H2 fuel onsite once ZEMU train vehicles are incorporated into the rail operations. Final design for the proposed Project would be completed after the certification of this EIR. The proposed Project may consider constructing elements visible from the public ROW, such as a wall around the H2 fuel pad and storage area. If this feature were to be built, SBCTA would consult with the City to determine what, if any, aesthetic features should be applied.
Goal 5.2: Attractively design, landscape, and maintain San Bernardino's major corridors.	
Goal 6.7: Work with the railroads and other public agencies to develop and maintain railway facilities that minimize the impacts on adjacent land uses.	**Consistent.** The Project would be constructed entirely within SBCTA ROW or the AMF site currently under construction. The proposed Project would augment the AMF site to allow for the use and storage of H2 fuel onsite once ZEMU train vehicles are incorporated into the rail operations. The proposed Project would not result in any temporary construction easements or ROW acquisitions
Policy 6.7.1: Accommodate railroad services that allow for the movement of people and goods while minimizing their impact on adjacent land uses.	
Policy 6.7.2: Coordinate with San Bernardino Associated Governments[a], SCAG, the County and other regional, state or federal agencies and the railroads regarding plans for the provision of passenger, commuter, and high-speed rail service.	

Table 3.2-1. Consistency with Applicable City of San Bernardino Goals and Policies

Goals and Policies	Project Consistency
Policy 6.7.3: Encourage the provision of a buffer between residential land uses and railway facilities and encourage the construction of sound walls or other mitigating noise barriers between railway facilities and adjacent land uses.	**Consistent.** The proposed Project may implement the construction of a wall or buffer between the H2 fuel storage area and the residential areas to the south. Currently, a fence is installed along the perimeter of the site which functions as a visual block between most of the AMF site and the adjacent residential area to the south.
Goal 12.8: Preserve natural features that are characteristic of San Bernardino's image.	**Consistent.** The proposed Project would not result in the alteration of any natural features or resources identified within the City's General Plan. Project construction would take place within the existing AMF site, owned by SBCTA.

Sources: City of San Bernardino 2005a

Notes:

[a] SBCTA was formed by SB 1305 (2016), which consolidated the various transportation-related functions of the San Bernardino Associated Governments into SBCTA.

AMF=Arrow Maintenance Facility; H2=hydrogen; ROW=right-of-way; SBCTA=San Bernardino County Transportation Authority; SCAG=Southern California Association of Governments; ZEMU=zero-emission multiple unit

VISUAL IMPACT

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed Project. These impacts can be either beneficial or detrimental. As previously indicated, because it is not feasible to analyze all the views in which the proposed Project would be seen, two KOPs were selected to assess the change in the Project's visual quality. Key views also represent the viewer groups that have the highest potential to be affected by the Project, considering exposure and sensitivity.

Key Observation Point 1 – View from the Historic Santa Fe Depot

The Project would augment the existing AMF maintenance building, the top of which is visible from KOP 1; reconfigure and potentially upgrade utilities; construct a refueling pad; and incorporate safety and maintenance needs associated with H2 fuel delivery, storage, and use. An example photo of the H2 fuel storage container is provided in Figure 2-4 in Chapter 2, Project Description, of this EIR. The container is anticipated to be approximately 14 feet tall and 40 feet long. Based on the surrounding buildings, such as the maintenance operations building, the proposed fueling pad would be minor in scale.

It is anticipated that viewers from the public ROW to the Project site would have a low response to the Project changes. Neighbors' exposure to views resulting from the proposed Project would be of longer duration and many would have closer views of the changes. Commuters (rail and road) are anticipated to have a low response due to the limited exposure to a majority of the proposed changes. Neighbors and commuters would experience moderately low viewer sensitivity to the proposed Project, given that the improvements would be compatible with the existing views, resulting in a level of viewer sensitivity

similar to current conditions. When traveling on the local roads or via railroad, viewers would retain existing views of the San Bernardino Mountains to the north and east.

The proposed changes to the Project site are not anticipated to be seen from KOP 1 once constructed. The AMF maintenance is over 15 feet in height, and only the top of the AMF maintenance building is visible in KOP 1. Additional vertical intrusions may appear as a part of the Project; however, these vertical intrusions are consistent with the existing uses in the area and would not impact the viewshed. The Project would not alter views to or from the Santa Fe Depot, nor would it result in construction of a building or structure taller than the existing AMF maintenance building. The scenic resources visible from the Project site (e. g., historic Santa Fe Depot and San Bernardino Mountains) would not be impacted by the Project, and the visual quality of the overall setting would remain moderate. Therefore, the visual impact for KOP 1 is less than significant.

Key Observation Point 2 – View from South of 3rd Street

The same project changes would occur under KOP 2 as described in KOP 1. The proposed Project would augment the existing AMF maintenance building, reconfigure and potentially upgrade utilities, construct a refueling pad, and address safety and maintenance needs associated with H2 fuel delivery, storage, and use. Temporary visual impacts are anticipated during the construction. Temporary impacts would include the presence of construction equipment and materials, construction staging areas, temporary roadside barriers, and construction and detour signage within the area of the Project site, as well as construction activities, such as truck hauling and excavation activity. The proposed Project would not remove any mature vegetation or trees. These temporary impacts would occur for approximately 6 months but would cease upon Project operation.

It is anticipated that neighbors from the public ROW to the Project site would have a moderately low response to the proposed resource changes. Neighbors' exposure to views resulting from the proposed Project would be of longer duration, and many would have closer views of the changes. Commuters are anticipated to have a low response due to the limited exposure to a majority of the proposed changes. When traveling on the local roads or via railroad, viewers would maintain existing views of the San Bernardino Mountains to the north and east. Implementation of the proposed Project would not affect views of scenic resources such as the Santa Fe Depot (not visible from this view) or the San Bernardino Mountains in the distance.

Locally, KOP 2 provides views to the existing AMF site from neighboring residential areas to the south. Resource changes would result in additional built elements that would add to the existing built and industrial setting. The proposed Project may include one or more wall features to screen the Project from the residential land uses, consistent with the City's General Plan. Mitigation Measure AES-1 (San Bernardino General Plan) is proposed to maintain consistency of Project elements with the City's General Plan, as applicable to the aesthetics and visual quality. Based on these considerations, the visual impact of the Project at KOP 2 would be less than significant following implementation of the proposed mitigation.

Threshold D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The Project limits currently receive light and glare from traffic on local roadways, street lighting, traffic signals, freeway on- and off-ramps, paved surfaces, and the surrounding industrial and commercial businesses. Existing lighting planned for the AMF site would be modified or relocated to accommodate the H2 fueling pad and storage area as a result of the proposed Project. Mitigation Measure AES-2 would reduce potential impacts related to light and glare during construction and operation by selecting

and placing lighting fixtures to minimize additional light and glare to traveling motorists, train vehicle operations, maintenance facility workers, bicyclists, pedestrians, and onto adjacent properties/businesses and into the night sky. Mitigation Measure AES-1 would provide coordination with the City of San Bernardino to maintain consistency with the San Bernardino General Plan goals and policies. With implementation of the Mitigation Measures AES-1 and AES-2, impacts associated with this resource issue would be less than significant.

3.2.4 Mitigation Measures

AES-1 **Comply with Aesthetic Guidelines in the San Bernardino General Plan.** During final design, SBCTA will apply the design elements are consistent with the vision for the City regarding aesthetic enhancements, landscaping, streetscapes, materials, colors, and signage and as applicable to the Project's final design.

AES-2 **Prepare a Lighting Plan.** During final design, lighting fixtures will be selected and installed to minimize glare on adjacent properties. Lighting fixtures shall be shielded with non-glare hoods and focused within the Project site

3.2.5 CEQA Significance Conclusions After Mitigation

Mitigation Measures AES-1 (San Bernardino General Plan) and AES-2 (Lighting Plan) would reduce impacts related to aesthetic resources. Specifically, AES-1 would require consistency with the City's General Plan as it relates to aesthetic features and visual quality. AES-2 would require the Project to prepare a lighting plan to limit the light and glare during Project construction to minimize additional light and glare to travelers and neighboring areas, as well as during operation onto adjacent properties and into the night sky. Therefore, impacts would be less than significant after mitigation.

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3.3 Air Quality and Greenhouse Gas Emissions

3.3.1 Introduction

The air quality and GHG chapter describes the environmental setting and regulatory setting for air pollution and climate change in the vicinity of the Project. It also describes the impacts on air quality and climate change that would result from construction and operation of the Project and mitigation measures that would reduce significant impacts, where feasible. Cumulative impacts on air quality and climate change, in combination with planned, approved, and reasonably foreseeable projects, are discussed in Chapter 4, Cumulative Impacts.

3.3.2 Environmental Setting

This section summarizes the existing environmental setting related to air quality and climate change within the Project site and incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024). The previously certified EIR considered the impacts of constructing and operating AMF (previously referred to as IEMF) to air quality and is included in Appendix A.

Criteria Pollutants

Criteria pollutants are a group of six common air pollutants for which the federal and state governments have set national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS), respectively. Ozone (O_3) is considered a regional pollutant because its precursors affect air quality on a regional scale; nitrogen oxides (NO_X) and reactive organic gases (ROG) react photochemically to form O_3, and this reaction occurs at some distance downwind of the emissions source. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are considered local pollutants that tend to accumulate in the air locally. Particulate matter is both a local and regional pollutant.

Concentrations of criteria pollutants are commonly used indicators of ambient air quality for which acceptable levels of exposure can be determined. The ambient air quality standards for these pollutants are set with an adequate margin of safety for public health and the environment (Clean Air Act Section 109). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants and form the scientific basis for new and revised ambient air quality standards.

The primary criteria pollutants generated by the Project are O_3 precursors (NO_X and ROG), CO, NO_2, SO_2, and particulate matter.[1] Additional narrative on sources and health effects of these pollutants is provided in the Final EIR for the DSBPRP.

Greenhouse Gases

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these

[1] Lead is also a criteria pollutant, and there are state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility particulates. However, these pollutants are typically associated with industrial sources, which are not included as part of the Project. Accordingly, they are not evaluated further.

climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.

GHGs vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO_2 equivalents” (CO_2e). Table 3.3-1 shows the GWPs for each type of GHG. For example, SF_6 is 23,900 times more potent at contributing to global warming than CO_2.

Table 3.3-1. Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
CO_2	50–200	1
CH_4	12	21
N_2O	114	310
HFC-23	270	11,700
HFC-134a	14	1,300
HFC-152a	1.4	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500

Table 3.3-1. Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
PFC: Hexafluoromethane (C_2F_6)	10,000	9,200
SF_6	3,200	23,900

Source: Intergovernmental Panel on Climate Change 2007
Notes:
CH_4=methane; CO_2=carbon dioxide; GWP=Global Warming Potential; N_2O=nitrous oxide; SF_6=sulfur hexafluoride

Toxic Air Contaminants

Although ambient air quality standards have been established for criteria pollutants, no ambient standards exist for toxic air contaminants (TAC). Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or their acute or chronic health risks. For TACs that are known or suspected carcinogens, California Air Resources Board (CARB) has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment. The primary TAC of concern associated with the Project is diesel particulate matter (DPM).

DPM is generated by diesel-fueled equipment and vehicles. CARB estimates that DPM emissions are responsible for about 70 percent of the total ambient air toxics risk (CARB 2020a). Short-term exposure to DPM can cause acute irritation (e.g., eye, throat, and bronchial), neurophysiological symptoms (e.g., lightheadedness and nausea), and respiratory symptoms (e.g., cough and phlegm). The International Agency for Research on Cancer (2012) has classified diesel engine exhaust as “carcinogenic to humans, based on sufficient evidence that exposure is associated with an increased risk for lung cancer."

Existing Air Quality Conditions

Ambient Concentrations

The existing conditions in the local air quality study area can be characterized by regional monitoring data. CARB and SCAQMD collect and maintain ambient air quality data through a network of air monitoring stations throughout the state. The Project site is in San Bernardino which is in San Bernardino County. The closest monitoring station in San Bernardino is the San Bernardino – KVCR Tower (CARB 33199), located approximately 1.3 miles south/southwest of the southern boundary of the Project site. The San Bernardino – KVCR Tower Station only monitors CO, CH_4, CO_2, and NO_2. The closest station that monitors O_3, particulate matter less than 10 micron diameter (PM_{10}), and particulate matter less than 2.5 micron diameter ($PM_{2.5}$) is the other monitoring site in San Bernardino, California, which is located approximately 1.5 miles east of the eastern terminus of the Project site.

Between 2017 and 2019, monitored CO and NO_2 concentrations did not exceed any federal or state standards. However, the state or federal standards for O_3, PM_{10}, and $PM_{2.5}$ were exceeded. As discussed above, the ambient air quality standards define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the O_3 and particulate matter ambient air quality standards indicate

that certain individuals exposed to this pollutant may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

Regional Attainment Status

Local monitoring data are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the ambient air quality standards.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period
- Unclassified—assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question

Table 3.3-2 summarizes the current attainment status for the portion of San Bernardino County within the South Coast Air Basin.

Table 3.3-2. Federal and State Attainment Status for the Project Site

Criteria Pollutant	San Bernardino County	
	Federal Designation	State Designation
O_3 (8-hour)	Extreme nonattainment*	Nonattainment
CO	Attainment/Maintenance	Attainment
PM_{10}	Attainment/Maintenance	Nonattainment
$PM_{2.5}$	Serious Nonattainment**	Nonattainment
NO_2	Attainment/Maintenance	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment

Sources: CARB 2020b; U.S. EPA 2020a

Notes:

*Extreme nonattainment status applies to areas with values of 0.163 parts per million (ppm) and above.

**Serious nonattainment area is based on the USEPA's determination that the area cannot practicably attain the standard by the applicable Moderate area attainment date of December 31, 2021. A serious area attainment plan is required to demonstrate attainment of the 2012 annual $PM_{2.5}$ NAAQS prior to December 31, 2025.

CO=carbon monoxide; NAAQS=National Ambient Air Quality Standards; NO_2=nitrogen dioxide; O_3=ozone; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter; SO_2=sulfur dioxide

3.3.3 Regulatory Setting

This section summarizes federal, state, and local regulations related to air quality that are applicable to the Project.

Federal

Clean Air Act

The federal CAA and its subsequent amendments form the basis for the nation's air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA and has established NAAQS for six criteria pollutants—O_3, particulate matter (both PM_{10} and $PM_{2.5}$), CO, N_2O, SO_2, and lead. The NAAQS identify levels of air quality that are considered the maximum safe levels of ambient (background) air pollutants, within an adequate margin of safety, to protect public health and welfare.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The CAA mandates that the states submit and implement a state implementation plan (SIP) for local areas not meeting NAAQS. The plans must include pollution control measures that demonstrate how the standards will be met.

Table 3.3-3 shows the NAAQS currently in effect for each criteria pollutant, as well as the CAAQS (discussed below).

Table 3.3-3. Federal and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards[a]	
			Primary	Secondary
O_3	1-hour	0.09 ppm	—[b]	—[b]
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
PM_{10}	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual mean	20 μg/m^3	—	—
$PM_{2.5}$	24-hour	—	35 μg/m^3	35 μg/m^3
	Annual mean	12 μg/m^3	12.0 μg/m^3	15 μg/m^3
CO	8-hour	9.0 ppm	9 ppm	—
	1-hour	20 ppm	35 ppm	—
NO_2	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	—
SO_2[c]	Annual mean	—	0.030 ppm	—
	24-hour	0.04 ppm	0.014 ppm	—
	3-hour	—	—	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	—
Lead	30-day average	1.5 μg/m^3	—	—
	Calendar quarter	—	1.5 μg/m^3	1.5 μg/m^3
	3-month average	—	0.15 μg/m^3	0.15 μg/m^3
Sulfates	24-hour	25 μg/m^3	—	—

Table 3.3-3. Federal and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards[a]	
			Primary	Secondary
Visibility reducing particles	8-hour	—[d]	—	—
Hydrogen sulfide	1-hour	0.03 ppm	—	—
Vinyl chloride	24-hour	0.01 ppm	—	—

Source: CARB 2016

Notes:

[a] National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

[b] The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for SIPs.

[c] The annual and 24-hour NAAQS for SO_2 only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.

[d] CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

$\mu g/m^3$=micrograms per cubic meter; CAAQS=California Ambient Air Quality Standard; CO=carbon monoxide; NAAQS=National Ambient Air Quality Standard; NO_2=nitrogen dioxide; O_3=ozone; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter; ppm=parts per million; SO_2=sulfur dioxide; SIP=state implementation plan

Non-road Diesel Rule

U.S. EPA established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. New construction equipment used to implement the Project, including heavy-duty trucks and off-road construction equipment, will be required to comply with the emission standards.

Locomotive Emissions Standards

In March 2008, U.S. EPA adopted a three-part emissions standard program to reduce emissions from diesel locomotives. The regulation tightens emission standards for existing, remanufactured locomotives and sets exhaust emission standards for newly built locomotives of model years 2011 through 2014 (Tier 3) and 2015 and beyond (Tier 4). The regulation is expected to reduce particulate matter emissions from locomotive engines by as much as 90 percent and nitrogen oxide (NO_X) emissions by as much as 80 percent when fully implemented.

Corporate Average Fuel Efficiency Standards

Under the Energy Policy Act of 2005, as amended by the Energy Independence and Security Act, National Highway Traffic Safety Administration sets fuel economy standards for passenger cars and light trucks, as well as medium and heavy-duty vehicles. These standards are set in coordination with the U.S. EPA, which sets GHG emissions standards under the CAA.

On September 19, 2019, the U.S. EPA and National Highway Traffic Safety Administration issued a final action on the One National Program Rule, which is considered Part One of the Safer Affordable Fuel-Efficient Vehicles Rule. The One National Program Rule clarified the federal preemption of state fuel economy regulation under the Energy Policy Act of 2005, revoking the previous waiver of preemption of the California Clean Air Act (CCAA) standards.

Part 2 of Safer Affordable Fuel Efficient Vehicles Rule, issued on March 30, 2020, revised fuel economy standards for passenger cars and light trucks, maintaining the future year standard at 40.5 miles per gallon rather than increasing to 54.5. However, Executive Order (EO) 13990, issued on January 20, 2021, instructs the Executive Director of National Highway Traffic Safety Administration and Administrator of U.S. EPA to consider suspending, revising, or rescinding the Safer Affordable FuelEfficient Vehicles Rule by July 2021.

Hazardous Air Pollutants

In February 2007, U.S. EPA finalized a rule (Control of Hazardous Air Pollutants [HAP] from Mobile Sources) to reduce HAPs from mobile source air toxics. The rule limits the benzene content of gasoline and reduces toxic emissions from passenger vehicles and gas cans. U.S. EPA estimates that in 2030, this rule would reduce total emissions of mobile source air toxics by 330,000 tons and ROG emissions (precursors to O_3 and $PM_{2.5}$) by more than 1 million tons. The latest revision to this rule, which added specific benzene control technologies, occurred in October 2008. U.S. EPA has not established NAAQS or provided ambient standards for HAPs.

State

California Clean Air Act

In 1988, the state legislature adopted the CCAA, which established a statewide air pollution control program. The CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. The CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are shown in Table 3.3-3.

CARB and local air districts bear responsibility for meeting the CAAQS, which are to be achieved through district-level air quality management plans (AQMP) incorporated into the SIP. In California, U.S. EPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards while maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of indirect and area-wide sources of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

Truck and Bus Regulation

Originally adopted in 2005, the on-road truck and bus regulation requires heavy trucks to be retrofitted with particulate matter filters. The regulation applies to privately and federally owned diesel-fueled trucks with a gross vehicle weight rating greater than 14,000 pounds. Compliance with the regulation can be reached through one of two paths: vehicle retrofits according to engine year or phase-in

schedule. Compliance paths ensure that by January 2023, nearly all trucks and buses will have 2010 model-year engines or newer.

Tailpipe Emissions Standards

Like U.S. EPA at the federal level, CARB has established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft operating in California. New equipment used to construct the Project would be required to comply with the standards.

Carl Moyer Memorial Air Quality Standards Attainment Program

The Carl Moyer Memorial Air Quality Standards Attainment Program is a voluntary program that offers grants to owners of heavy-duty vehicles and equipment. The program is a partnership between CARB and local air districts throughout the state to reduce air pollution emissions from heavy-duty engines. Locally, the air districts administer the Carl Moyer Memorial Air Quality Standards Attainment Program.

Toxic Air Containment Identification and Control Act

California regulates TACs (equivalent to the federal HAPs) primarily through the TAC Identification and Control Act and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Hot Spots Act). The act created California's program to reduce exposure to air toxics. The Hot Spots Act supplements the TAC Identification and Control Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, CARB identified DPM from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan was to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identifies 14 measures that target new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators).

CARB has adopted regulations to reduce emissions from both on-road and off-road heavy-duty diesel vehicles (e.g., equipment used in construction). These regulations, known as airborne toxic control measures, reduce the idling of school buses and other commercial vehicles, control DPM, and limit the emissions of ocean-going vessels in California waters. The regulations also include measures to control emissions of air toxics from stationary sources. The California toxics inventory, developed by interpolating from CARB estimates of total organic gases and particulate matter, provides emissions estimates by stationary, area-wide, on-road mobile, off-road mobile, and natural sources.

Local

South Coast Air Quality Management District

SCAQMD is responsible for air pollution control in the South Coast Air Basin, which includes the urbanized areas of Los Angeles, Orange, Riverside, and San Bernardino Counties. In addition to San Bernardino, these correspond to the member agencies of SCRRA, and the majority of Metrolink operations take place within the jurisdiction of SCAQMD. SCAQMD adopted an AQMP in 2016.

The 2016 AQMP incorporates the latest scientific and technological information and planning assumptions, as well as updated emission inventory methodologies for various emission source

categories (SCAQMD 2016). The 2016 AQMP is the region's clean air plan, which guides the region's air quality planning efforts to attain the CAAQS. The 2016 AQMP contains district-wide control measures to reduce O_3 and $PM_{2.5}$ precursors. SCAQMD also prepared a SIP to address the lead NAAQS, and a clean communities plan (formerly known as the air toxics control plan) to reduce toxic emissions and risk from both mobile and stationary sources.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the metropolitan planning organization for Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization for most of the Southern California region and is the largest metropolitan planning organization in the nation. With regard to air quality planning, SCAG prepares the Regional Transportation Plan (RTP) and Federal Transportation Improvement Program, which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMPs discussed above. The two plans are also used in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP, the Federal Transportation Improvement Program, and the AQMPs are based on projections originating within local jurisdictions. Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality.

SCAG adopted the *2020–2045 Regional Transportation Plan/Sustainable Community Strategy* (Connect SoCal) for federal air quality conformity on May 7, 2020, and the plan was fully adopted on September 3, 2020. Connect SoCal includes a commitment to reduce emissions from transportation sources to comply with Senate Bill (SB) 375, improve public health, and meet the NAAQS as set forth by the CAA. Connect SoCal meets criteria pollutant emission budgets set by U.S. EPA.

Southern California Regional Rail Authority

SCRRA is committed to the goal of cleaner air in Southern California. By implementing such programs as the Tier 4 Locomotive Engine Program, Fuel Conservation Program, and Plug-In Program, SCRRA has reduced locomotive NO_X and particulate matter emissions by 85 percent, reduced train idling by 35 percent systemwide, and increased the number of electric plug-in stations (which supply electric ground power to railcars during testing and inspection) by 55 percent. In addition, an electric railcar mover was recently purchased to perform the testing and inspections. These programs have reduced the fuel use and emissions associated with operational activities.

In March 2021, SCRRA adopted a Climate Action Plan (SCRRA 2021). SCRRA's Climate Action Plan focuses on three main sources of GHG emissions in the sectors of energy, transportation, and oil and gas. The time horizon for the Climate Action Plan spans over the next 10 years through 2030 and establishes a framework for reducing GHGs and criteria pollutants including nitrogen oxides and particulate matter.

Climate Change

Assembly Bill 32 (Global Warming Solutions Act)

In September 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. California met its 2020 reduction goal in 2018.

Executive Order B-30-15

On April 20, 2015, former Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. California's emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels.

Senate Bill 32

SB 32 was signed into law on September 8, 2016 and expands upon AB 32 to reduce GHG emissions. SB 32 sets into law the mandated GHG emissions target of 40 percent below 1990 levels by 2030 written into EO B-30-15.

Climate Change Scoping Plan

In December 2008, the CARB adopted the *Climate Change Scoping Plan* (2008 Scoping Plan) to achieve the goals outlined in AB 32. The 2008 Scoping Plan, developed by CARB in coordination with the Climate Action Team, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. According to the 2008 Scoping Plan, California will implement strategies to achieve a reduction of approximately 118 million metric tons (MT) CO_2e, or approximately 22 percent, from the State's projected 2020 emission level of 545 million MT of CO_2e under a business-as-usual scenario. This is a reduction of 47 million MT CO_2e, or almost 10 percent, from 2008 emissions. The CARB's original 2020 projection was 596 million MT CO_2e, but this revised 2020 projection considers the economic downturn that occurred in 2008.

The *First Update to the Climate Change Scoping Plan* (2014 Scoping Plan) was approved by the CARB in May 2014 and builds upon the 2008 Scoping Plan with new strategies and recommendations. The 2014 Scoping Plan contains the main strategies California will implement to achieve a reduction of 80 million MT of CO_2e emissions, or approximately 16 percent, from the State's projected 2020 emission level of 507 million MT of CO_2e under the business-as-usual scenario defined in the 2014 Scoping Plan. The 2014 Scoping Plan also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the state's GHG inventory. Several strategies to reduce GHG emissions are included: the Low Carbon Fuel Standard, the Pavley Rule, the Advanced Clean Cars program, the Renewable Portfolio Standard, and the Sustainable Communities Strategy (SCS).

In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With the passage of SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. The CARB adopted *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in November 2017. The 2017 Scoping Plan represents a second update to the scoping plan to reflect the 2030 target as codified by SB 32. According to the 2017 Scoping Plan, the 2030 target of 260 million MT of CO_2e requires the reduction of 129 million MT of CO_2e, or approximately 33.2 percent, from the state's projected 2030 business-as-usual scenario emissions level of 389 million MT of CO_2e.

Assembly Bill 1493 (Pavley Clean Car Standards)

In July 2002, the Legislature enacted AB 1493 (Pavley Bill), which requires the CARB to develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state." In September 2004, pursuant to this directive, the CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. These regulations created what are commonly known as the "Pavley standards." In September 2009, the CARB adopted amendments to the Pavley standards to reduce GHG emissions from new motor vehicles through the 2016 model year. These regulations created what are commonly known as the "Pavley II standards."

In January 2012, the CARB adopted an Advanced Clean Cars program aimed at reducing both smog-causing pollutants and GHG emissions for vehicle models developed in the years 2017-2025. The Advanced Clean Car regulations focus on substantially increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and H2 readily available for these vehicle technologies. It is expected that the Advanced Clean Car regulations will reduce GHG emissions from California passenger vehicles by about 34 percent below 2016 levels by 2025, all while improving fuel efficiency and reducing motorists' costs.

Low Carbon Fuel Standards

In 2009, the CARB approved the Low Carbon Fuel Standards regulation to reduce the carbon intensity of transportation fuel used in California by at least 10 percent by 2020 from a 2010 baseline. The Low Carbon Fuel Standards are one of the key AB 32 Scoping Plan measures intended to reduce GHG emissions and other smog-forming and toxic air pollutants by improving vehicle technology, reducing fuel consumption, and increasing transportation mobility options. The Low Carbon Fuel Standards are designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

In 2011, the CARB approved amendments to clarify, streamline, and enhance certain provisions of the regulation. In 2015, the CARB re-adopted the Low Carbon Fuel Standards and updated the procedural requirements. In 2018, the CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in line with California's 2030 GHG target enacted through SB 32. The 2017 Scoping Plan, which reflects the 2030 target of reducing statewide GHG emissions by 40 percent below 1990 levels and is codified in SB 32, increased stringency of the Low Carbon Fuel Standards by requiring an 18 percent reduction in carbon intensity by 2030, up from the previous target of 10 percent in 2020.

Renewable Portfolio Standards (Senate Bill 1078)

In September 2002, the Legislature enacted SB 1078, which established the Renewables Portfolio Standard program, requiring retail sellers of electricity to purchase a specified minimum percentage of electricity that has been generated by eligible renewable energy resources such as wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. The Renewables Portfolio Standard applies to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB 1078 set a target by which 20 percent of the State's electricity would be generated by renewable sources. In September 2006, the Legislature enacted SB 107, which modified the Renewables Portfolio Standard

to require that at least 20 percent of electricity retail sales be served by renewable energy resources by year 2010.

In April 2011, the Legislature enacted SB X1-2, which set the requirement that 33 percent of the State's electricity come from renewables by 2020. According to SB X1-2, all electricity retailers must meet renewable energy goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020.

In 2015, the Legislature enacted SB 350. SB 350 embodies a policy encouraging a substantial increase in the use of electric vehicles and increased the Renewable Portfolio Standard to require 50 percent of electricity generated to be from renewables by 2030. On September 10, 2018, then-Governor Brown signed into law SB 100 and EO B-55-18. SB 100 raises California's Renewable Portfolio Standard requirement to a target of 50 percent renewable resources by December 31, 2026, and to a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. EO B-55-18 establishes a carbon neutrality goal for California by 2045 and sets a goal to maintain net negative emissions thereafter.

3.3.4 Impact Analysis

This section describes the potential for environmental impacts related to air quality and climate change as a result of Project implementation. It describes the thresholds used to determine whether an impact would be significant, as well as measures to mitigate potentially significant impacts, where appropriate.

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, Project impacts related to air quality would be considered significant if the Project would:

A. Conflict with or obstruct implementation of the applicable air quality plan

B. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or state ambient air quality standard

C. Expose sensitive receptors to substantial pollutant concentrations

D. Result in other emissions (such as those leading to odors) affecting a substantial number of people

Project impacts related to climate change would be considered significant if the Project would:

A. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

Methodology

SCAQMD Guidelines

Specific criteria for determining whether the potential air quality impacts of a project are significant are set forth in the SCAQMD's *CEQA Air Quality Handbook*. Table 3.3-4 lists the daily thresholds for construction and operational emissions that have been established by the SCAQMD and will be used in the analysis of air quality impacts for the proposed Project to determine significance.

Table 3.3-4. South Coast Air Quality Management District Air Quality Thresholds of Significance

Pollutant	Construction (pounds/day)	Operation (pounds/day)
NO_X	100	55
Volatile Organic Compounds	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550

Source: SCAQMD 2018
Notes:
CO=carbon monoxide; NO_X=nitrogen oxide; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter; SO_X=sulfur oxide

LOCALIZED SIGNIFICANCE THRESHOLDS

SCAQMD has developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each SRA. LSTs are derived based on the location of the activity (i.e., the SRA); the emission rates of NOx, CO, $PM_{2.5}$, and PM_{10}; the size of the Project Site; and the distance to the nearest exposed individual. The Project Site is located within SRA No. 23 (Metropolitan Riverside County). Ground disturbance associated with project construction would be limited within the 3.61-acre project site boundaries. The closest sensitive land uses to the project site are homes located to the south and southwest at a distance of approximately 400 feet (120 meters). Table 3.3-5 lists the LST emission rates for a 2-acre site located within 100 meters of a sensitive use.

Table 3.3-5. South Coast Air Quality Management District Localized Significance Thresholds

Pollutant	Construction (pounds/day)	Operation (pounds/day)
NO_X	264	264
CO	2,232	2,232
PM_{10}	38	10

$PM_{2.5}$	10	3

Source: SCAQMD 2019

Notes:

CO=carbon monoxide; NO_X=nitrogen oxide; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter;

LOCAL CARBON MONOXIDE CONCENTRATIONS

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
    - California State 8-hour CO standard of 9.0 ppm

GREENHOUSE GAS EMISSION THRESHOLD

The SCAQMD's Interim Thresholds for commercial, residential, mixed use and industrial development projects are as follows:

- Industrial Projects – 10,000 MT of CO_2e per year
    - Residential, commercial, and mixed-use projects (including parks, warehouses, etc.) 3,000 MT CO_2e per year

The Project is not an industrial development. Therefore, for purposes of this analysis, both direct and indirect GHG emissions from the proposed Project are discussed in the context of the 3,000 MT threshold levels.

INCREMENTAL HEALTH RISK SIGNIFICANCE THRESHOLD

The SCAQMD CEQA Air Quality Handbook (SCAQMD 2018) lists significance thresholds for TACs. TACs refer to a diverse group of air pollutants that are capable of causing chronic and acute adverse effects on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, and painting operations that may involve substances such as ammonia, asbestos, benzene, cadmium, lead, and trichloroethylene. The SCAQMD's TAC thresholds are as follows:

- Maximum Incremental Cancer Risk ≥ 10 in 1 million
- Cancer Burden > 0.5 excess cancer cases
    - Chronic and Acute Hazard Index ≥ 1.0

Air Quality Impacts

Threshold A: Would the project conflict with or obstruct implementation of the applicable air quality plan?

For a project to be consistent with the 2016 AQMP, the pollutants emitted from a project should not exceed the SCAQMD daily threshold or cause a significant impact on air quality (SCAQMD 2016). However, if feasible mitigation measures are implemented and shown to reduce the impact level from significant to less than significant, a project is deemed consistent with AQMP. As discussed below, the Project's short-term construction and long-term operational emissions would not exceed the SCAQMD's significance thresholds. Therefore, implementation of the Project will not conflict with the 2016 AQMP. This is considered a less than significant impact.

Threshold B: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or state ambient air quality standard?

CONSTRUCTION

The most recent version of the CalEEMod model (Version 2016.3.2) was used to calculate the construction emissions for the Project. The construction-related emissions generated during peak construction days for the proposed project are presented in Table 3.3-6. Because construction operations on-site must comply with dust control and other measures prescribed by SCAQMD Rules 402 and 403 to minimize short-term construction impacts, Table 3.3-6 assumes the incorporation of these measures. The PM_{10} and $PM_{2.5}$ emissions incorporate 55 percent control of fugitive dust as a result of watering and associated dust-control measures per SCAQMD's Rule 403. The emissions presented in Table 3.3-6 are based on the best information available at the time of calculations, and assume construction would commence in 2023 and extend for up to six months. Project construction would consist of the construction of a H2 refueling pad, safety upgrades to the AMF, and associated utility connections. Ground disturbance associated with project construction would be limited within the 3.61-acre Project site boundaries. Site clearance would involve removal of asphalt which would not require extensive grading, cut and fill, or import or export of soils.

Table 3.3-6. Construction Period Emissions

Construction	Criteria Pollutants (Pounds per day)						CO_2e
	ROG	NO_X	CO	SO_X	PM_{10}[a]	$PM_{2.5}$[a]	
Regional Emissions							
Peak Daily Emissions	4.28	41.49	31.6	0.05	6.1	3.89	5,083
SCAQMD Threshold	75	100	550	150	150	55	N/A
Exceed Threshold?	No	No	No	No	No	No	N/A
Localized Emissions[b]							
Peak Daily Emissions	1.14	10.16	11.48	0.024	1.122	0.646	2,351
SCAQMD Threshold	N/A	264	2,232	N/A	38	10	N/A
Exceed Threshold?	N/A	No	No	N/A	No	No	N/A

Source: Appendix B of this EIR

Notes:

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403.

[b] Localized emissions thresholds are based on the following: source receptor area 23, 2-acre site area, and 100-meter receptor distance.

CO=carbon monoxide; CO_2=carbon dioxide equivalents; NO_X=nitrogen oxide; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter; ROG=reactive organic gases; SCAQMD=South Coast Air Quality Management District; SO_X=sulfur oxide; SRA=source receptor area

As shown in Table 3.3-6, both localized and regional construction emissions would remain below SCAQMD significance thresholds and are considered less than significant.

OPERATIONS

When compared to a standard DMU, the operation of a ZEMU train would result in a 100 percent reduction in the localized exhaust emissions resulting from the current DMU operation. However, there are emissions associated with the production and transport of the H2 fuel. Maintaining the assumption that liquid H2 is used as the fuel for the ZEMU trains, Table 3.3-7 lists the emissions associated with the existing DMU and those associated with the production and transport of the H2 fuel. These emissions are for a single round trip between the SBTC and Redlands. As shown, the use of a ZEMU would result in a net reduction in emissions. Therefore, the project's long-term impact would be less than significant.

Table 3.3-7. Roundtrip Emissions (including well-to-wheel emissions)

Emission	Total DMU Emissions (in pounds)	Total ZEMU emissions (in pounds)	Net reduction (in pounds)
GHGs	607.55	493.22	114.33
NO_x Total	6.46	0.25	6.21
$PM_{2.5}$ Total	0.19	0.02	0.17
PM_{10} Total	0.20	0.02	0.18
CO Total	0.96	0.18	0.78
VOC Total	0.31	0.06	0.25

Notes:

Emissions data provided in Low- or Zero-Emission Multiple Unit Feasibility Study Prepared for SBCTA by Center for Railway Research and Education, Eli Broad College of Business, Michigan State University.

CO=carbon monoxide; DMU=diesel multiple unit; GHG=greenhouse gas; PM_{10}=particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$=particulate matter less than or equal to 2.5 micrometers in diameter; SBCTA=San Bernardino County Transportation Authority; ZEMU=zero-emission multiple unit

Threshold C: Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction activities would result in short-term project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment. DPM contains gaseous HAPs including acetaldehyde; acrolein; benzene; 1,3-butadiene; formaldehyde; and polycyclic aromatic

hydrocarbons. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer time period. Health risk assessments, which determine the exposure of sensitive receptors to HAP emissions, are typically based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Project.

The closest sensitive receptors[2] to the project site are located at a distance of approximately 400 feet. Additionally, as presented earlier in Table 3.3-6, maximum daily particulate emissions, which include DPM, would be relatively low. Furthermore, the construction period would be relatively short (approximately six months), especially when compared to 70 years. Combined with the highly dispersive properties of DPM, construction-related emissions of HAPs would not expose sensitive receptors to substantial emissions of HAPs.

As provided in the Final EIR for DSBPRP, SCAQMD has developed thresholds and guidance with respect to analyzing TAC concentrations and health risk evident at nearby sensitive receptor locations, including residential areas south of 3rd Street. The previous Final EIR quantified train-related DPM emissions at nearby receptor locations using U.S. EPA's AERSCREEN dispersion model. As provided in the Final EIR, health risk impacts associated with the sum of short-term construction and long-term operations were determined to be below SCAQMD thresholds for identifying health risk impacts and less than significant. With the addition of the Project, the generation of DPM emissions would be reduced beyond the level previously forecasted and, therefore, the Project would result in a less than significant impact.

Threshold D: Would the project result in other emissions (such as those leading to odors) affecting a substantial number of people?

Land uses commonly considered to be potential sources of odorous emissions include wastewater treatment plants, sanitary landfills, food processing facilities, chemical manufacturing plants, rendering plants, paint/coating operations, and concentrated agricultural feeding operations and dairies (CARB 2005). During the construction phase, emissions from construction equipment could be produced and affect nearby sensitive receptors. In the event of a leak, H2 is odorless, colorless, and tasteless, and thus would not have any effect on nearby sensitive receptors. No impact would occur to any receptors nearby.

Greenhouse Gas Emissions

Threshold A: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

During construction of the project, GHG emissions would be emitted from the operation of construction equipment, on-site heavy-duty vehicles, equipment hauling materials to and from the project site, grading activity, utility engines, and asphalt paving. Each of these mechanisms or processes typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

[2] Sensitive receptors include land uses, such as residential areas and schools, where individuals are more susceptible to the effects of adjacent land uses and exposed for prolonged durations.

The most recent version of the CalEEMod model (Version 2016.3.2) was used to calculate the construction emissions. The construction-related GHG emissions generated during peak construction days for the proposed project are present in Table 3.3-8.

Table 3.3-8. Construction Greenhouse Gas Emissions

Year	Pollutant Emissions (MT/year)			
	CO_2	CH_4	N_2O	CO_2e
2023	387.4	0.07	0.0	389.2

Notes:
CH_4=methane; CO_2=carbon dioxide; CO_2=carbon dioxide equivalents; MT=metric ton; N_2O=nitrous oxide

SCAQMD's GHG emissions policy for construction activities is to amortize emissions over a 30-year lifetime. When amortized, the project's annual construction emissions would be 13 MT. Therefore, the estimated construction GHG emissions from the proposed project are well below SCAQMD's 3,000 MT/year significance threshold and are not anticipated to directly result in a significant impact.

As shown in Table 3.3-7, the replacement of a standard DMU with the proposed ZEMU would result in a net decrease in operational GHG emissions. Therefore, a less than significant impact is identified for this issue area.

Threshold B: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As described above, construction of the proposed Project would not substantially increase GHG emissions in the Project area. In addition, once operational, the replacement of a standard DMU with the proposed ZEMU would result in a net decrease in operational GHG emissions. The Project would also further the goals in SCAG's RTP/SCS and SCRRA's recently adopted Climate Action Plan. Therefore, the implementation of the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG and no impact would result.

3.3.5 Mitigation Measures

No mitigation measures are required.

3.3.6 CEQA Significance Conclusions After Mitigation

With implementation of Standard Condition AQ-1, the Project would have a less than significant impact on air quality.

3.4 Cultural Resources

3.4.1 Introduction

This section evaluates the impacts of the proposed Project on cultural resources per the requirements of CEQA. Cultural resources include prehistoric or historic districts, sites, buildings, structures, and objects and associated artifacts, records, and material remains. CEQA is primarily concerned with two classes of cultural resources: historical resources, which are defined in Public Resources Code (PRC) Section 21084.1 and CEQA Guidelines Section 15064.5, and unique archaeological resources, which are defined in PRC Section 21083.2.

The cultural resources study area was defined based on the anticipated effects of the proposed Project on cultural resources. The study area incorporates the area of physical impacts (API) and the area of potential effects (APE; Figure 3.4-1). The API, used for the identification of archaeological resources, encompasses the horizontal and vertical extent of any ground-disturbing activity associated with the proposed Project that may physically impact resources. The APE, used for the identification of built environment resources, encompasses the API and any adjacent areas containing historical resources that may be subject to impacts that could cause alterations in the character or use of these resources, such as visual impacts, noise, or vibration. Figure 3.4-1 provides an overview of existing conditions within the API and APE.

The following analysis incorporates by reference SBCTA's certified Final EIR for DSBPRP (SCH No. 2011051024; Appendix A to this EIR). The area analyzed for cultural resources in the DSBPRP Final EIR encompassed the API and APE for the current proposed Project. The previously certified Final EIR considered the impacts to cultural resources of constructing and operating the IEMF (now referred to as the AMF) and is included in Appendix A. With a few exceptions discussed below, the impacts of the Project are generally within the scope of and adequately analyzed in the certified Final EIR pursuant to the requirements of CEQA. On April 3, 2012, the SHPO concurred with the determination of eligibility of historic properties and finding of no adverse effect for the DSBPRP.

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Figure 3.4-1. Map showing the Area of Physical Impacts, Area of Potential Effects, and CEQA Historical Resources

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3.4.2 Environmental Setting

A detailed summary regarding the prehistoric, ethnographic, and historic settings of the proposed Project location can be found in Section 3.5.1 of the DSBPRP Revised EA/Final EIR (Appendix A to this EIR). The following information was obtained and research conducted to augment the prior analysis

Native American Consultation

On July 15, 2020, a request was made to the Native American Heritage Commission (NAHC) for a review of the Sacred Lands File. The NAHC responded on July 15, 2020, stating that a Sacred Lands File search did not identify any sacred lands or traditional cultural properties within the immediate Project area. The NAHC provided a list of 16 Native American contacts. On March 17, 2021, SBCTA sent letters to 16 tribes describing the project and requesting information about the identification of cultural resources in the project area. To date, no responses have been received. Refer to Appendix D for details regarding Native American consultation efforts.

Records Search

On July 13, 2020, a records search request was submitted to the South Central Coastal Information Center of the California Historical Resources Information System, housed at California State University, Fullerton. The purpose of the records search was to determine the extent of previous cultural resource investigations and to identify previously documented cultural resources within the APE and a 0.25-mile radius around it. The results of the records search, received on September 2, 2020, identified 18 previous cultural resources investigations within 0.25 mile of the APE. The APE was surveyed most recently in 2010 by ICF for the DSBPRP (ICF 2012).

The South Central Coastal Information Center records search, as well as additional data provided by ICF (2012) and the San Bernardino County Built Environment Resource Directory, identified 49 cultural resources (one historic archaeological site and 48 historic built-environment resources) within 0.25 miles of the API. No previously recorded archaeological resources were identified within the API. Five previously recorded historic built-environment resources were identified within the APE. These five resources are listed in Table 3.4-1, with detailed descriptions and eligibility information provided below.

Table 3.4-1. Previously recorded resources within the Area of Potential Effects

Primary number	Name	Eligibility (code)
P-36-006847	AT&SF Kite-Shaped Track	Determined ineligible for the NRHP by consensus through Section 106 process (6Y); recommended ineligible for the CRHR
P-36-017975	AT&SF Railroad Depot (built in 1918). Listed in the NRHP in 2001 (NRHP ID No. 01000025)	Individual property listed in the NRHP by the Keeper; Listed in the CRHR (1S)
P-36-032933	AT&SF Railyard, originally constructed in 1883	Recommended ineligible for the NRHP and CRHR
—	AT&SF Railroad Depot Tree Grouping; destroyed	Determined ineligible for the NRHP by consensus through Section 106 process (6Y); recommended ineligible for the CRHR

Table 3.4-1. Previously recorded resources within the Area of Potential Effects

Primary number	Name	Eligibility (code)
—	981 West 3rd Street, Valley Linen Supply Offices (Allgood Shower Door Company)	Determined ineligible for the NRHP by consensus through Section 106 process (6Y); listed as a local historic resource and district contributor (5B)

Notes:
AT&SF=Atchison, Topeka & Santa Fe; CRHR=California Register of Historic Resources; ID=Identification; NRHP=National Register of Historic Places

Atchison, Topeka & Santa Fe Kite-Shaped Track (P-36-006847)

The Kite-Shaped Track, named for a 19th century figure-eight-shaped horseracing track, consisted of a 166-mile stretch of railroad track arranged in a rough figure-eight pattern and was part of the original network of tracks developed by the Atchison, Topeka, and Santa Fe Railroad. The track was officially in operation from 1891 until 1938 and was a popular Southern California excursion route. The route traversed the greater Los Angeles basin from Los Angeles at the west to Mentone at the east, passing through numerous towns and areas including Pasadena, the San Gabriel foothills, Orange County, Riverside, San Bernardino (which served as the crux of the figure-eight), and Redlands. The line focused on the idealized imagery of Southern California's citrus industry and beautiful surrounding natural terrain, and passengers were encouraged to disembark at various points to spend a few hours absorbing the local atmosphere (Moruzzi 2011a; Appendix A to the EIR).

The Kite-Shaped Track was originally recorded as a cultural resource in 1990 by Greenwood and Associates and since then has been updated numerous times, most recently by ICF in 2011. ICF recorded and evaluated the portion of the track that crosses the current Project APE. While the alignment of the track here is original, the integrity of the route's design, workmanship, and materials has been compromised by ongoing routine maintenance and periodic replacement of tracks, ties, and associated materials. Additionally, the discontinuation of passenger service in 1938 (and loss of association with a popular tourist attraction) and changes in scenery due to economic development have resulted in a considerable degradation of setting, feeling, and association. The resource was determined ineligible for the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR), and as such, is not considered a historical resource under CEQA.

Atchison, Topeka & Santa Fe Railroad Depot (P-36-017975)

The Atchison, Topeka, and Santa Fe Railroad Depot in San Bernardino is an imposing two-story Mission Revival style building with a cast-in-place concrete and hollow clay tile structure surfaced with rough-cast cement stucco. The building's central bay features four domed faux bell towers, paired pilasters and frieze, quatrefoil window in the gable, and triple arched windows above the entryway. The wings of the Depot, housing various work and office spaces, are similarly designed with reference to mission façades and arcades and include shaped "bell walls," buttress and pilaster wall detailing, and other characteristic features (Donaldson 1991:18–19). The Depot was constructed between 1916 and 1918 and is the sole surviving building associated with the Atchison, Topeka & Santa Fe (AT&SF) Railway's Los Angeles Division headquarters (ICF 2012; Miller and Starzak 1999).

The Depot was recorded and evaluated in 1999 by Miller and Starzak. It was determined eligible for listing in the NRHP under Criterion A and the CRHR under Criterion 1 at the local level of significance

because of the role the Santa Fe railroad played in the development of the City of San Bernardino and the building's stature as the headquarters of the Santa Fe's Los Angeles Division. It was also determined eligible under Criterion C/3 as an outstanding example of the Mission Revival style. The Depot was listed in the NRHP in 2001 (NRHP ID No. 01000025) and is a California Point of Historical Interest (No. 53). Because the property is listed in the NRHP, as well as the CRHR, it is considered a historical resource under CEQA.

Atchison, Topeka & Santa Fe Railyard (P-36-032933)

P-36-032933 was recorded in 2018 by ICF archaeologist Salli Hosseini as the historic AT&SF Railyard (currently the BNSF San Bernardino Intermodal Facility), a 1,781,199 square-feet rail facility occupying a vast parcel on the north side of the Santa Fe Depot (Hosseini 2018). The railyard was originally constructed in 1883 and was the company's largest in the west. Original buildings included a blacksmith shop, boiler shop, car shop, acid house and office, round house and wheel shop. In the early 1900s, the AT&SF railway and rail yard were major factors in the development of San Bernardino and continued to be considerable factors in the economic growth and physical development of the City for more than a century. As recently as 1994, the railyard contained 14 shop buildings, 2 administration buildings, and 11 storage buildings/sites (Myra L. Frank & Associates, Inc. 1994). By 2001, however, these buildings had been demolished. Comparison of historic aerial photographs of the railyard confirms that a significant number of buildings in the maintenance yard have been demolished since 1938 (NETR 2020). Additional alterations to the railroad and railyard over the past several decades include general maintenance, railroad realignment, new rail tracks, changes to station platforms, and the introduction of paving. The addition of modern passenger amenities to facilitate Metrolink's regional rail service and long-distance passenger service (previously provided by the Santa Fe Railway), and the development of facilities for freight service provided by the Santa Fe Railway and its successor BNSF, has significantly altered the integrity of the railyard and railroad. As such, the AT&SF railyard was recommended ineligible for listing in the NRHP and CRHR under any criteria: A/1, B/2, C/3, or D/4, because it no longer possesses integrity of design, materials, workmanship, and feeling (Hosseini 2018). It is therefore not considered a historical resource under CEQA.

Atchison, Topeka & Santa Fe Railway Depot Tree Grouping

The Depot tree grouping, recently removed during construction of the DSBPRP ca. 2015, consisted of 19 mature *Washingtonia robusta*, *Washingtonia filifera*, and *Phoenix canariensis* palm trees in addition to one bottle tree (*Brachychiton populneus*). The trees were originally part of a park dating to 1886, the year when the original depot, which burned in 1915, was opened. The *Washingtonia robusta* palms appeared to be as old as the park itself, and historic aerial imagery confirms that the entire grouping was extant in 1926. Such parks and landscape features contributed to the aesthetic experience of train travel in southern California at the end of the 19th century. This park in particular, being located at the San Bernardino Depot at the crux of the Kite-Shaped track route, likely served as a popular strolling ground for travelers passing through the Depot (Paul 2011; Appendix A to this EIR).

The Depot tree grouping was recorded as a cultural resource and evaluated by ICF in 2011 (Paul 2011). At the time, the tree grouping was determined ineligible for the NRHP and CRHR under any criterion: it did not retain sufficient integrity to convey the broad social pattern of regional railroad-related recreation, was found not to be associated with persons of historic importance, and, due to alterations and tree removal, did not adequately represent the park it was once a part of (Appendix A to this EIR). For these reasons, the resource was not considered a historical resource under CEQA. The Depot tree grouping has since been entirely removed.

981 West 3rd Street – Valley Linen Supply Offices (Allgood Shower Door Company)

981 West 3rd Street is a one-story commercial office building designed in the Moderne style. The building is irregular in plan, with its west elevation contouring to the curving railroad ROW. Capped by a flat roof with parapet, a distinguishing feature is a tall round tower (or former smokestack) located on the building's northwest corner. The building was constructed in 1930 and represents a very good example of a 1930s era Moderne style commercial building with a moderate to high level of physical integrity. According to the 1951 Sanborn map, this was the location of the offices of Valley Linen Supply steam laundry. There is a high probability that this business had some relationship to the railroad's operations, given its proximity to the Santa Fe Depot (Moruzzi 2011b; Appendix A to this EIR).

This building was recorded as a cultural resource and evaluated by ICF in 2011 (Moruzzi 2011b). The property does not reach the level of significance required for listing in the NRHP or CRHR. However, it is listed in a local register of historic resources as individually significant and as a contributor to the Santa Fe Railroad Workers Overlay Zone (City of San Bernardino 2005a; Donaldson 1991). The property is thus considered a historical resource under CEQA.

Historical Resources Identified

Historical resources significant under CEQA include those designated or eligible for designation in the NRHP, the CRHR or other state program, or a local register of historical resources. Historical resources may also include resources listed in the State Historic Resources Inventory as significant at the local level or higher, and resources evaluated as potentially significant in a survey or other professional evaluation.

Based on the results of the records search, archival research, and previous survey for the DSBPRP (ICF 2012), five built environment resources were identified within the APE. Based on previous evaluations of these resources discussed above, two were found to qualify as CEQA historical resources.

The following two resources are considered historical resources for the purposes of CEQA environmental review:

- AT&SF Railroad Depot (P-36-017975)
- 981 West 3rd Street – Valley Linen Supply Offices (Allgood Shower Door Company)

The potential for the Project to cause a significant impact on these two historical resources is assessed in Section 3.4.4.

Paleontological Resources Identified

According to the Final EIR for DSBPRP (Appendix A), Paleontological resources (or the fossilized remains of organisms from prehistoric environments) may occur throughout the City, although the evenness of their distribution is not known. The proposed Project is situated on Quaternary alluvium (Appendix A), which is older at depth. Quaternary Holocene-age alluvium near the modern ground surface has a low potential for vertebrate fossils, but older Quaternary deposits have a higher potential for vertebrate fossils, primarily of mammals of the Pleistocene epoch. Surface grading or very shallow excavation in the Project site is unlikely to uncover significant fossil vertebrates. Deeper excavations that extend 5 feet or more into older Quaternary deposits may encounter significant fossil vertebrate remains.

3.4.3 Regulatory Setting

Table 3.4-2 identifies and summarizes applicable laws, regulations, and plans relative to cultural resources. Additional detail is provided in Appendix A.

Table 3.4-2. Applicable laws, regulations, and plans for cultural resources

Law, Regulation, or Plan	Description
State	
CEQA, Title 14 CCR Section 15064.5	Section 15064.5 directs lead agencies to determine whether cultural resources are historically significant resources.
PRC Section 21084.1	A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.
CRHR	The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens to identify the existing historical resources of the state and indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (California PRC Section 5024.1(a)). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP (PRC Section 5024.1(d)).
AB 4239	AB 4239 established the NAHC as the primary state government agency responsible for identifying and cataloging Native American cultural resources.
PRC Section 5097.97	PRC Section 5097.97 states that no agency or party shall cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. No previously recorded Native American religious or ceremonial sites are documented within the vicinity of the project.
PRC Section 5097.98 (b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the NAHC identified most likely descendants to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.
California Health and Safety Code, Section 7050.5	This statute makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This statute also requires a project owner to halt construction if human remains are discovered and to contact the County Coroner.
Local	
San Bernardino Register of Historical Resources	San Bernardino has yet to establish a register of historical resources under its 2007 historic preservation ordinance. As a result, the Historic Resources Reconnaissance Survey, San Bernardino, California, that was prepared by architect Milford Wayne Donaldson, A.I.A., for the City of San Bernardino Department of Planning and Building Services, dated April 30, 1991, has been used by the City as a de facto list of its historical resources.

Notes:

AB=Assembly Bill; CCR=California Code of Regulations; CEQA=California Environmental Quality Act; CRHR=California Register of Historic Resources; MLD=most likely descendants; NAHC=Native American Heritage Commission; NRHP=National Register of Historic Places; PRC=Public Resources Code

3.4.4 Impact Analysis

Thresholds of Significance

Appendix G of the CEQA Guidelines contains significance criteria for the evaluation of impacts of a project on cultural resources. Impacts to cultural resources would be considered significant if the project were to:

A. Cause a substantial adverse change in the significance of a historical resource as defined in 14 California Code of Regulations (CCR) Section 15064.5;

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to 14 CCR Section 15064.5; or

C. Disturb any human remains, including those interred outside of dedicated cemeteries; or

D. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

A substantial adverse change in the significance of a historical resource includes:

- Physical demolition or destruction;
- Relocation that does not maintain the integrity and significance of the historical resource;
- Conversion, rehabilitation, or alteration of a historical resource that does not conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings; or
- Construction that reduces the integrity or significance of historical resources on the site or in the vicinity.

Thresholds Requiring No Further Analysis

The following thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the Project:

D. Based on the Project's infill location and prior site disturbance as part of constructing AMF, there is a low potential for project construction to directly or indirectly destroy a unique paleontological resource or site or unique geological feature. No impact would result.

Impact Analysis

Threshold A: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Two historical resources were identified within the APE: the AT&SF Railroad Depot (P-36-017975) and 981 West 3rd Street. The proposed Project involves modifications to SBCTA's recently constructed AMF to facilitate the integration of a ZEMU rail vehicle into SBCTA's planned Arrow service. DSBPRP was environmentally cleared in 2012 (SCH No. 2011051024; Appendix A to this EIR) and covered the AMF site (previously referred to as IEMF). The Project would be constructed within the same footprint (or API) as the AMF and involves the following:

- Retrofits to the AMF maintenance building (or shed);

- Construction of a new H2 Refueling Area in the southern portion of the AMF;
- Possible improvements to existing storm drains, oil and grease separators, water (and fire) lines, and sanitary sewer lines;
- Possible modifications to facilitate the internal movement of the H2 delivery trucks and interim onsite storage; and
- Security improvements along the perimeter of AMF.

Ground disturbance associated with Project construction would be limited to the API. Site clearance would involve removal of asphalt and minor grading. Excavation for the Refueling Area foundation pad and utilities could extend up to five feet in depth. Construction staging would be located within the southern portion of the AMF site. Temporary lighting may be required during nighttime work, if required.

As discussed below, these activities have a very limited potential to cause substantial adverse changes to the two identified historical resources.

1170 WEST 3RD STREET – ATCHISON TOPEKA & SANTA FE RAILROAD DEPOT (P-36-017975)

The Depot was recorded and evaluated in 1999 by Miller and Starzak and was determined eligible for listing in the NRHP/CRHR under Criterion A/1 and C/3. The Depot was listed in the NRHP in 2001 (NRHP ID No. 01000025) and is a California Point of Historical Interest (No. 53). On April 3, 2012, SHPO concurred with a finding that the DSBPRP (including the AMF) would have no adverse effect on historic properties. Specifically, SHPO stated that the undertaking would not physically alter the AT&SF Depot nor would it affect any of its character-defining features.

The current proposed Project involves only minor modifications to the AMF, including the introduction of a H2 Refueling Area, augmentation and/or relocation of existing utilities, and minor changes to the configuration of roadway within the limits of the AMF site. The Project would have no physical impact on the Depot. Furthermore, there would be no visual impact to the Depot from the proposed Project's above-ground structures as structures associated with the Project are relatively small-scale and compatible with the existing surrounding development (i.e., mixed commercial/residential areas adjacent to an active rail yard). Existing views of the Depot along 3rd Street would be unobstructed (see Figure 3.2-2 in Section 3.2, Aesthetics, of this EIR). Therefore, the Project would not reduce the integrity or significance of this historical resource and a less than significant impact would result.

981 WEST 3RD STREET – VALLEY LINEN SUPPLY OFFICES (ALLGOOD SHOWER DOOR COMPANY)

This building was recorded as a cultural resource and evaluated by ICF in 2011 (Moruzzi 2011b). While it was determined ineligible for listing in the NRHP or CRHR, it is listed in a local register of historic resources as individually significant and as a contributor to the Santa Fe Railroad Workers Overlay Zone.

The building derives its significance primarily from its architecture (representing a good example of the Moderne style) and from its proximity to and association with the railroad. The Project will not physically demolish or destroy the building; it will not relocate the building; and there will be no conversion, rehabilitation, or physical alteration of the building or the location of the rail line located approximately 250 feet north-northwest. Although previous documentation does not note any specific viewsheds or setting elements outside of the property boundary (i.e., the view of the rail line to the north-northeast of the resource), given the association of the building with the nearby railroad, the Project may cause minor visual impacts by constructing certain features that minimally interfere with

the visual connection between the building and parts of the railroad. This will neither impact the resource's ability to convey its historical significance nor impact its eligibility for listing in the local register, nor would it impact its ability to contribute to the Santa Fe Railroad Workers Overlay Zone. In this context, impacts to 981 West 3rd Street would be less than significant.

Threshold B: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No archaeological sites have been identified within the API. Only 1 historic archaeological site (P-36-008695/CA-SBR-8695) and no prehistoric sites were identified within 0.25 mile of the API. The potential for the API to yield buried prehistoric or historic-period archaeological resources is considered to be low. Furthermore, given the amount of previous disturbance from previous construction, the likelihood that any potential resources would retain integrity is also considered to be low. No resources were encountered during construction of the AMF. During monitoring of construction for the DSBPRP adjacent south to the AMF, a buried historic trolley line was uncovered beneath the asphalt along 3rd Street. This resource no longer remains following modernization of 3rd Street with new pavement, sidewalks, and curbing.

Construction of the Project would result in ground-disturbing activities within the same location as the AMF currently under construction. The modifications proposed as a part of the proposed Project as well as utility improvements and relocations may result in ground-disturbing activities deeper than the impacts analyzed within the previously certified DSBPRP Final EIR. Given the discovery of resources within 3rd Street during construction, it is possible that previously undiscovered archaeological deposits are present and could be uncovered during ground-disturbing activities. Therefore, a potentially significant impact is anticipated in the absence of mitigation.

With implementation of Mitigation Measure CUL-1 (Stop Work if Unanticipated Archaeological Resources are Encountered), impacts would be reduced to a less than significant level.

Threshold C: Would the project disturb any human remains, including those interred outside of formal cemeteries?

As discussed above in Threshold B, the proposed Project may result in ground-disturbing activities deeper than the impacts analyzed in the Final EIR for the AMF. Ground-disturbing activities as a result of construction have the potential to damage or destroy buried human remains, although no documented cemeteries or burial sites occur within the proposed Project limits. Therefore, a potentially significant impact is anticipated in the absence of mitigation

With implementation of Mitigation Measure TCR-1 (Stop work and Consult the Tribes consulted under AB 52 Consult with Tribes if Cultural Resources or Human Remains are Encountered) identified in Section 3.8, Tribal Cultural Resources, impacts would be reduced to a less than significant level.

3.4.5 Mitigation Measures

The following mitigation measures are included to reduce potentially significant impacts resulting from the inadvertent discovery of archeological resources and human remains to a less than significant level.

CUL-1 **Stop work if unanticipated archaeological resources are encountered**. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 50 feet of the find will immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can assist Project personnel in avoiding the newly discovered resources and implement management measures to evaluate the significance of the find and determine whether additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR Section 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, the work area shall be secured from additional disturbance; additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted and shall be carried out at the attending archaeologist's discretion and in consultation with the Project proponent and the lead agency.

3.4.6 CEQA Significance Conclusions After Mitigation

Mitigation proposed for the potential unanticipated discovery of archaeological resources or human remains would reduce impacts associated with the proposed Project to less-than-significant levels. Overall, the Project would have less-than-significant impact on cultural resources.

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3.5 Energy, Utilities, and Service Systems

The energy, utilities, and service systems chapter describes the environmental setting and regulatory setting for energy, utilities, and service systems in the vicinity of the Project. It also describes the impacts on energy, utilities, and service systems that would result from construction and operation of the Project; and mitigation measures that would reduce significant impacts, where feasible. Cumulative impacts on energy, utilities, and service systems, in combination with planned, approved, and reasonably foreseeable projects, are discussed in Chapter 4, Cumulative Impacts.

3.5.1 Environmental Setting

This section summarizes the existing environmental setting related to energy, utilities, and service systems within the Project study area. This section incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024), which considered the impacts of constructing and operating AMF (previously referred to as IEMF) on existing utilities and service systems, and is included in Appendix A.

Water Service

The Project is within the San Bernardino Valley Municipal Water District, which covers about 325 square miles within southwestern San Bernardino County. Retail water service for the AMF site is provided by the San Bernardino Municipal Water Department (SBMWD). As predicted in the 2015 San Bernardino Valley Regional Urban Water Management Plan, the SBMWD will be able to reliably provide potable water service to its customers within its service area through 2040 based on currently adopted land use plans. In total 75,466 acre-feet in 2030 and 90,582 acre-feet in 2040 (Water Systems Consulting, Inc. 2016).

An existing 12-inch water main is located along the outer perimeter of the AMF area and within the southern parking lot. Current plans for the AMF indicate that a connection to the water supply line will be constructed in the northeast portion of the Maintenance Shed. Connections will also be made to the Wash Rack through a new connection (WSP 2019).

Sanitary Sewer Service and Facilities

The SBMWD transferred responsibility for the operation and maintenance of the sewer collections infrastructure from the City of San Bernardino Public Works Department in 2017. The SBMWD sewer collection system consists of the Water Reclamation Plant, approximately 493 miles of gravity sewers and force mains, and 15 active lift stations. Existing wastewater flows are approximately 14,632 acre-feet year for the service area with projected wastewater demands that total 37,876 acre-feet year within the year 2060 (SBMWD 2020).

An existing 27-inch sanitary sewer line owned and maintained by the City is located along the eastern perimeter of the AMF area. Construction of the AMF realigned the sewer line to the perimeter of the Maintenance Shed (WSP 2019).

Solid Waste

The closest solid waste landfill is the Mid-Valley Sanitary Landfill (36-AA-0055), located approximately seven miles northwest of the Project area. The landfill has a remaining capacity of 61,219,377 cubic yards, maximum daily disposal capacity of 7,500 tons, and an estimated cease operation date of April 2045 (California Department of Resources Recycling and Recovery [CalRecycle] 2019).

Electricity and Natural Gas

Natural gas is imported by the Southern California Gas Company, and electricity is provided by the SCE Company. An underground electrical conduit is located within the eastern portion of the AMF site. In addition, overhead electrical lines are located outside of the Project site. The natural gas line is located within the eastern perimeter of the AMF site.

3.5.2 Regulatory Setting

State Regulations

Senate Bill 610

SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment, except as otherwise specified. ‘‘Project’’ means any of the following:

- A proposed residential development of more than 500 dwelling units
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space
- A proposed hotel or motel, or both, having more than 500 rooms
- A proposed industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area
- A mixed-use project that includes one or more of the projects specified in this subdivision
- A project that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling unit project

California Groundwater Management Act Assembly Bill 3030

The Groundwater Management Act of the California Water Code provides guidance for applicable local agencies to develop a voluntary Groundwater Management Plan in state-designated groundwater basins.

Diversion Rule Assembly Bill 341

Under commercial recycling law (Chapter 476, Statutes of 2011), AB 341 directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The final regulation was approved

by the Office of Administrative Law May 7, 2012. AB 341 declared a state policy goal that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020.

Integrated Waste Management Act Assembly Bill 939

AB 939 mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. California Integrated Waste Management Board (CIWMB) was a disposal reporting system and facility and program planning. On January 1, 2010, all CIWMB duties and responsibilities, with the Department of Conservation Division of Recycling, were transferred to the new CalRecycle, which is under the jurisdiction of the Natural Resources Agency.

Assembly Bill 1007, Alternative Fuels Plan

AB 1007 (Pavley, Chapter 371, Statutes of 2005) requires the California Energy Commission to prepare a state plan to increase the use of alternative fuels in California (Alternative Fuels Plan). The Alternative Fuels Plan, approved by the California Energy Commission on November 2, 2007, aims to clean the state's air, diversify fuel sources, and protect the state from oil spikes that affect prices, the economy, and jobs.

The Alternative Fuels Plan focuses on transportation fuels and alternative fuels in particular but recognizes other components of the transportation system, including advanced vehicle technology and efficiency improvements in conventional vehicles. Additionally, the plan indicates that significant efforts are needed to reduce vehicles miles traveled by all Californians through more effective land use and transportation planning and greater mass movement of people and goods.

California Code Title 24, Part 6, Energy Efficiency Standards

CCR Title 24, Part 6 establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to the building envelope, mechanical systems (e.g., heating/ventilation/air conditioning and water heating systems), indoor and outdoor lighting, and illuminated signs.

California Code Title 11, Green Building Standards Code

Local jurisdictions have to implement California Green Building Standards (CalGreen) or their local construction and demolition ordinance, policy, or directive, whichever is more stringent. Local mandates adopted prior to January 1, 2011, may not reflect the CalGreen requirements.

California Energy Commission

The California Energy Commission is responsible for forecasting future energy needs for the state, among other things. SB 1389 (Chapter 568, Statutes of 2002) requires the California Energy Commission to prepare a biennial Integrated Energy Policy Report assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report also provides policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies.

Local Regulations

2015 San Bernardino Valley Regional Urban Water Management Plan

The 2015 Regional Urban Water Management Plan is the service area's master plan for reliable water supply and resources management. The Regional Urban Water Management Plan outlines existing and planned sources of water, forecasts water demand, and identifies conservation efforts to reduce water demand. Specifically, the San Bernardino Municipal Valley Water District and SBMWD would pursue feasible and cost-effective options and opportunities to meet demands by enhancing water supplies from traditional sources like the State Water Project, groundwater extraction, water recycling, storm water capture, and water banking/conjunctive use.

County of San Bernardino General Plan

The County of San Bernardino General Plan, adopted in October 2020, is the fundamental policy document for the unincorporated, privately owned lands of San Bernardino County. The General Plan sets the framework for decision-making regarding the County's long-term development and utilization of resources. The Infrastructure and Utilities Element provides guidance on where, when, and how infrastructure and utilities are improved and expanded, including the establishment of goals and policies to maintain an adequate supply of potable water and the safe disposal, treatment, and recycling of wastewater, as well as the recycling and safe disposal of solid waste. The Renewable Energy and Conservation Element provides guidance to ensure efficient consumption of energy and water, reduce GHG emissions, pursue the benefits of renewable energy, and responsibly manage its impacts on the environment, communities, and economy.

City of San Bernardino General Plan

The City of San Bernardino General Plan, adopted in November 2005, serves as the planning tool to drive the city's growth and development. Chapter 9, Utilities, provides goals and policies that maintain and/or improve the level of utility services provided to existing and future residents. Chapter 13, Energy and Water Conservation, provides policy guidance that addresses the efficient use and conservation of energy and water resources.

3.5.3 Impact Analysis

This section describes the potential for environmental impacts related to energy, utilities, and service systems as a result of Project implementation. It describes the thresholds used to determine whether an impact would be significant, as well as measures to mitigate potentially significant impacts, where appropriate.

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, Project impacts related to energy would be considered significant if the project would:

A. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation

B. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As defined in Appendix G of the CEQA Guidelines, Project impacts related to utilities and service systems would be considered significant if the project would:

C. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects

D. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years

E. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

F. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals

G. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Thresholds Requiring No Further Analysis

The following identified thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the Project:

D. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

- The Project would not create additional water demands. The existing AMF has sufficient water supplies available to serve the Project, including sufficient pressure to support anticipated fire flow requirements, and reasonably foreseeable future development during normal, dry, and multiple dry years. A less than significant impact would result.

E. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

- The Project would not increase the generation of sanitary sewer flows beyond the existing AMF operations. No impact would result.

F. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

- The Project would generate minor amounts of solid waste during construction that would be disposed of in accordance with state and local requirements. No impact would result.

G. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

- The Project would comply with local and state requirements related solid waste and generate only minor amounts of solid waste. No impact would result.

Impact Analysis

A. Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

During construction, consumption of energy would occur as fuel energy consumed by construction vehicles and equipment, and bound energy used in the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Construction activities would consume fuel energy through the use of construction vehicles for grading, excavation or other construction related activities. As construction activities would be short-term and temporary, energy consumption, including consumption of non-renewable sources, would not be significant, permanent, nor involve an unnecessary commitment of energy. In addition, the construction contractor would be required to implement standard best management practices (BMP) to minimize the consumption of energy. Energy sources for construction vehicles and equipment are not in short supply and use of construction equipment would not have a significant impact on the availability of these resources. Impacts would be less than significant.

Energy consumption within the proposed maintenance facility would be reduced through the use of sustainable design features and implementation of a variety of measures designed to reduce energy consumption. The Project is designed with applicable mandatory provisions of the 2016 CalGreen Code, which includes a variety of measures for energy reduction, renewable energy, water usage, and construction waste disposal and recycling.

The Project would introduce the use of ZEMU trains into the Arrow train service. Fuel consumption would be required through the transportation of H2 fuel to AMF. The H2 fuel transportation would be short-term and temporary once additional local production sites are implemented. Therefore, energy consumption would not be an unnecessary use of energy. In addition, the amount of fuel used would not be substantial since the proposed Project would not involve a substantial increase in the Arrow schedule. Improved train frequency and service would encourage commute trips to shift from private vehicles to less energy-intensive public transit services. For all of these reasons, the Project would result in a less than significant impact on energy consumption.

B. Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As discussed above, the construction contractor would be required to implement standard BMPs to minimize energy consumption and comply with state and local plans, policies, and regulations related to energy consumption. In addition, the 2016 CalGreen Building Standard Codes would be implemented to reduce energy consumption during operations of the proposed Project. Ultimately, the Project would reduce fuel and energy consumption by improving the rail/transit service and connectivity between the different modes of transportation and encouraging more individuals to use public transit services, directly reducing the number of personal vehicles on the roads. There would be a reduction in gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits. Impacts would be less than significant.

C. Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water/Wastewater. During construction, water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. Project construction would require the use of locally available water supplies, which are distributed by the SBMWD. The Project's water demand would be short term and temporary and would not require the construction of new or expanded water facilities or new water supply sources. Impact would be less than significant.

Drainage. The Project would connect to storm drain infrastructure constructed as part of AMF. No new drainage facilities would be required beyond connection to the existing storm drain system onsite. Throughout operations, the proposed drainage system is designed to function in accordance with the City of San Bernardino's storm drainage design standards and other applicable standards for post-construction BMPs to avoid potential for significant impacts on the environment. Impacts would be less than significant.

Electricity/Natural Gas. Sufficient supplies of gas and electricity are available to construct the Project. Existing utility services would be maintained throughout the construction of the Project. Modifications to utility infrastructure would be limited to protection of existing utilities in place on site and or new on-site connections. No additional distribution or transmission lines or substations would be required to construct the proposed Project. Coordination with SCE and Southern California Gas would be required during final engineering design to avoid potential conflicts. Impacts would be less than significant.

3.5.4 Mitigation Measures

No mitigation measures are required.

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3.6 Hazards and Hazardous Materials

This section summarizes the existing environmental setting related to hazards and hazardous materials within the Project study area. This section incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024), which considered the impacts of constructing and operating AMF (previously referred to as IEMF) and is included in Appendix A. A Feasibility Study/Collateral Risk of Upset Analysis was also prepared for the Project in support of the EIR analysis and is included in Appendix D.

3.6.1 Environmental Setting

The Project study area is located in an urbanized, infill location that includes railroad infrastructure, the historic Santa Fe Depot, medium-density residential development (south of 3rd Street), a variety of industrial and commercial businesses, and BNSF's San Bernardino Intermodal Yard to the north to the Project limits. Structures located in the area surrounding the Project study area are largely first-generation original construction; many have been present since at least 1930. The Santa Fe Depot, west of the Project limits, was rebuilt in 1918 after a fire destroyed the original building. Non-conforming residential properties are located south of 3rd Street and west of I-215.

Sanborn® Fire Insurance Map

SBCTA's certified EIR for DSBPRP (SCH No. 2011051024) included a review of the 1894 and 1906 Sanborn maps. Those findings are summarized here. The Project study area and surrounding area was largely residential and undeveloped in the 1894 maps. The railroad was present in its current location in the 1894 map. The original Depot building was present on the 1906 Sanborn map. The portion of the map corresponding to the area south of the Project study area is largely consistent with the earlier map, with the exception of the Parker Iron Works Machine Shop, which was added at a location southeast of the Project study area on the south side of 3rd Street.

Already identified as a site of concern, the Santa Fe Depot (listed as AT&SF) located at 1170 West 3rd Street was listed because of the identification of six underground storage tanks (UST). According to the summary provided in the DSBPRP certified EIR, the status of the USTs could not be determined from the available information. Notwithstanding the completion of DSBPRP (and AMF), these pre-existing USTs are considered a recognized environmental condition (REC).

Historical Aerial Photographs

The DSBPRP EIR also reviewed the following historical aerial photographs: 1930, 1938, 1953, 1966, 1977, 1989, 1994, 2002, and 2009. The historical aerial photographs identified no sites of concern within the DSBPRP project study area, which entirely encompasses the Project site. As a result, no sites of concern were identified within the Project study area.

Environmental Records Review

A Phase I environmental site assessment (ESA) was conducted for DSBPRP and summarized within the certified EIR (Appendix A). The Phase I included an environmental records search of federal, state, local, and tribal databases and identified 418 environmental records for sites located within or adjacent to the rail corridor. Five of the sites of concern are located within 0.25 miles of the Project site and described further in Table 3.6-1.

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Table 3.6-1. Recorded Sites of Concern

Map Code	Site Name	Address[a]	Site Operations Relative to Hazmat Issues[b], Regulatory Listing	Data Source[c]	Risk Ranking[d]	Located within Project Study Area[e]	Additional Details
A	Depot (listed as AT&SF Railroad and San Bernardino Waste Treatment Plant)	1170 West 3rd Street	Railroad depot. Open SLIC, open LUST, HIST Cortese, HIST UST listings.	R, D, H	H	N	The site is listed as open as an SLIC and LUST site. Four USTs are listed in the HIST UST database, with one HIST Cortese listing related to leaking USTs. Based on the open status of the SLIC and LUST cases, the site is considered a high-risk site and an REC.
B	Precision Automotive (listed as Motor Car Company and Performance Automotive)	909 West 2nd Street	Auto repair facility. CA FID UST, SWEEPS UST. No updated UST information available.	R, D, H	I	N	The site is listed in the CalEPA, CA FID UST, and SWEEPS UST databases. Three tanks are listed as active. No additional, updated information was available regarding the tanks' status. It is generally considered, based on experience, that soil contamination exists in the surrounding subsurface; however, actual risk cannot be determined. The site is considered an indeterminate-risk site and an REC.
C	Historic service station (listed as Allen Property)	895 West 2nd Street	Historic Service Station; Open LUST case	R, D, H	H	N	One open LUST case is listed at the site; included in the CA FID UST and SWEEPS UST databases, which are no longer updated. According to reviews conducted at the Santa Ana RWQCB Resource Water Control Board, four USTs were removed from the site in February 2001. Subsequent soil sampling identified soil contamination in the area of the removed tanks; the case remains open. This site is considered a high-risk site and an REC.

Table 3.6-1. Recorded Sites of Concern

Map Code	Site Name	Address[a]	Site Operations Relative to Hazmat Issues[b], Regulatory Listing	Data Source[c]	Risk Ranking[d]	Located within Project Study Area[e]	Additional Details
D	Snow Freight Lines/ Super Cal Express	958 West Rialto Avenue	Commercial trucking facility. One closed LUST case, two USTs listed in HIST UST database. No updated UST information available.	R, D, H	H	N	One LUST case at the site closed in August 2001. Two USTs are listed in the HIST UST database. No additional information regarding the status of USTs was provided. As a result of the on-site LUST case and the unknown status of the USTs identified, the site is considered a high-risk site and an REC.
R	Carry Shell Service Station	1077 West 3rd Street	Historic Service Station	R, H	I	N	No additional details available.

Source: Appendix A to this EIR

Notes:

Sites listed in bold print are considered by ASTM International to be an REC or historical REC.

[a] Corresponds to location of the site as indicated in Phase I ESA, Figure 3.7-1, also included as Appendix F.

[b] Historic Service Station (no longer present)

[c] Indicates primary information sources for listing: R=Reconnaissance, D=Database, H=Historical Source, I=Interview (city directories, historical aerial photographs).

[d] Risk of potential impacts on site, low/intermediate high.

[e] Sites may be partially or entirely within Project Study Area.

AT&SF=Atchison, Topeka & Santa Fe; CalEPA=California Environmental Protection Agency; CA FID UST=California Environmental Protection Agency Facility Inventory Database for Active and Inactive Underground Storage Tanks; DTSC=Department of Toxic Substance Control; ESA=environmental site assessment; FID UST=Facility Inventory Database for Active and Inactive Underground Storage Tanks; HIST=Historic; UST=underground storage tank; LUST=leaking underground storage tank; REC=recognized environmental condition; SLIC=Spills, Leaks, Investigations, and Cleanup; SWEEP UST=State Water Resources Control Board, Underground Storage Tank Listing

3.6.2 Regulatory Setting

This section identifies and summarizes federal, state, and local laws; policies; and regulations that are applicable to the projects.

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over 5 years, $1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. The Comprehensive Environmental Response, Compensation, and Liability Act established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified.

Emergency Planning Community Right-to-Know Act of 1986 (42 United States Code 11001 et seq.)

The Emergency Planning Community Right-to-Know Act was included under the Superfund Amendments and Reauthorization Act (SARA) law and is commonly referred to as SARA Title III. Emergency Planning Community Right-to-Know was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. These concerns were triggered by the disaster in Bhopal, India, in which more than 2,000 people suffered death or serious injury from the accidental release of methyl isocyanate. To reduce the likelihood of such a disaster in the U.S., Congress imposed requirements on both states and regulated facilities. Emergency Planning Community Right-to-Know establishes requirements for federal, state, and local governments; Indian Tribes; and industry regarding emergency planning and “Community Right-to-Know” reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of Extremely Hazardous Substances (40 Code of Federal Regulations [CFR] 355). The Emergency Planning Community Right-to-Know provisions help increase the public’s knowledge of and access to information on chemicals at individual facilities, as well as their uses, and releases into the environment. In California, SARA Title III is implemented through the California Accidental Release Prevention.

Hazardous Materials Transport Act – Code of Federal Regulations

The Hazardous Materials Transportation Act was published in 1975. Its primary objective is to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce by improving the regulatory and enforcement authority of the Secretary of Transportation. A hazardous material, as defined by the Secretary of Transportation is, any “particular quantity or form” of a material that “may pose an unreasonable risk to health and safety or property.”

Occupational Safety and Health Administration

Occupational Safety and Health Administration's mission is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. Occupational Safety and Health Administration standards are listed in 29 CFR Part 1910.

The Occupational Safety and Health Administration Process Safety Management of Highly Hazardous Chemicals (29 CFR Part 110.119) is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable, or explosive highly hazardous chemicals. It fulfills this intention by regulating chemicals' use, storage, manufacturing, and handling. The standard intends to accomplish its goal by requiring a comprehensive management program integrating technologies, procedures, and management practices.

Resource Conservation and Recovery Act

The goals of the Resource Conservation and Recovery Act (RCRA), a federal statute passed in 1976, are the protection of human health and the environment, the reduction of waste, the conservation of energy and natural resources, and the elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions, and technical requirements. The corresponding regulations in 40 CFR parts 260-299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

State

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources

The Division of Oil, Gas, and Geothermal Resources was formed in 1915 to address the needs of the state, local governments, and industry by uniformly regulating statewide oil and gas activities. The Division supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs. The Division's programs include: well permitting and testing; safety inspections; oversight of production and injection projects; environmental lease inspections; idle-well testing; inspecting oilfield tanks, pipelines, and sumps; hazardous and orphan well plugging and abandonment contracts; and subsidence monitoring.

California Department of Toxic Substances Control

Each year, Californians generate two million tons of hazardous waste. One hundred thousand privately and publicly owned facilities generate one or more of the 800-plus wastes considered hazardous under California law. Properly handling these wastes avoids threats to public health and degradation of the environment.

The Department of Toxic Substances Control (DTSC) regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. Approximately 1,000 scientists, engineers, and specialized support staff make sure that companies and individuals handle, transport, store, treat, dispose of, and clean up hazardous wastes

appropriately. Through these measures, DTSC contributes to greater safety for all Californians, and less hazardous waste reaches the environment.

On January 1, 2003, the Registered Environmental Assessor program joined DTSC. The program certifies environmental experts and specialists as being qualified to perform a number of EA activities. Those activities include private site management, Phase I ESAs, and risk assessment.

California Division of Occupational Safety and Health

The California Division of Occupational Safety and Health protects workers and the public from safety hazards through its programs and provides consultative assistance to employers. The California Division of Occupational Safety and Health issues permits, provides employee training workshops, conducts inspections of facilities, investigates health and safety complaints, and develops and enforces employer health and safety policies and procedures.

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Within CalEPA, DTSC has primary regulatory responsibility, and delegates enforcement to local jurisdictions that enter into agreements with the state agency, in order to manage hazardous materials and generate, transport, and dispose of hazardous waste under the authority of the Hazardous Waste Control Law.

California Emergency Response Plan

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is managed by the State Office of Emergency Services, which coordinates the responses of other agencies including Cal-EPA, the California Highway Patrol, California Department of Fish and Wildlife, Regional Water Quality Control Board, San Bernardino County Sheriff's Department, San Bernardino County Fire Department, and the City of San Bernardino Police Department.

California Hazardous Waste Control Law

The Hazardous Waste Control Law, Health and Safety Code Sections 25100–25249, is the primary hazardous waste law in the State of California. The Hazardous Waste Control Law implements RCRA as a "cradle-to-grave" waste management system. It specifies that generators' primary duty is to determine whether their wastes are hazardous and ensure their proper management. The HWCL also

establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds federal requirements by mandating source reduction planning and imposing a much broader requirement on permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by federal law with RCRA.

City of San Bernardino General Plan

The City of San Bernardino General Plan was adopted November 1, 2005. Chapter 10 of the City's General Plan identifies goals and policies for transportation, storage, operations, disposal, public health and safety of hazardous materials and waste.

3.6.3 Impact Analysis

This section describes the potential for environmental impacts related to hazardous materials and waste as a result of the proposed Project. This section identifies the thresholds pursuant to CEQA used to determine if implementation of the proposed Project would result in a significant impact, as well as any measures to mitigate potentially significant impacts.

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, Project impacts related to hazardous materials and waste would be considered significant if the project would:

A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

D. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

G. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Thresholds Requiring No Further Analysis

The following thresholds are not applicable to the Project or would result in no impact.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

   - No existing schools are within 0.25 miles of the Project site. The nearest school to the Project limits is Lytle Creek Elementary School, which is located approximately 0.45 miles to the south. As such, implementation of the proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school and no impact would occur.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

   - The proposed Project is not located within 2 miles of an airport or private airstrip. The nearest airport is San Bernardino International Airport, located approximately 3 miles southeast of the Project site. Based on these considerations, no impact would occur.

F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

   - The proposed Project would be contained within the SBCTA ROW in an area approved for train maintenance and accessible via a private driveway. Construction deliveries to the proposed Project may cause traffic delays, however, those trips would be short-term or one-time events. In addition, standard construction practices, implementation of a Transportation Management Plan, if needed, and preconstruction coordination with emergency responders would minimize impacts. Operation of the proposed Project would be in accordance with all applicable state and local requirements regarding any emergency evacuation plans and no impact would result.

G. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

   - As discussed within the EIR, the proposed Project is located within the City of San Bernardino, where the hazard for wildland fires exists in hillside areas of the City. The proposed Project is not located in, or in the vicinity of, the City's Foothill Fire Zone Overlay District and, therefore, no impact would occur.

Threshold A) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

During construction, construction activities may include the use of commercially available hazardous materials, such as fuels, brake fluids, coolants, and paints. These activities would be temporary or one-time events. The proposed Project would be required to comply with federal, state, and local regulations for the routine transport, use, and disposal of any hazardous materials, including the RCRA; U.S. Department of Transportation Hazardous Materials Regulations (CFR Title 29); and the California Health and Safety Code. In addition, SBCTA will require its contractor to comply with mitigation requirements from the DSBPRP EIR (HM-1 and HM-2) and to prepare a stormwater pollution prevention plan (SWPPP), if required for project construction. In this context, Project-related impact would be less than significant following mitigation.

As discussed in Section 3.6.1, five REC or historically REC sites were identified within 0.25 miles of the Project study area. Ground-disturbing activities during construction would generally be limited to the approved AMF site limits. Four of the five sites identified within Table 3.6-1 are listed as sites with USTs; some have been identified as leaking underground storage tanks (LUST) or historical USTs. Contaminants from these various USTs could have impacted subsurface areas within the Project site. The EIR for DSBPRP identified Mitigation Measures HM-1 (Comply with Hazards and Hazardous Materials Recommendations) and HM-2 (Plan and Monitor for Hazardous Materials) and SBCTA proposes to carry forward these requirements for Project construction. Therefore, with implementation of Mitigation Measures HM-1 and HM-2, impacts during construction would be reduced to a less than significant level.

Threshold B) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

During construction of the proposed Project, pre-existing hazardous materials and/or waste may be present; however, as discussed in response to Threshold A, above, previously proposed Mitigation Measures HM-1 and HM-2 from the DSBPRP EIR would be incorporated into the Project to reduce the potential for accidental release of hazardous materials during construction.

Once operational, the proposed Project would facilitate the integration of a ZEMU train vehicle into the Arrow service through the incorporation of a H2 fueling pad, battery chargers, and a H2 fuel storage tank. As currently approved, the re-fueling of DMUs at AMF would occur daily and these operations would be conducted according to the safety plan for AMF. With the addition of H2 fuel at AMF, SBCTA conducted a Collateral Risk of Upset Analysis (Appendix D) to evaluate the proposed Project's potential to exacerbate the existing risk of upset. To facilitate the use of either gas or liquid H2 for ZEMU operations, the risk analysis considered both scenarios. It is anticipated that the proposed Project during operation would require approximately 265 kilograms of gaseous H2 fuel for a single day of complete ZEMU rail vehicle service. For the purposes of this analysis, it is assumed that either 500 kilograms of gaseous H2 would be delivered to the Project site every 2-3 days or 4000 kilograms of liquid H2 fuel every 10-15 days. The gaseous or liquid H2 would be stored in a mobile H2 storage tank as shown in Figure 2-4 of Chapter 2, Project Description, and re-filled or replaced when empty.

The storage of gas or liquid H2 is considered a hazardous risk due to the explosive (or unstable) nature of the fuel in a gas or liquid state. The risk analysis analyzed 3 low-probability/high-consequence accidental explosion scenarios to evaluate the relative hazards and associated risk: (1) gas vapor cloud explosion (GVCE), (2) liquid vapor cloud explosion (LVCE), and (3) boiling liquid expanding vapor explosion (BLEVE). A Vapor Cloud Explosion (VCE) results from the ignition of a cloud of flammable vapor, gas, or mist, in which flame speeds accelerate to sufficiently high velocities to produce significant overpressure. A BLEVE event describes the instantaneous vaporization and rapid expansion of a stored superheated liquid. BLEVE is not applicable for gaseous H2 (Appendix D). The scenarios considered in the Feasibility Study/Collateral Risk of Upset Analysis (Appendix D) are based on the "burden of doubt methodology" whereas a conservative worst-case version of assumptions is applied to the analysis.

VAPOR CLOUD EXPLOSION

As previously stated, two VCE scenarios were analyzed, GVCE and LVCE, with lower (deflagration) and upper (detonation) bounds. Deflagration is defined as combustion, which propagates through a gas or across the surface of an explosion at subsonic speeds, driven by the transfer of heat. Detonation, on the other hand, is defined as the combustion of a substance which is initiated suddenly and propagates extremely rapidly, giving rise to a possible shock wave. To prepare a conservative assessment of collateral risk, the following assumptions were made when assessing VCE event likelihood:

1. VCE formation assumes failure of all safety and monitoring systems that are intended to detect onset of storage tank destabilization or early stages of a gas leak.
2. VCE assessment assumes the entire volume of stored H2 gradually or instantaneously leaks from the tank and collects in a relatively dense cloud that lingers in place (e.g., no wind). Therefore, this assumption negates any assumption of a partial leak and any consideration for ambient conditions that would result in dispersion of gas, rather than formation of a vapor cloud.
3. VCE assessment assumes that the formed vapor cloud is exposed to an ignition source.
4. Upper Bound VCE events assume that ideal conditions are present to enable a deflagration to detonation transition. These conditions are typically more characteristic of a vapor cloud that forms within a constrained volume rather than open air.

The risk analysis identified the following consequence categories for VCE accidental explosions: Overpressure and Thermal Radiation (Appendix D):

- Overpressure
  - Building Damage (structural)
  - Building Damage (window)
  - Injury
- Thermal Radiation
  - Injury

Overpressure events can result in three classes of injury: primary (critical organ injury or eardrum rupture), secondary (bodily harm and lacerations due to fragmented projectiles), and tertiary (blast induced movements or falls which result in bone fractures or contusions).

A thermal-radiation-related injury may occur when a flammable H2 release ignites prior to extensive mixing with surrounding air, producing a fireball. Five injury/building damage criteria were established for thermal radiation for the purpose of this analysis: insufficient to cause discomfort for long exposure, threshold for pain, threshold for cracking of glass, threshold for first degree burn, and threshold for piloted ignition of wood.

Due to the built-up nature of the area, four building types were identified to represent the surrounding area and consequences to those kinds of structures. Additionally, the analysis estimated the resistance of single-pane glass representative of the built environment after completion of construction of the proposed Project (Appendix D). The analysis also considered the structural damage to nearby segments of elevated I-215 on/off ramps and roadway due to the close proximity of these

transportation features to the Project site. Using the criteria and assumptions identified above, Table 3.6-2 identifies the likelihood of accidental explosion events under ideal circumstances and the relative severity of each event.

Table 3.6-2. Event Likelihood and Severity for Vapor Cloud Explosions

Event	Relative Likelihood	Relative Severity
GVCE Lower (Deflagration)	Low	Low
GVCE Upper (Detonation)	Very Low	High
LVCE Lower (Deflagration)	Low	High
LVCE Upper (Detonation)	Very Low	Very High

Source: Appendix D to this EIR
Notes:
GVCE=gas vapor cloud explosion; LVCE=liquid vapor cloud explosion

The risk analysis determined that the likelihood of gaseous and liquid H2 explosions is low to very low; however, the severity for all but deflagration with gaseous H2 is high to very high as shown in Table 3.6-2. The evaluated upper GVCE and upper and lower LVCE scenarios were assigned high to very high severity based on the extent of potential collateral building damage exceeding thresholds of structural performance set by building code-based design to mitigate the effects of earthquakes and other natural disasters. The lower bound GVCE event, by contrast, is not expected to result in significant building damage and has been assigned a low severity. All considered VCE scenarios have an associated risk of injury with greater risk being attributed to upper bound (detonation) events. Building damage is not anticipated for GVCE lower bound accidental explosion events; however, some building damage is anticipated within approximately 300 feet of the H2 fuel tank (Appendix D). The nearest residential structures are located over 500 feet from the proposed H2 fuel tank location.

GVCE upper bound and both LVCE upper and lower bound accidental explosions events are anticipated to cause damage exceeding acceptable levels to all building types within approximately 1,000 feet. Collateral damage to buildings within 3,100 feet from the explosion site is anticipated for a LVCE upper event. The AMF train shed is the closest structure and expected to sustain severe damage in the event of a gaseous or LVCE (lower or upper bound). Additionally, there is a potential for significant cratering within a 20-foot radius of the H2 (gas) storage tank and within a 50-foot radius of the liquid H2 storage tank. All at-grade infrastructure and equipment within this radius is assumed to be significantly damaged (Appendix D).

Road damage, specifically damage to the above-grade I-215 structure, east of the project site, is anticipated to experience heavy structural damage and at the western edge of the I-215 freeway along the 3rd Street off-ramp with a GVCE event. Moderate to minor damage is expected on the eastern portion of the I-215 freeway north and south of the site under GVCE upper and lower bound events. LVCE events would result in more severe damage to roadways, with moderate to severe damage for the lower bound LVCE and severe damage for the immediate roadways extending up to 5,200 feet from the H2 fuel storage site for an LVCE upper bound event.

The assessments also considered window glass fragmentation to inform an understanding of potential injury to building occupants. Areas characterized by or exceeding a "High Fragment Hazard" are expected to be associated with a high risk of injury to building occupants resulting from flying glass debris. High fragment hazards are anticipated within 3,100 feet for lower GVCE and LVCE, respectively. Those distances increase for upper bound GVCE and upper LVCE to approximately 6,000 feet and 18,500 feet, respectively (Appendix D).

Primary injuries (lethal) are anticipated as a result of overpressure within approximately 145 feet for upper bound GVCE events and 375 feet for upper bound LVCE events. Primary injuries are not anticipated for both lower bound GVCE and LVCE events. Secondary and tertiary injuries (non-lethal) injuries are anticipated within approximately 150 feet for lower bound GVCE, 600 feet for upper bound GVCE, 400 feet for lower bound LVCE, and 1,450 feet for upper bound LVCE. Thermal-radiation-related injuries are anticipated within approximately 750 feet for lower and upper bound GVCE events and approximately 2,100 feet for upper and lower LVCE events.

Collectively, these potential hazards in the event of a VCE accident are considered significant in the absence of mitigation. Mitigation Measure HM-3 is proposed to minimize the probability for these hazards occurring during the operational life of the Project. Additional features may be incorporated into the Project during the final design process.

BOILING-LIQUID-EXPANDING-VAPOR EVENT

A BLEVE event describes the instantaneous vaporization and rapid expansion of a stored superheated liquid and corresponding energy release. This scenario is specific to liquid H2 storage and fueling operations and is not applicable to scenarios involving gaseous H2. BLEVE formation is, additionally, dependent on exposure of the stored liquids to an external energy source that causes tank contents to be heated above their normal atmospheric boiling points. Without an external energy source, a BLEVE event is not considered to be credible, but will still be considered for the purposes of this environmental analysis.

The BLEVE event was considered in evaluating collateral consequences attributed to high-magnitude overpressures, thermal radiation, and high-velocity debris impact. The latter consideration accounted for the potential for fragments of the ruptured tank to be thrown from the explosion epicenter. To prepare a conservative assessment of collateral risk, the following assumptions were made when assessing BLEVE event likelihood:

1. BLEVE assessment assumes that all safety and monitoring systems in place to detect change in internal pressure or temperature fail.
2. The BLEVE assessment assumes that an undamaged storage vessel is exposed to an external energy source that creates an internal vapor pressure imbalance. Without sufficient exposure to an external energy source that creates a rise in internal tank pressure and temperature, a BLEVE event is not expected to occur.
3. Evaluations of debris resulting from tank rupture neglect energy losses and assume that critical fragment shapes can form. This assessment discounts likelihood of formation for these large, high-energy fragments.

The Collateral Risk of Upset Analysis used the same consequence categories for VCEs, overpressure and thermal radiation, as well as debris (Appendix D):

- Overpressure
  - Building Damage (structural)
  - Building Damage (window)
  - Injury
- Thermal Radiation
  - Injury
- Debris
  - Injury

BLEVE resulted in the same kinds of injuries as overpressure and thermal radiation events, but due to the type of explosion BLEVE events cause, this kind of event also required consideration of flying debris resulting in bodily harm or lacerations. The BLEVE analysis used the same four building types and same elevated roadway damage and window damage assumptions previously defined under VCE.

Using the above-mentioned criteria and assumptions, the likelihood of accidental explosion events under ideal circumstances was determined to be very low and have a moderate relative severity. Building damage is anticipated within approximately 160 feet of the H2 storage site. Significant cratering is projected within a 30-foot radius of the liquid H2 storage tank. All at-grade infrastructure and equipment within this radius is assumed to be significantly damaged. Damage to overhead I-215 structures at 3rd Street, east of the Project site, is not anticipated for a BLEVE event; however, window damage, or the high fragment hazard, is anticipated within 1,130 feet from the storage area. High fragment hazards are anticipated within 3,100 feet for lower GVCE and LVCE. Those distances increase for upper bound GVCE and upper LVCE to approximately 6,000 feet and 18,500 feet, respectively (Appendix D).

Primary injuries (lethal) as a result of overpressure are anticipated within 55 feet, while secondary and tertiary injuries (non-lethal) injuries are anticipated within approximately 150 feet. Thermal-radiation-related injuries are anticipated within approximately 2,100 feet. Debris related injuries are projected within 3,890 feet from the liquid H2 storage location.

Similar to VCE, the potential hazards of an BLEVE are considered significant in the absence of mitigation. Detonation of a liquid H2 VCE (upper bound LVCE) would result in the most catastrophic damages to buildings and roadways, while the BLEVE for liquid H2 generates additional damages from flying debris, which could cause both lethal and non-lethal injuries. The Project will implement Mitigation Measure HM-3 (Prepare a Hazards Operations and Emergency Response Plan) as part of the Project's final design to develop and implement a Hazardous Material Operations Plan. In addition to precautions taken against VCE scenario, additional precautions to reduce likelihood of loss of containment and rupture of the storage tank would be considered as part of the mitigation strategy for the BLEVE scenario.

Threshold D) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

According to the EIR for DSBPRP, the Project limits intersect with a portion of the historic Santa Fe Depot, located at 1170 and 1260 West 3rd Street (across several APNs). The Santa Fe Depot is listed on the Historic Hazardous Waste and Substances Sites (Cortese) List (Government Code Section 65962.5) and, as previously indicated, includes historic UST listings. As a result, the risk-ranking for this site, which crosses into the Project study area, is identified as high.

AMF is currently under construction, which is required to comply with Mitigation Measures HM-1 (Comply with Hazards and Hazardous Materials Recommendations) and HM-2 (Plan and Monitor for Hazardous Materials) per previously certified EIR for DSBPRP. By implementing these measures as part of the Project, the risk of encountering hazardous materials during Project construction will be minimized and, if an incident occurs, a proper response and countermeasure plan is in place. Once operational, the proposed Project is not anticipated to further impact existing hazardous material sites. Therefore, with implementation of Mitigation Measures HM-1 and HM-2, Project-related impacts would be reduced to a less than significant level.

3.6.4 Mitigation Measures

The following mitigation measures from the previously certified DSBPRP EIR will be incorporated as result of the proposed Project.

HM-1 **Comply with Hazards and Hazardous Materials Recommendations.** The proposed Project will comply with all recommendations provided in the Phase I ESAs, Phase II ESAs, and associated Technical Memorandum of Additional Findings prepared for the Project. This includes recommendations related to subsurface activities, additional investigations, and proper handling and removal of previously unknown wastes and soils affected by lead.

HM-2 **Plan and Monitor for Hazardous Materials.** Prior to the start of ground-disturbing activities, the contractor will be provided with a copy of the Phase I ESA and advised that hazardous wastes may be present anywhere along the rail corridor. The contract specifications will require the contractor to be responsible for appropriate handling, storage, and disposal of any hazardous wastes encountered on the site or generated during project-related construction and demolition activities, in accordance with applicable local, state, and federal laws.

Prior to the demolition of any structures within the Project Study Area, a survey shall be conducted for the presence of hazardous building materials such as asbestos-containing materials (ACM), lead-based paints, and other materials falling under universal waste requirements. The results of this survey shall be submitted to SBCTA and the City of San Bernardino's Community Development Department. If any hazardous building materials are discovered, a plan for their proper removal shall be prepared in accordance with applicable requirements of the California Division of Occupational Safety and Health and the County of San Bernardino Environmental Health Services. The contractor performing the work will be required to have a license in the State of California and possess a C-21, A or B classification. Further, and if required, the contractor or its subcontractor will be required to possess a California State Contractor License (asbestos) to perform any asbestos-related work. Prior to

any demolition activities, the contractor will be required to secure the site and ensure the disconnection of utilities.

The following mitigation measure will be incorporated as result of the proposed Project.

HM-3 **Prepare a hazards operations and emergency response plan.** Prior to construction of the Project, SBCTA will evaluate methods to minimize operational hazards associated with the transportation, storage, and use of H2 fuel on-site, in accordance with the Department of Energy guidance, applicable National Fire Protection Association, International Fire Code, and process safety codes, standards, and industry best practices. These measures will be integrated into the Project's final design to maximize operational safety, system redundancy, and other design features.

3.6.5 CEQA Significance Conclusions After Mitigation

Mitigation Measures HM-1 (Comply with Hazards and Hazardous Materials Recommendations) and HM-2 (Plan and Monitor for Hazardous Materials) would reduce impacts related to hazards and hazardous materials during construction. Therefore, impacts during construction would be less than significant after mitigation. Mitigation measure HM-3 (Prepare a Hazards Operations and Emergency Response Plan) would reduce the accidental risk impacts related to operation risk from the transportation, use, and storage of H2 fuel, by proposing additional safety measures and precautions.

3.7 Land Use and Planning

This section addresses the land use compatibility of the proposed project with existing plans and surrounding development. This section addresses potential effects on existing land uses and describes potential changes to future land uses located within the proposed Project limits that could result from the Project. This section also considers the proposed Project's compatibility with existing and planned land uses within the land use study area and the Project's consistency with applicable plans and policies.

3.7.1 Environmental Setting

The land use analysis reviews the area(s) with the limits of the Project site and adjacent properties within approximately 500 feet. This area is also referred to as the land use study area. Figure 3.7-1 illustrates existing land uses within the land use study area. This section incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024). The previously certified EIR considered the impacts of constructing and operating AMF (previously referred to as IEMF) to local land uses and consistency with local plans and is included in Appendix A.

Existing Land Uses

As discussed in Chapter 2, Project Description, the Project limits are entirely within the existing AMF site. As provided in the Final EIR for DSBPRP, the General Plan land use designation for the AMF site is heavy industrial. The City of San Bernardino has not amended its (2005a) General Plan and, therefore, this land use designation remains unchanged. The current land use zoning within the land use study area is shown on Figure 3.7-1 and defined below in Table 3.7-1.

According to California Environmental Protection Agency's (CalEPA) EnviroScreen (Version 3.0) online database, the proposed Project is located within a disadvantaged community and is part of Census Tract 6071004900. As shown on Figure 3.7-1, areas south of 3rd Street currently contain medium-density residential areas. These residential uses are considered non-confirming uses with the underlying City zoning.

Table 3.7-1. Existing Land Use within the Land Use Study Area

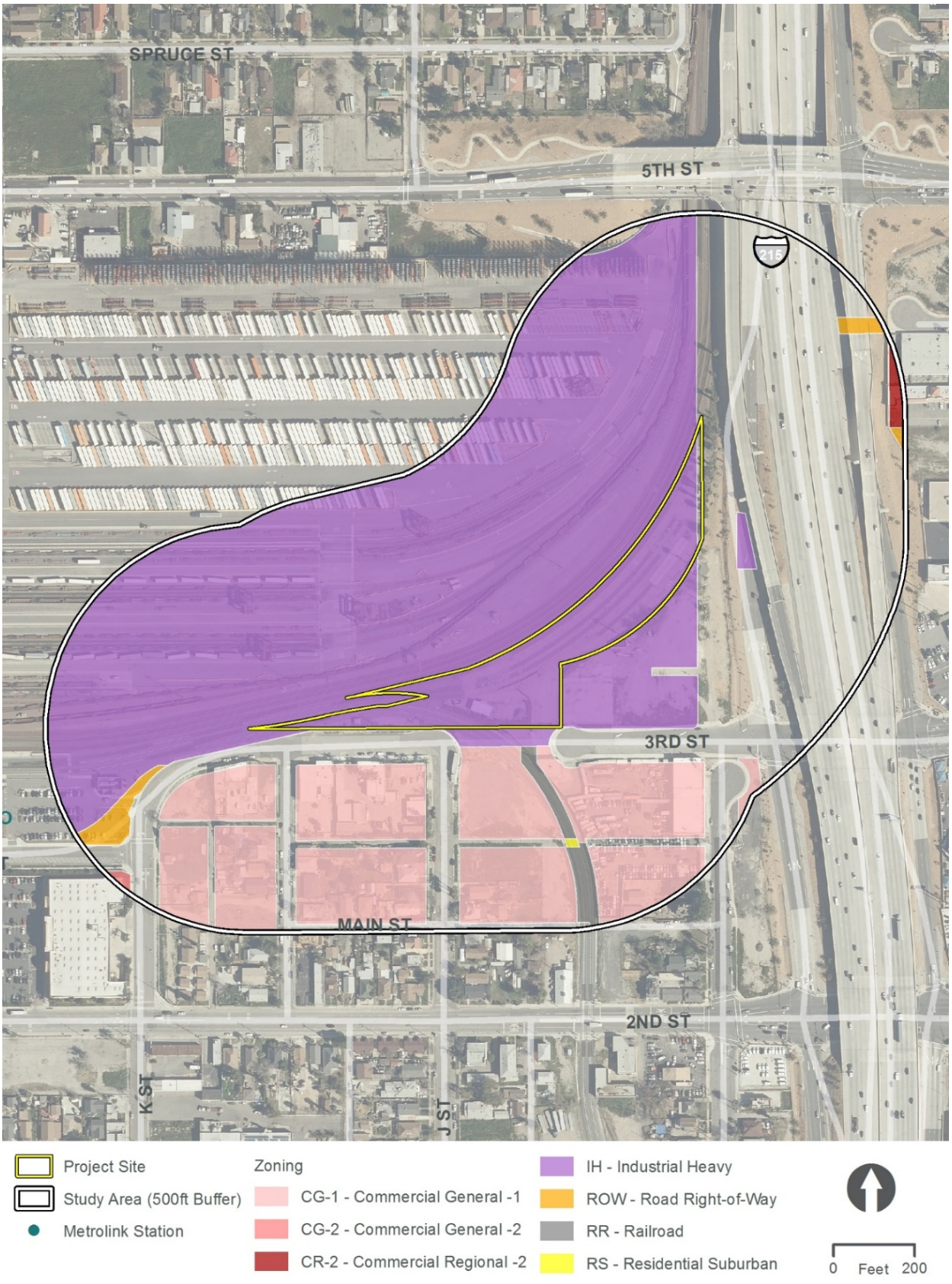
Existing Land Use	Intended Use
Industrial Heavy	This designation is intended for a variety of intense industrial activities that could potentially generate significant impacts, such as excessive noise, dust, and other nuisances, such as rail yards and multi-modal transportation centers. Additionally, this land use designation allows for other uses such as parks and other public/institutional uses that are determined to be compatible with and oriented towards the needs of industrial uses.
Industrial Light	This designation is intended for a variety of light industrial uses, including warehousing/distribution, assembly, light manufacturing, research and development, mini storage, and repair facilities conducted within enclosed structures, as well as supporting retail and personal uses (such as retail, services, restaurants, professional and administrative offices, hotels and motels, mixed use projects, public and quasi-public uses, and compatible uses). Additionally, this land use designation allows for other uses such as parks and other public/institutional uses that are determined to be compatible with and oriented towards the needs of industrial uses.

Table 3.7-1. Existing Land Use within the Land Use Study Area

Existing Land Use	Intended Use
Commercial General	This designation is intended for local and regional serving retail, personal services, entertainment- and office-related commercial uses, and limited residential uses with a conditional use permit. The maximum level of development intensity for CG-1 is 0.7 floor area ratio or the total net floor area of a building to the total lot area. Additionally, this land use designation allows for other uses such as parks, childcare facilities, and other public/institutional uses that are determined to be compatible with and oriented towards the needs of commercial uses.
Commercial General 2	This designation is intended for local- and regional-serving retail, personal services, entertainment- and office-related commercial uses, and limited residential uses with a conditional use permit. The maximum level of development intensity for CG-1 is 1.0 floor area ratio or the total net floor area of a building to the total lot area. Additionally, this land use designation allows for other uses such as parks, childcare facilities, and other public/institutional uses that are determined to be compatible with and oriented towards the needs of commercial uses.
Commercial Heavy	This designation is intended for large-scale, regional-serving retail and service uses and limited commercial and industrial uses that are characterized by an extensive use of outdoor or indoor space for their sales, service, and/or storage. Additionally, this land use designation allows for other uses such as parks, childcare facilities, and other public/institutional uses that are determined to be compatible with and oriented towards the needs of commercial uses.
Single Family Residential Suburban	This designation is intended for single-family detached residences in a high quality suburban setting. Additionally, this land use designation allows for other uses such as schools, parks, childcare facilities, and other public/institutional uses that are determined to be compatible with and oriented towards the needs of residential neighborhoods.

Sources: City of San Bernardino 2005a, 2005b

Figure 3.7-1. Existing Land Use



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3.7.2 Regulatory Setting

State Legislation

Senate Bill 535

In 2012, SB 535 (Disadvantaged Communities) was adopted and requires that 25 percent of the GHG Reduction Fund go to projects that would provide benefits to disadvantaged communities. Disadvantaged Communities, under this SB, are identified by CalEPA. In 2017, CalEPA released CalEnviroScreen 3.0, which maps Disadvantaged Communities by census tracts. Identification of Disadvantaged Communities is based on the requirements outlined within the bill, which seeks to identify communities that are disproportionately burdened and vulnerable to multiple sources of pollution.

Senate Bill 1000

In 2016, SB 1000 was signed into legislation. The bill requires local governments to identify environmental justice, or "disadvantaged communities", in their jurisdictions and address environmental justice in their general plans. This bill requires the development and implementation of an environmental justice element, or related environmental justice goals, policies, and objectives integrated in other elements. The environmental justice goals and policies would identify potential risks as well as objectives and policies to reduce health risks in disadvantaged communities, as specified; identify objectives and policies to promote civil engagement in the public decision-making process; and identify objectives and policies that prioritize improvements and programs that address the needs of disadvantaged communities. The bill requires the environmental justice element, or goals, policies, and objectives in other elements, to be adopted or reviewed upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018.

Regional Plans

Southern California Association of Governments 2020 Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy

SCAG adopted the *2020–2045 Regional Transportation Plan/Sustainable Community Strategy* (Connect SoCal) on September 3, 2020. Connect SoCal RTP/SCS (SCAG 2020a) identifies and analyzes transportation needs for the region and creates a framework for project priorities. The SCS, which is incorporated into the RTP/SCS per SB 375, demonstrates how the region would meet its GHG reduction targets.

Southern California Association of Governments 2008 Regional Comprehensive Plan

The SCAG 2008 Regional Comprehensive Plan (SCAG 2008) provides guidance for local agencies for their voluntary use preparing local plans and handling issues of regional significance. The Regional Comprehensive Plan addresses important regional issues, such as housing, traffic/transportation, water, and air quality, and presents a vision of how the region can balance resource conservation, economic vitality, and quality of life.

Metrolink Climate Action Plan – March 2021

On March 26, 2021 Metrolink adopted the Climate Action Plan (SCRRA 2021). The purpose of the Climate Action Plan is to further augment state and federal environmental plans. The Climate Action

Plan includes goals and policies to achieve zero emissions within Southern California. To achieve zero emissions, Metrolink is focused on reducing GHG emissions, addressing climate change-related impacts such as coastal erosion, reducing traffic congestion, and improving and promoting pedestrian, bicycle, and intermodal facilities.

Local Plans

San Bernardino County Non-Motorized Transportation Plan—2018 Update

The intent of the *San Bernardino County Non-Motorized Transportation Plan—2018 Update* is to ensure the development of a cohesive, consistent, and quality bikeway system throughout the County, and to coordinate and guide the provision of all bicycle-related plans, programs, and projects within the County, including Transit Access Improvement.

Several short- to mid-term projects are identified in the plan. These include the Santa Ana River Trail and the San Timoteo Canyon and Transit Access Improvement projects. To achieve greater non-motorized transportation activity in the County, the Transit Access Improvements project identifies improvements for bicyclists and pedestrians, such as improved parking for bicycles at key locations on the County's transit network, development of signing programs to guide bicyclists to these sites, development of access paths and trails to provide more convenient access to transit, and other efforts designed to reduce the real and perceived barriers to safe non-motorized access to transit services.

City of San Bernardino General Plan

The *City of San Bernardino General Plan* was adopted in November 2005. The *City of San Bernardino General Plan* represents the community's development plan and views for the future, that provides the community's vision for the long term (approximately 20 years) development by guiding the City's physical growth. The purpose of the general plan is to provide a basis for judging whether specific development proposals and public projects are in harmony with plan policies; determining whether development is in line with future needs; and establishing priorities for detailed plans, programs, regulations, and capital improvement projects.

3.7.3 Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, project impacts to land use would be considered significant if the project was determined to:

- Physically divide an established community;
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Thresholds Eliminated from Further Consideration

The following environmental issue area was determined in the Initial Study (Appendix A of this EIR) to result in no impact and would not require further review in the EIR. Please refer to Appendix A of this EIR for a copy of the Initial Study and additional information regarding this issue area:

- Physically divide an established community. The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying

areas. The proposed Project would involve the integration of a ZEMU train into the SBCTA's Arrow service. Construction and operation of the proposed Project would be contained within an existing infill location at SBCTA's AMF site. The proposed Project would comply with the underlying zoning and would not directly or indirectly physically divide an established community. Therefore, no impact would result.

3.7.4 Impact Analysis

Threshold B) Will the Project Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

SBCTA's previously certified EIR for DSBPRP considered the impacts of constructing and operating AMF, previously referred to as IEMF, on existing land use and plan consistency. The proposed Project would be located within the previously approved DSBPRP footprint and located entirely within SBCTA's railroad ROW. The Project would introduce a new use at an existing maintenance facility site on land zoned for heavy industrial uses.

The Project would be consistent with the goals and policies of the City of San Bernardino's General Plan, SCAG's RTP/SCS (SCAG 2020a), and the State's Rail Plan. Table 3.7-2 provides an analysis of the proposed Project's consistency with these applicable transportation and land use plans. For this reason, the Project would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and a less than significant impact would result.

Regarding the Project's compatibility with adjacent land uses, although the surrounding area is zoned for commercial and industrial uses, several non-conforming residential uses are located south of 3rd Street. According to CalEPA's CalEnviroScreen 3.0, these areas are part of Census Tract 6071004900, which is identified as a community within the top-scoring 95-to-100 percentile for pollutant burden and has been identified as a disadvantaged community. In recognition of these pre-existing conditions, the EIR for DSBPRP included multiple mitigation measures to minimize, reduce, and/or avoid adverse environmental impacts to disadvantaged communities along the railroad corridor.

In particular, SBCTA adopted Mitigation Measure NOI-4 (Establish Quiet Zones), which required the establishment of quiet zones by constructing supplemental safety measures in coordination with the City of San Bernardino and FRA. In the case of 3rd Street, the implementation of DSBPRP included the full closure of 3rd Street, which functionally allowed for the discontinuation of the sounding of train horns, thereby greatly reducing long-term ambient noise levels. In addition, the closure of 3rd Street substantially reduced the traffic volumes on 3rd Street.

The proposed Project would be constructed and operated within a disadvantaged community. During construction, temporary disruptions to traffic, increased noise from equipment, and localized construction emissions would result. In response to these concerns, the proposed Project would carry forward Mitigation Measure T-1 from the previously certified EIR to reduce any temporary disruptions to circulation. The transportation management plan, as outlined in Mitigation Measure T-1, would involve public notification of the upcoming construction work and traffic management during construction activities. Additional temporary impacts may occur during construction relating to noise and air quality and, therefore, the Project would implement Mitigation Measures NOI-1 (Employ Noise Reducing Measures during Construction) from the previous DSBPRP EIR and AQ-1 (Implement Air

Quality BMPs during Construction). The implementation of these measures would mitigate these potential construction impacts to a less than significant level.

Table 3.7-2. Land Use Plans and Policies Consistency Summary

Goals and Policies	Project Consistency
SCAG – Connect SoCal 2020	
Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods	**Consistent.** The purpose of the proposed Project is to augment the AMF site to incorporate the use of H2 fuel for zero-emission vehicles. During operation, the proposed Project would replace one of the two DMU trains with a ZEMU train vehicle while maintaining the same capacity of trains. The use of H2 fuel would help reduce GHGs and emissions of criteria air pollutants and TACs, as discussed in Section 3.3, Air Quality and Greenhouse Gas Emissions.
Goal 4: Increase person and goods movement and travel choices within the transportation system.	
Goal 5: Reduce GHG emissions and improve air quality.	
Goal 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	
SCAG – Connect SoCal 2020 – Transportation Technical Report	
Goal: Reduce greenhouse GHG and improve air quality.	**Consistent.** As discussed within Chapter 2, Project Description, the proposed Project would augment the existing AMF site in order to incorporate ZEMU vehicles into service by 2024. With the incorporation of the ZEMU vehicles, GHG emissions and diesel particulate-related air pollution will be reduced, as discussed in detail within Section 3.3, Air Quality and Greenhouse Gas Emissions, of this EIR.
Goal: Adapt to a changing climate and support an integrated regional development pattern and transportation network. By reducing vehicle miles traveled, active transportation can support strategies to reduce GHG emissions and climate change. It will also support land use changes that support short trips by providing a zero-emission option to access local destinations. The changing climate may, however, impact the number of trips taken by walking and bicycling due to increased extreme heat events.	
SCAG – 2008 Regional Comprehensive Plan	
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent.** The purpose of the proposed Project is to augment the existing AMF site to allow for the integration of the H2 fuel-powered train vehicles. During operation, the proposed Project is anticipated to facilitate the modernization of public transportation through the incorporation of dependable, zero-emission technology, as proposed with the integration of a ZEMU vehicle. Additionally, subject to the results of the Project and additional environmental review, the potential for future scalability exists. Therefore, the proposed Project is consistent with these goals.
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	
Metrolink – Climate Action Plan	
Revenue Fleet Emissions: Reduce total GHG emissions 50% by 2030; moon-shot of 100% zero emissions by 2028.	**Consistent.** As discussed within Chapter 2, Project Description, the proposed Project would augment the existing AMF site to incorporate ZEMU vehicles into SCRRA's Arrow service by 2024.

Table 3.7-2. Land Use Plans and Policies Consistency Summary

Goals and Policies	Project Consistency
Revenue Fleet Locomotive: • Accelerate the transition of the Metrolink fleet toward zero emissions • Increase operational efficiencies for maximum fuel conservation	With the incorporation of the ZEMU vehicles, GHG emissions and diesel particulate-related air pollution will be reduced, as discussed in detail within Section 3.3, Air Quality and Greenhouse Gas Emissions, of this EIR. The Project would be consistent with these goals and assist SCRRA in achieving its objectives.
San Bernardino County Non-Motorized Transportation Plan	
Goal 3: Routine accommodation in transportation and land use planning. Routinely consider bicyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.	**Consistent.** As previously discussed within the DBSPRP EIR, improvements at the AMF site would be consistent with and provide facilities allowing for pedestrian sidewalks and shoulders within the roadway for bicycle use. The proposed Project would be entirely constructed within the AMF site and would not alter pedestrian or bicycle facilities within adjacent 3rd Street. Construction traffic, such as deliveries or vehicles moving in and out of the Project site, would occur during construction; however, pedestrian and bicycle access would remain open throughout construction and would not be permanently altered. Therefore, the proposed Project is consistent with these goals.
City of San Bernardino General Plan – Land Use Element	
Policy 2.2.1: Ensure compatibility between land uses and quality design through adherence to the standards and regulations in the Development Code and policies and guidelines in the Community Design Element.	**Consistent.** The proposed Project would implement project design features as applicable from the City of San Bernardino Development Code and the City of San Bernardino General Plan.
Goal 2.7: Provide for the development and maintenance of public infrastructure and services to support existing and future residents, businesses, recreation, and other uses.	**Consistent.** The Project would augment an existing rail maintenance facility to facilitate integration of zero-emission technologies.
Policy 2.8.4: Control the development of industrial and other uses that use, store, produce, or transport toxics, air emissions, and other pollutants.	**Consistent.** The proposed Project is not a development project and would result in the reduction of GHG emissions by replacing DMU vehicles with ZEMU vehicles. Integration of the ZEMU vehicles would assist the region in meeting its GHG reduction targets as determined by CARB.

Table 3.7-2. Land Use Plans and Policies Consistency Summary

Goals and Policies	Project Consistency
City of San Bernardino General Plan – Economic Development Element	
Policy 4.8.1: Examine opportunities to capitalize on the City's train and distribution uses as well as the historic Santa Fe Depot and its Metrolink Passenger Services.	**Consistent.** The proposed Project would include the incorporation of ZEMU rail service in the City of San Bernardino. The proposed Project would allow for the integration of new train technologies into operations at the Santa Fe Depot with minimal intrusion on the Depot's historic character.
City of San Bernardino General Plan – Circulation Element	
Goal 6.6: Promote a network of multimodal transportation facilities that are safe, efficient, and connected to various points of the City and the region.	**Consistent.** The proposed Project would be entirely constructed within the AMF site and would not alter pedestrian or bicycle facilities within adjacent 3rd Street. Operation of the proposed Project would not result in a reduction of train service and would not impact current operations at the Santa Fe Depot or the movements of goods or people. Therefore, the proposed Project is consistent with these goals.
Goal 6.7: Work with the railroads and other public agencies to develop and maintain railway facilities that minimize the impacts on adjacent land uses.	**Consistent.** As previously discussed within Chapter 2, Project Description, the proposed Project would augment the existing AMF site to allow for the integration of H2 fuel for the use of ZEMU vehicles. The ZEMU vehicles would replace a DMU vehicle and commence ZEMU rail service in 2024, with revenue service starting in 2025. The proposed Project requires the coordinated efforts of multiple agencies including, but not limited to, the County, City, rail service operators, SCAG, and CARB to implement new train technology on the existing AMF site. The proposed Project would take place entirely within the AMF site and would not require temporary construction easements or ROW for construction or operation. Additionally, the previously certified DBSPRP EIR/EA proposes a retaining wall at the south edge of the SBCTA ROW and 3rd Street. The proposed Project would not alter the proposed retaining wall and may propose additional walls or barriers to minimize the visual impact residents to the south may incur. Visual impacts are discussed further in Section 3.2, Aesthetics.
Policy 6.7.1: Accommodate railroad services that allow for the movement of people and goods while minimizing their impact on adjacent land uses.	
Policy 6.7.2: Coordinate with San Bernardino Associated Governments, SCAG, the County and other regional, state or federal agencies and the railroads regarding plans for the provision of passenger, commuter, and high-speed rail service.	
Policy 6.7.3: Encourage the provision of a buffer between residential land uses and railway facilities and encourage the construction of sound walls or other mitigating noise barriers between railway facilities and adjacent land uses.	

Source: City of San Bernardino 2005a; SBCTA 2018; SCAG 2008, 2020a

Notes:

AMF=Arrow Maintenance Facility; CARB=California Air Resources Board; DMU=diesel multiple unit; EA=Environmental Assessment; GHG=greenhouse gas; ROW=right-of-way; SBCTA=San Bernardino County Transportation Authority; SCAG=Southern California Association of Governments; SCRRA=Southern California Regional Rail Authority; TAC=toxic air contaminant; ZEMU=zero-emission multiple unit

Once operational, no nuisance impacts to disadvantaged communities are anticipated to result from the Project additions to AMF. Section 3.3, Air Quality and Greenhouse Gas Emissions, discusses the benefits of the proposed Project with regards to emissions. Operation of the ZEMU vehicle is anticipated to result in a net reduction in emissions as the ZEMU vehicle is brought into service. Post-construction views from residences to the south would be required to comply with Mitigation Measures AES-1, Comply with Aesthetic Guidelines in the San Bernardino General Plan, and AES-2, Prepare a Lighting Plan, to minimize the Project's visual impacts. Additionally, as provided in

Section 3.6, Hazards and Hazardous Materials, Mitigation Measure HAZ-3, Prepare a Hazards Operations Plan, would be implemented to minimize the risks associated with the use and storage of H2 on site and comply with federal and state regulations typical with the use of this technology. Therefore, it is anticipated that the proposed Project will result in a net benefit to disadvantaged communities by reducing the amount of local pollution generated by the operation of DMUs. Therefore, impacts would be less than significant with the implementation of the proposed mitigation.

3.7.5 Mitigation Measures

No land use policy changes or related mitigation measures are required for the proposed Project. Refer to Section 3.2, Aesthetics, for Mitigation Measures AES-1 and AES-2. The following mitigation measures would further minimize and/or avoid temporary impacts to adjacent uses during the construction of the Project.

T-1 **Prepare and Implement a Traffic Management Plan.** Prior to initiating construction, SBCTA will ensure that the construction contractor prepares a Traffic Management Plan that includes construction detour plans and designates construction truck access routes for each phase of construction. During each phase of construction, the construction contractor will provide signage indicating the construction limits, access routes, detour routes, and entrances to individual business sites. In addition, the construction contractor will supply “open for business” signs to encourage normal business activity during construction.

NOI-1 **Employ Noise-Reducing Measures during Construction.** The project sponsor will require its construction contractors to employ measures to minimize and reduce construction noise. Measures that will be implemented to reduce construction noise to acceptable levels include the following:

- Comply with local noise regulations and limit construction hours to the extent practicable (i.e., between the hours of 7:00 a.m. and 8:00 p.m.).
- Use available noise suppression devices and techniques, including:
    - Equipping all internal combustion engine-driven equipment with mufflers, air-inlet silencers, other types of shrouds or shields, or other noise-reducing features that are in good operating condition and appropriate for the equipment (5 to 10 decibel reduction possible).
    - Using “quiet” models of air compressors and other stationary noise sources where such technology exists.
    - Using electrically powered equipment instead of pneumatic or internal combustion-powered equipment, where feasible.

AQ-1 **Implement Air Quality BMPs during Construction.** During clearing, grading, earthmoving, or excavation operations, excessive fugitive dust emissions will be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403. All material excavated or graded will be watered in quantities sufficient to prevent the generation of visible dust plumes. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. All material transported on-site or off-site will be securely covered to prevent excessive amounts of dust. The area disturbed by

clearing, grading, earth-moving, or excavation operations will be minimized to prevent excessive amounts of dust. These control techniques will be indicated in Project specifications. In addition, where feasible, the following measures will be implemented to reduce construction emissions:

- Minimize land disturbance;
- Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas;
- Suspend grading and earth moving when wind gusts exceed 25 miles per hour, unless the soil is wet enough to prevent dust plumes;
- Cover trucks when hauling dirt;
- Stabilize the surface of dirt piles if not removed immediately;
- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads;
- Minimize unnecessary vehicular and machinery activities;
- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway;
- Revegetate disturbed land, including vehicular paths created during construction, to avoid future off-road vehicular activities;
- Ensure that all construction equipment is properly tuned and maintained;
- Minimize idling time to 5 minutes—this saves fuel and reduces emissions;
- Provide an operational water truck on-site at all times. Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas;
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators; and
- Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.

3.8 Tribal Cultural Resources

The TCR section describes the environmental setting and regulatory setting for TCRs in the vicinity of the Project. It also describes the impacts on TCRs that would result from construction and operation of the Project and mitigation measures that would reduce significant impacts, where feasible.

3.8.1 Environmental Setting

This section summarizes the existing environmental setting related to TCRs within the Project study area. For further discussion on the prehistoric, ethnohistoric, and historic settings of the Project study area, refer to Section 3.4, Cultural Resources. The TCR information contained in this section is summarized, in part, from the Cultural Resources Letter Report (Appendix C).

A records search request was submitted to the South Central Coastal Information Center to determine the extent of previous cultural resource investigations and to identify previously documented cultural resources within the APE and a 0.25 mile radius around it. The results of the records search, received on September 2, 2020, identified 18 previous cultural resources investigations within 0.25 mile of the APE. The APE was surveyed most recently in 2010 by ICF for the DSBPRP (ICF 2012).

As detailed further in Section 3.4, Cultural Resources, 49 cultural resources (one historic archaeological site and 48 historic built-environment resources) were identified; however, none of these resources were determined to be Native American in origin. Additionally, the NAHC confirmed that the requested Sacred Lands File search was negative for the Project study area and provided a list of tribes that are traditionally and culturally affiliated with the geographic area.

3.8.2 Regulatory Setting

This section summarizes state and local regulations related to TCRs resources that are applicable to the Project.

State

Assembly Bill 52

AB 52 was approved on September 25, 2014 and became effective on July 1, 2015. As it relates to Native Americans, this bill amended Section 5097.94 of the PRC and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

In order to recognize tribal cultural values in addition to scientific and archaeological values when determining impacts and mitigation, AB 52 establishes a new category of resource under CEQA called TCRs (PRC Section 21074). TCRs are “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” (PRC Section 21074). In order to qualify as a TCR, a resource can be either of the following:

1. A resource listed or determined eligible for listing on the national, state, or local register of historic resources; or,
2. A resource that a lead agency chooses to treat as a TCR based on the CRHR criteria and the cultural value of the resource to a California Native American tribe.

AB 52 requires that the CEQA lead agency notify any interested Native American tribes of a proposed project only if those tribes have requested to be notified regarding the CEQA lead agency's projects. The CEQA lead agency must consult in good faith with participating California Native American Tribes prior to the release of the EIR. If a project has the potential to affect a TCR, the CEQA document must discuss whether there is a significant impact on a TCR and whether there are feasible alternatives or mitigation to avoid or substantially lessen impacts on the TCR. Consultation is finished when one of the following applies:

1. The parties agree to avoid or mitigate significant impacts on TCRs; or,
2. The CEQA lead agency, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

The NAHC is the primary state government agency for identifying and cataloging Native American cultural resources. AB 52 required the NAHC to provide each California Native American tribe, as defined, on or before July 1, 2016, with a list of all public agencies that may be a lead agency within the geographic area in which the tribe is traditionally and culturally affiliated, the contact information of those agencies, and information on how the tribe may request those public agencies to notify the tribe of projects within the jurisdiction of those public agencies for the purposes of requesting consultation.

The NAHC also provides protection to Native American burials from vandalism and inadvertent destruction, provides a procedure for the notification of most likely descendants (MLD) regarding the discovery of Native American human remains and associated grave goods, brings legal action to prevent severe and irreparable damage to sacred shrines, ceremonial sites, sanctified cemeteries and places of worship on public property, and maintains an inventory of sacred places. Upon written request, the NAHC is required to conduct a Sacred Lands File search for sites located on or near a project site.

Public Resources Code 5097.98 (b) and (e) and Section 15064.5 of the CEQA

PRC 5097.98(b) and (e) and Section 15064.5 of the CEQA guidelines requires that if Native American human remains are found, the project proponent must halt construction or excavation activity within the area of discovery and confer with MLDs identified by the NAHC to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the project proponent is required to reenter the remains elsewhere on the property in a location not subject to further disturbance.

California Public Resources Code

Cultural resources are recognized as nonrenewable resources, and receive additional protection under the PRC and CEQA; therefore, the following PRCs provide additional protections under the following regulations for TCRs:

- **PRC 5097.97:** This code states that no agency or party shall cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require.
- **PRC 65092:** This code provides for notices of projects to be sent to California Native American tribes that are on the contact list maintained by the NAHC in the definition of person to whom notice of public hearings shall be sent by local governments.

California Health and Safety Code (Section 7050.5)

Section 7050.5 of the Health and Safety Code requires that if human remains are found, the project proponent must halt construction or excavation activity within the area of discovery until a County Coroner can determine if the remains are Native American. If the remains are determined to be Native American, the County Coroner must contact NAHC pursuant to PRC Section 5097.98(b) and (e), as discussed above.

Confidentiality of Information on Archaeological Sites and Native American Places in California

California Government Code Sections 6253, 6254, and 6254.10 authorize state agencies to exclude information on archaeological sites from public disclosure under the Public Records Act. In addition, the California Public Records Act (California Government Code 6250 et seq.) protects the confidentiality of information on Native American cultural places.

The California Public Records Act, as amended in 2005, contains two exemptions that aid in the protection of records relating to Native American cultural places by allowing any state or local agency to deny a California Public Records Act request and withhold public disclosure of:

- Records of Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects described in Sections 5097.9 and 5097.993 of the PRC maintained by, or in the possession of, the NAHC, another state agency, or a local agency (California Government Code 6254[r])
- Records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency (California Government Code 6254.10)

Additionally, the California Historical Resources Information System maintained by the Office of Historic Preservation prohibits public dissemination of records and information about site locations. In compliance with these requirements, and those contained in the codes of ethics of the Society for American Archaeology, Society for California Archaeology, and Register of Professional Archaeologists, information about the location and nature of cultural resources is considered confidential information with highly restricted distribution and is not publicly accessible.

3.8.3 Impact Analysis

This section describes the potential for environmental impacts related to TCRs as a result of Project implementation. It describes the thresholds used to determine whether an impact would be significant, as well as measures to mitigate potentially significant impacts, where appropriate.

Thresholds of Significance

As defined in Appendix G of the CEQA Guidelines, Project impacts related to TCRs are considered significant if the project would cause a substantial adverse change in the significance of a TCR defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

A. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC 5020.1(k); or,

B. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC 5024.1. In applying the criteria set forth in subdivision (c) of PRC 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Thresholds Requiring No Further Analysis

No thresholds were determined to result in no impact or are otherwise inapplicable to the actions associated with the Project.

Methodology

The potential for significant impacts on TCRs was assessed by performing a record search through the South Central Coastal Information Center within the 0.25-mile search radius of the Project study area, and conducting intensive pedestrian field survey and visual inspection of the Project footprint and Project study area for all prehistoric or Native American cultural resources.

Would the Project cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k)?

Based on the negative results of the NAHC Sacred Lands File search along with the absence of prehistoric and/or ethnohistoric related cultural resources based on records search and archaeological survey of the Project study area, no TCRs have been identified within the boundaries of the Project footprint or in the immediate vicinity of the Project.

The NAHC provided a list of recommended Native American individuals and/or tribes indigenous to the surrounding area. SBCTA initiated contact pursuant to AB 52 with 16 individuals/Tribes on the list who had established an interest in the Project: Agua Caliente Band of Cahuilla Indians, Gabrieleno Band of Mission Indians – Kizh Nation, Gabrielino/Tongva San Gabriel Band of Mission Indians, Gabrielino/Tongva Nation, Gabrielino Tongva Indians of California Tribal Council, Gabrielino-Tongva Tribe, Morongo Band of Mission Indians, Quechan Tribe of the Fort Yuma Reservation, San Manuel Band of Mission Indians (SMBMI), Serrano Nation of Mission Indians, and Soboba Band of Luiseño Indians. Initial contact with the eight individuals/Tribes was initiated through a letter from SBCTA dated March 17, 2021.

On March 24, 2021, SMBMI provided a response stating the Project is of interest to the Tribe. The SMBMI requested to be notified if cultural resources are identified or encountered during any phase of the Project and that the Project incorporate the provided mitigation measures. SBCTA has incorporated the suggested mitigation measures as TCR-1. No further consultation with SMBMI is

required at this time unless a criterion within TCR-1 (Consult with SMBMI if Cultural Resources Encountered) is met during Project construction.

In the unlikely event that potentially significant archaeological materials are encountered during Project-related ground-disturbing activities, implementation of Mitigation Measure CUL-1 would require that a qualified archaeologist assess the significance of the archaeological resource and consult with local Native American tribes if the find is prehistoric or Native American in origin. Therefore, the Project would not cause substantial adverse changes in the significance of a TCR as defined in PRC Section 21074 or 5020.1(k). With implementation of Mitigation Measure CUL-1, impacts would be reduced to a less than significant level.

Once construction is complete, operation would involve train operations, re-fueling, and maintenance within SBCTA ROW. Therefore, no further ground-disturbing activity that could impact buried TCRs, as defined in PRC Section 21074 or 5020.1(k), would occur during operation of the Project and no impact would occur.

Would the Project cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1? In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As stated above, the Sacred Lands File search for the Project study area was completed with negative results along with the absence of prehistoric and/or ethnohistoric related cultural resources based on records search and archaeological survey of the Project study area, and no TCRs were identified within the boundaries of the Project footprint or in the immediate vicinity of the Project.

In the unlikely event that archaeological materials are encountered during Project-related ground-disturbing activities, and are found to be prehistoric or Native American in origin, Mitigation Measure CUL-1 and TCR-1 would require the qualified archaeologist to consult with local Native American tribes.

In the unlikely event that Native American human remains are found in proximity to the Project footprint, Mitigation Measure TCR-1 would require the Project to adhere to regulations legislated by Health and Safety Code 7050.5, CEQA 15064.5(e), and PRC 5097.98 so that the Project would not cause substantial adverse changes in the significance of a TCR as defined in PRC Section 21074 or 5024.1(c). Therefore, with implementation of Mitigation Measures CUL-1 and TCR-1, potentially significant construction impacts to TCRs would be reduced to a less than significant level.

Once construction is complete, operation would involve train operations and maintenance. Therefore, no further ground-disturbing activity that could impact buried TCRs, as defined in PRC Section 21074 or 5024.1(c) during operation of the Project and no impact would result.

3.8.4 Mitigation Measures

Mitigation Measures CUL-1 is described in Section 3.4, Cultural Resources, and are proposed to avoid or minimize the Project's potential to significantly impact previously unidentified TCRs that may be encountered during construction.

3.8.5 CEQA Significance Conclusions After Mitigation

With implementation of Mitigation Measures CUL-1 and TCR-1, the Project would have a less than significant impact on TCRs.

TCR-1 **Stop Work and Consult the Tribes consulted under AB 52 if Cultural Resources or Human Remains are Encountered.** In the event that any cultural resources are encountered during Project construction, SBCTA will:

- Cease all work in the immediate vicinity of the find (within a 60-foot buffer) and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, the Tribes consulted under AB 52 shall be contacted regarding any pre-contact and/or historic-era finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment.
- If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended), are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to the Tribes consulted under AB 52 for review and comment. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.
- If any previously unrecorded human remains are inadvertently discovered during construction, all work within the immediate vicinity of the discovery must cease immediately and a 100-foot-wide buffer will be established around it to secure it from further disturbance. California State law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99) will be followed on state, county, and private land. This law specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered. The lead agency and the county coroner will be immediately notified of the discovery. The coroner has 2 working days to examine the remains after being notified by the lead agency. If the remains are determined to be Native American, the coroner has 24 hours to notify NAHC, who will determine the MLD. The NAHC will immediately notify the identified MLD, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 48 hours, the area of the property must be secured from further disturbance. If no recommendation is given, the lead agency or its authorized representative will re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.
- The Tribes consulted under AB 52 shall be contacted of any pre-contact and/or historic-era cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed

significant, as defined by CEQA (as amended), a cultural resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with the Tribes consulted under AB 52, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents a tribe for the remainder of the project, should any of the Tribes consulted under AB 52 elect to place a monitor on-site.

- Any and all archaeological/cultural documents created as a part of the Project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to the Tribes consulted under AB 52. The Lead Agency and/or applicant shall, in good faith, consult with Tribes consulted under AB 52 throughout the life of the project.

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4 Cumulative Impacts

The cumulative impact analysis is intended to identify impacts of the Project that may be minor when viewed in isolation, but which contribute to a larger impact when combined with similar impacts from past, present, and anticipated future projects. Chapter 4 provides an evaluation of the Project's incremental contribution to cumulative impacts when considered in tandem with those from other reasonably foreseeable projects.

4.1 Regulatory Framework

CEQA requires an EIR to include an evaluation of a project's contribution to cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of the related past, present, and reasonably foreseeable future projects. CEQA Guidelines (Section 15355) define a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The CEQA Guidelines [Section 15130(a)(1)] further state that "an EIR should not discuss impacts which do not result in part from the project."

Section 15130(a) of the CEQA Guidelines provides that "[A]n EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable..." Cumulatively considerable, as defined in Section 15065(a)(3), "means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

4.2 Cumulative Impact Analysis

Section 15130(b) of the CEQA Guidelines identifies two basic methods for establishing the cumulative environment in which the Project is to be considered: (1) a list of past, present, and probable future projects producing related or cumulative impacts, or (2) a summary of projections contained in an adopted general plan or similar document, or in an adopted or certified environmental document, that describes or evaluates conditions contributing to a cumulative impact. For this EIR, a combined list and plan approach has been used to generate the most reliable future projections possible for assessing potential cumulative impacts at both the local and regional scale, and temporally over the duration of project construction and future operation.

The Project comprises new infrastructure improvements at an existing maintenance facility. To facilitate consideration of these proposed improvements and their corresponding potential direct and indirect effects during construction and long-term operation of the Project, this analysis considers three types of cumulative projects: rail projects, other regional transportation improvement projects, and local land development projects. A list of reasonably foreseeable projects within the study area in the City of San Bernardino is provided in Table 4-1. The geographic study area considered for this cumulative impact analysis varies by scale for each individual resource, such as the Project site for land use to the local air basin for criteria pollutants or GHG emissions (Table 4-2).

This cumulative analysis also incorporates by reference the cumulative impact analysis provided in the EIR for DSBPRP. Similar to DSBPRP, this cumulative analysis incorporates by reference SCAG's RTP/SCS Program EIR, as amended, which includes a zero-emission technology strategy that could be scaled proportionally to integrate throughout the existing, regional transit network.

Table 4-1. Projects Considered in Cumulative Impact Analysis

Project	Jurisdiction	Overview	Status	Address
Second Street Bridge Replacement Project, Bridge #54C-0411	City of San Bernardino and Caltrans	Improve the sufficiency rating of the bridge, including improving the longevity of the bridge	Obtaining ROW parcels for replacement	Approx. 195 North Arrowhead Avenue, San Bernardino, California 92408
Freight Service	BNSF	Redlands rail corridor along BNSF Railroad	Existing service.	Freight service to three customers per month along the rail line.
Amtrak Long-Distance Passenger Rail Service	Amtrak	Existing rail ROW	Existing service	Existing Amtrak train service routes #3 (westward) and #4 (eastward), the Southwest Chief
Metrolink Commuter Passenger Rail Service	SCRRA	Existing rail ROW	Existing service	Metrolink San Bernardino and Inland Empire – Orange County line.
Mount Vernon Avenue Overhead Replacement Project Bridge	City of San Bernardino	Mount Vernon Avenue between 2nd and 5th Street in San Bernardino	Projected 2024	Bridge No. 54C-0066 at Mount Vernon Avenue
Electric Vehicle Supply Equipment	Caltrans District 8	Installation and connection of Electric Vehicle Supply Equipment	Operations in 2022	464 West 4th Street San Bernardino, California
RPRP (Arrow)	FTA/SBCTA	Construction of new, nine-mile rail infrastructure between SBTC and University of Redlands with four new station stops and train layover at AMF	Operations in 2022	174 South East Street, San Bernardino, California 92401
Eastern Maintenance Facility	SCRRA	Construction of Phase 3 expansion	Unknown (projected 2025)	1945 Bordwell Avenue Colton, California 92324

Notes:
AMF=Arrow Maintenance Facility; BNSF=Burlington Northern Santa Fe; Caltrans=California Department of Transportation; FTA=Federal Transit Administration; ROW=right-of-way; RPRP=Redlands Passenger Rail Project; SBCTA=San Bernardino County Transportation Authority; SBTC=San Bernardino Transit Center; SCRRA=Southern California Regional Rail Authority

Table 4-2 details the scale at which the cumulative analysis was conducted for each of the resource topics covered in Chapter 3, Environmental Analysis, Impacts, and Mitigation.

Table 4-2. Project Resource-Specific Study Areas

Resource Areas	Geographic Area of Impact Assessed	Localized Impacts[a]	Regional Impacts[b]
Aesthetics	Project site and study area	Yes	No
Air Quality and GHG Emissions	Project study area SCAQMD, South Coast Air Basin, statewide, and global	Yes	Yes
Cultural Resources	Project footprint and 0.25-mile buffer	Yes	No
Energy, Utilities and Service Systems	Service area electrical, utility, natural gas, and service area provider	Yes	Yes
Hazards and Hazardous Materials	Project study area and 0.25-mile buffer	Yes	No
Land Use and Planning	State, Regional, and Project study area	Yes	Yes
TCRs	Project footprint and 0.25-mile buffer	Yes	No

Notes:

[a] Localized cumulative impacts would be generally confined to the project study area (and project footprint for each build alternative). Cumulative impacts within the Project study area would occur during construction and operation of the Project.

[b] Regional cumulative impacts would be expressed regionally, beyond the project study area, and distributed throughout the larger region. Cumulative impacts experienced at the regional scale would be associated with future operations.

GHG=greenhouse gas; SCAQMD=South Coast Air Quality Management District; TCR=tribal cultural resource

4.3 Summary of Cumulative Impacts

The discussion of cumulative impacts focuses on the potentially significant impacts of the Project as presented in Chapter 3 and the potential for other reasonably foreseeable projects to result in cumulatively considerable impacts.

4.3.1 Aesthetics

The geographic scope of analysis for cumulative impacts to aesthetics is the same study area established in Section 3.2, Aesthetics. The Project is visible from adjacent public roadways, residences to the south, and transportation users on I-215. Viewer groups predominantly comprise transient members of the public traveling in north or south directions on I-215, employees at the San Bernardino Depot, and Metrolink/Amtrak users from the west.

Visual Character

Construction activities associated with the cumulative projects listed in Table 4-1 have the potential to degrade the existing visual character or quality of the Project study area, including local viewsheds as defined in Section 3.2, Aesthetics. Construction activities would introduce visual changes to all user groups as a result of increased activity and the presence of construction equipment within the Project site and cumulative projects identified in Table 4-1. However, the land uses within the Project study area are primarily industrial, commercial, and transportation-related and are not sensitive to these

temporary construction impacts. Additionally, the Project would add to pre-existing visual encroachments including, but not limited to, industrial and commercial buildings and operations, transportation elements such as I-215, Mount Vernon Bridge, San Bernardino Santa Fe Depot, power transmission lines, street lights, and ornamental landscaping.

The San Bernardino Mountains are identified as a visual resource in the San Bernardino General Plan and are visible within the Project limits and from roadways to the south. The proposed Project would introduce additional visual features such as an H2 refueling and storage pad that would be constructed within the southern portion of AMF (up to 14 feet in height). Mitigation Measures AES-1, Comply with Aesthetic Guidelines in the San Bernardino General Plan, and AES-2, Prepare a Lighting Plan, would require the Project to maintain the exterior appearance along 3rd Street that complies with San Bernardino's General Plan, including if a security fence is installed. However, based on the Project's infill location, these new elements of the proposed Project, combined with other projects listed in Table 4-1, would not create new visual intrusions that could substantially change the existing visual character of the Project study area. Therefore, no cumulatively considerable impact would result.

Light or Glare

The Project is in an urban setting with substantial sources of existing light and glare associated with surrounding commercial, industrial, and transit uses. Within the Project limits, light and glare is attributed to existing rail operations associated with existing tracks, a maintenance facility, and nearby commercial and industrial buildings and roadways. However, non-conforming residential areas are located to the south of 3rd Street and may be sensitive to nighttime construction in conjunction with other cumulative projects listed in Table 4-1. Construction would be subject to Mitigation Measure AES-1 to minimize these impacts.

Once constructed, the sources of nighttime lighting would be similar to existing conditions. Given that other reasonably foreseeable projects listed in Table 4-1 would be required to adhere to local design standards and requirements for light, glare, and aesthetics. Therefore, no cumulatively considerable impacts would result.

4.3.2 Air Quality and Greenhouse Gas Emissions

The geographic scope of analysis for cumulative air quality impacts is the same study area identified in Section 3.3, Air Quality and Greenhouse Gas Emissions, which includes the Project study area for local impacts, as well as the SCAQMD. Cumulative impacts on sensitive receptors (e.g., dust) and odors are considered at a more localized level, such as the surrounding neighborhood or block.

Conflicts with Air Quality Plans

The proposed Project is located within the SCAQMD and is subject to the air quality standards implemented by the U.S. EPA and CARB. The SCAQMD and SCAG developed the AQMP to improve regional air quality by addressing CCAA requirements and demonstrating attainment with state and federal ambient air quality standards. The Project would not exceed thresholds identified in the AQMP and is consistent with the RTP/SCS, as amended. Therefore, no cumulatively considerable impacts would result.

Increases in Criteria Pollutants

Construction of the proposed Project would consist of ground-disturbing activities, including grading, import and export of construction materials, and the use of construction equipment. Construction

activities would be short-term and would not exceed the thresholds identified in the AQMP. Compliance with SCAQMD's Rule 403 would minimize the generation of localized emissions within the vicinity of adjacent sensitive land uses, which are located approximately 400 feet from the Project. Operation of the proposed Project would, add a ZEMU to the fleet, and replace one DMU with a ZEMU train during service, thereby resulting in a new reduction in the generation of criteria air pollutants and GHGs emitted over the longer term. Although this reduction would be partially offset by emissions associated with the production and transport of the H2 fuel, the projected emissions are expected to remain below existing levels (assuming continued use of DMUs) with the potential for greater reduction in the future. In this context, the Project would not generate cumulatively considerable emissions of criteria air pollutants.

4.3.3 Cultural Resources

The geographic scope of analysis for cumulative cultural resource impacts is the same study area identified in Section 3.4, Cultural Resources, which is includes the Project footprint and a 0.25-mile buffer.

Historical Resources

The proposed Project would be located within SBCTA-owned land approximately 0.25 miles northeast of the Santa Fe Depot, a historical site identified on the NRHP. As a result of the proposed Project, a new H2 fueling pad would be constructed within the confines of the existing AMF and within 800 feet of the existing Depot. As provided in Section 3.3, Air Quality and Greenhouse Gas Emissions, the physical features associated with the H2 refueling pad are anticipated to result in less than significant impacts to the historic character of the Depot. Other cumulative projects listed in Table 4-1 would be required to comply with the same federal, state and local regulations and ordinances as the Project. For this reason, no cumulatively considerable impacts would result.

Archaeological Resources and Human Remains

A records search for new and previously recorded archeological resources was conducted within the Project area of potential effect, which was discussed within the previously certified EIR. No new resources were identified, and previously recorded resources were not eligible for the NRHP. Construction of the proposed Project would result in ground-disturbing activities within the same location as the AMF currently under construction. The modifications proposed as a part of the proposed Project, as well as utility improvements and relocations, may result in ground-disturbing activities that extend to depths of up to five feet. Given the discovery of resources within 3rd Street during construction, Project-specific Mitigation Measures CUL-1, Stop work if Unanticipated Archaeological Resources are Encountered, and TCR-1, Stop Work and Consult the Tribes Consulted under AB 52, are proposed to minimize potential impacts to undocumented archaeological resources. Other cumulative projects listed in Table 4-1 would be required to comply with the same federal, state and local regulations and ordinances as the Project and, therefore, no cumulatively considerable impacts would result.

Ground-disturbing activities as a result of construction have the potential to damage or destroy buried human remains, although no documented cemeteries or burial sites occur within the proposed Project. Other cumulative projects listed in Table 4-1 would be required to comply with the same federal, state and local regulations and ordinances adopted for the purposes of protecting human remains. In this context, with the implementation of Project-specific mitigation measure(s) during construction similar to the Project, no cumulatively considerable impacts would result.

4.3.4 Energy, Utilities and Service Systems

The geographic scope of analysis for assessing cumulative impacts to energy, utilities, and service systems includes the regional SCE and SoCal Gas service areas and corporate limits of the City of San Bernardino.

Conflict with State or Local Renewable Energy Plan

As discussed in Section 3.5, Energy, Utilities, and Service Systems, construction of the Project would involve the consumption of fuel energy by construction vehicles and equipment and bound energy through the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Construction activities would consume fuel energy through the use of construction vehicles for grading, excavation and other construction related activities. Electricity and natural gas are not expected to be consumed in large quantities during construction-related activities as construction equipment is expected to be fueled with gasoline or diesel. Energy sources for construction vehicles and equipment are readily available, and the Project would not have a cumulatively considerable impact on the availability of these resources.

The Project would introduce the use of H2 storage and re-fueling of ZEMU trains to facilitate the integration of zero-emission technology into the Arrow train service. As a result, the import of H2 fuel to AMF would be similar to the existing import of diesel for DMU re-fueling. Although the increased haul distance may be greater for H2, the net energy consumption for the Project would be less than existing conditions due to the incorporation of the ZEMU train vehicle. Other cumulative projects listed in Table 4-1 would be required to comply with the same state and local regulations and ordinances (e. g. Green Book) and, therefore, no cumulatively considerable impacts would result.

Relocation or Expanded Utilities

During construction of each phase, water would be required for various activities, such as controlling dust, compacting soil, and mixing concrete. Project construction would require the use of locally available water supplies, which are distributed by the SBMWD. The project's water demand would be short-term and temporary and would not require the construction of new water facilities or expansion of existing facilities. No cumulatively considerable impact to potable water delivery or supplies would result from the Project.

Reconfiguration or realignment of the storm drains would be conducted in coordination with the City. On-site electrical utilities are available for the Project. Existing utility services would be maintained throughout the construction of the Project to maintain Arrow service. On-site modifications, relocations, and/or protection in place of existing utility infrastructure would be determined during the Project's final design and limited to on-site connections. No additional off-site lines or substations would be required to construct the proposed project.

Similar to other projects listed in Table 4-1, the Project would be required to coordinate with utility providers on a utility-by-utility basis to connect the Project to the required utility infrastructure. Based on the Project's infill location, these utilities would be available on-site at AMF, and SBCTA would coordinate with the appropriate service providers prior to interconnection of the Project features. Therefore, the Project's impacts on utilities/service systems would not be cumulatively considerable.

4.3.5 Hazards and Hazardous Materials

The geographic scope for hazards and hazardous materials consists of the Project footprint and a 0.25-mile buffer. In general, cumulative projects occurring within 0.12 miles of the Project footprint (and in the case of active release sites, within 0.25 miles) were considered in this analysis due to the localized nature of potential impacts associated with the release of hazardous materials into the environment.

Transport, Use, or Disposal of Hazardous Materials

Project construction activities would include the use of commercially available hazardous materials, such as fuels, brake fluids, coolants, and paints. As described in Section 3.6, Hazards and Hazardous Materials, these activities would be temporary, and the construction contractor would be required to comply with federal, state, and local regulations for the routine transport, use, and disposal of any hazardous materials. Notwithstanding these considerations, the potential for an accidental release of these materials during construction exists and, therefore, Mitigation Measures HM-1, Comply with Hazards and Hazardous Materials Recommendations, and HM-2, Plan and Monitor for Hazardous Materials, are proposed to minimize this hazard by outlining a protocol for the clean-up, remediation, and disposal of any accidental spill of hazardous materials or wastes, as well as of any previously undocumented sources of contamination.

Other cumulative projects identified in Table 4-1 would also involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. These cumulative projects would be required to implement and comply with existing hazardous materials laws, regulations, and policies to reduce potential releases of hazardous materials into the environment. Therefore, the Project's incremental contribution to cumulative impacts associated with the storage, use, disposal, and transport of hazardous materials, contaminated soil, and groundwater would not be cumulatively considerable.

Risk of Upset

As a part of the proposed Project, SBCTA would integrate a ZEMU train vehicle into the Arrow service by constructing a supporting fueling pad, battery chargers, and an H2 storage tank. Storage of liquid or gaseous H2 on the Project site would introduce the potential for a risk of upset due to the explosive nature of H2 fuel in a gas or liquid state. As provided in Section 3.6, Hazards and Hazardous Materials, two explosion types were identified: (1) VCE and (2) BLEVE. VCE and BLEVE explosions were analyzed in Section 3.6 and determined to have a potential significant impact related to a new on-site risk for damage to adjacent buildings, overhead roadways (I-215), and people. Detonation of a liquid H2 VCE (upper bound LVCE) would result in the most catastrophic damages to buildings and roadways, while the BLEVE for liquid H2 would result in additional damages of flying debris, which could cause both lethal and non-lethal injuries within 1,000 feet of the Project site.

In response to this Project-related impact, SBCTA will prepare a Hazards Operations and Emergency Response Plan, as required by Mitigation Measure HM-3, to minimize operational hazards associated with the transportation, storage, and use of H2 fuel in accordance with the Department of Energy guidance. Future cumulative projects within the Project study area would be subject to compliance with all the federal, state, and local regulations followed by the Project. These regulations require an individual site evaluation and, if hazardous materials are encountered, cleanup and proper disposal by the responsible party. Additional H2 storage facilities may be considered by SBCTA or other entities and would be required to undergo similar project site and environmental review as the Project.

Therefore, the Project's incremental contribution to cumulative impacts associated with creating a significant hazard to the public or the environment would not be cumulatively considerable.

Existing Hazardous Material Sites

As provided in Section 3.6, Hazards and Hazardous Materials, the Project study area intersects with a portion of the historic Santa Fe Depot, located at 1170 and 1260 West 3rd Street (across several APNs). The Depot is listed as having the following site operations that are subject to hazardous materials regulation: railroad depot; open Spills, Leaks, Investigations, and Cleanup; LUSTs; Historic Hazardous Waste and Substances Sites (Cortese) List (Government Code Section 65962.5); and historic UST listings. The risk ranking for this site, which crosses into the Project limits, is identified as high.

Future cumulative projects within the Project study area would be subject to compliance with similar hazardous federal, state, and local regulations as the Project. These regulations require an individual site evaluation and, if hazardous materials are encountered, cleanup and proper disposal by the responsible party. Mitigation Measures HM-1, Comply with Hazards and Hazardous Materials Recommendations, and HM-2, Plan and Monitor for Hazardous Materials, are proposed as part of the Project hazards related to encountering previously undocumented sources of contamination. Therefore, the Project's incremental contribution to cumulative impacts associated with creating a significant hazard to the public or the environment would not be cumulatively considerable.

4.3.6 Land Use and Planning

The geographic scope of analysis for the cumulative analysis for land use and planning includes the Project study area as described in Section 3.7, Land Use and Planning, and a 0.25-mile buffer. The Project is proposed at an existing maintenance site (AMF) and is surrounded by compatible planned land uses, including industrial and commercial uses. Multiple existing residences are located south of 3rd Street and no longer conform with the currently adopted General Plan land use designation.

Conflict with Land Use Plans and Policies

Construction of the Project would occur at an infill location and existing maintenance facility and is, therefore, unlikely to affect community mobility, viability of local businesses, community resources and events, population, housing, and employment. Construction of other local, un-programmed transportation and infrastructure projects listed in Table 4-1 could overlap with the Project construction period, thereby resulting in incremental effects. Additionally, these effects would be predominantly borne by disadvantaged populations. Multiple mitigation measures are proposed in Section 3.7, Land Use and Planning, to address the Project's construction related impacts, including T-1, Prepare and Implement a Traffic Management Plan, NOI-1, Employ Noise Reducing Measures during Construction, and AQ-1, Implement Air Quality BMPs during Construction. Based on these considerations, the Project's impact to adjacent land uses, including disadvantaged communities, would not be cumulatively considerable.

Once operational, the Project would contribute desirable benefits in terms of a zero-emission train vehicle and reductions in criteria air pollutant emissions, on top of the pre-existing benefits of DSBPRP (which included the closure of 3rd Street and implementation of quiet zones to minimize long term effects). Additionally, the Project would be implemented with a high-quality transit corridor per the RTP/SCS, as amended, and would further SCAG's goal of exploring zero-emission train technologies for passenger rail service. Based on this cumulative context, the Project, in conjunction with other

cumulative projects listed in Table 4-1, would not result in conflicts with federal, state, and local plans and policies adopted for the purposes of avoiding or mitigating adverse environmental impacts, and no cumulatively considerable impact would result.

4.3.7 Tribal Cultural Resources

The geographic scope of analysis for TCRs is the same as discussed in Section 3.8, Tribal Cultural Resources, which includes the Project footprint and 0.25-mile buffer. A TCR is defined in PRC Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.

Change in Significance for Listed/Eligible Historical Resources

The San Bernardino Santa Fe Depot is listed on the NRHP and is located approximately 0.25 miles southwest of the Project site. The proposed Project would involve ground-disturbing construction activities that would avoid any direct impacts to this historic resource. No significant tribal resources were discovered during the construction of DSBPRP or AMF. As a result, the potential for Project construction within the prior construction area is unlikely. In addition, letters describing the DSBPRP Project area and Project location were sent to 11 Native American contacts with no response received. In this context, no cumulatively considerable impact would result.

Change in Resource Significance to a California Native American Tribe

Construction-related grading or excavation activities associated with the proposed Project may impact unknown or previously unrecorded archaeological resources. During Project construction-related ground-disturbing activities, in the unlikely event that potentially significant archaeological materials are encountered and are found to be prehistoric or Native American in origin, proper treatment of the discoveries is required per Mitigation Measure TCR-1. If human remains are discovered and determined to be prehistoric or Native American in origin, notification of NAHC is required to notify a MLD per Mitigation Measure TCR-1. Therefore, these measures, combined with implementation of Mitigation Measures CUL-1 and TCR-1, would reduce project-level impacts to less than significant. Given that other projects listed in Table 4-1 would be required to implement similar project-specific mitigation measures during construction, the Project's incremental contribution to cumulative impacts on TCRs would not be cumulatively considerable.

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5 Alternatives

This chapter describes and analyzes a range of reasonable alternatives to SBCTA's proposed Project that could feasibly attain most of the basic Project objectives while avoiding or substantially lessening one or more of the significant effects of the Project. The primary purpose of this chapter is to provide a comparative analysis that enables informed decision making by SBCTA and CEQA-responsible agencies regarding the range of alternatives considered by SBCTA to the Project as part of the environmental review process.

5.1 Regulations and Requirements

The identification and analysis of alternatives is a fundamental concept under CEQA. CEQA requires the consideration of alternatives to the proposed Project and a comparative analysis of the potential impacts associated with those alternatives. Through comparison of these alternatives to the Project, the advantages and disadvantages of each alternative may be weighed and analyzed. CEQA Guidelines Section 15126.6 requires that a reasonable range of alternatives to the Project be discussed and analyzed in the Draft EIR. Section 15126.6(a) of the CEQA Guidelines requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant impacts of the project, and evaluate the comparative merits of the alternatives."

Section 15126.6(c) of the CEQA Guidelines requires that an EIR identify any alternatives that were considered but were rejected as infeasible.

Additionally, Sections 15126.6(e) and (f) of the CEQA Guidelines state:

- The specific alternative of no project shall also be evaluated along with its impact. If the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.
- The range of alternatives required in an EIR is governed by a rule of reason that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the proposed project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the proposed project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making.

Pursuant to the CEQA Guidelines stated above, a range of alternatives to the proposed Project were considered for evaluation in this EIR. Alternatives to the proposed Project were identified throughout the conceptual and preliminary design process phase for the Project in addition to input from other responsible agencies and organizations during the NOP scoping process. Section 5.2 provides additional detail on SBCTA's alternative selection process and those alternatives to the proposed Project considered by SBCTA but dismissed from further analysis.

5.2 Alternatives Screening Process

SBCTA considered multiple alternatives for the proposed H2 storage improvements to Metrolink's AMF. The range of feasible alternatives was determined through a combination of conceptual and preliminary engineering design for the Project components identified in Chapter 2, Project Description, and coordination with local stakeholders during the scoping period.

Over the course of SBCTA's preliminary design process, multiple alternatives were considered, but rejected from consideration. The discussion of these alternatives considered, but rejected from further analysis, follows the outline below.

- A description of the alternative(s)
- An analysis of whether the alternative(s) meet the objectives of the Project
- A comparative analysis of the alternative(s) with the proposed Project and SBCTA's rationale for not considering such alternative(s) in the Draft EIR for the Project. Emphasis is placed on whether the alternative(s) are capable of avoiding or reducing the significant environmental impacts of the Project.

Each of the potential alternatives were initially evaluated in terms of their ability to meet the basic project objectives as discussed in Chapter 2, Project Description. Secondarily, the analysis of environmental impacts contained in Chapter 3, Environmental Analysis, Impacts, and Mitigation, identified the following significant and unavoidable impacts of the Project:

- Risk of Upset

All other Project impacts were found to be less than significant or could be reduced to a less than significant level through the implementation of recommended mitigation measures.

5.2.1 Alternatives Considered but Rejected

In addition to specifying that the EIR evaluate "a range of reasonable alternatives" to the project, Section 15126.6(c) of the CEQA Guidelines requires that an EIR identify any alternatives that were considered but were rejected as infeasible or would otherwise not meet the stated project objectives. As part of SBCTA's evaluation and selection process, the following criteria were considered:

- **Technical and Engineering Feasibility**. An alternative must be technically and physically feasible. An alternative must be based on existing and accepted engineering concepts and practices. Also, an alternative must not be dependent upon either the availability or acquisition of site locations that cannot be reasonably assured in order to meet a project's operational objectives.
- **Environmental Fatal Flaw**. An alternative cannot have environmental impacts that are so significant as to negate the positive attributes of the alternative, or simply transfer potential environmental impacts from one location to another.
- **Economic Feasibility**. An alternative cannot be economically impractical or infeasible. Similarly, an alternative cannot result in excessive operation and maintenance costs.
- **Public Health and Safety**. An alternative should be able to meet all existing and anticipated future State and Federal health and safety requirements.

- **Timing.** An alternative must be capable of being implemented within a reasonable timeframe such that the benefits and needs of the project are not unduly delayed.
- **Institutional**. An alternative cannot possess significant uncertainty that all permits, licenses, or other logistical requirements can be reasonably obtained.

In considering the above criteria, the following alternatives were rejected from further consideration in the EIR:

Alternative Mode Technologies. Metrolink will operate the Arrow DMU train service from the AMF site as previously approved by SBCTA. Metrolink also currently operates passenger rail service along its San Bernardino Line (and San Gabriel Subdivision), which extends south of and east of AMF and terminates in downtown San Bernardino. Metrolink is in the process of upgrading its diesel-powered locomotive fleet to comply with U.S. EPA's Tier IV regulations.

In support of SBCTA's selection of the Project ZEMU technology as an alternate to the currently planned DMUs, SBCTA commissioned the Center for Railway Research and Education at Michigan State University in collaboration with the Birmingham Centre for Railway Research and Education at the University of Birmingham, United Kingdom, to assist with the comparison of low- and zero-emission technology suitable for railway motive power applications (SBCTA 2019). This study considered a wide range of technologies including renewable diesel, natural gas, H2 fuel cell, and hybrid (or combined w/ battery) options.

The study concluded that a H2 hybrid propulsion vehicle, as proposed under the Project, carries additional upfront capital cost and has uncertainties and risks associated with the technology, especially compared to a DMU implementation scenario (SBCTA 2019). Given that DMUs are already planned and scheduled for revenue service in 2022, the traditional DMU technology is captured under the CEQA-mandated No Project Alternative. Other technologies were considered, including natural gas; however, the study concluded that given FRA's existing engagement in the advancement of H2 technology, the approval process for operating H2 powered vehicles would likely be similar to that of natural gas technology. Additionally, similar to natural gas, a H2-hybrid solution can be expanded incrementally based on existing regional production sources. Due to the increased GHGs resulting from a natural gas train vehicle, this vehicle technology was not carried forward for additional consideration.

Given the availability of several H2 supply options and the emission reduction objectives of the Project, no additional train technologies were considered to the Project beyond the No Project Alternative. Based on the above reasons, other alternative train technologies were eliminated from consideration in the EIR.

Alternative Site Locations, including SCRRA's Eastern Maintenance Facility (EMF). SBCTA did not consider an alternative site location to AMF for the Project mainly due to the availability of the pre-existing AMF site and its strategic interconnection with the Arrow service and infill location. The acquisition of a new site and additional railroad ROW required to connect such a site would result in substantially greater impact when compared to the Project. The acquisition of new ROW required to secure a new rail alignment and maintenance site would result in substantial displacements of existing residential, industrial, and commercial property within the City, thereby increasing land use and community/neighborhood impacts resulting from the Project. For these reasons, a new site location and rail alignment were rejected from further consideration.

SBCTA also considered other existing maintenance facilities in proximity to AMF, including SCRRA's EMF site in the City of Colton approximately 2.5 miles south-southwest of the Project site. However,

the EMF site would not avoid any of the impacts of the Project and would extend the operating distance of the ZEMU non-revenue service. Notwithstanding the introduction of an operational inefficiency thereby minimizing the Project's air quality benefits, the EMF site is also located in close proximity to other sensitive land uses, including residential areas. These areas are identified as disadvantaged in CalEnviroScreen (Version 3) similar to the areas south of AMF and, in the case of EMF, are greater in number. Additionally, the site layout within the EMF site intersects Lytle Creek, which is a U.S. Army Corps of Engineers constructed channel. Any new bridge crossing would carry greater impacts to Waters of the U. S. and State, in addition to adding regulatory permitting requirements to the Project.

Based on the above considerations, an alternative site location, including placement at SCRRA's EMF site or a new maintenance site, was not carried forward for additional consideration in the EIR.

Modified Operations and Site Layout(s): SBCTA considered operational changes and alternative site configurations at AMF to minimize the significant impacts associated with the Project. The placement of the H2 storage and refueling pad is generally restricted to the southern portion of the AMF site due to the preexisting placement of the maintenance shed and spur tracks. In this context, shifting the H2 refueling pad within the AMF site is generally not feasible.

H2 characteristics and safety implications are discussed in Section 3.6, Hazards and Hazardous Materials, for the Project. SBCTA also considered an operational scenario that excludes the H2 storage component of the Project and a daily refueling scenario, similar to the DMU operation, to minimize the supplies onsite at any given time. However, to facilitate this type of operation, SBCTA expects that additional haul truck trips would be required to deliver fuel, thereby reducing the Project's air quality benefits.

For these reasons, a modified operations scenario and alternative site configuration was not carried forward for consideration in the EIR.

5.3 Alternatives Considered

5.3.1 Evaluation of Alternatives

As described in Section 5.2, several key factors narrowed the range of build alternatives for consideration in this EIR. Of these factors, SBCTA's goal of integrating a zero-emission train vehicle and avoidance of environmental resources were the most critical. This EIR considers the No Project Alternative consistent with the requirements of CEQA and a comparative analysis is provided below.

5.3.2 No Project Alternative

The CEQA Guidelines require analysis of the no project alternative (PRC Section 15126). According to Section 15126.6(e), "the specific alternative of 'no project' shall also be evaluated along with its impacts. The 'no project' analysis shall discuss the existing conditions at the time the NOP is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

For the purpose of this EIR, the no project alternative is evaluated in this section as the No Project Alternative and assumes that the Project, herein referred to as the proposed Project, would not be implemented by SBCTA. Compared with the proposed Project, under the No Project Alternative none of the H2 storage and refueling improvements to the AMF site would be constructed.

The following analysis provides a comparative analysis of the proposed Project to the No Project Alternative.

Aesthetics

Changes to the existing aesthetic conditions would not occur under the No Project Alternative. This alternative does not include new infrastructure elements or improvements at the AMF site that would introduce new sources of light or glare that could adversely affect day or nighttime views beyond existing conditions. Compared with the proposed Project, the No Project Alternative would avoid significant impacts related to temporary construction-induced impacts to aesthetics for sensitive viewers to the south of the Project site. However, given the Project components would complement the existing DMU maintenance infrastructure, the visual impacts of the proposed Project would be less than significant and comparable to the No Project Alternative.

Air Quality

Under the No Project Alternative, the H2 storage and refueling infrastructure proposed under the Project would not be installed at the AMF site. As a result, the Arrow service would continue to operate solely with the current DMU train fleet. This alternative would not create new or significant air quality impacts, similar to the Project; however, the No Project Alternative would be unable to achieve reductions in criteria air pollutants and GHGs from the DMU operating fleet as expected with the Project.

Based on these considerations, the maximum reduction of operational emissions and associated air quality benefits as facilitated by the proposed Project, would not be realized under a No Project Alternative. Compared with the proposed Project, the No Project Alternative would avoid near-term emissions related to construction and, therefore, would result in no impact. Over the long term and in the absence of the Project, SBCTA and SCRRA would be unable to achieve the projected air quality benefits from the integration of zero-emission, hybrid train vehicle technology. Given this overarching goal in SCAG's RTP/SCS, as amended, the No Project Alternative would be in conflict and result in a potentially significant impact.

Biological Resources

Under the No Project Alternative, there would be no construction activities and no changes to the AMF site. Therefore, existing conditions in the study area would remain unchanged under this alternative. Similar to the proposed Project, the No Project Alternative would avoid impacts related to biological resources such as potential nesting and foraging habitats, federally and/or state-listed wildlife species, and non-listed special status species. Once operational, the Project would result in less than significant impacts on biological resources based on its infill location, which would be comparable to the passenger rail service and maintenance operations under the No Project Alternative.

Cultural Resources

No construction-related ground disturbance or demolition would occur under the No Project Alternative; therefore, known and undiscovered cultural resources within the Project site would not be subject to disturbance. Compared with the proposed Project, the No Project Alternative would avoid potentially significant construction-related impacts on archaeological resources and human remains.

Once operational, the Project would avoid impacts on cultural resources due to its infill location, which would be comparable to the No Project Alternative.

Energy

No construction activities would occur under the No Project Alternative; therefore, increased demand on utilities and service systems would not occur. The No Project Alternative would not result in an unnecessary consumption of energy resources nor conflict with initiatives for renewable energy or energy efficiency during construction or operation. Compared with the proposed Project, the No Project Alternative would avoid minor increases in energy demand and impacts on utilities/service systems due to construction and future operations.

Geology, Soils, and Seismicity

No changes to geologic conditions in the Project site would occur under the No Project Alternative. Given the prior grading in support of the AMF, the Project site is considered stable and subject to minimal risks associated with liquefaction hazards, soil erosion, lateral spreading, or expansive soils. Compared with the proposed Project, the No Project Alternative would avoid the minor grading associated with the augmentation of the AMF site and no impact would result.

Greenhouse Gas Emissions

Under the No Project Alternative, a continuation of existing conditions would result in generation of a quantity of GHG emissions similar to existing conditions. Additionally, because no construction activity would occur there would be no emission of CO_2, CH_4, and N_2O from mobile and stationary construction equipment exhaust, nor would any employee haul truck vehicle exhaust be generated. Therefore, no conflict with the AQMP would occur, and no new GHG emissions would be generated under the No Project Alternative.

As described in Section 3.3, Air Quality and Greenhouse Gas Emissions, the proposed Project would decrease the generation of long-term GHG emissions from increased passenger services through the integration of zero-emission technology. Therefore, the proposed Project would reduce operational GHG emissions and provide a net GHG and environmental benefit to the region. The No Project Alternative would not realize these GHG reduction benefits.

The proposed Project is also identified in the 2020-2045 RTP/SCS (SCAG 2020a) and would contribute to the RTP/SCS GHG reduction goals for the SCAG region, in addition to statewide GHG reduction targets, as represented by the California EO S0305. Based on these considerations, the reduction of operational GHG emissions and beneficial impacts, as facilitated by the proposed Project, would not be realized under the No Project Alternative. Hence, the No Project Alternative would be inconsistent with State and local plans and policies adopted for the purposes of reducing GHG emissions. This impact would be potentially significant and avoided by the Project.

Hazards and Hazardous Materials

Under the No Project Alternative, there would be no ground-disturbing activities associated with construction that would carry a potential to encounter contaminated soils. Although the proposed Project would mitigate potential impacts from encountering hazardous materials during construction, the No Project Alternative would avoid the potential to exacerbate existing documented and undocumented sources of hazardous materials condition. Compared with the proposed Project, the No Project Alternative would avoid impacts on identified hazardous materials cleanup sites, including LUST sites, because no excavation activities would occur. This includes avoiding the potential for ACM or lead-based paint to be released into the environment because no existing structures would be demolished. The No Project Alternative would also avoid the potential for a collateral risk of upset

based on the Project's use of H2 onsite. Compared with the proposed Project, this alternative would avoid potentially significant impacts related to hazards and hazardous materials.

Hydrology, Flooding, and Water Quality

No construction activities would occur under the No Project Alternative and existing drainage conditions would remain unchanged. Therefore, surface hydrology, groundwater recharge, and flow routing would be unaffected and no new stormwater drainage improvements or water quality measures would be required under the No Project Alternative. Similar to the proposed Project's infill location, the No Project Alternative would avoid impacts on hydrology, water quality, and floodplains.

Land Use and Planning

Under the No Project Alternative, no construction-related land use conflicts would result. Land use development would continue to occur in the proposed Project study area pursuant to the City's General Plan and zoning regulations. Compared with the proposed Project, the No Project Alternative would avoid temporary impacts related to access disruptions. Once operational, the No Project Alternative and proposed Project would function similarly with all existing access routes maintained.

The No Project Alternative would not be consistent with Federal, State, and regional plans, policies, and regulations that promote the reduction of criteria air pollutants, GHGs, and toxic air containments (e.g., DPM). In particular, the No Project Alternative is inconsistent with the regional land use and transportation goals of the 2020 RTP/SCS, which has a strategic goal of upgrading the Metrolink and Amtrak locomotive fleets with zero-emission technology. Based on this inconsistency with the regional plan for transportation and land use, this is considered a significant impact. No mitigation is proposed beyond the implementation of the Project per the SCAG 2020–2045 RTP/SCS project list (SCAG 2020b; Project No. XXX).

Noise and Vibration

Under the No Project Alternative, construction-related noise and vibration impacts, including nighttime activities, identified for the Project would be avoided. Similar to the Project, existing sensitive land uses would not be subjected to changes in operational noise as a result of the Project based on the pre-existing quiet zones that were implemented by the City following the installation of supplemental safety measures as part of DSBPRP, specifically, the closure of 3rd Street. These preexisting improvements to the grade crossings would be unchanged under the No Project Alternative. Compared with the proposed Project, under the No Project Alternative existing noise levels would remain unchanged and less than significant.

Public Services

Under the No Project Alternative, no construction would occur; therefore, the temporary impacts on emergency access and public services would not occur. Compared with the proposed Project, the No Project Alternative would avoid potentially significant impacts on public services related to emergency response times. Once operational, the proposed Project and No Project Alternatives would have no impacts on public services.

Transportation and Traffic

No construction activities, short-term increases in construction-related vehicle trips, or short-term interruptions to pedestrian and bicycle facilities would result under the No Project Alternative. Similar

to the proposed Project, this alternative would result in no construction-related delays or disruption to train operations or level of service in the traffic study area and no impact would result. Like the proposed Project, the No Project Alternative would not result in any changes to existing vehicle miles traveled and no impact would result.

Tribal Cultural Resources

No construction-related ground disturbance or demolition would occur under the No Project Alternative; therefore, undiscovered TCR within the proposed Project study area would not be disturbed. Although the Sacred Lands File Search conducted for the proposed Project came back with negative results, the No Project Alternative would avoid potentially significant impacts on TCRs because of an overall avoidance of construction activities.

Utilities and Service Systems

Under the No Project Alternative, the demand for water; generation of wastewater treatment or stormwater drainage; electrical power, natural gas, or telecommunications facilities; and generation of solid waste would remain unchanged from existing conditions. Similar to the proposed Project, the No Project Alternative would avoid impacts on utilities and service systems because no offsite improvements would be implemented. Temporary impacts related to onsite utility protection and relocation would be avoided.

Wildfire

Under the No Project Alternative, there would be no construction activities and no operational changes in the Project site. Therefore, there would be no potential for exacerbating the risk of wildfire. The No Project Alternative would avoid impacts associated with the risk of wildfire because no improvements would be implemented.

Conclusion – No Project Alternative

Under the No Project Alternative, the construction-related impacts associated with implementation of the proposed Project would be reduced overall, including impacts on aesthetics, cultural resources, hazards and hazardous materials, land use and planning, TCRs, and utilities and service systems.

While the No Project Alternative is theoretically feasible, it would fail to meet any of the Project objectives (Section 2.3 in Chapter 2, Project Description, of this EIR). The No Project Alternative would result in a lost opportunity to upgrade from diesel-powered locomotives to zero-emission technology. Furthermore, the Project under the No Project Alternative would not be consistent with the 2020-2045 RTP/SCS (SCAG 2020a), would not support the goal for more frequent rail service set out in the *California State Rail Plan* (Caltrans 2018) nor contribute to the 2020-2045 RTP/SCS GHG reduction goals for the SCAG region and statewide GHG reduction targets. Therefore, the No Project Alternative would be unable to achieve the air quality benefits of the Project, which could be applied regionally in the future.

5.4 Environmentally Superior Alternative

This section identifies the environmentally superior alternative among the alternatives considered in this EIR. As provided in Table 5-1, the No Project Alternative would avoid the construction impacts identified for the proposed Project and would have fewer environmental impacts during operation. As discussed in Section 5.1, a range of alternatives required in an EIR is governed by a rule of reason

that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the proposed project. Given the existing setting and limitation within the Project site, the only reasonable alternative to consider is the No Project Alternative.

However, as discussed in Section 5.3.2, the No Project Alternative does not meet the Project objectives and is inconsistent with the 2020–2045 RTP/SCS (SCAG 2020a) and *California State Rail Plan* (Caltrans 2018). Although the No Project Alternative would, for the most part, have fewer impacts than the proposed Project, including avoidance of any potential increase in collateral risks related to the use of H2, the No Project Alternative would not allow SBCTA and SCRRA to advance zero-emission technology. This technology would facilitate future emission reductions in criteria air pollutants, GHGs, and TACs and deliver corresponding health benefits for adjacent communities.

CEQA Guidelines Section 15126.6(e)(2) states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." An alternative location, including placement of the Project facilities at SCRRA's EMF site, would not avoid the significant impacts of the Project, but simply change the geographic influence of the Project's impacts. Given the Project's infill location and SBCTA's integration of the proposed mitigation measures, the Project is environmentally superior.

Table 5-1. Comparison of Alternatives Impact Assessment

	Proposed Project		No Project	
Impact Topic	Construction	Operation	Construction	Operation
Aesthetics	Less than Significant with Mitigation	Less than Significant	Avoid	Similar
Air Quality	Less than Significant	Less than Significant	Avoid	Greater (Significant)
Biological Resources	Less than Significant	Less than Significant	Avoid	Similar
Cultural Resources	Less than Significant with Mitigation	No Impact	Avoid	Similar
Energy	Less than Significant	Less than Significant	Avoid	Greater
Geology and Soils	No Impact	No Impact	Avoid	Similar
GHG Emissions	Less than Significant	Less than Significant	Avoid	Greater (Significant)
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less than Significant with Mitigation	Avoid	Avoid
Hydrology and Water Quality	Less than Significant	No Impact	Avoid	Similar

Table 5-1. Comparison of Alternatives Impact Assessment

Impact Topic	Proposed Project		No Project	
	Construction	Operation	Construction	Operation
Land Use and Planning	Less than Significant with Mitigation	Less than Significant	Avoid	Greater (Significant)
Noise and Vibration	Less than Significant	Less than Significant	Reduced (Less than Significant)	Similar
Public Services	No Impact	No impact	Avoid	Avoid
Transportation	Less than Significant	Less than Significant	Avoid	Similar
TCRs	Less than Significant with Mitigation	No Impact	Avoid	Similar
Utilities and Service Systems	Less than Significant	Less than Significant	Avoid	Similar
Wildfire	No Impact	No Impact	Avoid	Similar
Mandatory Findings of Significance	Less than Significant with Mitigation	Less than Significant with Mitigation	Reduced (Less than Significant)	Reduced (Less than Significant)

Notes:
Avoid=Impacts under this alternative avoided as compared with impacts for the proposed Project.
Reduced=Impacts under this alternative reduced as compared with impacts for the proposed Project.
Similar=Impacts under this alternative similar to impacts for the proposed Project.
Greater=Impacts under this alternative greater than impacts for the proposed Project.
GHG=greenhouse gas; TCR=tribal cultural resource

6 Economic and Social Effects and Growth-Inducing Impacts

6.1 Introduction

This chapter provides a discussion of the economic, social, and growth-inducing impacts of the Project. Table 6-1 provides a summary of CEQA's requirements for considering a project's economic, social, and growth-inducing impacts and the impacts identified for the proposed Project.

Table 6-1. Summary of Economic, Social, and Growth-Inducing Impacts

Topic	CEQA Requirement	Summary of Impact
Economic Effect	CEQA does not have specific requirements for evaluating the economic impacts of a proposed project. Section 15131 of CEQA Guidelines states that "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires."	The Project would not result in negative economic impacts to the region. The Project would provide temporary, short-term construction jobs. Additionally, the Project would provide increased mobility for local residents across all economic brackets.
Social Effect	The social impacts of a project include environmental justice considerations. California Government Code Section 65040.12 defines Environmental Justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."	The Project would not result in disproportionate environmental effects on minority populations, low-income populations, or Native Americans. The Project would be constructed within an existing maintenance yard and improve local air quality through use of zero-emission technology. These impacts would be distributed equitably across all populations.
Growth-Inducing Impact	CEQA Guidelines § 15126 (d) makes recommendations for analyzing impacts due to growth inducement, including discussing ways in which the project could foster economic or population growth, the construction of additional housing, or other factors which could remove obstacles to population growth or encourage and facilitate other activities which could impact the environment individually or cumulatively.	The Project would be constructed at an infill location and does not involve the construction of new housing or land use changes within the City of San Bernardino. In this context, the Project would not result in local or regional growth-inducing impacts.

Notes:
CEQA=California Environmental Quality Act; EIR=environmental impact report

Based on the information provided in Table 6-1, implementation of the Project would not, either individually or cumulatively, cause significant, adverse economic, social, or growth-inducing effects. These impacts would be less than significant.

6.2 Demographics

6.2.1 Population

The population of the City of San Bernardino has grown over the past 18 years from 185,382 in 2000 to 221,130 in 2018 (SCAG 2019). The population in the City grew at an average rate of 19.3 percent, slightly lower than the growth rate of San Bernardino County (27.2 percent). Table 6-2 identifies the general population characteristics for the City of San Bernardino and San Bernardino County.

Table 6-2. Profile of General Population Characteristics, San Bernardino and San Bernardino County, 2018

Category	San Bernardino	County of San Bernardino
Hispanic	64.2%	52.3%
Non-Hispanic White	15.3%	29.8%
Non-Hispanic Asian	4.2%	6.7%
Non-Hispanic Black	13.2%	8.0%
Non-Hispanic American Indian or Alaska Native	0.2%	0.3%
Total Population	221,130	2,174,938

Source: SCAG 2019

6.2.2 Housing

Single family homes are the most common housing type in San Bernardino and comprise 63 percent of available housing units, while multi-family homes comprise approximately 31 percent of available housing units (SCAG 2019). The closest residences to the Project site are south of 3rd Street. Table 6-3 shows the housing profile in the City of San Bernardino for 2018.

Table 6-3. Profile of Housing Type by Units in San Bernardino, 2018

Housing Type	Number of Units	Percent of Total Units
Single Family Detached	39,435	60.0%
Single Family Attached	1,917	2.9%
Multi-family: 2 to 4 units	5,107	7.8%
Multi-family: 5 units plus	15,011	22.9%
Mobile Home	4,207	6.4%
Total	65,677	100%

Source: SCAG 2019

6.2.3 Employment

In 2017, the average annual salary in the City of San Bernardino was $47,055 (SCAG 2019). According to the American Community Survey (ACS), the City's labor force (population age 16 years and over) was 163,978 in 2017, with approximately 56.2 percent of the City's eligible labor force employed within the City (U.S. Census Bureau 2017). Because the City's labor force exceeds the number of available jobs in San Bernardino, many residents do not work in the City (SCAG 2019). The top 10 locations where residents from the City commute to work are shown in Table 6-4.

Table 6-4. Profile of Employment Characteristics, 2016

Local Jurisdiction	Number of Commuters	Percent of Total Commuters
1. San Bernardino	17,213	26.2%
2. Riverside	3,513	5.4%
3. Ontario	3,089	4.7%
4. Los Angeles	3,031	4.6%
5. Fontana	2,481	3.8%
6. Rancho Cucamonga	2,481	3.8%
7. Redlands	2,327	3.5%
8. Colton	2,278	3.5%
9. Rialto	1,792	2.7%
10. Loma Linda	1,492	2.3%
All other destinations	25,933	39.5%

Source: SCAG 2019

6.3 Economic and Social Effects

In accordance with Section 15131 of the CEQA Guidelines, "economic or social information may be included in an EIR or may be presented in whatever form the agency desires." The guidelines continue to state that:

a. "Economic or social effects of a project shall not be treated as significant effects on the environment. But rather, an EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the EIR analysis shall be on the physical changes.

b. Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant.

Where an EIR uses economic or social effects to determine that a physical change is significant, the EIR shall explain the reason for determining that the effect is significant.

c. Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR. If information on these factors is not contained in the EIR, the information must be added to the record in some other manner to allow the agency to consider the factors in reaching a decision on the project."

6.3.1 Economic and Social Benefits of the Project

The Project would provide multiple local and regional economic and social benefits, as described further below.

In considering a Project's social effects and related benefits, increasing emphasis is being placed on environmental justice and a project's effects and benefits on disadvantaged communities. California Government Code Section 65040.12(e) defines environmental justice as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies." The purpose of "fair treatment" within this context is to identify the potential environmental harms and risks that result from adverse environmental consequences of industrial, government, and commercial operations or programs and policies, and to determine whether these would disproportionately burden a population. Further, it allows for the mitigation of identified impacts.

In order to identify potential environmental justice concerns, a proximity-based approach was used to compare the demographic and socioeconomic characteristics of population groups affected by a source to the demographic and socioeconomic characteristics of population groups unaffected by a source. To identify and confirm the presence of pre-existing disadvantaged populations within a 0.25-mile radius of the Project (or affected area), CalEPA's CalEnviroScreen (Version 3) was referenced and is further described in Section 3.7, Land Use and Planning.

Minority Populations: The term "minority population" in the affected area is present if "the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general populations" (U.S. EPA 1998). The term "minority" refers to people who are not identified as Non-Hispanic White Alone (U.S. EPA 2017). The minority population within 0.25 miles of the Project is approximately 85 percent (U.S. EPA 2020b), compared to the City of San Bernardino's minority population of 88 percent (U.S. Census Bureau 2019). As such, the minority population in the affected area is comparable to the minority population in the City of San Bernardino.

Low-Income Populations: Low-income populations refer to a geographically dispersed group of individuals that "experience common conditions of environmental exposure or effect" (Council on Environmental Quality 1997). The low-income population within 0.25 miles of the Project is approximately 81 percent (U.S. Census Bureau 2019), compared to the City of San Bernardino's low-income population of 56 percent (U.S. Census Bureau 2019). Based on this comparison, the affected area contains a higher proportion of low-income populations that would benefit from the lower emissions resulting from the operation of a ZEMU rail vehicle.

Native American Tribes: As discussed in Section 3.8, Tribal Cultural Resources, no TCRs have been identified within the boundaries or immediate vicinity of the Project site. Moreover, no Native American tribes have requested notification of projects subject to CEQA within SBCTA's jurisdiction. During construction, the implementation of mitigation measures would minimize and avoid impacts to any previously undiscovered cultural resources (including TCRs). Once construction is complete, operation would involve passenger train operations, maintenance, and refueling at the maintenance facility. Therefore, the Project is not anticipated to disturb or otherwise inadvertently destroy any TCRs.

6.4 Growth-Inducing Impacts

As provided in Chapter 1, Introduction, this EIR incorporates by reference the previously certified EIR for DSBPRP. CEQA Guidelines Section 15126.2(d) requires a discussion of the potential growth-inducing impacts of a project. This discussion addresses how implementation of the proposed Project would foster economic or population growth based on the prior analysis provided for DSBPRP and the Project's relationship to AMF.

The EIRs prepared for both DSBPRP and RPRP analyzed the growth-inducing effects of establishing passenger rail service between the Santa Fe Depot and downtown San Bernardino and cities of San Bernardino and Redlands, respectively. Both EIRs acknowledged that the transportation projects and station locations could provide secondary multi-modal transit development opportunities (or transit-oriented development). Development within transit-oriented development opportunity areas could in turn result in secondary effects, such as increased noise.

Projects outlined in the RTP/SCS, as amended, would contribute to new growth or the intensity of development within the SCAG region. The proposed Project, however, is a transportation enhancement project aimed at improving the quality of the environment along the existing railroad corridor and enhancing the efficiency and safety of an existing transit system. No change in land use is required to facilitate the Project. Also, the proposed Project would involve short-term construction activities and is not anticipated to create a significant number of permanent jobs. In this context, the proposed Project would not spur new regional population or employment growth and would not result in significant growth-inducing impacts.

The proposed Project would not provide rail or surface traffic system improvements greater than those contained in regional planning documents, such as relevant transportation improvements, air quality reduction plans, and local growth forecasts. It also does not include infrastructure designed to support more intensive land uses. As such, the proposed Project would have a less than significant impact on growth.

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7 Other CEQA Considerations

7.1 Introduction

Section 15126 of the CEQA Guidelines states that an EIR must address the following topics:

- Any significant irreversible environmental changes that may occur as a result of Project implementation;
- Impacts found not significant; and
- Significant and unavoidable impacts.

Chapter 7 includes a discussion of these requirements in the context of the proposed Project as described in Chapter 2, Project Description.

7.2 Irreversible Environmental Changes

CEQA requires that irreversible and irretrievable commitment of resources be addressed for certain categories of projects, including "[t]he adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency" (CEQA Guidelines Section 15127[a]).

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the associated impacts that this consumption could have on future generations. Commitments of resources could be current, as well as future. Future commitments of resources would be associated with the secondary effects of growth-inducing impacts. Irreversible impacts result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a significant cultural resource).

Some resources, such as any timber used for construction, are generally considered renewable and could ultimately be replenished within a reasonable timeframe. Human resources are also considered a renewable resource. Non-renewable resources, such as petrochemical construction materials; steel, copper, lead, and other metals; gravel; concrete; and other materials, are typically considered finite and would not be replenished over the lifetime of the Project.

The construction and implementation of the Project would entail the irreversible and irretrievable commitment of some land, energy, and human resources. These resources include the following:

- Commitment of land for transportation purposes;
- Commitment of natural resources during construction activities associated with the Project, including the use of construction materials (e.g., steel, ballast, concrete); and,
- Consumption of nonrenewable energy resources, mainly diesel, gasoline, and electricity, as a result of construction, operation, and maintenance of the Project.

The land used for the Project is currently dedicated for transportation purposes thereby maximizing the use of the available ROW. Hence, the Project represents an efficient use of the land; especially given its infill location. Beyond the Project's commitment of land resources, the Project would result in

a short-term increase in the use of energy to manufacture, deliver, and construct the proposed improvements. The manufacturing of materials used to construct the Project, and energy in the form of natural gas, petroleum products, and electricity consumed during construction and operation, would contribute to the incremental depletion of renewable and nonrenewable resources. Steel, concrete, and other materials would be recycled, to the extent feasible; however, the loss of these resources is considered irreversible because their reuse for a purpose other than the Project would be highly unlikely or impossible. Based on these considerations, the Project constitutes an irreversible and irretrievable commitment of natural resources.

The Project's use of nonrenewable energy sources, such as diesel fuel, is considered an irreversible, irretrievable commitment of these petroleum resources. The commitment of resources to construct and operate the Project is based on the belief that residents, employees, and visitors would benefit from the improved efficiency, accessibility, safety, and environmental quality of the transportation system in Southern California. These benefits are anticipated to substantially outweigh any short-term irreversible or irretrievable commitment of nonrenewable resources.

7.3 Effects Found Not Significant

In accordance with Section 15128 of the CEQA Guidelines, an EIR is required to identify those resource topics that were determined to have no or less than significant impacts. SBCTA circulated an initial study with the NOP (Appendix A) that identified those resource topics that would not result in significant impacts based on the components associated with the Project. Additionally, this analysis incorporates by reference SBCTA's certified EIR for DSBPRP (SCH No. 2011051024) and the previously adopted mitigation measures that are now implemented (Appendix A).

7.3.1 Agricultural and Forest Resources

The Project is located in a developed portion of the City of San Bernardino. There are no agricultural land uses in or adjacent to the Project site and implementation and operation of the project would not result in the conversion of farmland to non-agricultural uses or cancellation of a Williamson Act contract.

The Project study area is not zoned forest land, timberland, or timberland zoned Timberland Production (as defined in PRC Section 12220(g), PRC Section 4526, and Government Code Section 51104(g)). The Project would not conflict with existing zoning of forest land or cause rezoning of any forest land. No impacts would result.

7.3.2 Biological Resources

The Project site is zoned for Heavy Industrial use and is surrounded by industrial and commercial land uses (and non-conforming residential uses south of 3rd Street). Vegetation communities within the Project site consist of urban and developed habitats composed mainly of paved and other impervious surfaces. Few ornamental trees are located south of 3rd Street. No riparian habitat, waters of the U. S. or State, or other sensitive, natural community is present within or adjacent to the Project site. Due to the developed and urban infill location, no wildlife corridors exist in, or near, the Project area or approved or adopted habitat conservation plan(s). Construction of the proposed Project would remain within the SBCTA ROW and the previously analyzed AMF site (or IEMF). Based on these considerations, no impacts to biological resources would result.

7.3.3 Geology and Soils

The Project site is not located within an Alquist-Priolo fault zone, and the closest fault, the San Jacinto fault (San Bernardino section), is located more than 1 mile southwest of the Project limits. A geotechnical investigation was conducted for DSBPRP in conjunction with the certified EIR. Mitigation measures were adopted for DSBPRP as part of the EIR that required a final geotechnical investigation. The recommendations from the investigation were to be incorporated into the final design of DSBPRP to minimize risks associated with seismic ground shaking and related geologic hazards (e.g. liquefaction). These measures were implemented on the AMF site and, therefore, for the purposes of the Project, these hazards are addressed under existing conditions. The corresponding impacts to the Project would be less than significant.

SBCTA's construction contractor would be required to comply with the NPDES General Construction Permit during construction and prepare and implement an SWPPP. Once constructed, SBCTA will file for coverage under the Industrial General Permit, which also requires a SWPPP. The SWPPP requires erosion control BMPs, including the use of proper grading techniques, proper soil stabilization, sediment control, and runoff control. In this context, impacts related to soil erosion would be less than significant.

Based on these considerations, the proposed Project would be required to implement required standard engineering practices, site-specific engineering practices identified during final design, and applicable California Building Code standards. Compliance with these regulations, combined with the Project's integration of the drainage and water quality mitigation measures implemented as part of DSBPRP, would ensure that the Project does not exacerbate existing geologic or soil hazards. Therefore, a less than significant impact would result from the project.

Issues related to paleontological resources are addressed in Section 3.4, Cultural Resources.

7.3.4 Hydrology and Water Quality

The proposed Project would result in a disturbed soil area greater than 1 acre and, therefore, the Project would be required to comply with the NPDES Construction and Industrial General Permit. Construction and operation of AMF is currently covered under the Waste Discharge ID No. 8 36C383747. The current SWPPP identifies temporary BMPs to address the potential temporary impacts on water quality during construction. Following construction, SBCTA (or SCRRA) will file for coverage under the NPDES Industrial General Permit, which will also require the preparation and implementation of a SWPPP to address post-construction discharges and related BMPs. In this context, the Project's impacts to water quality are less than significant based on compliance with the NPDES regulatory program.

The proposed Project does not include the use of groundwater resources and will connect directly to on-site potable water infrastructure. Additionally, the Project would not substantially alter the existing drainage pattern within the Project limits and would integrate with existing drainage improvements constructed as a part of DSBPRP and AMF. In this context, Project-related impacts to groundwater and drainage would be less than significant.

As discussed in the certified EIR for DSBPRP, the Federal Emergency Management Agency flood map for the AMF site identifies the Project site as Zone X or an area outside of the 100-year floodplain zone. In this context, the proposed Project is not at risk of inundation by seiche, tsunami, or mudflow and no impacts related to flooding would result.

7.3.5 Mineral Resources

As provided in the certified EIR for DSPRP, the proposed Project is located within an area designated as MRZ-2, an area with a likelihood of significant mineral deposits. However, the Project limits and the surrounding areas are developed with urban land uses and designated accordingly under the City of San Bernardino's General Plan. The proposed Project is not within an Industrial Extractive zone and would not interfere with any current mining activity or prevent access to an approved MRZ-2 zone. No impact would result.

7.3.6 Noise and Vibration

Construction of the proposed Project would result in short-term, temporary increases in noise; however, activities would be isolated to the AMF site. Construction activities are anticipated to occur between the hours of 7:00 a.m. to 7:00 p.m. on weekdays and Saturdays, in accordance with City of San Bernardino standards. Nighttime construction may also be required. For this reason, construction-related noise measures are identified in Section 3.7, Land Use and Planning, to address potential short-term increases in ambient noise levels.

Once constructed, the Project would take advantage of the quiet zone mitigation previously implemented by SBCTA and adopted by the City of San Bernardino and FRA. The introduction of the Project facilities to AMF is not expected to add new stationary noise sources or activities that would otherwise increase noise levels beyond those permitted for the AMF and M-3 zoning. Additionally, the operational noise generated by the ZEMU train vehicle would be comparable to that produced by DMUs (and Metrolink locomotives) already approved for operations. For these reasons, long-term noise impacts would be less than significant.

The proposed Project construction activities would have the potential to generate ground-borne vibration with the use of heavy equipment. However, these activities would be of sufficient proximity from the nearest sensitive land use (approximately 400 feet) and not discernable. Therefore, Project-related construction and operational sources of vibration would be less than significant.

The proposed Project is not located within 2 miles of an airport or private airstrip. The closest airport is located approximately 3 miles southeast of the Project limits. No impact would result.

7.3.7 Population and Housing

The Project does not propose the construction of new residential units or commercial buildings. The proposed Project would be located entirely within SBCTA's ROW, a developed area zoned for Industrial Heavy use. Acquisition of private properties would not be required; therefore, no displacement of existing people or housing would occur. In this context, no impact would result from the Project.

7.3.8 Public Services

The Project would be constructed at an infill location within the limits of the AMF site and would not generate population growth that would otherwise place new demands on local public fire and police protection services or schools. Additionally, the proposed Project does not include a residential component, which would otherwise result in an incremental increase in demand for public services. No impact would result.

7.3.9 Recreation

The proposed Project would not contribute to population growth that could result in an increased use of existing neighborhood and regional parks, nor does the proposed Project include or require the construction or expansion of recreational facilities. No impact would result.

7.3.10 Transportation and Traffic

The proposed Project would integrate one ZEMU train into SBCTA's Arrow service and include construction of H2 storage and refueling improvements to the existing AMF site. The Project would be entirely contained within SBCTA ROW. No street closures or roadway reconfigurations are proposed as a part of the Project. Similar to AMF, the Project would use the existing driveway access at West 3rd Street for the H2 imports. For these reasons, the Project would not alter the circulation for transit, roadway, bicycle, or pedestrian facilities within the Project limits or the surrounding area.

Project construction would be located entirely within SBCTA ROW, including staging or construction laydown areas. For these reasons, the Project would not require detours, temporary roadway closures, or alterations to existing sidewalks. Once constructed, the proposed Project would not require any new roadways or geometric designs accessible to the public beyond those previously constructed for AMF. Based on these considerations, Project-related impacts to transportation and traffic are less than significant.

7.3.11 Wildfires

The proposed Project is within 1.25 miles of two San Bernardino Fire Stations (Fire Station 221 at 200 East 3rd Street and Fire Station 222 at 1201 West Ninth Street). The proposed Project is currently zoned for Industrial Heavy and surrounded by commercial and industrial areas. In addition, the proposed Project site is relatively flat and far from vegetated hillside areas of the City of San Bernardino that are prone to wildfires. Given these considerations and required compliance with state and local fire protection regulations, the Project's impact would be less than significant.

7.4 Significant and Unavoidable Environmental Impacts

Section 15126.2(b) of the CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the Project is implemented. Sections 3.1 through 3.8 of this EIR provide a detailed analysis of any significant environmental impacts related to the project; identify feasible mitigation measures, where available, that could avoid or reduce the significant impacts; and present a determination of whether these mitigation measures would reduce the impacts to a level less than significant. Chapter 4, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined impacts of the Project and related projects considered in cumulative analysis. If a specific impact in either of these sections cannot be fully reduced to a level less than significant, it is considered a significant and unavoidable impact.

Based on the analysis provided in Chapters 3 and 4 of this EIR, the proposed Project would not result in significant and unavoidable impacts following the implementation of the proposed mitigation measures.

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9 Preparers

San Bernardino County Transportation Authority

Carrie Schindler, Director of Transit and Rail

Mott MacDonald

Joy Buenaflor, Project Commercial Manager

Eric Banghart, Project Manager

Brianne Overton, Lead Designer

HDR Engineering, Inc

Clint Meyer, Project Manager

Natalie Brim, Environmental Planner

Anders Burvall, GIS Manager

Patrick Macpherson, Environmental Planner

Daniel Leonard, Cultural Resources Specialist

Leesa Gratreak, Architectural Historian

Keith Lay, Senior Air Quality Specialist

Renee Stueber, Document Production

Katherine Turner, Document Production

Integral

Brian Katz, Risk Assessment Technical Consultant

Organizations Persons Consulted

City of San Bernardino

Agua Caliente Band of Cahuilla Indians

San Manuel Band of Mission Indians

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