

4.16 Historic, Archaeological, and Paleontological Resources

4.16.1 Regulatory Framework and Methodology

4.16.1.1 Regulatory Framework

The applicable federal, state, and local regulations that are relevant to an analysis of the proposed project's cultural resources impacts are listed below. For additional information regarding these regulations, please see the Cultural Resources Impact Report in Appendix S of this Draft EIS/EIR.

Federal

The following federal regulations would be applicable to the proposed project:

- National Environmental Policy Act
- Section 106 of the National Historic Preservation Act (NHPA)
- National Register of Historic Places
- Code of Federal Regulations Part 800
- Archeological and Historic Preservation Act of 1974
- Archeological Resources Protection Act of 1979
- American Indian Religious Freedom Act of 1978
- Native American Graves Protection and Repatriation Act of 1990
- Executive Order 11593 (1971), Protection and Enhancement of the Cultural Environment
- Executive Order 13007 (1996), Protection and Preservation of Native American Sacred Sites
- Executive Order 13175 (2000), Consultation and Coordination with Indian Tribal Governments
- Executive Order 13287 (2003), Preserve America
- Antiquities Act

State

The following state regulations would be applicable to the proposed project:

- California Environmental Quality Act
- Public Resources Code
- State Health and Safety Code, Section 7050.5/California Public Resources Code, Section 5097.9

Local

The study area lies in the Cities of Los Angeles and San Fernando. NEPA and CEQA guide lead agencies to incorporate local designations in the review and evaluation of project effects. At the local level, the City of Los Angeles designates individual historical resources as Historic-Cultural

Monuments (LAHCM) and historic districts as Historic Preservation Overlay Zones (HPOZ). Also at the local level, the City of San Fernando designates Historic Resources, which are included in its San Fernando Register of Historic Resources. Local designations, including HCMs and HPOZs designated by the City of Los Angeles and Historic Resources designated by the City of San Fernando, have “presumptive significance” under CEQA, and mitigation measures are recommended to address any significant impacts on these resources.

The study area lies in the Cities of Los Angeles and San Fernando. Although the City of San Fernando has no guidelines concerning fossils, the City of Los Angeles has adopted a CEQA thresholds guide (CoLA 2006):

If a project could disturb “surface or subsurface fossils, either through site preparation, construction or operational activities, or through an increase in human activities at or near the fossil site” then “an expanded Initial Study, Negative Declaration, Mitigated Negative Declaration, or EIR may be required” (CoLA 2006, page D. 1-2 section 1C).

Potential mitigation measures for this project include (1) nonexcavation, or (2) retention of “a qualified paleontologist to monitor, and if necessary, salvage scientifically significant fossil remains”, “divert grading efforts in the area of an exposed fossil to allow excavation and if necessary salvage of exposed fossils”, and to “ensure that scientific specimens become the property of a public, nonprofit educational institution, such as the Los Angeles County Museum of Natural History” (now the Natural History Museum of Los Angeles County; CoLA 2006, page D. 1-5 section 2B).

Additionally, the City of Los Angeles Public works Construction, Section 6-3.2 “Requires that grading, excavation, or other ground disturbing activities for a public project be halted in the area of a paleontological or archaeological find, until such time as a resource expert can review the find, determine its significance, and if required, determine appropriate mitigation measures” (CoLA 2006, page D. 1-8).

4.16.1.2 Methodology

Archaeological Resources

For the purposes of this project, a general study area for the NEPA and CEQA analyses and a smaller Area of Potential Effects (APE) for the Section 106 analysis were identified. The study area was the same broad area generally utilized for all environmental impacts analysis on this project, whereas a narrower APE was defined to solely identify known and potential cultural resources in the project area that have the potential to be physically or indirectly affected by the undertaking. For this project, a preliminary study area was identified for research and records search purposes and encompassed a one-half mile radius on either side of the proposed alignment areas.

Information on existing archaeological resources within the study area was gathered through the use of a cultural resources literature and records search. On October 6, 2011, ICF conducted a records search at the SCCIC located at California State University Fullerton. SCCIC is a branch of the California Historical Resources Information Center, which maintains the State of California’s official records of previously recorded cultural resource studies and recorded archaeological sites. SCCIC maintains the records for Los Angeles and Orange Counties. The SCCIC records search included the project study area and a 0.5-mile buffer surrounding the project study area. In addition, the ICF cultural resources library and the following sources were consulted:

- National Register of Historic Places (NRHP);
- Historic Property Data Files;

- The California Register of Historical Resources (CRHR);
- California Historical Landmarks Database; and
- Los Angeles Historic-Cultural Landmarks Database.

Potential impacts to archaeological resources resulting from the project alternatives were evaluated by determining whether ground disturbing activities would affect areas that contain or could contain any archaeological sites listed in or eligible for listing in the NRHP or the CRHR, or that are archaeological resources designated as a City of Los Angeles Historic-Cultural Monument, or that are otherwise considered a unique or important archaeological resource under CEQA.

Historic Resources

The following steps were used to identify known and potentially eligible historical resources within the project area that could be affected by the proposed project alternatives:

- Determine Scope of Identification Efforts and APE;
- Review Existing Information/Identification of Previously Recorded Properties;
- Seek Information from the Public/Interested Parties; and
- Identify and Evaluate Potential Historic Properties

Descriptions of these steps and the APE maps for historic resources are included in the Cultural Resources Impacts Report in Appendix S.

4.16.1.3 Significance Thresholds

NEPA and Section 106

NEPA does not include specific significance thresholds. According to the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA, the determination of significance under NEPA is based on context and intensity.¹ Context relates to the various levels of society where effects could result, such as society as a whole, the affected region, the affected interests, and the locality. The intensity of an effect relates to several factors, including the degree to which public health and safety would be affected; the proximity of a project to sensitive resources; and the degree to which effects on the quality of the human environment are likely to be highly controversial or involve unique or unknown risks.

However, Section 106 of the NHPA requires federal agencies that license or fund projects to consider the undertaking's effects on historic properties (and archaeological resources). Provided below are descriptions of the criteria that are used to determine whether an undertaking or project would result in an adverse effect on archaeological and historic resources under Section 106.

Archaeological Resources

An adverse effect is found on archaeological resources when an undertaking may alter, directly or indirectly, any of the characteristics of an archaeological resource that qualify the resource for inclusion in the NRHP because it:

¹ Code of Federal Regulations. *CEQ – Regulations for Implementing NEPA, 40 CFR Part 1508, Terminology and Index.*

- Is associated with events that have made a significant contribution to the broad patterns of history;
- Is associated with the lives of persons significant in the past;
- Embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Historic Resources

An adverse effect is found on historic properties when an undertaking may alter, directly or indirectly, any of the characteristics of historic properties that qualify the resource for inclusion in the NRHP because it:

- Is associated with events that have made a significant contribution to the broad patterns of history;
- Is associated with the lives of persons significant in the past;
- Embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

According to 36 CFR 800.5(a)(1), an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, setting, design, materials, workmanship, feeling, or association.

Examples of adverse effects on historic properties include, but are not limited to:

- (i). Physical destruction of or damage to all or part of the property;
- (ii). Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- (iii). Removal of property from its historic location;
- (iv). Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v). Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi). Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- (vii). Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.²

² 36 CFR 800.5(a)(2)(i through vii).

CEQA

Archaeological Resources

For the purposes of the analysis in the EIR, in accordance with Appendix G of the State CEQA Guidelines, the project would have a significant archaeological resources impact under CEQA if it would:

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5(b) of Appendix G of the State CEQA Guidelines goes on to define “substantial adverse change,” in relevant part, as follows:

1. Substantial adverse change in the significance of an historical resource, including significant archaeological resources, means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.
2. The significance of an historical resource, including significant archaeological resources, is materially impaired when a project:
 - A. Demolishes or materially alters in an adverse manner those physical characteristics of the resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or
 - B. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register or historic resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historic resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically significant; or
 - C. Demolishes or materially alters in an adverse manner those physical characteristics of the resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for the purposes of CEQA.

Historic Resources

In enacting the CRHR in 1998, the Legislature amended CEQA to clarify which properties are significant, as well as which project impacts are considered to be significantly adverse:

A project 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.³

A substantial adverse change means demolition, destruction, relocation, or alteration of the resource such that the significance of a historical resource is materially impaired.⁴

³ Public Resource Code Section 21084.1.

⁴ Public Resource Code Section 5020.1(q).

The State CEQA Guidelines include a slightly different definition of “substantial adverse change:”⁵

Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource is materially impaired.⁶

The Guidelines go on to state that “the significance of a historic resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that convey its significance and that justify its inclusion in or eligibility for inclusion in the CRHR local register, or its identification in a historic resources survey.”⁷

Paleontological Resources

The State CEQA Guidelines do not describe specific significance thresholds. However, Appendix G of the State CEQA Guidelines lists a variety of potentially significant effects, which are often used as thresholds or guidance in developing thresholds for determining impact significance. Accordingly, for the purposes of this EIS/EIR, a project would normally have a significant impact on paleontological resources, under CEQA, if it would:

- Directly or indirectly destroy a unique paleontological resource or site.

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003; Scott et al. 2004).

⁵ 14 CCR Section 15064.5(b)(2)(A)

⁶ 14 CCR Section 15064.5(b)(2)(A).

⁷ 14 CCR Section 15064.5(b)(2).

L.A. CEQA Thresholds Guide

Archaeological Resources

According to the *L.A. CEQA Thresholds Guide*, a project would have a significant impact upon archaeological resources if it could disturb, damage, or degrade an archaeological resource or its setting that is found to be important under the criteria of CEQA because it:

- Is associated with an event or person of recognized importance in California or American prehistory or of recognized scientific importance in prehistory;
- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions;
- Has a special or particular quality, such as the oldest, best, largest, or last surviving example of its kind;
- Is at least 100-years-old and possesses substantial stratigraphic integrity; or
- Involves important research questions that historical research has shown can be answered only with archaeological methods.

Historic Resources

The following factors are set forth in the *L.A. CEQA Thresholds Guide*, which states that a project would normally have a significant impact on historical resources if it would result in a substantial adverse change in the significance of an historical resource. A substantial adverse change in significance occurs if the project involves:

- Demolition of a significant resource;
- Relocation that does not maintain the integrity and (historical/architectural) significance of a significant resource;
- Conversion, rehabilitation, or alteration of a significant resource which 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 important resources on the site or in the vicinity.

Therefore, the test for determining whether or not the project will have a significant impact on identified historical resources is whether it will materially impair the physical integrity of the historical resource such that it would no longer be listed in the NRHP or CRHR, or other landmark programs such as the list of Los Angeles Historic-Cultural Monuments.

Paleontological Resources

According to the *L.A. CEQA Thresholds Guide*, the determination of significance of impacts on paleontological resources shall be made on a case-by-case basis, considering the following factors:

- Whether, or the degree to which, the project might result in the permanent loss of, or loss of access to, a paleontological resources; and
- Whether the paleontological resource is of regional or statewide significance.

4.16.2 Affected Environment/Existing Conditions

4.16.2.1 Archaeological Resources

Prehistoric Human Occupation

People have lived in California for more than 13,000 years and in the greater Los Angeles area for more than 9000 years Before Present (BP). The Topanga Complex is used to date sites within the San Fernando Valley. Treganza and Bierman identified two phases of the Topanga Complex, Phase I and Phase II, with their research at sites CA-LAN-1 and CA-LAN-2 in Topanga Canyon.⁸ In 1966, K. Johnson identified a third phase based on his work at CA-LAN-2 and compiled dates for all three phases.⁹ Michael Moratto summarizes the three phases in his 2004 study, *California Archaeology*.¹⁰ Moratto's summary was used as the basis for the following discussion.

Phase I: Phase I began prior to 5000 BP. An abundance of millingstones and manos found at Phase I sites indicate that processing hard seeds was a major subsistence activity. Archaeological deposits also contain large stone tools such as scrapers, choppers, hammerstones, and projectile points. During Phase I, the deceased were interred under millingstones and secondary burials were common.

Phase II: Radiocarbon dates acquired from Phase II sites place them temporally between 5000 BP and 3000 BP. Phase II is distinguished from Phase I by the inclusion of small projectile points, incised and cogged stones, and fewer core tools than Phase I. Secondary burials continued into Phase II and extended burials oriented south were introduced.

Phase III: Phase III dates between 3000 BP and 2000 BP and is marked by the introduction of large, circular rock ovens and flexed burials. Additional tools found at Phase III sites include mortars, pestles, pressure flaked projectile points, core tools and millingstones.

Native American Ethnography

The project study area lies within Gabrielino and Fernandeano ethnographic territories. The terms Gabrielino and Fernandeano refer to Native American groups historically associated with the San Gabriel and San Fernando Missions. Gabrielino and Fernandeano territory is not well defined, but generally believed to incorporate the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. It includes the entire Los Angeles Basin, the coast between Aliso Creek and Topanga Creek and the islands of San Clemente, San Nicholas, and Santa Catalina. The ancestors of the Gabrielinos and Fernandeanos likely arrived in the Los Angeles Basin around 2500 B.P. as part of what Kroeber (1925)¹¹ referred to as the "Shoshonean Wedge." By 1500 B.P., permanent villages were built in the lowlands along rivers and streams. Over 50 villages may have been occupied simultaneously with populations between 50 and 200 people per village (Bean and Smith 1978).¹²

⁸ Treganza, A.E. and A. Bierman. 1958. The Topanga Culture: Final Report on Excavations, 1948. Berkeley: *University of California Anthropological Records* 20(2):45-86.

⁹ Johnson, K.L. 1966. LAN-2: A Late Manifestation of the Topanga Complex in Southern California Prehistory. Berkeley: *University of California Anthropological Records* 23:1-36.

¹⁰ Moratto, Michael J. 2004. *California Archaeology*. Academic Press, Inc.

¹¹ Kroeber, A.L. 1925. Handbook of the Indians of California, Washington D.C.: *Smithsonian Institution, Bureau of American Ethnology Bulletin* 78.

¹² Bean L. J. and C.R. Smith. 1978. Gabrielino. In R.F. Heizer, vol. ed., *Handbook of North American Indians, Vol. 8., California*: 550-563. Washington D.C. Smithsonian Institute.

Gabrielino and Fernandeano houses were primarily domed, semi-subterranean, thatched structures of locally accessible materials including tule, fern, and carrizo. Principal game included deer, rabbit, fish, sea mammals, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, and other birds. Acorns were the most important single food source and villages seem to have been located near water resources necessary for the leaching of acorns. Grass seeds were the next most abundant food source. Seeds were parched, ground, and cooked as a mush in various combinations. Additional food sources included various greens, cactus pods, yucca buds, bulbs, roots, and tubers. Tools for food acquisition, storage, and preparation included an inventory made from widely available materials. Hunting tools included shoulder-height bows with fire-hardened wood or stone-tipped arrows curved throwing sticks, rabbit nets, slings, and traps. Seeds were ground with handstones on shallow unshaped basin metates. The same granites were made into shaped or unshaped mortars and pestles for pounding acorns or small game. Coiled and twined baskets and steatite bowls were used in food gathering, preparation, storage, and serving. Other utensils for food preparation included wooden food paddles, brushes, tongs, tweezers, and wooden digging sticks.

Historic Background

European settlement of California began with the founding of Mission San Diego de Alcala in 1769. Several expeditions into California followed and led to the establishment of the San Gabriel Mission in 1771 and the San Fernando Mission in 1797. Mexico, including Southern California, won independence from Spain in 1821. In 1848, following the Mexican-American war, the American Southwest, including the project study area, was ceded to the United States.

The project study area is located in the San Fernando Valley of Southern California. Van Nuys Boulevard and the associated City of Van Nuys, is named after Isaac Van Nuys, a senior partner of San Fernando Farm Homestead Association (SFFHA). In 1869, the SFFHA purchased former California Governor Pio Pico's interest in the Valley and sold it to the Los Angeles Suburban Home Association (LASHA). Senior members of the LASHA included Harry Chandler and Harrison Gray Otis of the Los Angeles Times, Moses Sherman, a streetcar line owner, and Hobart Johnstone Whitley, a real-estate promoter. The group subdivided the Valley into three cities: Van Nuys, Marian (now Reseda), and Owensmouth (now Canoga Park). Van Nuys was designed around the Pacific Electric Redline and marketed by the SFFHA as the "town that started right." The City joined the City of Los Angeles in 1915. The project study area experienced a population boom after World War II, where it became a popular suburb for returning GIs. In 1945, General Motors built an Assembly Plant in Van Nuys, which led to continued growth. Today, Van Nuys is home to over 60,000 people.

Previously Identified Historical Resources

On October 6, 2011, ICF conducted a records search at the SCCIC located at California State University Fullerton. SCCIC is a branch of the California Historical Resources Information Center, which maintains the State of California's official records of previously recorded cultural resource studies and recorded archaeological sites. SCCIC maintains the records for Los Angeles and Orange Counties. The SCCIC records search included the project study area and a 0.5-mile buffer surrounding the project study area.

A review of SCCIC's records indicates that 56 previous cultural resource studies have been conducted within a 0.5-mile radius of the project alternatives. Approximately 25% of the project alternatives have been previously surveyed. Previous cultural resource studies have identified two archaeological sites within the project APE. Previous cultural resource studies have identified 15 additional cultural resource within a ½ mile radius of the APE, of which 12 are built resources and three are prehistoric archaeological sites.

The two archaeological sites located in the APE are Site #19-001124, three historical archaeological features associated with the Southern Pacific Railroad, and Site #19-002681, a multi-component prehistoric and historical archaeological site. The subsurface extents of these archaeological sites have not been determined. Neither resource has been evaluated for the CRHR or the NRHP. These sites are located within the project ROW, and not within the proposed MSF sites.

Site #19-001124 encompasses three historical archaeological features associated with the circa 1874 Southern Pacific Railroad San Fernando Station, engine house, and turntable. All of these buildings had been removed and the site was a vacant lot when the site was recorded in 1982. Three features were recorded at that time (Howell 1982).

Feature A consisted of two parallel linear foundations, apparently associated with the engine house. Feature B, also associated with the engine house location, was a single course brick foundation remnant. Feature C consisted of a 73.5-foot diameter circular brick foundation on which the roundhouse tracks had been laid.

Site #19-002681 encompasses two brick features, a concentration of historical glass, and a diffuse scatter of historical and prehistoric artifacts (Knight 2001). The first brick feature is a small brick and mortar foundation made up of about 250 whole and fragmented bricks. The second brick feature consisted of a mixture of bricks and non-local granitic cobbles, and some ashy soils.

The historical glass concentration encompassed about 100 fragments of whiskey and medicine bottles. Features of the glass and the bottle finishes (tops) suggested they were 50 to 75 years old. Prehistoric items recovered included a metate fragment, a mano, a pestle, a hammerstone, a scrapper, and two flakes. Additional items that possibly were prehistoric included two possible groundstone or anvil fragments, a possible chopper, and three possible manuports.

4.16.2.2 Historic Resources

Historical Context

The early history of the San Fernando Valley was characterized by Native American settlement, Spanish, and Mexican colonization during the late eighteenth century and first part of the nineteenth century, and agricultural development under U.S. governance in the late nineteenth century. The town of San Fernando was founded in 1874 and is the oldest City in the San Fernando Valley. The land that became the City of San Fernando was located within the holdings of the Mission San Fernando, founded in 1797. The mission itself was abandoned following secularization of the missions in the 1830s, and the land became ranchos. Charles Maclay founded San Fernando; he sold town lots as well as agricultural land.¹³ After the arrival of the Southern Pacific Railroad in 1876, the agricultural economy, which was the cornerstone of the town, flourished. Land was devoted to citrus and olives, among other crops.¹⁴

The City of San Fernando, which incorporated in 1911, remained a separate City and refused annexation by Los Angeles. The City possessed its own deep water wells, which allowed it to maintain its independence and retaining a reliable source of water. The communities of Pacoima and Van Nuys were among those annexed to the City of Los Angeles after the completion of the Owens Valley Aqueduct. Pacoima was established in 1887 along the Southern Pacific Railroad. Its founder, Jouett

¹³ Leonard Pitt and Dale Pitt, *Los Angeles A to Z: An Encyclopedia of the City and County* (Berkeley: University of California Press, 1997), 447.

¹⁴ County of Los Angeles Public Library, "San Fernando Community History," <<http://www.colapublic.org/history/sanfernando/>>. Accessed May 14, 2013.

Allen, purchased 1,000 acres of land from San Fernando founder Charles Maclay, and the land was soon devoted to agricultural purposes, including the growth of citrus, olives, and apricots. After annexation by Los Angeles and access to water from the Owens Valley Aqueduct, agriculture flourished. The area became known for its farms, poultry ranches, and thoroughbred horses.¹⁵ This remained the case until after World War II.

Van Nuys developed on land originally owned by Isaac Newtown Van Nuys, a prominent wheat rancher. The Van Nuys family sold approximately 475,000 acres of land to the Los Angeles Suburban Homes Company in 1909. From the 1910s onward, the separate agricultural communities of the San Fernando Valley grew and merged into residential communities that were increasingly served and designed for automobile use. These communities remained largely agricultural and disparate until after World War II.¹⁶ In the five years following the end of the war, the population of the San Fernando Valley more than doubled from 176,000 to 402,538.¹⁷ The landscape of the San Fernando Valley changed rapidly. Residential neighborhoods replaced agricultural land, and home construction could not keep up with demand.

When World War II ended, the thousands of returning veterans, defense workers and their families created a huge demand not only for housing but for material goods and services. As a result, industrial production facilities in Los Angeles were expanded in order to meet those needs, primarily in the San Fernando Valley and near LAX; however, available land for industrial development was becoming more and more scarce. To solve this issue, the Industrial Association of the San Fernando Valley was formed, with the aim of rezoning farmland for industrial use. In the 1950s, they succeeded in rezoning over 7,000 acres along the Southern Pacific Railroad tracks through the San Fernando Valley.

The unprecedented growth of the San Fernando Valley – the population again doubled in the 1950s – caused congestion of its now outdated streets. In the late 1950s and 1960s, the construction of freeways through the San Fernando Valley helped alleviate traffic congestion. During this period, a shift towards development of multiple-family housing resulted.

Prior to the construction of the freeway system, a number of the major thoroughfares in the San Fernando Valley were laid out and utilized as highways. They were also designated as such. Ventura Boulevard was U.S. 101, Sepulveda Boulevard was State Route 7, and San Fernando Road was both U.S. 6 and State Route 99.¹⁸ Ventura Boulevard was initially part of the El Camino Real, the route laid out by the Spanish to connect the missions in the mission system. It was widened by 70 feet in the 1920s to accommodate increased automobile traffic and was often utilized by commuters traveling between Los Angeles and the San Fernando Valley.¹⁹ In the post-war period, it became an even more heavily traveled corridor lined with commercial development.

Van Nuys Boulevard was laid out by developers in the early twentieth century as a major north-south thoroughfare at the eastern end of the San Fernando Valley. Early on, Van Nuys Boulevard contained an electric railroad line, and it was increasingly used as an automobile route, resulting in the widening of the boulevard in the late 1950s. From its inception, commercial and entertainment uses gravitated to well-traveled Van Nuys Boulevard, including theatres, restaurants, shops, and recreational facilities. By the mid-century, large shopping plazas appeared, and automobile-related

¹⁵ Pacoima Chamber of Commerce, “Pacoima’s History,” <<http://www.pacoimachamber.com/pacoimas-history/>> Accessed May 14, 2013.

¹⁶ Roderick, 113.

¹⁷ Roderick, 113 and 123.

¹⁸ Roderick, 108.

¹⁹ Roderick, 77 and 113.

commerce like car washes, drive-through diners, and dealerships were prevalent on Van Nuys Boulevard. The corridor also became the administrative and public services center for the San Fernando Valley, beginning with the establishment of important civic institutions during the 1920s and 1930s within the community of Van Nuys. This area became known as the Van Nuys Government Center. As the San Fernando Valley's population expanded and its communities grew during the postwar period, additional civic institutions, public utility buildings, health services, and government-financed public housing were constructed along Van Nuys Boulevard. In this way, Van Nuys Boulevard served as the San Fernando Valley's Main Street, and it became an outdoor "show room" for commercial and institutional architecture that was expressive of the development of the broader San Fernando Valley.

Previously Identified Historical Resources

Within the study area, there are 15 individual properties that were previously recorded as historic properties/historical resources that are currently extant. Three of the 15 properties are located within the APE. They are indicated with an * in Table 4.16-1 and described in additional detail in the text that follows the tables below. Of the 15 previously recorded resources, two individual properties are listed in the NRHP and the CRHR and local landmark programs; two individual properties are listed in the CRHR only; six properties are listed on the CRHR and local landmark programs, and three are designated at the local level as Los Angeles Historic Cultural Monuments (LA HCMs). Two properties were identified as appearing to be eligible as part of a previous study, including the San Fernando Road and the San Fernando Road Bridge over Pacoima Wash.

Bridge #53C-0302, the San Fernando Bridge over Pacoima Wash, was evaluated in 2012 and found to be not eligible for the NRHP or CRHR as an individual resource, but is a contributing feature of San Fernando Road, which was previously found eligible for listing in the NRHP and CRHR as part of a CEQA review process. A small segment of both San Fernando Road and Bridge #53C-0302 is located within the project's APE.

Within the study area, there are two previously recorded historic districts. The previously recorded historic districts include the Van Nuys Historic Preservation Overlay Zone (HPOZ), which is locally designated by the City of Los Angeles, and the Panorama City Historic District, which is recorded as eligible for listing in the NRHP and is listed in the CRHR. Neither district is located within the APE and is not discussed further in this report.

The City of Los Angeles' Office of Historic Resources (OHR) is currently managing a citywide survey, called SurveyLA, to identify and document historical resources in the City. Surveys are being completed in phases and are divided by City of Los Angeles Community Plan Area (CPA). Portions of the study area within Los Angeles city limits are within the Mission Hills-Panorama City CPA and the Van Nuys-North Sherman Oaks CPA. The survey findings for the Mission Hills-Panorama City CPA were finalized in March 2014; the survey findings for the Van Nuys-North Sherman Oaks CPA were finalized in August 2015. The results of SurveyLA have been included in this report.

The Cultural Resources Impacts Report in Appendix S includes information regarding the 15 individual properties that were previously recorded as historical resources that are located within the study area. See Figure 2-1 in the Cultural Resources Impacts Report for a full list of the California Historical Resource Status Codes and their meanings.

Table 4.16-2 includes information regarding the 15 properties within the APE that were identified through SurveyLA efforts.

Table 4.16-1: Previously Recorded Individual Historic Properties

Ref. No.	Address	City	Zip	Designation/ Listing Type	Notes
1.	14601 Aetna Street*	Van Nuys	91411	CRHR	Department of Water and Power Building
2.	216 Hagar Street	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	/
3.	447 Hagar Street	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	/
4.	14603 Hamlin Street	Los Angeles	91411	HCM No. 203	Baird House (Volunteer League Community Center)
5.	130 N. Brand Boulevard*	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	San Fernando Junior High School
6.	575 N. Maclay Avenue	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	Morningside Elementary
7.	208 Park Avenue	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	Old Rock Scout House
8.	804 Park Avenue	San Fernando	91340	CRHR, identified City of San Fernando Historic Preservation Element	Elks Lodge
9.	1100 Pico Street	San Fernando	91340	NRHP, CRHR, identified City of San Fernando Historic Preservation Element	Lopez Adobe
10.	14410 Sylvan Street	Los Angeles	91411	HCM No. 202, CRHR	Valley Municipal Building (Van Nuys City Hall)
11.	14415 Sylvan Street	Los Angeles	91401	CRHR	Fire Station #39
12.	14553 Sylvan Street	Los Angeles	91411	NRHP, CRHP, HCM No. 911	Van Nuys Branch Library
13.	14832 Sylvan Street	Los Angeles	91411	HCM No. 201	Van Nuys Woman's Club
14.	Havana and Bleeker Streets	Los Angeles	91342	HCM No. 50	Mission Wells and the Settling Basin (Area Of)
15.	San Fernando Road*	San Fernando	91340	Appears to be eligible for NRHP.	Portion of Segment B, including Bridge #53C-0302

Source: GPA Consulting, 2015.

Table 4.16-2: SurveyLA Findings within the APE

Ref. No.	Address	CPA
1.	14601-14603 Aetna Street	Van Nuys - North Sherman Oaks
2.	6103 Cedros Avenue	Van Nuys - North Sherman Oaks
3.	14463 Haynes Street	Van Nuys - North Sherman Oaks
4.	6000 Kester Avenue	Van Nuys - North Sherman Oaks
5.	14829-33 Oxnard Street	Van Nuys - North Sherman Oaks
6.	6353 Van Nuys Blvd	Van Nuys - North Sherman Oaks
7.	6362 Van Nuys Blvd	Van Nuys - North Sherman Oaks
8.	6551 Van Nuys Blvd	Van Nuys - North Sherman Oaks
9.	6569 Van Nuys Blvd	Van Nuys - North Sherman Oaks
10.	6920 Van Nuys Blvd	Van Nuys - North Sherman Oaks
11.	8324 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
12.	8333 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
13.	8201 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
14.	8121 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
15.	14035 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
16.	9110 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills
17.	14035 Van Nuys Boulevard	Mission Hills - Panorama City - North Hills

Source: GPA Consulting, 2015.

14601–3 Aetna Street

As shown in Figure 4.16-1, 14601 Aetna Street, with an alternative address at 14603 Aetna Street, is a Progress Works Administration (PWA) Moderne Department of Water and Power (DWP) building that was used for meter repairs. It is listed in the California Historic Resources Information System (CHRIS) with a 2S2 status code (Individual property determined eligible for the NRHP, by consensus through a Section 106 consultation, listed on CRHR) dated March 20, 2002. The SCCIC was contacted on July 24, 2015 for additional documentation and information regarding this previous evaluation. Michelle Galaz, Assistant Coordinator at the SCCIC, responded on July 27, 2015 to say that there was no documentation for this address in their office, or for its alternative address, 14603 Aetna Street. SCCIC made a request to the State Office of Historic Preservation (OHP) for additional documentation and information. The property evaluation was updated for the purposes of this report, but on August 13, 2015, the information from the prior evaluation was received from SCCIC.

Figure 4.16-1: 14601–3 Aetna Street, view looking northeast



130 North (N.) Brand Boulevard

As shown in Figure 4.16-2, 130 N. Brand Boulevard is a junior high school campus. In 1995, the Auditorium (built in 1916), Science Building (built in 1916), and Boys' Gymnasium (built in 1937) were found to be individually significant for their architecture as part of a survey of properties damaged in the 1994 Northridge Earthquake. The prior evaluation and an update form are included in Appendix S.

Figure 4.16-2: 130 N. Brand Boulevard, Auditorium, view looking southwest



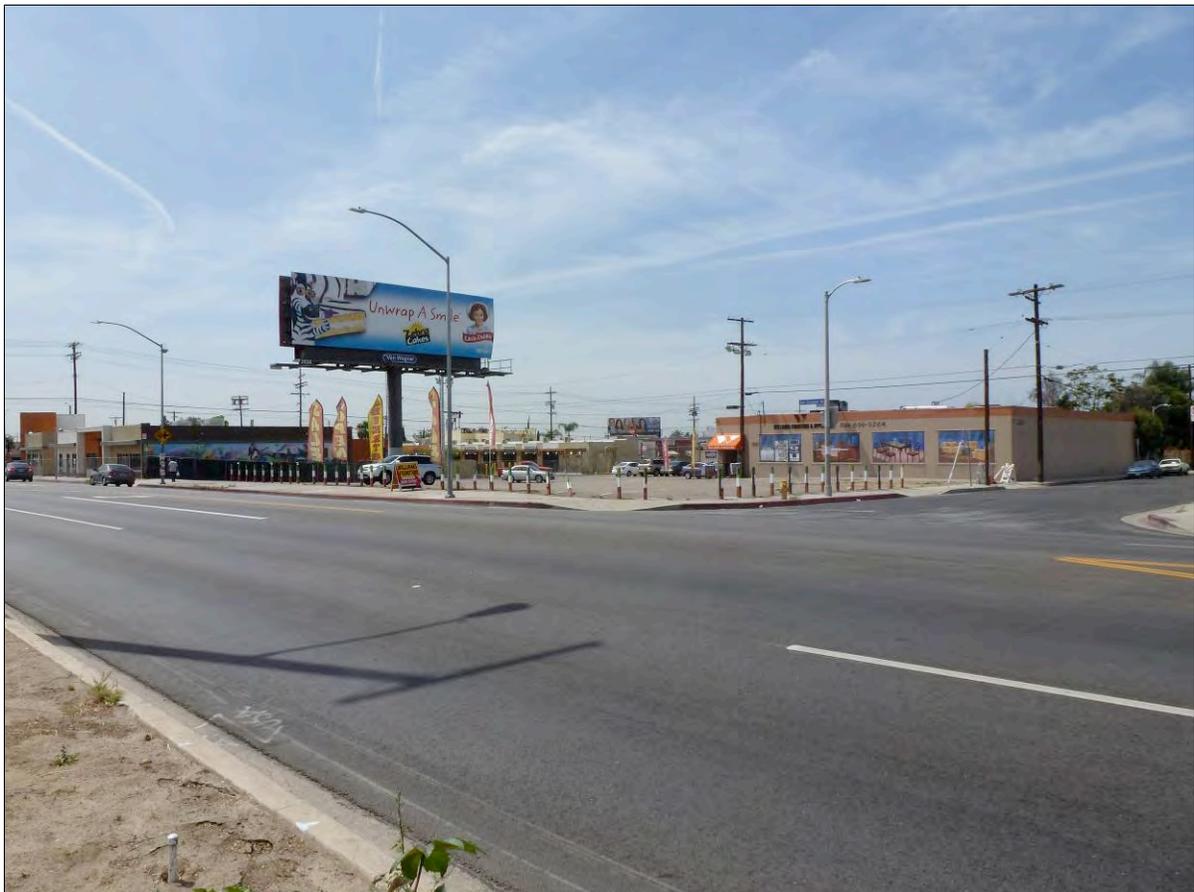
San Fernando Road

As shown in Figure 4.16-3, San Fernando Road is a multi-lane road that runs through the Cities of Los Angeles, San Fernando, Burbank, and Glendale. Segments of the road were found eligible for the NRHP in 2013 as part of a CEQA review process.

San Fernando Road was a major thoroughfare in Southern California as early as the 1870s until 1963. The road was in existence as early as 1863, but it was not cleared and packed until 1871 by Remi Nadeau, to ease transport of silver ore by wagon. In the 1920s, it was included as part of U.S. Highway 99, which spanned between the Mexican and Canadian borders; it was decommissioned in 1963 following the completion of I-5. Portions of San Fernando Road were first paved in 1910, with the rest paved and widened between 1925 and 1929. The road has undoubtedly been paved and repaved.

One segment, "Segment B," is located within the APE, which includes Bridge #53C-0302, the San Fernando Bridge over Pacoima Wash. This segment spans between the southern end of Truman Street to North Lincoln Street/Victory Place; the portion within the APE is located between the southern end of Truman Street to Pierce Street, a distance of approximately 1.5 miles. The prior evaluation and an update form are included in Appendix A to the Cultural Resources Impacts Report (see Appendix S to this EIS/EIR).

Figure 4.16-3: San Fernando Road at Pinney Street, looking south



Properties Identified for Further Study

There are 180 properties located in the APE that are more than 45 years old that were identified during the historic resources field study as requiring further study as an individual resource or as a district area (see Section 2.2.1.1 of the Cultural Resources Impacts Report in Appendix S for a detailed explanation of identification efforts and the methodology utilized for determining properties that warrant further study). Twenty-one of the 180 properties had a moderate to high level of integrity and an apparent potential for significance, based on the City of Los Angeles' Citywide Historic Context Statement and SurveyLA methodology for evaluating potential historical resources (as administered by the City of Los Angeles OHR).²⁰ Each of these 21 properties were inventoried on a DPR 523 A Form and evaluated on a DPR 523 B Form; previous evaluations were updated.

Concentrations of related properties identified during the field study were evaluated as potential districts.²¹ Each property within the district was inventoried on a DPR 523 A Form. These forms are attached to a DPR 523 D Form (District Record) that includes an evaluation of each potential district. A list of the properties identified within the APE, the results of their evaluations, and the alternatives that may affect them are listed in Tables 3-3 through 3-7 of the Cultural Resources Impacts Report (see Appendix S of this EIS/EIR). Please refer to the DPR form sets in the Cultural Resources Impacts Report in Appendix S for additional details.

Evaluation Results

Of the 21 properties that were evaluated individually for historic significance, the following 10 properties were determined to be historically significant at the national, state, or local level of significance. The results of the evaluations are summarized below. See Figure 2-1 in the Cultural Resources Impacts Report in Appendix S for a full list of the California Historical Resource Status Codes and their meanings. Please refer to the DPR form sets in Appendix A of the Cultural Resources Impacts Report for additional details.

Historic Properties

The following 10 individual properties have either been previously evaluated or evaluated for this report and given a status code of 3S or 2S2. A 3S status code indicates that a property appears eligible for the National Register of Historic Places (NRHP) as an individual property through a survey evaluation. A 2S2 status code indicates that it is an individual property determined eligible for the NRHP by a consensus through the Section 106 process, and it is listed in the California Register of Historical Resources (CRHR). Therefore, all of the following are historic properties for the purposes of NEPA and Section 106 of the NHPA. The 10 properties are also historical resources for the purposes of CEQA because properties that are listed on or formally determined eligible for the NRHP are automatically included in the CRHR.

²⁰ The streamlined methodology for this report was established in consultation with the SHPO on February 11, 2015. Only properties that were more than 45 years old, retained a moderate to high level of integrity, and had apparent potential significance were evaluated and recorded on DPR 523 A and B forms. The determination of "potential significance" would be made by qualified architectural historians utilizing the historic contexts included in the City of Los Angeles' Citywide Historic Context Statement and SurveyLA methodology for evaluating potential historical resources.

²¹ For concentrated areas of potential right-of-way acquisition (such as the proposed MSFs), SHPO approved the proposed approach of evaluating these areas as districts within the SurveyLA historic context themes, rather than evaluating each of the properties on an individual basis, during consultation on February 11, 2015.

14601-3 Aetna Street – 3S

14601-3 Aetna Street was identified for further study as an example of PWA Moderne architecture and early infrastructure in the San Fernando Valley. The property was individually re-evaluated for listing on the NRHP and CRHR as part of this study. The evaluation determined that the property appears to be significant at the national and state level as a rare example of a pre-war DWP facility in the San Fernando Valley, and as an excellent example of the PWA Moderne style; the property retains sufficient integrity to convey its association with that trend and architectural style. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



130 N. Brand Boulevard – 2S2

130 N. Brand Boulevard was identified for further study due to its Classical Revival architecture on the junior high campus. It was previously evaluated in 1995 as part of a Section 106 survey of earthquake-damaged properties. It was given a status code of 2S2, “individual property determined eligible for NRHP by consensus through Section 106 process,” and listed in the CRHR as an excellent example of Classical Revival architecture. Therefore, it was subsequently listed in the CRHR. The project team reviewed the previous evaluation and after field inspection determined that the existing 2S2 status code is still valid.



1140 San Fernando Road – 3S

1140 San Fernando Road was identified for further study as a unique example of a J.C. Penney department store in a commercial strip, as opposed to a shopping mall. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property appears to be eligible for the NRHP and CRHR at the local level of significance for its association with the commercial development of the City of San Fernando and for its architectural style; it retains sufficient integrity to convey those associations. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



1601 San Fernando Road – 3S

1601 San Fernando Road was identified for further study as an example of a Googie style car wash on San Fernando Road. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property is significant under Criterion C as exemplifying a Googie car wash and that it retains sufficient integrity for listing. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



6353 Van Nuys Boulevard - 3S

6353 Van Nuys Boulevard was identified for further study as an example of Streamline Moderne architecture that represents an early period of commercial development in the San Fernando Valley. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property appears to meet the NRHP and CRHR Criteria at the local level of significance as a rare example of pre-World War II commercial development in the San Fernando Valley, as well as exemplifying the Streamline Moderne style; the property retains sufficient integrity to convey this significance. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



6551 Van Nuys Boulevard – 3S

6551 Van Nuys Boulevard was identified for further study as an example of New Formalist architecture and the work of Millard Sheets. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property appears to be eligible for the NRHP and CRHR as a good example of New Formalism in the San Fernando Valley. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



8201 Van Nuys Boulevard – 3S

8201 Van Nuys Boulevard was identified for further study as a rare example of Expressionist architecture. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property appears to meet the NRHP and CRHR Criteria for its architecture and as the work of W.A. Sarmiento, who was pivotal to the shift in bank design during the twentieth century, and that it retains sufficient integrity to convey that significance. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



8324 Van Nuys Boulevard – 3S

8324 Van Nuys Boulevard was identified for further study as part of a planned commercial strip for the successful post-war suburb of Panorama City. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property appears to be eligible for the NRHP and CRHR at the local level for its association with the planned development of Panorama City, and it retains sufficient integrity to convey that significance. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



9110 Van Nuys Boulevard – 3S

9110 Van Nuys Boulevard was identified for further study as part of a planned commercial strip for the successful post-war suburb of Panorama City, and as the work of master architect William Pereira. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property was not an important example of Pereira’s work, but that it appears to meet the NRHP and CRHR Criteria at the local level for its association with Panorama City, and it retains sufficient integrity to convey that significance. As a result of this evaluation, the property was assigned a 3S status code, “Appears eligible for NRHP as an individual property through survey evaluation.”



San Fernando Road – 3S

A portion of San Fernando Road was identified for further study due to its historic alignment, dating from as early as 1871. It was previously evaluated in 2013 as part of a CEQA review process. Segments of the road were given a status code of 3S, “Appears eligible for NRHP as an individual property through survey evaluation.” One of the segments is included within the APE. The project team reviewed the previous evaluation and after field inspection determined that the existing 3S status code appears to still be valid.



Non-Historic Properties

The following properties were evaluated either individually or as a potential district area for this report and given a status code of 6Z or 7N1. A 6Z status code indicates that a property was “Found ineligible for the NRHP, CRHR, or Local Designation through survey evaluation.” A 7N1 status code indicates that a property “Needs to be reevaluated, [but] may become eligible for the NRHP with restoration or when meets other specific conditions.” Of the 180 total properties that were evaluated for this study, 170 properties were determined not to be historically significant. Of the 170 properties, 11 were evaluated individually and 159 were evaluated as part of 4 potential district areas. Three properties were evaluated both individually and as part of a district (6103 Cedros Avenue, 6000 Kester Avenue, and 14829-33 Oxnard Street). The 11 individual properties and 4 historic districts are further described below.

None of the following properties are historic properties for the purposes of NEPA or Section 106 of the NHPA, nor are they historical resources for the purposes of CEQA.

6103 Cedros Avenue -6Z

6103 Cedros Avenue was identified for further study as an early example of an industrial planning mill in Los Angeles. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

6000 Kester Avenue - 6Z

6000 Kester Avenue was identified for further study as an example of a building supply warehouse in Los Angeles dating from the post-war building boom period. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

14829-33 Oxnard Street – 6Z

14829-33 Oxnard Street was identified for further study as an example of a building supply warehouse in Los Angeles dating from the post-war building boom period. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

6362 Van Nuys Boulevard - 6Z

6362 Van Nuys Boulevard was identified for further study as an example of early period of commercial development in the San Fernando Valley and for its distinctive signage. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property has significance, but lacks sufficient integrity for listing. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

6569 Van Nuys Boulevard – 6Z

6569 Van Nuys Boulevard was identified for further study as an example of Mid-Century Modern architecture and the work of Culver Heaton and Millard Sheets. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

6920 Van Nuys Boulevard – 6Z

6920 Van Nuys Boulevard was identified for further study as an example of a Mid-Century Modern architecture and for its association with post-war infrastructure in the San Fernando Valley. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

8121 Van Nuys Boulevard – 6Z

8121 Van Nuys Boulevard was identified for further study as an example of Corporate International architecture. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. In addition, the building is less than 50 years old and is not of exceptional importance, so it would not meet the requirements of NRHP Criteria Consideration G. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

8155 Van Nuys Boulevard – 6Z

8155 Van Nuys Boulevard was identified for further study as an example of Corporate International architecture. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

8333 Van Nuys Boulevard – 6Z

8333 Van Nuys Boulevard was identified for further study as an example of an early department store in the San Fernando Valley, and specifically Panorama City. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property likely has significance for its association with Post-war Suburbanization and Commercial Development, but

that it lacks sufficient integrity to convey that association, and is therefore ineligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

14035 Van Nuys Boulevard – 6Z

14035 Van Nuys Boulevard was identified for further study as an example of the walk-up food stand property type. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

14463 Haynes Boulevard – 6Z

14463 Haynes Boulevard was identified for further study as an example of a Mid-Century Modern commercial building and for its association with post-war infrastructure in the San Fernando Valley. The property was individually evaluated for listing on the NRHP and CRHR. The evaluation determined that the property lacks historical and architectural significance, and is therefore not eligible for listing on either register. As a result of this evaluation, the property was assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation.”

San Fernando Road Commercial District – 7N1

The San Fernando Road Commercial District area was identified for further study as a concentration of low-rise commercial buildings in San Fernando, the majority of which were developed prior to World War II. This area is the commercial center of San Fernando. The area was evaluated as a district for listing on the NRHP and CRHR. The evaluation determined that the area likely has significance for its association with the Development of the City of San Fernando, but that it lacks sufficient integrity to convey its period of significance, and is therefore ineligible for listing on either register at this time. Should enough of the alterations be removed, the area could become eligible for listing on a historic register. As a result of this evaluation, the 42 properties within this potential district were assigned a 7N1 status code, “Needs to be reevaluated – may become eligible for NRHP with restoration or when meets other specific conditions” (see Appendix S for District Record Map and full listing of property addresses).

Bessemer and Oxnard Industrial District – 6Z

The Bessemer and Oxnard Industrial District area was identified for further study as a concentrated area of industrial buildings from the mid-century located within the potential right-of-way acquisition areas for the proposed MSF. This area is roughly bounded by Calvert Street to the north, Vesper Avenue to the east, Oxnard Street to the south, and Kester Avenue to the west in the City of Los Angeles. Per the information provided in Chapter 2.2.1 of the Cultural Resources Impacts Report (see Appendix S), the SHPO approved the approach of evaluating these areas as districts within the SurveyLA historic context themes, rather than evaluating each of the properties on an individual basis due to their lack of likely individual significance. Therefore, the area was evaluated as a potential district for listing on the NRHP and CRHR. The evaluation determined that the area lacks historical and architectural significance, and is therefore not a district that would be eligible for listing on either register. As a result of this evaluation, the 56 properties in this area were assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation” (see Appendix S for District Record Map and full listing of property addresses).

Arminta Industrial District – 6Z

The Arminta Industrial District area was identified for further study as a concentrated area of light industrial buildings from the mid-century within the potential right-of-way of a proposed MSF. It consists of the first legal parcel on the north and south sides of Arminta Street between its intersections with Van Nuys Boulevard and Willis Avenue in the City of Los Angeles near the Southern Pacific Railroad tracks (see Appendix S for District Map). Per the information provided in Chapter 2.2.1 of this Report (Methodology), the SHPO approved the approach of evaluating these areas as districts within the SurveyLA historic context themes, rather than evaluating each of the properties on an individual basis due to their lack of likely individual significance. The area was evaluated as a district for listing on the NRHP and CRHR. The evaluation determined that the area lacks historical and architectural significance, and is therefore not a district that would be eligible for listing on either register. As a result of this evaluation, the 41 properties in this area were assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation” (see Appendix S for District Record Map and full listing of property addresses).

Raymer Industrial District – 6Z

The Raymer Industrial District area was identified for further study as a concentrated area of light industrial buildings from the mid-century located with the potential right-of-way of a proposed MSF. The area is roughly bounded by Raymer Street to the north and east, Keswick Street to the south, and ends at the western boundaries of 14757 Keswick Street, 14747 Keswick Street, and 14766 Raymer Street to the west in the City of Los Angeles (see Appendix S for District Map). Per the information provided in Section 2.2 of this report (Methodology), the SHPO approved the approach of evaluating these areas as districts within the SurveyLA historic context themes, rather than evaluating each of the properties on an individual basis due to their lack of likely individual significance. The evaluation determined that the area lacks historical and architectural significance, and is therefore not a district that would be eligible for listing on either register. As a result of this evaluation, the 26 properties in this area were assigned a 6Z status code, “Found ineligible for NRHP, CRHR, or Local designation through survey evaluation” (see Appendix S for District Record Map and full listing of property addresses).

4.16.2.3 Paleontological Resources

Regional Geology

The San Fernando Valley and adjacent mountains are part of the Transverse Ranges physiographic province that is composed of parallel, east-west trending mountain ranges and sediment-filled valleys (USGS 1996). The San Fernando Valley is a structurally complex, sedimentologically diverse, and tectonically evolving late Tertiary-Quaternary basin that contains the headwaters of the Los Angeles River and its tributaries. Prior to the advent of flood control, the valley floor was composed of active alluvial fans and floodplains. Seasonal streams emanating from Pacoima and Big Tujunga Canyons drain the complex western San Gabriel Mountains and deposit coarse, highly permeable alluvium that contains generally high-quality ground water. The San Fernando Valley is a structural trough that has been filled from the sides, with the major source of sediment being large drainages in the San Gabriel Mountains. Deposition on the major alluvial fan of Tujunga Wash and Pacoima Wash, which issues from the San Gabriel Mountains, and on smaller fans, has been influenced by ongoing compressional tectonics in the valley. Late Pleistocene deposits have been cut by active faults and warped over growing folds.

Stratigraphy

The project study area is covered by fluvial and fan deposits that originated in the mountains to the east. These deposits were carried by water down Pacoima, Little Tujunga, Tujunga, and La Tuna Canyons into the study area. The surface of the project study area is mapped entirely as Quaternary alluvium and gravel, as shown in Figures 4.16-4 and 4.16-5. Subsurface, at varying depths, the Quaternary older alluvium, Saugus Formation, Pico Formation, Topanga Formation, and Monterey Formation are present (Dibblee 1991a).

Mesozoic Quartz Diorite

At the base of the section is Mesozoic (65.5–251.0 million years [my]), potentially early Cretaceous (145.5–99.6 my), quartz diorite, which is locally named the Wilson Diorite. These grey, medium-grained quartz diorite rocks are composed of plagioclase feldspar, biotite, hornblende, and quartz.

Middle Miocene Topanga Formation

The middle Miocene (16–11.6 my) Topanga Formation consists of three units near the project study area: the upper Topanga Formation, a middle unit of volcanic rocks, and the lower Topanga Formation. Upper Topanga Formation rocks, which are light grey to tan semi-friable sandstone, consist of a pebble to cobble conglomerate deposited in a marine environment. The middle unit consists of basaltic to mafic andesitic flows and breccias, probably equivalent to the Conejo Volcanics of the central and western Santa Monica Mountains. Lower Topanga Formation rocks consist of nonmarine grey to reddish grey sandstone and conglomerate.

Late Miocene Monterey Formation

Dibblee mapped these sediments as late (11.6–5.3 my) Miocene Monterey Formation (Tm, Tmss) and as “unnamed late Miocene shale.” However, Yerkes and Campbell mapped these sediments as “Modelo Formation.” Most local workers agree that the “Modelo Formation” is a local name for the Monterey Formation, which spans across California. The Monterey Formation includes three units that may be encountered at depth: undifferentiated Monterey Formation, Monterey Formation sandstone, and an upper unit of the Monterey Formation. Undifferentiated Monterey Formation consists of white-weathering, tan to dark brown, thinly bedded, hard platy to soft, fissile, semi-siliceous to porcelaneous shale. The Monterey Formation sandstone is a light grey to tan bedded sandstone to pebble deposit from deep marine fans (turbidites) (Dibblee 1991a, b). The upper unit of the Monterey Formation consists of white-weathering, thinly bedded, diatomaceous shale with platy, dark brown, siliceous shale (Dibblee 1991b).

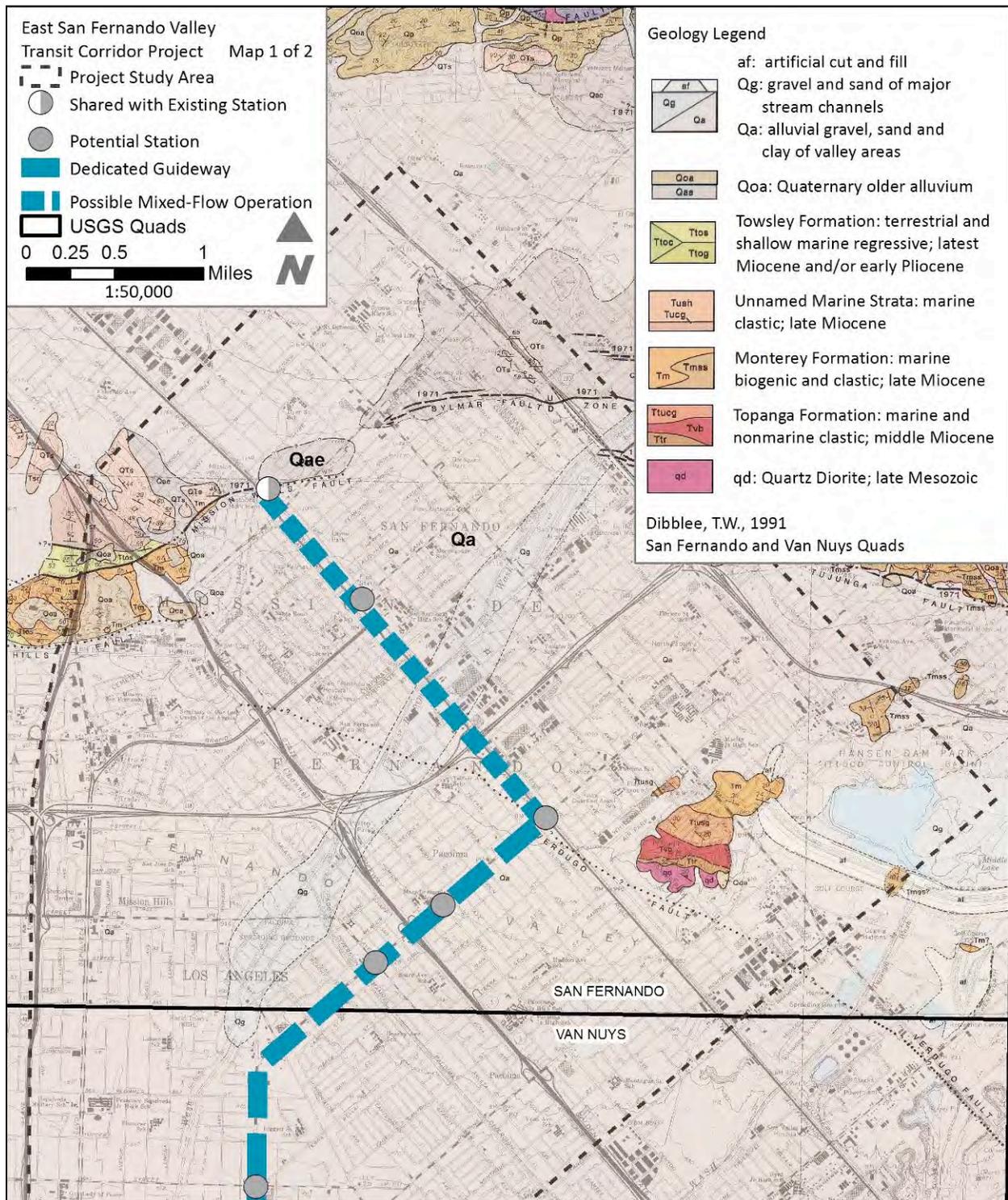
Pliocene Pico Formation

Dibblee (1991a) mapped these sediments as an “unnamed late Miocene marine strata” and late Miocene to Pliocene “Towsley Formation.” Yerkes and Campbell (2005) mapped these sediments as Pliocene (5.3–2.5 my) Pico Formation, which is the unit name used in this report. Yerkes and Campbell (2005) described the Pico Formation as marine clayey siltstone interbedded with sandstone.

Pliocene to Pleistocene Saugus Formation

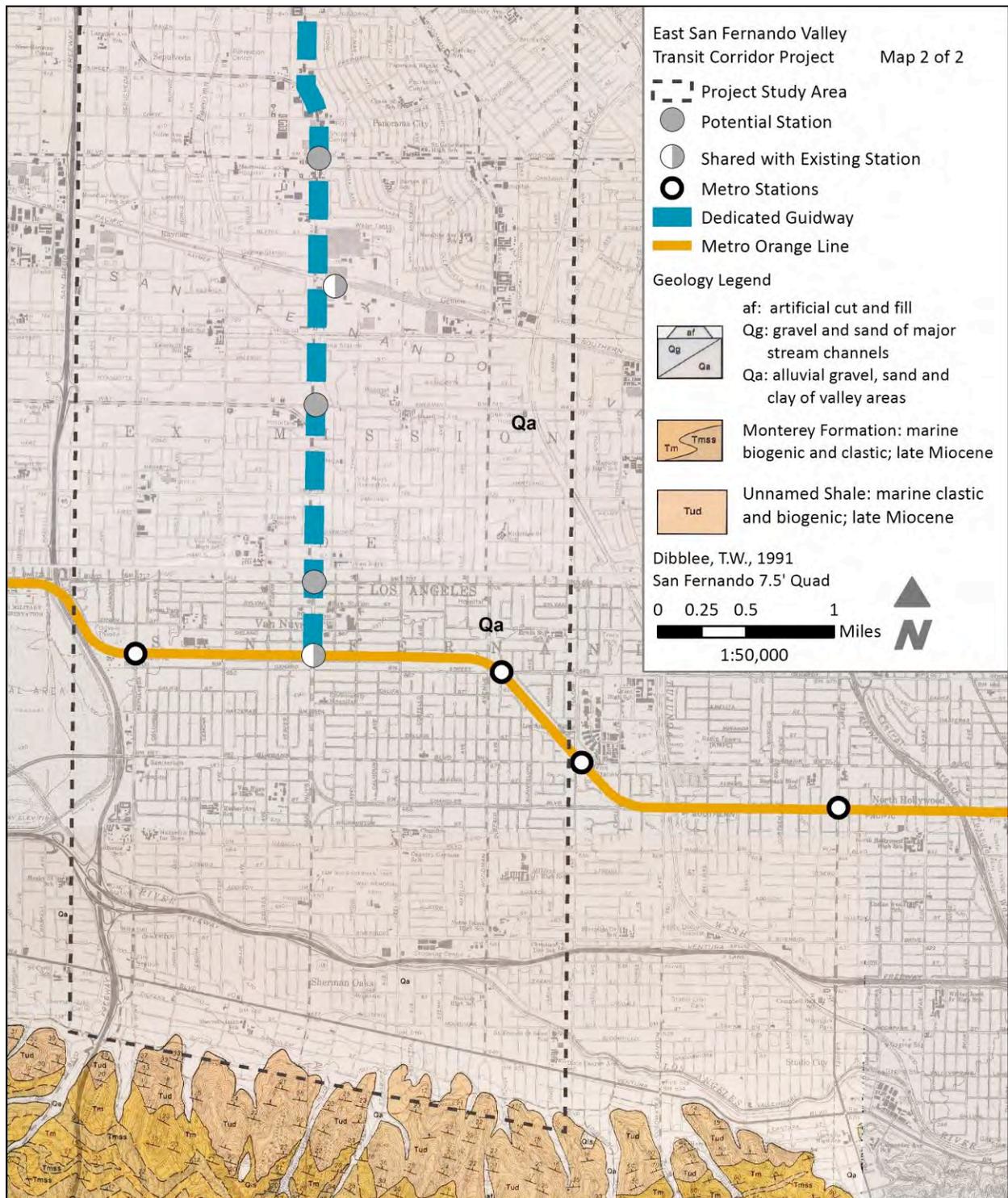
The Saugus Formation consists of interbedded light gray pebble-cobble conglomerate, sandstone, and green to red claystone. This formation was laid down in a stream environment during the Pliocene and Pleistocene epochs (5.3 my–11 thousand years [ky]) (Dibblee 1991a).

Figure 4.16-4: Geology of Project Study Area Map 1



Source: Dibblee, 1991a.

Figure 4.16-5: Geology of Project Study Area Map 2



Source: Dibblee, 1991a, 1991b.

Quaternary Older Alluvium

The Quaternary older alluvial deposits consist of late Pleistocene (1.8 my–11 ky) consolidated, dissected alluvial gravels and sands (Dibblee 1991a). These deposits are derived from the mountains bordering the valley. Sediments from these deposits fine with increasing distance from the source range.

Quaternary Alluvium and Gravel

Quaternary alluvial deposits are derived from the mountains bordering the valley. They consist of clays to pebble-gravel deposits that fine with increasing distance from the source range (Dibblee 1991a, b). These alluvial fan to fluvial deposits of the Holocene Epoch are less than 11,000 ky. Quaternary gravel deposits are also derived from the mountains bordering the valley, but these sand and pebble-boulder deposits are located in modern stream and river courses (Dibblee 1991a). Yerkes and Campbell (2005) described these same sediments as Holocene alluvial fan deposits adjacent to stream channels and Holocene to late Pleistocene young alluvial deposits farther from the modern streams. The younger Holocene deposits adjacent to the streams are coarser than distant deposits, consisting of unconsolidated sand and pebble-boulder conglomerates, while Holocene to late Pleistocene deposits consist of unconsolidated silt to gravel that may or may not show soil development (Yerkes and Campbell 2005).

Known Fossils in Project Vicinity

Paleontological resources are remnants of ancient life. Vertebrate fossils (e.g., mammals, birds, reptiles, amphibians, fish) are rare and, if identifiable, usually significant under CEQA. Fossils of invertebrates (e.g., snails, corals, sand dollars, etc.) and plants are relatively common and may not meet significance criteria unless they are unusual for their time period or environment.

A search for known fossils was performed by the Natural History Museum of Los Angeles County (LACM) (McLeod 2012). No vertebrate fossils are known within the project boundaries. Nearby, vertebrate fossils are known from the Quaternary older alluvium. Known depths of these fossils range from 14 to 100 feet below the surface (Table 4.16-3). Fossils are also known from the Saugus, Pico, Topanga, and Monterey formations.

Table 4.16-3: Known Fossils in Quaternary Older Alluvium

Common Name	Taxon	Depth	Locality
Bison, extinct	<i>Bison</i>	75 feet	LACM 3397
Mammoth, extinct	<i>Mammuthus</i>	unknown	LACM 7152
Bison, extinct	<i>Bison</i>		
Horse, extinct	<i>Equus</i>	unknown	LACM 1733
Mastodon, extinct	<i>Mammut</i>	unknown	LACM 5745
Horse, extinct	<i>Equus</i>		
Peccary, extinct	<i>Platygonus</i>	75–100 feet	LACM 3822
Camel, extinct	<i>Camelops</i>		
Bison, extinct	<i>Bison</i>		
Bison, extinct	<i>Bison</i>	20 feet	LACM 6208
Horse, extinct	<i>Equus</i>	14 feet	LACM 3263

Source: McLeod, 2012.

Paleontological Survey Results

Cogstone performed a field survey of the build alternatives on February 14, 2013. The field reconnaissance consisted of a windshield survey followed by a pedestrian survey of sediment exposures as encountered. Photographs were taken to document the condition of the project study area. Scale bars are centimeter scales.

Ground visibility in the project study area was very poor. Approximately 95% of the survey area was developed and obscured by hardscaping and landscaping. Where exposed, sediments primarily consisted of artificial fill used to build up roads and railways and previous building developments. However, a few exposures of native sediments were encountered. Where observed, native sediments consisted of light brown to tan, fine-grained, unconsolidated sand. This is consistent with the Holocene alluvium that is mapped at the surface of the project study area (Dibblee 1991a, 1991b). The best sediment exposure was located near the intersection of Van Nuys Boulevard and Gault Street, at an active construction site. Access to the site was restricted, making a close examination of the sediments impossible. However, a trench near the sidewalk revealed that the first few inches of surficial artificial fill was underlain by fine grained alluvial sediments to depths of at least six feet. No paleontological resources, whole or fragmentary, were observed within the project study area.

Paleontological Sensitivity

Using the Potential Fossil Yield (PFYC) system, geologic units are assigned a ranking from 1 (very low potential for fossils) to 5 (very high potential for fossils). Classifications are determined based on the relative abundance and scientific importance of vertebrate fossil localities or scientifically significant invertebrate or plant fossil localities. In Class 1 geologic units, fossils are non-existent or extremely rare due to transformation by extreme heat or deformation. Class 2 units are unlikely to contain fossils due mostly to young age of sediments. Class 3 rock units are divided into two subclasses. Class 3a includes rocks known to produce fossils but in unpredictable locations and abundance, while class 3b includes sedimentary rocks where fossils are not known and thus have an undemonstrated sensitivity. Class 4 units have a high abundance of known significant fossil localities. Class 5 units have highly significant fossil localities and occur in predictable locations.

Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher PFYC value; instead, the relative abundance of localities is intended to be the major determinant for the value assignment. Geological setting and fossil localities were considered in determining paleontological sensitivity according to PFYC criteria.

The Mesozoic quartz diorite is an igneous unit and does not contain fossils. It is ranked as Class 1 having very low sensitivity (Table 4.16-4). The Quaternary alluvium and gravel is ranked Class 2 or low. Due to the young age of these sediments, they are not sensitive for fossil resources.

The remaining project formations are all known to produce fossils within Los Angeles County but those fossils are distributed unevenly and sediments conducive to the preservation of fossils are generally fine-grained. The Quaternary older alluvium, Topanga Formation, Monterey Formation, Pico Formation, and the Saugus Formation are ranked as 3a or moderate on the PFYC scale.

Table 4.16-4: Paleontological Sensitivity Rankings

PFYC Ranking		5 very high	4 high	3a moderate; patchy	3b moderate; undemonstrated	2 low	1 very low
Rock Units	Map symbol (Figure 4.16-4)						
Mesozoic quartz diorite	qđ						X
Topanga Formation	Ttucg/Tvb/ Ttr			X			
Monterey Formation	Tm/Tmss/ Tud			X			
Pico Formation	Tush/Tucg/ Ttoc/Ttos/ Ttog			X			
Saugus Formation	QTs/Ts/Tar			X			
Quaternary older alluvium	Qoa			X			
Quaternary alluvium and gravel	Qa/Qg					X	

Source: Cogstone, 2015.

The Quaternary older alluvium is a minimum of 100 feet thick under the project area (refer to Table 4.16-3).

4.16.3 Environmental Consequences, Impacts and Mitigation Measures

4.16.3.1 Archaeological Resources

No-Build Alternative

Construction Impacts

The No-Build Alternative would result in no excavation activities. There would be no construction impacts to archaeological resources associated with the No-Build Alternative.

Operational Impacts

The No-Build Alternative would not result in new project facilities and consequently it would not result in any operational impacts on archaeological resources or human remains.

Cumulative Impacts

Under the No-Build Alternative, there would be no adverse effects or impacts to archaeological resources; therefore, this alternative would not contribute to cumulative impacts on archaeological resources that could occur as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

No construction mitigation measures are required.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effects under NEPA would occur.

CEQA Determination

No impacts under CEQA would occur.

TSM Alternative

Construction Impacts

The TSM Alternative would result in no or very minimal excavation activities. As a consequence, no construction impacts to archaeological resources are anticipated under the TSM Alternative.

Operational Impacts

The operational improvements proposed under the TSM Alternative would have no impact on archaeological resources or human remains.

Cumulative Impacts

Under the TSM Alternative, there would be no adverse effects or impacts to archaeological resources; therefore, this alternative would not contribute to cumulative impacts on archaeological resources that could occur due to other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

No construction mitigation measures are required.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effects under NEPA would occur.

CEQA Determination

No impacts under CEQA would occur.

Alternative 1

Construction Impacts

The Curb-Running BRT Alternative would involve excavation during station upgrades and sidewalk widening and removal. Under this alternative, it is anticipated that the existing Division 15 (East Valley) MSF would accommodate the 10 new buses without needing to be expanded. Archaeological sites 19-001124 and 19-002681 are both located in the footprint of this alternative, however, in areas that do not appear to involve construction. If construction were to take place in these site areas, there is a potential for significant impacts/adverse effects to archaeological resources if they are damaged or destroyed by construction activities. Implementation of Mitigation Measure MM AR-1 would reduce potential impacts on these archaeological resources to less-than-significant levels.

Previous ground disturbance at station and sidewalk locations has probably destroyed subsurface archaeological resources. This suggests that there is a low potential for ground-disturbing activities associated with this alternative to expose and affect previously unknown significant cultural resources, including archeological resources. However, there is still a possibility that archaeological materials may be exposed during construction. Grading and trenching, as well as other ground-disturbing actions, have the potential to damage or destroy previously unidentified and potentially significant archeological resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact or adverse effect. Implementation of Mitigation Measure MM AR-2 would reduce or avoid potential impacts on archeological resources.

No human remains have been previously discovered in the APE, and no burials or cemeteries are known to occur within the APE. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites.

Operational Impacts

Operation of the Curb-Running BRT Alternative would result in no impacts or effects on archaeological resources.

Cumulative Impacts

The cumulative impacts analysis for archaeological resources is based on the cumulative projects list method of cumulative analysis, as described by CEQA Guidelines, Section 15130, subd. (b)(1)(A), and for the build alternatives, refers to the projects listed in Table 2-3. These projects are located within and in close proximity to the proposed project corridor alignment. Most of the projects in Table 2-3 consist of development projects, whose construction could include excavation that would disturb buried archaeological resources and human remains. Under the Curb-Running BRT Alternative, adverse effects or significant impacts to archaeological resources or human remains are not anticipated. However, if impacts do occur, mitigation measures would reduce potential impacts to no adverse under NEPA or less than significant under CEQA. Nonetheless, if the proposed project

disturbs buried archaeological resources or human remains, and if any of the other cumulative projects also disturb buried archaeological resources or human remains, even though the proposed project's impacts may be less-than-significant after mitigation, the proposed project would still result in a cumulatively considerable contribution to a significant cumulative impact on archaeological resources.

Compliance Requirements and Design Features

If human remains are encountered during construction of any of the build alternatives, the Native American Graves Protection and Repatriation Act (NAGPRA) requires the person who makes the discovery to immediately notify the responsible federal agency official by phone, presumably the FTA. State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, who will then notify the Most Likely Descendent (MLD). Further provisions of PRC 5097.98 are to be followed as applicable. Also, see mitigation measure MM-AR-3 below.

Mitigation Measures

Construction Mitigation Measures

If construction occurs in the immediate vicinity of Archaeological sites 19-001124 and 19-002681, the following measure is proposed to mitigate potential impacts.

MM-AR-1: Within site areas and a 100-foot buffer zone around ground-disturbing activities, monitoring by a qualified archaeologist and culturally affiliated Native American shall be conducted within the project APE during all initial ground-disturbing activities. If, during cultural resources monitoring, the archaeologist determines that the sediments being excavated have been previously disturbed and are unlikely to contain significant cultural materials, the archaeologist shall request that monitoring be reduced or eliminated. If buried cultural resources such as flaked or ground stone, historic debris, or human remains are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find. Metro will notify the FTA, ACHP, and SHPO of those actions that it proposes to avoid, minimize, or mitigate adverse effects. Treatment measures for items that are not associated with human remains typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Consulting parties will have 48 hours to provide their views on the proposed actions. The FTA will ensure that timely filed recommendations of consulting parties are taken into account prior to granting approval of the measures that Metro will implement to resolve adverse effects. Metro shall carry out the approved measures prior to resuming construction activities in the location of the discovery.

Metro will ensure that the expressed wishes of Native American individuals, tribes, and organizations are taken into consideration when decisions are made regarding the disposition of Native American archaeological materials and records relating to Indian tribes.

If previously unidentified and potentially significant archeological resources are encountered during construction activities, the following measure is proposed to mitigate potential impacts:

MM-AR-2: If buried cultural resources, such as flaked or ground stone or historic debris, are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can evaluate the find and make recommendations. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, Metro will notify FTA and SHPO within 48 hours of the discovery to determine the appropriate course of action. Additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

In the event that human remains are found during ground-disturbing activities, the compliance measures identified above shall be followed. In addition, if the remains are thought to be Native American, the following measure is proposed to mitigate the impact:

MM-AR-3: If human remains are discovered during construction activities, all work in the immediate vicinity of the find shall halt, and Metro shall notify the county coroner/medical examiner within 48 hours of the discovery to determine the appropriate course of action. If human remains are discovered that are thought to be Native American, Metro and the FTA shall consult with the affected Native American individuals, tribes, and organizations regarding the treatment of cultural remains and artifacts. These shall be treated in accordance with the requirements of the California Health and Safety Code. If the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of PRC 5097.98 (a) – (d), which provides for the notification of human remains and associated grave goods.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation measures identified above would avoid or reduce effects on archaeological resources to no adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would avoid or reduce impacts to archaeological resources to a less-than-significant impact under CEQA.

Alternative 2

Construction Impacts

The Median-Running BRT Alternative would involve shallow excavation during bus stop platform construction in the median, station upgrades and sidewalk widening. Archaeological sites 19-001124 and 19-002681 are both located in the footprint of this alternative, however, in areas that do not appear to involve construction. If construction were to take place in these areas, there is a potential for significant impacts/adverse effects to archaeological resources if those resources are damaged or destroyed. Implementation of Mitigation Measure MM AR-1 would avoid or reduce potential impacts on these archaeological resources.

Alternative 2 has a low potential to encounter and adversely affect archaeological resources and human remains. However, construction would involve earth-disturbing activities, and it is still possible that archaeological resources or human remains may be discovered and damaged or destroyed during construction, which would be considered a significant impact. Mitigation Measure MM AR-2 would avoid or reduce potential impacts on archeological resources. Adherence to regulatory compliance requirements in conjunction with implementation of Mitigation Measure MM AR-3 would avoid or reduce potential impacts on human remains.

Operational Impacts

Operation of Alternative 2 would not result in any effects or impacts on archaeological resources.

Cumulative Impacts

Impacts would be the same as those described for Alternative 1.

Compliance Requirements and Design Features

See compliance requirements described above for Alternative 1.

Mitigation Measures

Construction Mitigation Measures

See proposed mitigation measures above for Alternative 1.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation measures would avoid or reduce effects on archaeological resources to a non-adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would avoid or reduce impacts to archaeological resources to a less-than-significant impact under CEQA.

Alternative 3

Construction Impacts

The Low-Floor LRT/Tram Alternative would involve shallow excavation during bus stop platform construction in the median, station upgrades, and sidewalk widening. Archaeological site 19-002681 is located in the footprint of this alternative, however, in areas that do not appear to involve construction. If construction were to take place in these site areas, there is a potential for significant impacts/adverse effects to archaeological resources if those resources are damaged or destroyed. Implementation of Mitigation Measure MM AR-1 would avoid or reduce potential impacts on these archaeological resources.

Alternative 3 has a low potential to encounter and adversely affect archaeological resources and human remains. However, construction would involve earth-disturbing activities, and it is still possible that archaeological resources or human remains may be discovered and damaged or destroyed, which would be considered a significant impact/adverse effect. Implementation of Mitigation Measure MM AR-2 would avoid or reduce potential impacts on archeological resources, and Mitigation Measure MM AR-3 would avoid or reduce potential impacts on human remains.

No archaeological resources are recorded within the three proposed MSF sites - Arminta Street, Keswick Street, and Aetna Street. Previous construction in these MSF sites has probably destroyed most subsurface archaeological resources. For this reason, construction of the MSF facility for this alternative has a low potential for ground-disturbing activities to expose and affect previously unknown significant archeological resources. However, there is still a possibility that archaeological materials may be exposed during construction. Grading and trenching, as well as other ground-disturbing actions, have the potential to damage or destroy previously unidentified and potentially significant cultural resources within the project area, including archeological resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact/adverse effect. Implementation of Mitigation Measure MM AR-2 would avoid or reduce potential impacts on cultural resources, including archeological resources, associated with the proposed project.

No human remains have been previously discovered in the MSF site portions of the APE, and no burials or cemeteries are known to occur within the MSF locations. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Compliance with regulatory requirements in conjunction with implementation of Mitigation Measure MM AR-3 would avoid or reduce potential impacts on human remains that are found during ground-disturbing activities.

Operational Impacts

Operation of Alternative 3 would result in no impacts or effects on archaeological resources.

Cumulative Impacts

Related and other proposed projects in the study area (i.e., the San Fernando Valley) could require earthmoving activities during construction that could disturb or result in the destruction of archaeological resources, a potentially significant impact. However, under the Low-Floor LRT Alternative, the potential for encountering significant archaeological resources is considered to be low. Additionally, if previously unknown resources are discovered, proposed measures would avoid or mitigate potential impacts to archaeological resources or human remains to a less-than-significant level. As a consequence, and because the related projects may also include mitigation measures to minimize or reduce potential impacts to archaeological resources, Alternative 3 is not expected to result in or contribute to significant cumulative impacts on archaeological resources within the study area.

Compliance Requirements and Design Features

See compliance requirements described above for Alternative 1.

Mitigation Measures

Construction Mitigation Measures

See the mitigation measures described above for Alternative 1.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation measures would avoid or reduce effects on archaeological resources to no adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would avoid or reduce impacts to archaeological resources to a less-than-significant level under CEQA.

Alternative 4

Construction Impacts

The LRT Alternative would involve shallow excavations for bus stop platform construction in the median, station upgrades and sidewalk widening. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. Additionally the Low Floor LRT Alternative includes an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

Archaeological sites 19-001124 and 19-002681 are both located in the footprint of this alternative, however in areas that do not appear to involve construction. If construction were to take place in these site areas, there is a potential for significant impacts to archaeological resources if those resources are damaged or destroyed. Implementation of Mitigation Measure MM AR-1 would avoid or reduce potential impacts on these archaeological resources to less-than-significant levels.

This alternative requires extensive excavations, but previous ground disturbance at tunnel, plaza, station, and sidewalk locations has probably destroyed subsurface archaeological resources. Due to the extent of excavations, this alternative has a moderate potential for ground-disturbing activities to expose and affect previously unknown significant archeological resources. If resources are encountered, grading and trenching, as well as other ground-disturbing actions, have the potential to damage or destroy previously unidentified and potentially significant archaeological resources within the project area. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact. Implementation of Mitigation Measure MM AR-2 would avoid or reduce potential impacts.

No human remains have been previously discovered in the APE, and no burials or cemeteries are known to occur within the APE. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Compliance with regulatory requirements and implementation of Mitigation Measure MM AR-3 would avoid or minimize potential impacts on any human remains that are found during ground-disturbing activities.

No archaeological resources are recorded within the three proposed MSF sites, Arminta Street, Keswick Street, and Aetna Street. Previous construction in these MSF sites has probably destroyed most subsurface archaeological resources. For this reason, construction of the MSF facility for this alternative has a low potential for ground-disturbing activities to expose and affect previously

unknown significant archeological resources. However, there is still a possibility that archaeological materials may be exposed during construction. If resources are encountered, grading and trenching, as well as other ground-disturbing actions, have the potential to damage or destroy previously these resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact. Implementation of Mitigation Measure MM AR-2 would avoid or reduce potential impacts on archeological resources.

No human remains have been previously discovered in the MSF site portions of the APE, and no burials or cemeteries are known to occur within the MSF locations. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Compliance with regulatory requirements and Mitigation Measure MM AR-3 would avoid or reduce impacts on any human remains that are found during ground-disturbing activities.

Operational Impacts

The LRT Alternative would result in no operational impacts or effects on archaeological resources.

Cumulative Impacts

Related and other proposed projects in the study area, i.e., the San Fernando Valley, could require earthmoving activities during construction that could disturb or result in the destruction of archaeological resources, a potentially significant impact. Although the LRT Alternative is not expected to result in impacts to previously identified archaeological resources in the study area, this alternative has a higher potential for encountering significant archaeological resources than the other build alternatives because of the depth and extent of excavation proposed. However, if previously unknown resources are discovered, proposed measures would avoid or reduce potential impacts to archaeological resources or human remains to no adverse or less-than-significant level. As a consequence, and because the related projects may also include mitigation measures to minimize or reduce potential impacts to archaeological resources, the LRT Alternative (Alternative 4) is not expected to result in or contribute to significant cumulative impacts on archaeological resources within the study area.

Compliance Requirements and Design Features

If human remains are encountered during construction of any of the build alternatives, the NAGPRA requires the person who makes the discovery to immediately notify the responsible federal agency official by phone, presumably the FTA. State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, who will then notify the Most Likely Descendent (MLD). Metro and the FTA will contact the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. Also, see mitigation measure MM-AR-3 below.

Mitigation Measures

Construction Mitigation Measures

Please see the mitigation measures described above for Alternative 1.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation measures would avoid or reduce impacts to archaeological resources to a no adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would avoid or reduce impacts to archaeological resources to a less-than-significant level under CEQA.

4.16.3.2 Historic Resources

Earth moving and demolition activities could result in the destruction or alteration of cultural resources. Additionally, each of the build alternatives has the potential to cause mild damage to historic properties as a result of temporary vibration caused during construction. Any physical effects caused by vibration would meet Criterion (i) for adverse effect, “Physical destruction of or damage to all or part of the property.” However, even if physical damage would occur due to construction vibration, it is unlikely that the damage caused would diminish the integrity of design, materials, or workmanship in a manner that the properties would no longer qualify for the NRHP.

The Noise and Vibration Impacts Report, (see Appendix M of this EIS/EIR), outlines the predicted FTA damage risk vibration limits for different building types, as well as the predicted vibration levels generated by construction equipment that may be used to construct proposed stations near the historic properties (see Tables 4.16-5 and 4.16-6). None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. All of the buildings are generally at least 25 feet from any proposed construction activities, including the demolition and/or construction of bus stops, kiosks, low-floor LRT and LRT platforms, etc. Please see the full Noise and Vibration Impacts Report for further details on potential vibratory impacts on nearby buildings. The discussion of construction impacts for each of the alternatives follows.

Table 4.16-5: FTA Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA Guidance Manual, 2006

Table 4.16-6: Construction Vibration Predictions for General Construction Equipment

Equipment	PPV at 25 ft (in/sec)	PPV at 50 ft (in/sec)
Vibratory Roller	0.21	0.07
Hoe Ram	0.09	0.03
Large Bulldozer	0.09	0.03
Caisson Drilling	0.09	0.03
Loaded Trucks	0.08	0.03
Jackhammer	0.04	0.01
Small Bulldozer	0.003	0.001

Source: ATS Consulting, 2014

No-Build Alternative

Construction Impacts

Under the No-Build Alternative, no new infrastructure would be built within the study area as part of the project. There would be no construction or vibration effects on historic properties associated under the No-Build Alternative.

Operational Impacts

The No-Build Alternative, which establishes a baseline for comparison with the other alternatives, involves no construction or changes to the existing transportation systems. No new transportation infrastructure would be built, apart from projects that are currently under construction or funded for construction and operation by 2040.

As no new project facilities are proposed under the No-Build Alternative, no operational impacts on historic properties would occur.

Cumulative Impacts

Under the No-Build Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on any historic properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

No mitigation measures are required.

Operational Mitigation Measures

Operational mitigation measures are not required.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

No impact under CEQA would occur.

TSM Alternative

Construction Impacts

The TSM Alternative would include relatively low-cost transit service improvements, such as increased bus frequencies, and possible physical improvements including bus stop amenities/improvements and minor modifications to the roadway network (such as traffic signalization improvements). These improvements would require only light construction equipment, and any construction would be of very short duration. Therefore, no adverse construction or vibration effects on historic properties are anticipated as a result of the TSM Alternative.

Operational Impacts

The TSM Alternative would involve low-cost transit service improvements such as increased bus frequencies. These operational improvements would have no impact on any historic properties.

Cumulative Impacts

Under the TSM Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on the properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

Construction mitigation measures are not required since there are no anticipated construction effects on historic properties as a result of the construction of the proposed transit facilities.

Operational Mitigation Measures

Operational mitigation measures are not required since there would be no anticipated operational effects on historic properties.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

Impacts would be less than significant.

Alternative 1

Construction Impacts

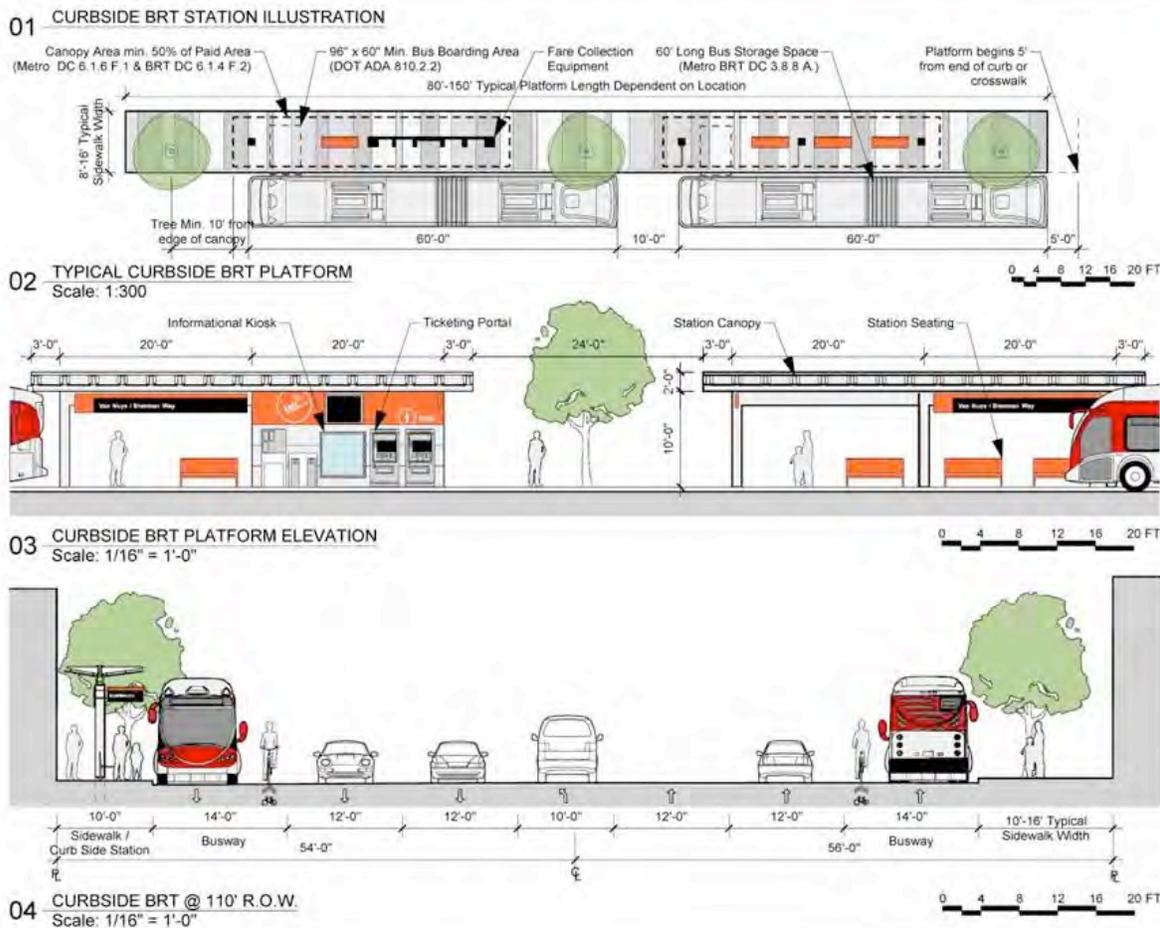
Under Alternative 1, 6.7 miles of existing curb lanes along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line would be converted to dedicated curb-running bus lanes. In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes, where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue.

The Curb-Running BRT Alternative would include construction or upgrading of 18 bus stops at the following locations:

1. Sylmar/San Fernando Metrolink Station
2. Hubbard Station (Hubbard Avenue and Truman Street)
3. Maclay Station (Maclay Avenue and Truman Street)
4. Paxton Station (Paxton Street and San Fernando Road)
5. Van Nuys/San Fernando Station (Van Nuys Boulevard and San Fernando Road)
6. Laurel Canyon Station (Laurel Canyon and Van Nuys Boulevards)
7. Arleta Station (Arleta Avenue and Van Nuys Boulevard)
8. Woodman Station (Woodman Avenue and Van Nuys Boulevard)
9. Plummer Station (Plummer Street and Van Nuys Boulevard)
10. Nordhoff Station (Nordhoff Street and Van Nuys Boulevard)
11. Chase Station (Chase Street and Van Nuys Boulevard)
12. Roscoe Station (Roscoe and Van Nuys Boulevards)
13. Blythe Station (Blythe Street and Van Nuys Boulevard)
14. Van Nuys Metrolink Station (Van Nuys Boulevard and Keswick Street)
15. Sherman Way Station (Sherman Way and Van Nuys Boulevard)
16. Vanowen Station (Vanowen Street and Van Nuys Boulevard)
17. Victory Station (Victory and Van Nuys Boulevards)

Metro Orange Line Station (Van Nuys Boulevard and Metro Orange Line) The bus stop platforms for Alternative 1 would be located on the existing sidewalk. On the platform, there would be a covered Informational Kiosk and Ticketing Portal and a seating area. The kiosk and ticketing portal would be under one canopy and the seating area under a second canopy. The metal canopies would be approximately 10 to 12 feet high, 8 to 10 feet wide and approximately 46 feet long. The two canopies would be approximately 24 feet apart. Sidewalk widening would be required on Truman Street at Hubbard Avenue (Meyer Street) and in both directions at Maclay Avenue where the existing sidewalk is less than 10 feet wide, in order to accommodate the canopy. Figure 4.16-6 and Figure 4.16-7 illustrate a typical station with a canopy that would be constructed under Build Alternative 1.

Figure 4.16-6: Illustrative Design Details for Curb-Running BRT Alternative



A1 ALTERNATIVE 1_CURBSIDE RUNNING BRT
DEIS/DEIR PROJECT DESCRIPTION
Date: 3/5/14

Metro **M** John Kaliski Architects
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For: **KOA CORPORATION**
AN AMTRAK & BNSF COMPANY

Source: KOA Corporation.

Figure 4.16-7: Architectural Rendering for Curb-Running BRT Alternative



Source: KOA Corporation, 2015.

Under Alternative 1, there are 5 historic properties that have a potential to be affected by the construction of proposed bus stations. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground station is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

1. 1601 San Fernando Road – Approximately 180 feet from proposed Hubbard Station
2. 6353 Van Nuys Boulevard – Approximately 100 feet from proposed Victory Station
3. 8201 Van Nuys Boulevard – Over 200 feet from proposed Roscoe Station
4. 8324 Van Nuys Boulevard – Approximately 40 feet from proposed Roscoe Station
5. 9110 Van Nuys Boulevard – Approximately 50 feet from proposed Nordhoff Station

As the above 5 properties are located more than 25 feet away from the proposed construction areas, equipment used for the construction of a bus station would not exceed the predicted FTA damage risk vibration limits. Therefore, this alternative would not result in adverse effects on any historic properties during construction.

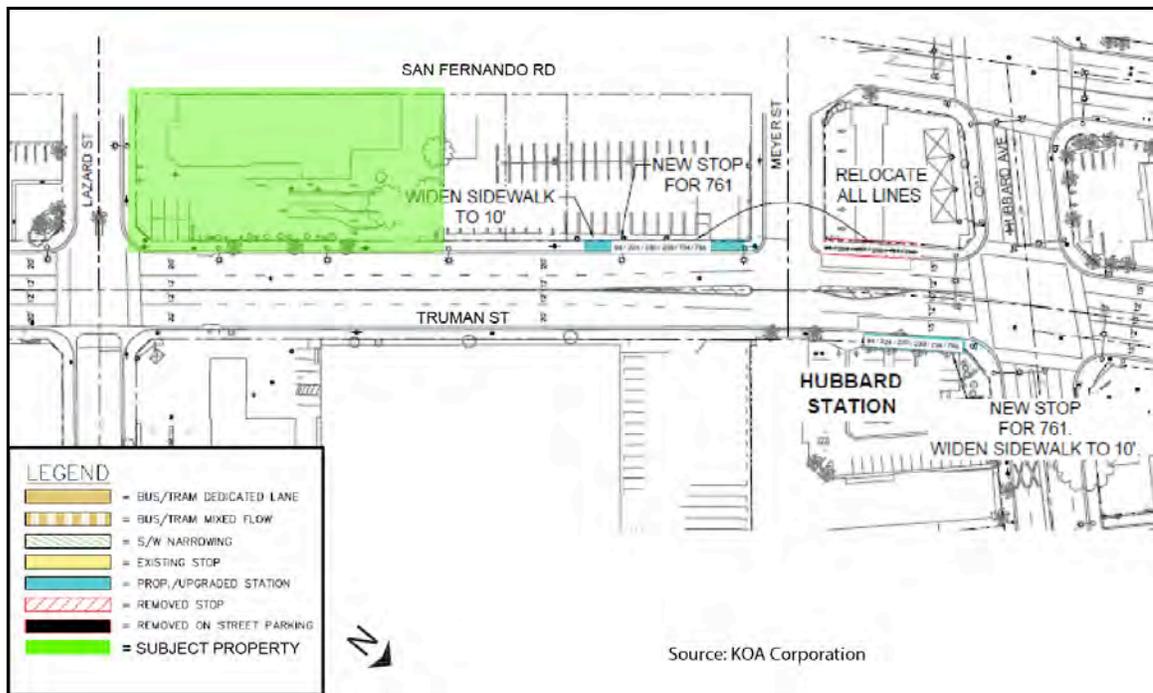
Operational Impacts

As the operation of a curb-running bus lane will not involve a change in use, demolition, alteration, removal, or neglect of a historic property, nor are any of the historic properties within the study area under federal ownership, the only potential operational impacts or effects that could occur under Alternative 1 would be limited to potential visual effects that could be caused by the introduction of a new feature within a historic property's setting (see Section 4.16.1.3 for a list of criteria for adverse effect). Thus, the applicable criterion for determining an adverse effect would be Criterion v: introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features. This Criterion generally addresses potential changes to a historic property's integrity of setting. Under Criterion v, this alternative would not result in atmospheric or audible elements that could diminish significant historic features of any of the properties; therefore, the discussion of impacts below focuses on the introduction of visual elements.

There are 10 historic properties in the APE. Five of the historic properties have the potential to be affected due to the introduction of visual elements under Alternative 1; however, based on the evaluations below, Alternative 1 would not cause an adverse effect on any historic properties because none of the new features would diminish the setting of any historic property in a manner that the property would no longer be eligible for the NRHP.

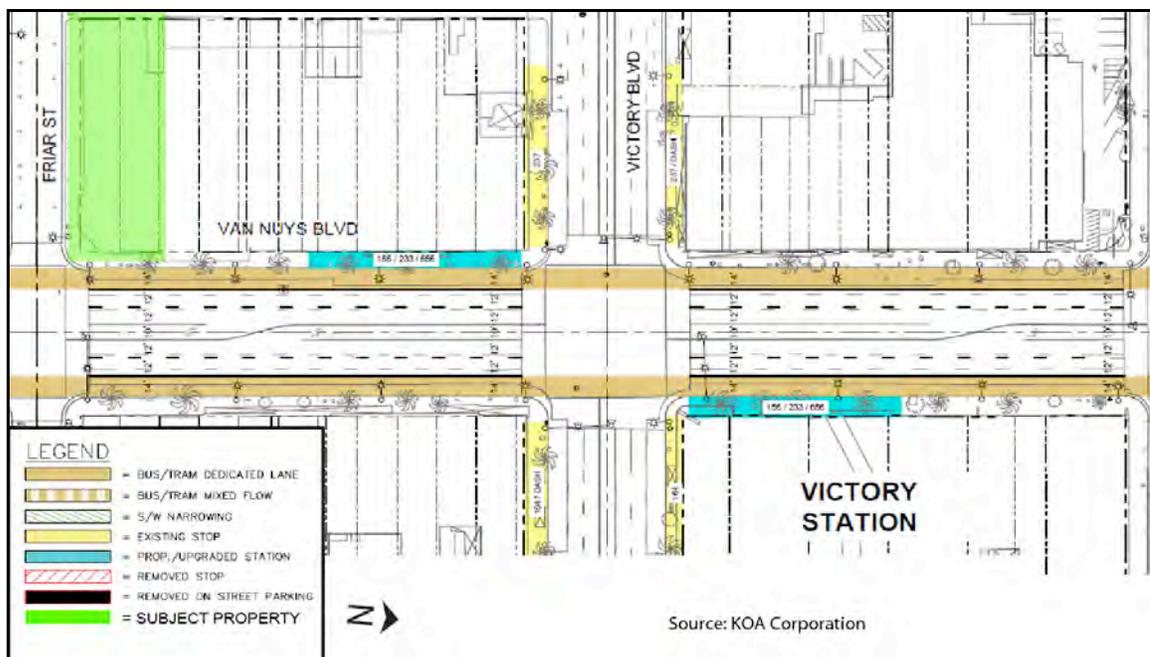
1. 1601 San Fernando Road

Under Alternative 1, the southbound Hubbard Station would be constructed along Truman Street at the southwest corner of Truman and Meyer Streets. While the historic property (indicated with green shading in the figure below) is near the proposed bus stop canopy and ticketing kiosk (indicated with light blue shading in the figure below), the station would be located to the rear of the property that faces Truman Street. The primary views of the historic car wash from San Fernando Road and Lazar Street would not be adversely affected by a new visual element or the sidewalk widening required to accommodate the new bus stop canopies. The property is already located in an urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property’s integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



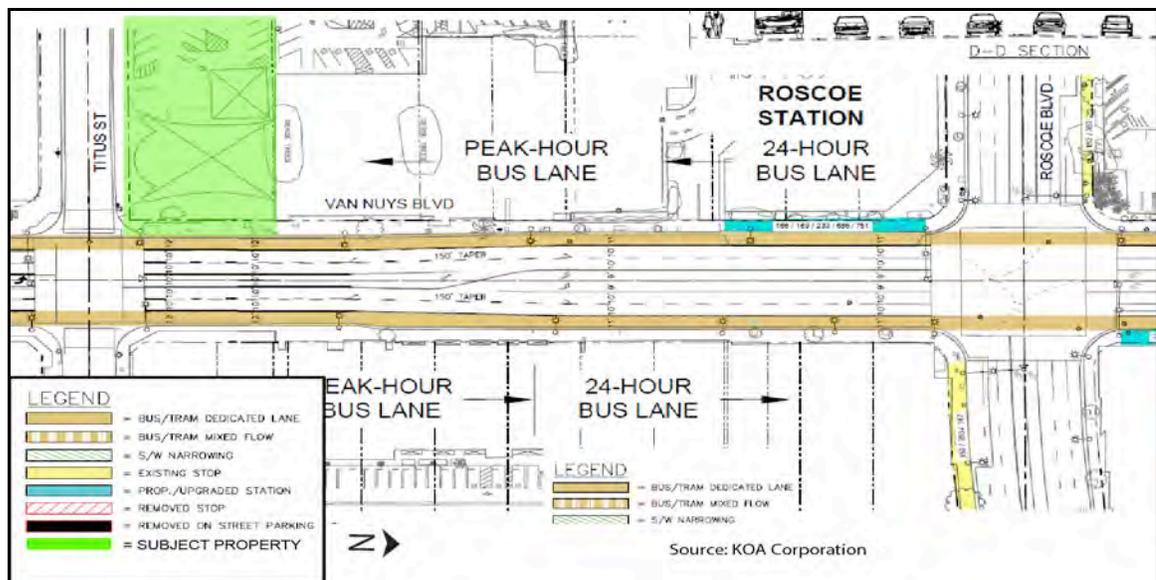
2. 6353 Van Nuys Boulevard

Under Alternative 1, the proposed southbound Victory Station would be constructed along Van Nuys Boulevard at the southwest corner of Van Nuys and Victory Boulevards. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. The primary views of the historic property from Van Nuys Boulevard and Friar Street would not be adversely affected by a new visual element. The property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station at the opposite end of the block would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



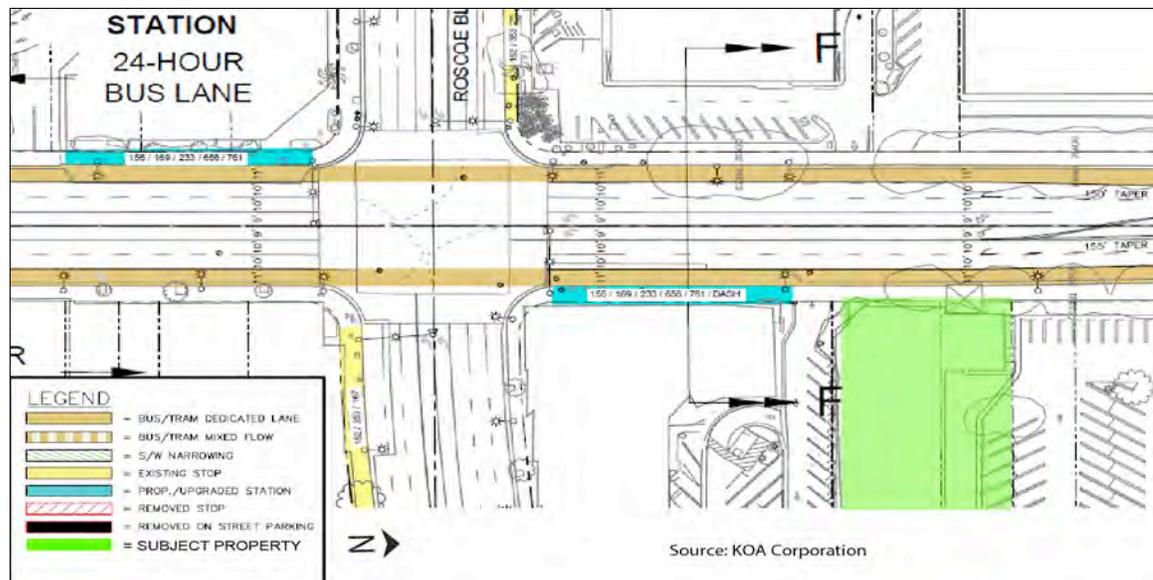
3. 8201 Van Nuys Boulevard

Under Alternative 1, the proposed southbound Roscoe Station would be constructed along Van Nuys Boulevard at the southwest corner of Roscoe and Victory Boulevards. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the new station would not be constructed directly in front of the historic property. The primary views of the historic building from Van Nuys Boulevard and Titus Street would not be adversely affected by a new visual element down the street. The property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



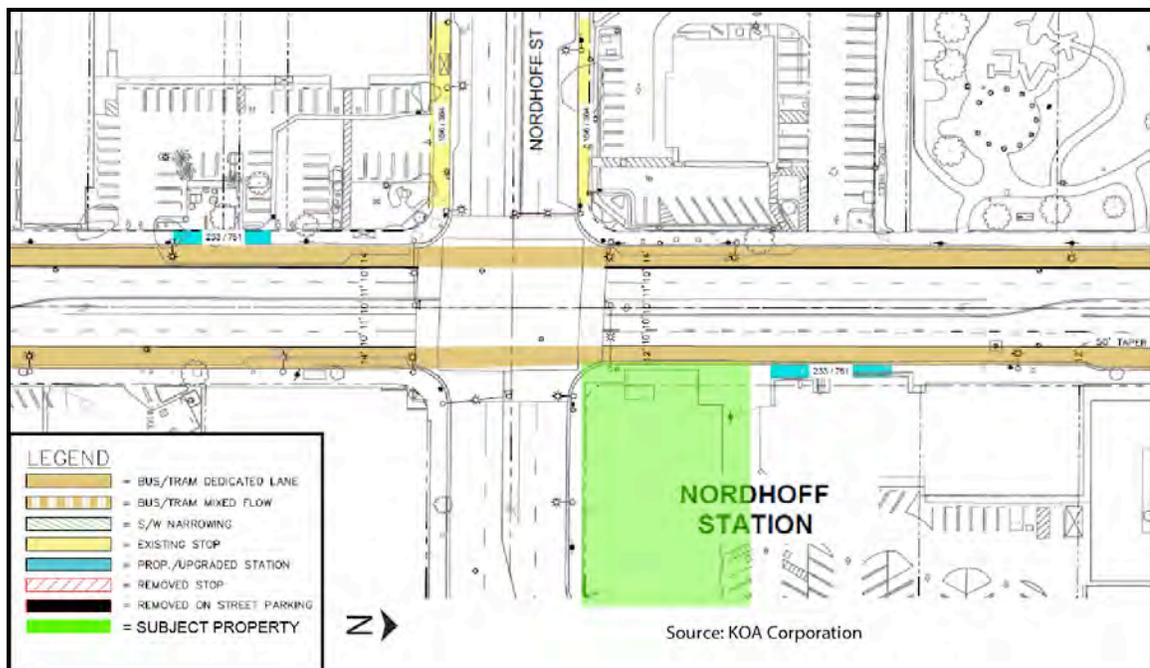
4. 8324 Van Nuys Boulevard

Under Alternative 1, the proposed northbound Roscoe Station would be constructed along Van Nuys Boulevard north of its intersection with Roscoe Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. The primary view of the building from Van Nuys Boulevard would not be adversely affected by a new visual element. The property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



5. 9110 Van Nuys Boulevard

Under Alternative 1, the proposed northbound Nordhoff Station would be constructed along Van Nuys Boulevard north of its intersection with Nordhoff Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. The primary views of the building from Van Nuys Boulevard and Nordhoff Street would not be adversely affected by a new visual element. The property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



Cumulative Impacts

Under the Curb-Running BRT Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on the properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

Construction mitigation measures are not required since there are no anticipated construction effects on historic properties as a result of the construction of the proposed transit facilities.

Operational Mitigation Measures

Operational mitigation measures are not required since there would be no anticipated operational effects on historic properties.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

Impacts would be less than significant.

Alternative 2

Construction Impacts

Alternative 2 would provide approximately 6.7 miles of dedicated median-running bus lanes along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line; the median-running bus lanes would be similar in operation to the Metro Orange Line. The remaining 2.5 miles of the route would operate in traffic between the Sylmar/San Fernando Metrolink and the intersection of San Fernando Road and Van Nuys Boulevard.

Five existing bus stops along Truman Street and San Fernando Road would be upgraded and include ADA-compliant design upgrades:

1. Sylmar/San Fernando Metrolink Station
2. Hubbard Station
3. Maclay Station
4. Paxton Station
5. Van Nuys/San Fernando Station

In addition to upgrading 5 existing stations, the Median-Running BRT Alternative would include construction of 12 new bus stop platforms in the median at the following locations:

1. Laurel Canyon Station (Laurel Canyon and Van Nuys Boulevards)
2. Arleta Station (Arleta Avenue and Van Nuys Boulevard)
3. Woodman Station (Woodman Avenue and Van Nuys Boulevard)
4. Plummer Station (Plummer Street and Van Nuys Boulevard)
5. Nordhoff Station (Nordhoff Street and Van Nuys Boulevard)
6. Roscoe/Chase Station (Van Nuys Boulevard between Roscoe Boulevard and Chase Street)
7. Blythe Station (Blythe Street and Van Nuys Boulevard)
8. Van Nuys Metrolink Station (Van Nuys Boulevard and Keswick Street)
9. Sherman Way Station (Sherman Way and Van Nuys Boulevard)
10. Vanowen Station (Vanowen Street and Van Nuys Boulevard)
11. Victory Station (Victory and Van Nuys Boulevards)
12. Metro Orange Line Station (Van Nuys Boulevard and Metro Orange Line)

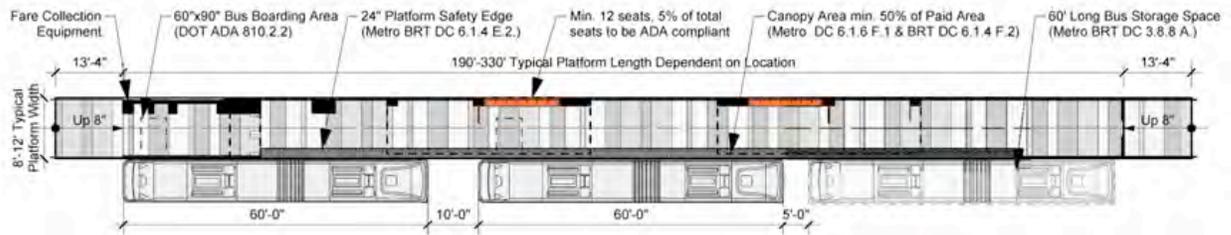
The new bus stop platforms for Alternative 2 would be located near the center of Van Nuys Boulevard. On the platform, there would be a ticketing portal, seating, and an informational kiosk. The seating would be located under a station canopy. The metal canopy would be approximately 10 to 12 feet high, 8 to 10 feet wide, and approximately 105 feet long. The entire platform would be approximately 190 to 330 feet long, depending on the location. The kiosk and ticketing portal would be approximately 12 to 14 feet high. Sidewalk widening would be required on Truman Street at Hubbard Avenue (Meyer Street) and both directions at Maclay Avenue where the existing sidewalk is less than 10 feet wide, in order to accommodate the canopy. Figure 4.16-8 and Figure 4.16-9 illustrate a typical station with a canopy that would be constructed under Alternative 2.

The upgraded bus stops at Hubbard Avenue and Maclay Avenue would require widening of the sidewalks to 10 feet to accommodate the bus stop canopies. Due to the narrow sidewalk width, the southbound bus stop at Hubbard Avenue would be shifted south of Meyer Street.

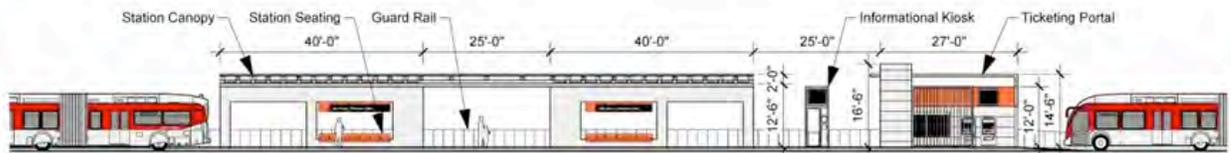
Figure 4.16-8: Illustrative Design Details for Median-Running BRT Alternative



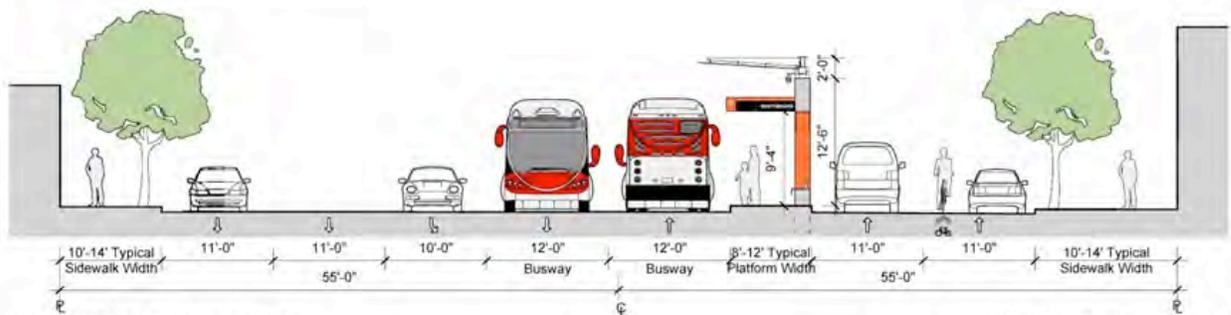
01 MEDIAN BRT STATION ILLUSTRATION



02 TYPICAL MEDIAN BRT PLATFORM
Scale: 1/32" = 1'-0"



03 MEDIAN BRT PLATFORM ELEVATION
Scale: 1/32" = 1'-0"



04 MEDIAN BRT @ 110' R.O.W.
Scale: 1/16" = 1'-0"



A2 ALTERNATIVE 2_MEDIAN RUNNING BRT
DEIS/DEIR PROJECT DESCRIPTION

Date: 3/5/14

Metro **M** John Kaliski Architects
 www.johnkaliski.com
 3780 Wilshire Boulevard, Suite 200
 Los Angeles, California 90010
 (213) 383-7960 pH
 (213) 383-7981 FAX

For: **KOA CORPORATION**
 PLANNING & ENGINEERING

Source: KOA Corporation.

Figure 4.16-9: Architectural Rendering for Median-Running BRT Alternative



Source: KOA Corporation, 2014.

Under Alternative 2, there are 4 historic properties that have a potential to be affected by the construction of proposed bus stations. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground station is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

1. 1601 San Fernando Road – Approximately 180 feet from proposed Hubbard Station
2. 6353 Van Nuys Boulevard – Approximately 40 feet from proposed Victory Station
3. 8324 Van Nuys Boulevard – Approximately 80 feet from proposed Roscoe/Chase Station
4. 9110 Van Nuys Boulevard – Approximately 20 feet from proposed Nordhoff Station

As 3 of the above properties are located more than 25 feet away from the proposed construction areas, equipment used for the construction of a bus station would not exceed the predicted FTA damage risk vibration limits. While use of a vibratory roller during construction could generate vibration of up to 0.21 in/sec PPV at a range of 25 feet, and 9110 Van Nuys Boulevard is less than 25 feet away from the proposed stop, the building is of reinforced concrete construction and can therefore withstand predicted vibration levels of 0.5 in/sec PPV. Therefore, this alternative would not result in adverse effects on any historic properties during construction.

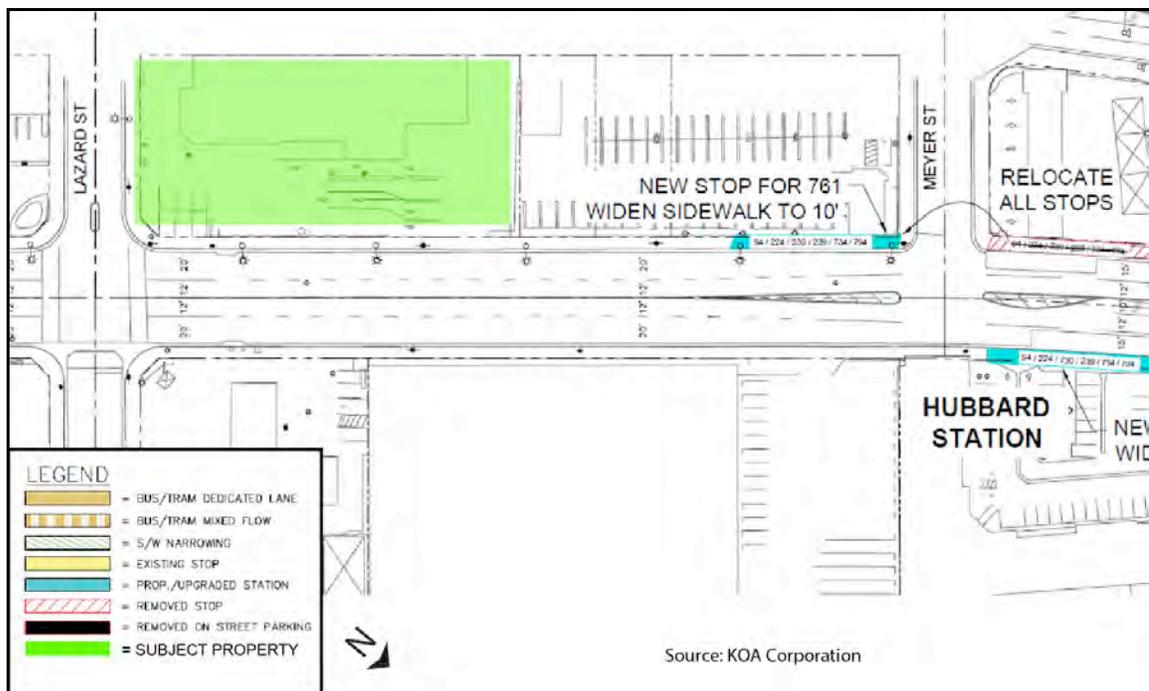
Operational Impacts

As the operation of a median-running bus lane will not involve a change in use, demolition, alteration, removal, or neglect of a historic property, nor are any of the historic properties within the study area under federal ownership, the only potential operational impacts or effects that could occur under Alternative 2 would be limited to potential visual effects that could be caused by the introduction of new visual features within a historic property's setting (see Section 4.16.1.3 for a list of criteria for adverse effect). Therefore, the only applicable criterion for adverse effect is Criterion v: introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features. This Criterion generally addresses potential changes to a historic property's integrity of setting. Under Criterion v, this alternative would not result in atmospheric or audible elements that could diminish significant historic features of any the properties; therefore, the discussion of impacts below focuses on the introduction of visual elements.

There are 10 historic properties in the APE. Four of the historic properties have a potential to be affected by the introduction of the introduction of new visual elements under Alternative 2; however, based on the evaluations below, Alternative 2 would not cause an adverse effect on any historic properties because none of the new features would diminish the setting of any historic property in a manner that the property would no longer be eligible for the NRHP.

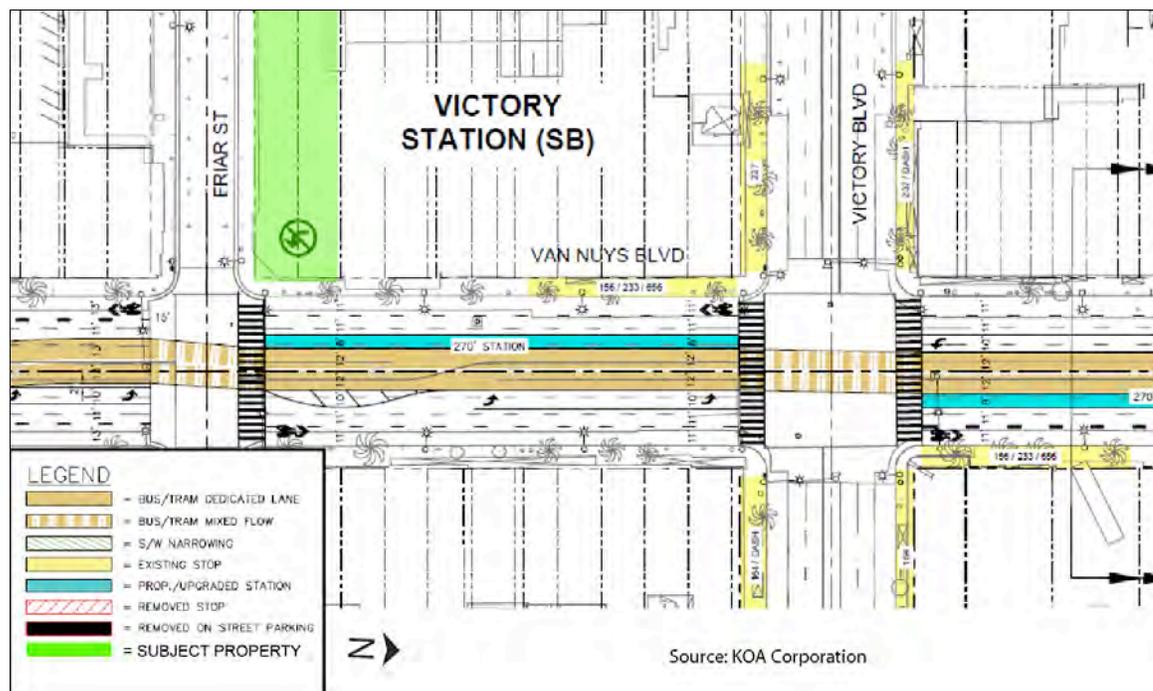
1. 1601 San Fernando Road

Under Alternative 2, the southbound Hubbard Station along Truman Street at the southwest corner of Truman and Meyer Streets would be upgraded. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would be located to the rear of the property that faces Truman Street. The primary views of the building from San Fernando Road and Lazar Street would not be adversely affected by a new visual element or the sidewalk widening. The property is already located in an urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



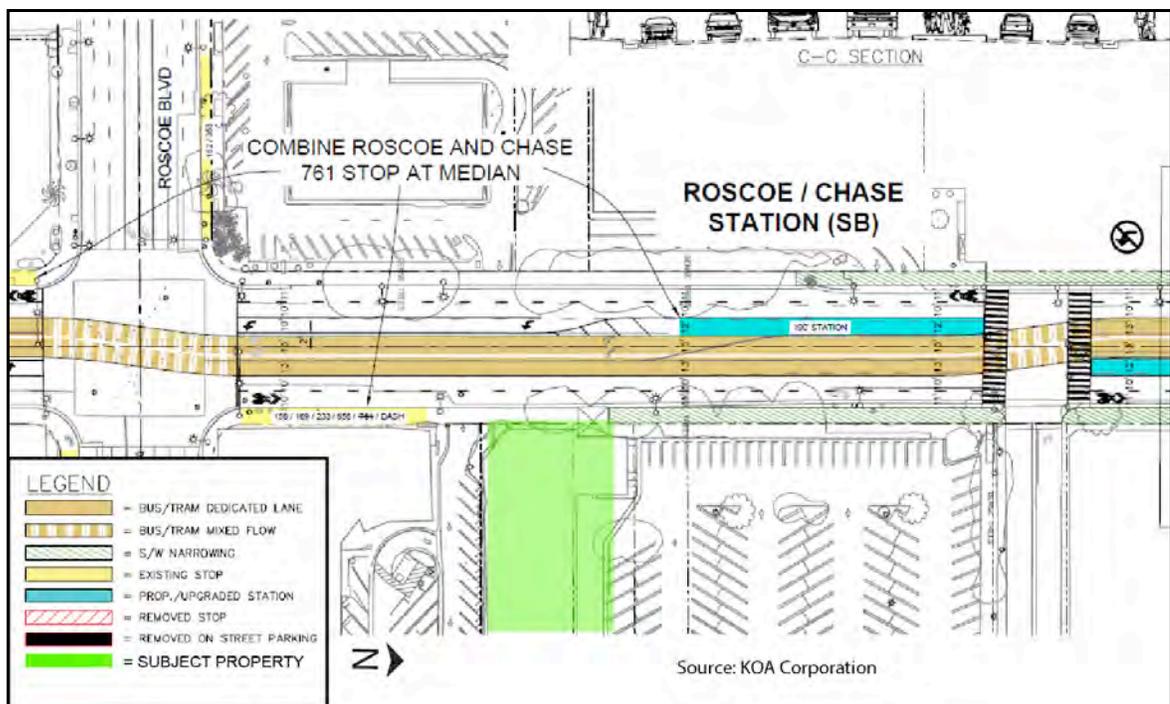
2. 6353 Van Nuys Boulevard

Under Build Alternative 2, the proposed southbound Victory Station would be constructed near the center of Van Nuys Boulevard between the intersection of Victory Boulevard and Friar Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed bus station. The primary views of the building from the west side of Van Nuys Boulevard and Friar Street would not be adversely affected by a new visual element. While the view might be obscured from the east side of Van Nuys Boulevard, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



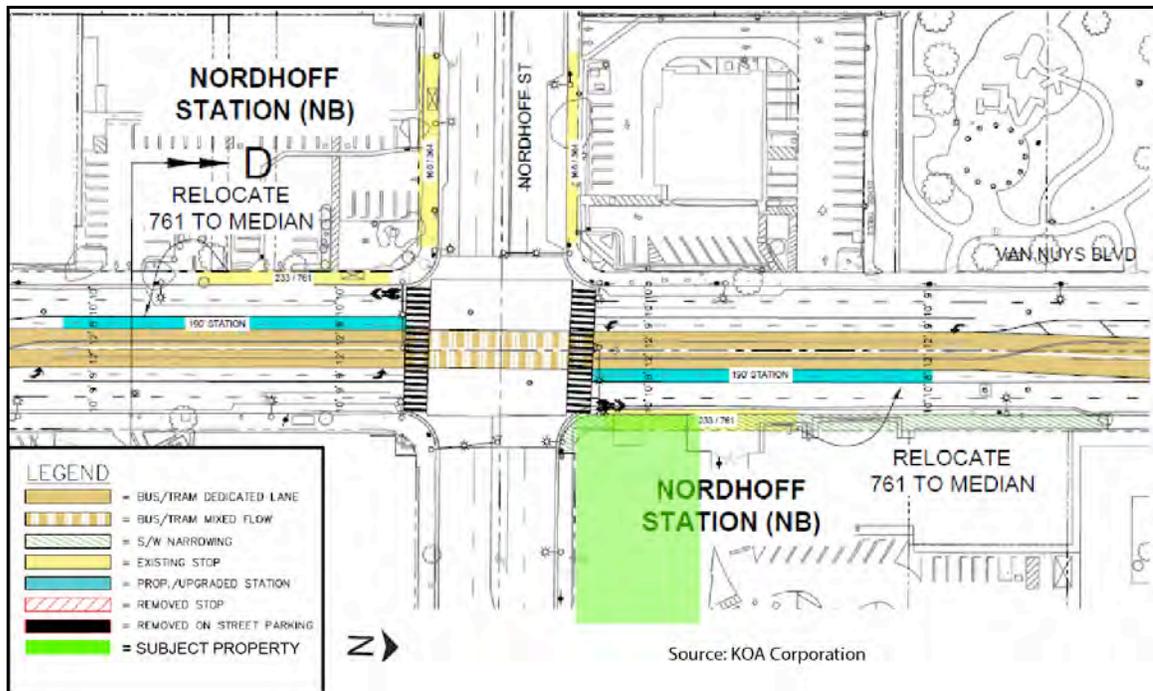
3. 8324 Van Nuys Boulevard

Under Alternative 2, the proposed southbound Roscoe/Chase Station would be constructed near the center of Van Nuys Boulevard north of its intersection with Roscoe Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. The primary view of the building from Van Nuys Boulevard would not be adversely affected by a new visual element. The property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



4. 9110 Van Nuys Boulevard

Under Alternative 2, the proposed northbound Nordhoff Station would be constructed near the center of Van Nuys Boulevard north of its intersection with Nordhoff Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed bus station. The primary views of the building from the east side of Van Nuys Boulevard and Nordhoff Street would not be adversely affected by a new visual element. While the view might be obscured from the west side of Van Nuys Boulevard, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new bus station would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



Cumulative Impacts

Under the Median-Running BRT Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on the properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

Construction mitigation measures are not required since there are no anticipated construction effects on historic properties as a result of the construction of the proposed transit facilities.

Operational Mitigation Measures

Operational mitigation measures are not required since there would be no anticipated operational effects on historic properties.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

Impacts under CEQA would be less than significant.

Alternative 3

Construction Impacts

Alternative 3 would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink Station to the north, to the Van Nuys Metro Orange Line Station to the south as described below.

- From the Sylmar/San Fernando Metrolink station, the Low-Floor LRT/Tram would operate within a median dedicated guideway on San Fernando Road.
- At Wolfskill Street, the Low-Floor LRT/Tram would operate within mixed-flow travel lanes on San Fernando Road to Van Nuys Boulevard.
- At Van Nuys Boulevard, the Low-Floor LRT/Tram would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- The Low-Floor LRT/Tram would continue to operate in the median along Van Nuys Boulevard until reaching its terminus at the Van Nuys Metro Orange Line Station.

Alternative 3 would operate using low-floor articulated tram vehicles that would be electrically powered using overhead wires. This alternative includes supporting facilities, such as an overhead contact system (OCS), traction power substations, (TPSS), signaling, and a maintenance and storage facility (MSF).

Stations for the Low-Floor LRT/Tram Alternative would be constructed at various intervals along the entire route. There are portions of the route where stations would be closer together, and other portions where they would be located further apart. Twenty-eight ADA-compliant stations are proposed with the Low-Floor LRT/Tram Alternative:

1. Sylmar/San Fernando Metrolink Station
2. Maclay Station (Maclay Avenue and San Fernando Road)
3. Paxton Station (Paxton Street and San Fernando Road)
4. Van Nuys/San Fernando Station (Van Nuys Boulevard and San Fernando Road)
5. Telfair Station (Telfair Avenue and Van Nuys Boulevard)
6. Haddon Station (Haddon Avenue and Van Nuys Boulevard)
7. Laurel Canyon Station (Laurel Canyon and Van Nuys Boulevards)
8. Arleta Station (Arleta Avenue and Van Nuys Boulevard)
9. Beachy Station (Beachy Avenue and Van Nuys Boulevard)
10. Woodman Station (Woodman Avenue and Van Nuys Boulevard)
11. Plummer Station (Plummer Street and Van Nuys Boulevard)
12. Tupper Station (Tupper Street and Van Nuys Boulevard)
13. Nordhoff Station (Nordhoff Street and Van Nuys Boulevard)
14. Parthenia North Station (Parthenia Street and Van Nuys Boulevard)
15. Parthenia South Station (Parthenia Street and Van Nuys Boulevard)
16. Chase Station (Chase Street and Van Nuys Boulevard)
17. Roscoe Station (Roscoe and Van Nuys Boulevards)
18. Lanark Station (Lanark Street and Van Nuys Boulevard)
19. Blythe Station (Blythe Street and Van Nuys Boulevard)
20. Saticoy/Metrolink Station (Van Nuys Boulevard and Keswick Street)
21. Valerio Station (Valerio Street and Van Nuys Boulevard)
22. Sherman Way Station (Sherman Way and Van Nuys Boulevard)
23. Hart/Vose Station (Hart Street and Van Nuys Boulevard)
24. Vanowen Station (Vanowen Street and Van Nuys Boulevard)
25. Kittredge Station (Kittredge Street and Van Nuys Boulevard)
26. Victory Station (Victory and Van Nuys Boulevards)
27. Erwin/Sylvan Station (Sylvan Street and Van Nuys Boulevard)
28. Metro Orange Line Station (Van Nuys Boulevard and Metro Orange Line)

The new Low-Floor LRT/Tram platforms for Alternative 3 would be located near the center of the street. The platforms would be raised up to 14 inches from the street with an ADA-Accessible ramp. On the platform, there would be a ticketing portal, seating, and an informational kiosk. The seating would be located under a station canopy. The metal canopy would be approximately 10 to 12 feet high, 8 to 10 feet wide and approximately 150 feet long. The total platform would be approximately 270 to 450 feet long, depending on the location. The kiosk and ticketing portal would be approximately 12 to 14 feet high. OCS poles would be approximately 30 feet tall and placed every 90 to 170 feet between the two Low-Floor LRT/Tram tracks. The TPSSs, which are electrical substations, would be placed every 1 to 1.5 miles, for a total of 9 miles along the entire route; TPSSs would be approximately 60 by 80 feet and 12 to 14 feet high.

Three possible MSF sites are proposed:

- MSF Option A – Van Nuys Boulevard/Metro Orange Line
- MSF Option B – Van Nuys Boulevard/Keswick Street
- MSF Option C – Van Nuys Boulevard/Arminata Street

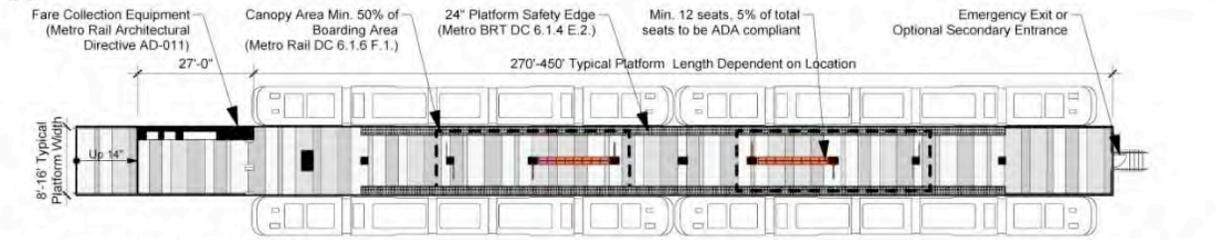
The MSF site would be an operational and administrative facility. The site would be comprised of maintenance and repair shops, storage areas for vehicles, materials, and tools, staff offices, break rooms, and dispatcher work areas. The MSF would serve as a point of origin and terminus for daily service.

Figure 4.16-10 and Figure 4.16-11 illustrate a typical station with a canopy that would be constructed under Alternative 3.

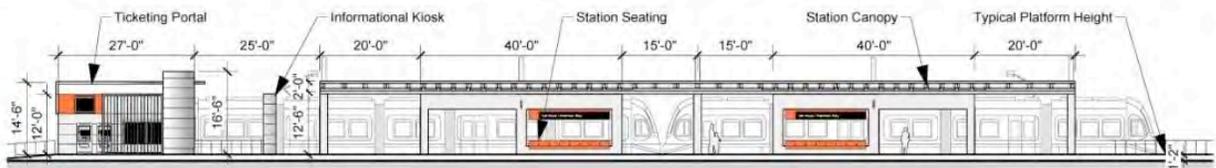
Figure 4.16-10: Illustrative Design Details for Low-Floor LRT/Tram Alternative



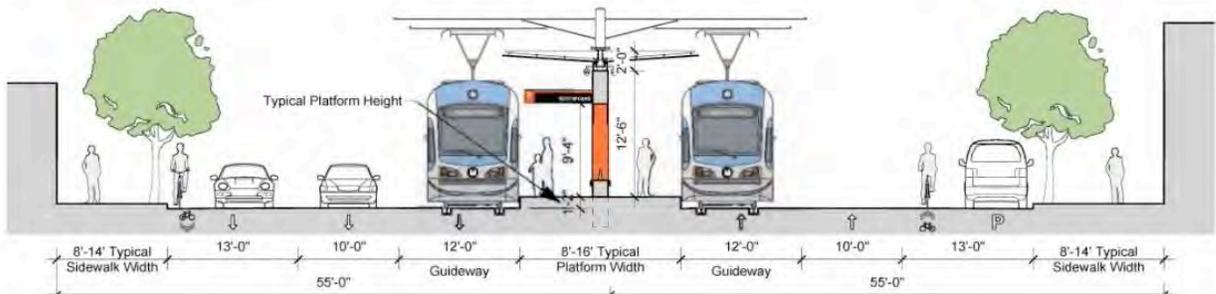
01 MEDIAN TRAM STATION ILLUSTRATION



02 TYPICAL MEDIAN TRAM PLATFORM
Scale: 1:450



03 MEDIAN TRAM PLATFORM ELEVATION
Scale: 1/32" = 1'-0"



04 MEDIAN TRAM @ 110' R.O.W.
Scale: 1/16" = 1'-0"

A3 ALTERNATIVE 3_MEDIAN RUNNING TRAM
DEIS/DEIR PROJECT DESCRIPTION
Date: 3/5/14

Metro **M** John Kaliski Architects
www.johnkaliski.com
3780 Wilshire Boulevard, Suite 300
Los Angeles, California 90010
(213) 383-7980 jka
(213) 383-7981 kax

FOR: **KOA CORPORATION**
PLANNING & ENGINEERING

Source: KOA Corporation, 2014.

Figure 4.16-11: Architectural Rendering for Low-Floor LRT/Tram Alternative



Source: KOA Corporation, 2014.

Under Alternative 3, there are 5 historic properties that have a potential to be affected by the construction of proposed tram stations. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground station is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

1. 1140 San Fernando Road – Approximately 80 feet from proposed Maclay Station
2. 6353 Van Nuys Boulevard – Approximately 30 feet from proposed Victory Station
3. 6551 Van Nuys Boulevard – Approximately 40 feet from proposed Kittridge Station
4. 8324 Van Nuys Boulevard – Approximately 40 feet from proposed Roscoe Station
5. 9110 Van Nuys Boulevard – Approximately 20 feet from proposed Nordhoff Station

As 4 of the above properties are located more than 25 feet away from the proposed construction areas, equipment used for the construction of an LRT station or MSF site would not exceed the predicted FTA damage risk vibration limits. While use of a vibratory roller during construction could generate vibration of up to 0.21 in/sec PPV at a range of 25 feet, and 9110 Van Nuys Boulevard is less than 25 feet away from the proposed stop, the building is made of reinforced concrete construction, and can therefore withstand predicted vibration levels of 0.5 in/sec PPV.

Under Alternative 3, there is 1 historic property that has the potential to be affected by the construction of proposed MSF Option A – Van Nuys Boulevard/Metro Orange Line. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground MSF site is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

1. 14601–3 Aetna Street – Approximately 120 feet from proposed LRT tracks at MSF site

As the historic property is located more than 100 feet away from the nearest new element (tracks) proposed as part of the MSF, the equipment used for the construction of the MSF would not exceed the predicted FTA damage risk vibration limits.

Therefore, this alternative would not result in adverse effects on any historic properties during construction.

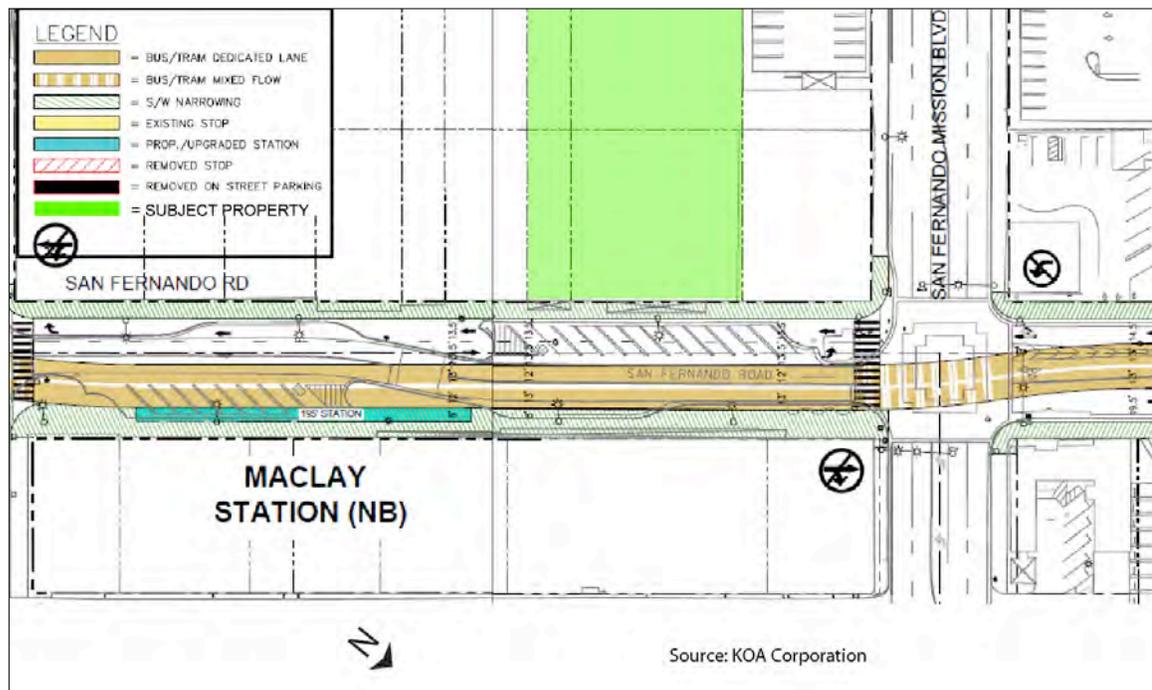
Operational Impacts

As the operation of a low-floor LRT/Tram will not involve a change in use, demolition, alteration, removal, or neglect of a property, nor are any of the historic properties within the study area under federal ownership, the only potential operational impacts or effects that could occur under Alternative 3 would be potential visual effects that could be caused by the introduction of a new visual feature within the setting of a historic property (see Section 4.16.1.3 for a list of criteria for adverse effect). Therefore, the applicable Criterion for adverse effect would be Criterion v: introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features. Criterion v generally addresses potential changes to a historic property's integrity of setting. Under Criterion v, this alternative would not result in atmospheric or audible elements that could diminish significant historic features of any the properties; therefore, the impacts discussion that follows focuses on introduction of visual elements.

There are 10 historic properties in the APE. Eight of the historic properties have a potential to be affected by the introduction of the introduction of new visual elements under Alternative 3; however, based on the evaluations below, Alternative 3 would not cause an adverse effect on any historic properties because none of the new features would diminish the setting of any historic property in a manner that the property would no longer be eligible for the NRHP.

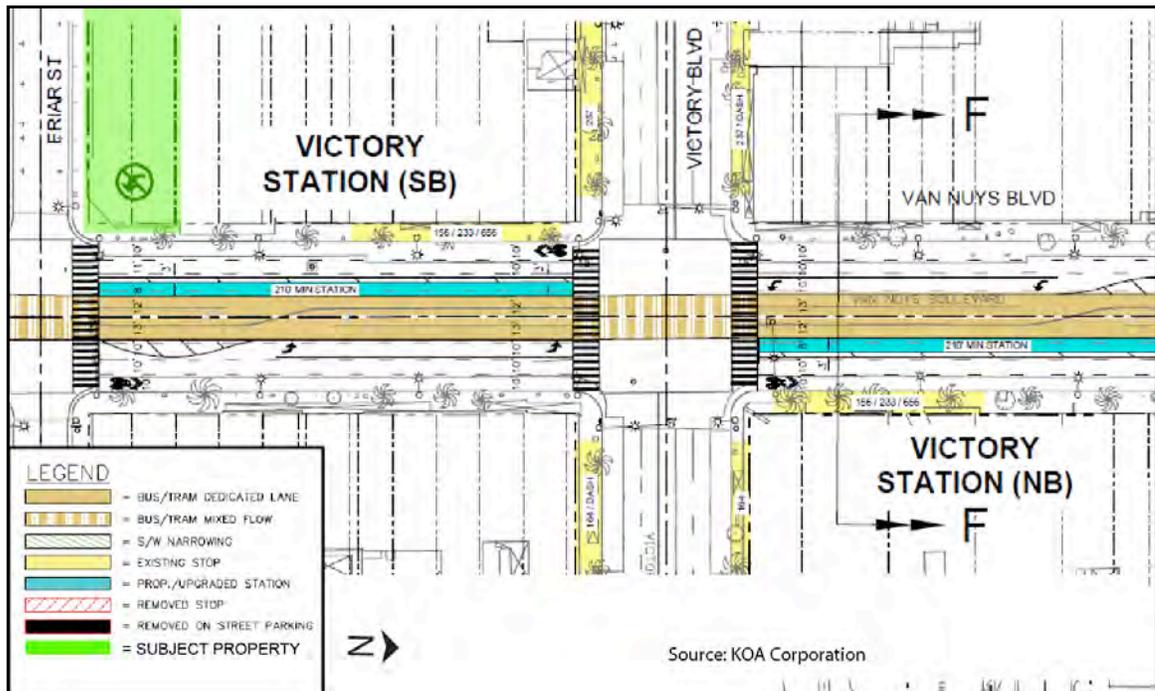
1. 1140 San Fernando Road

Under Alternative 3, the northbound Maclay Station would be constructed along the east side of San Fernando Road, north of its intersection with Maclay Avenue. While the historic property (indicated with green shading in figure on the next page) is near the proposed station (indicated with light blue shading in figure on the next page), the station would not be constructed directly in front of the building. While there would be an OCS and Low-Floor LRT/Trams passing in front of the building, the primary view of the façade from San Fernando Road would not be adversely affected by this new visual element. The primary character-defining features of the building are located near the top of the building, including the distinctive original signage and Late Moderne detailing, which would likely still be visible over the 10- to 12-foot canopy. In addition, the integrity of setting has already been somewhat diminished. Many of the properties along the commercial strip have been heavily altered or are infill construction, and the sidewalks along San Fernando Road were widened at an unknown date. Historic photos and aerial photography indicate that the existing curb bulb-outs, street planters, and the diagonal street parking configuration were added around 1969. Therefore, the setting has already been altered from its original, narrower sidewalk and parallel street parking configuration. The sidewalk narrowing (indicated in green hatching in figure on the next page) proposed as part of Alternative 3 and the construction of the Maclay Low-Floor LRT/Tram station and OCS would actually remove non-original features from the building’s setting. Therefore, the introduction of the new Low-Floor LRT/Tram station and OCS would not diminish the property’s integrity of setting in such a way that it would no longer be eligible for the NRHP; rather, it would remove non-original features from the existing setting, and the station would not obscure the existing primary view of the building in a manner that it would no longer qualify for the NRHP. All other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



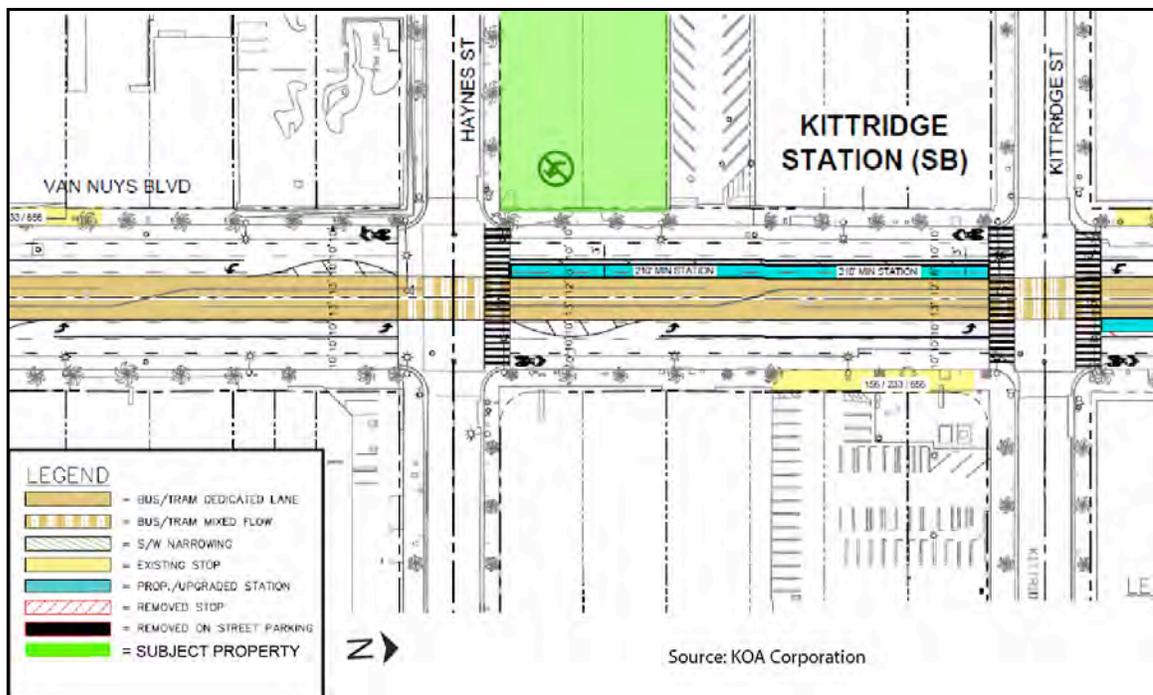
2. 6353 Van Nuys Boulevard

Under Alternative 3, the proposed southbound Victory Station would be constructed near the center of Van Nuys Boulevard between the intersection of Victory Boulevard and Friar Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed rail station. The primary views of the building from the west side of Van Nuys Boulevard and Friar Street would not be adversely affected by a new visual element. While the view might be obscured from the east side of Van Nuys Boulevard, the property is already located in a dense urban area with existing transit service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new Low-Floor LRT/Tram station and OCS would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



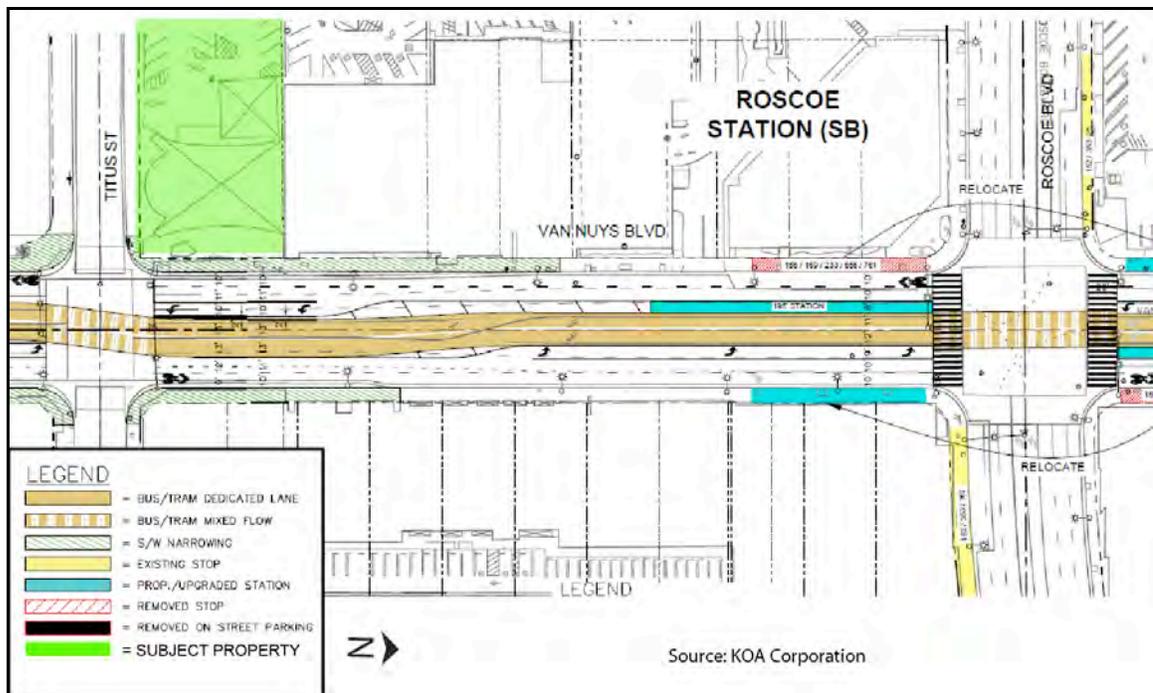
3. 6551 Van Nuys Boulevard

Under Alternative 3, the proposed southbound Kittridge Station would be constructed near the center of Van Nuys Boulevard between the intersections of Haynes Street and Kittridge Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed Low-Floor LRT/Tram station. The primary views of the building from the west side of Van Nuys Boulevard and Haynes Street would not be adversely affected by a new visual element. While the view might be partially obscured from the east side of Van Nuys Boulevard, the primary character-defining features of the building are located near the top of the building, including the dramatic roof overhang and the mural, which would likely still be visible over the 10- to 12-foot canopy. The building would be easily visible from the Low-Floor LRT/Tram alignment. The building is already located in a dense urban area with existing transit service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new tram station and OCS would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



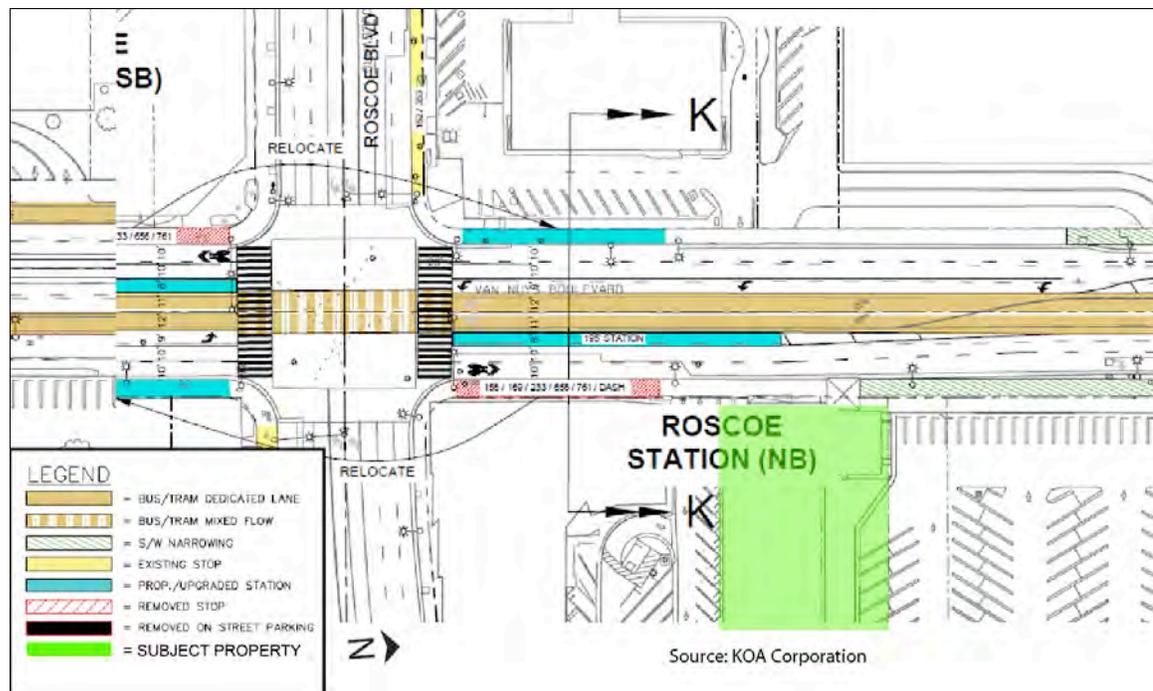
4. 8201 Van Nuys Boulevard

Under Alternative 3, the proposed northbound Roscoe Station would be constructed along Van Nuys Boulevard north of its intersection with Roscoe Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. The building is located at the opposite end of the block, and there would be two lanes of traffic separating the property from the proposed Low-Floor LRT/Tram station. The primary views of the building from the Titus Street and the west side of Van Nuys Boulevard would not be adversely affected by a new visual element. The property is already located in a dense urban area with existing transit service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new Low-Floor LRT/Tram station and OCS would not diminish the property’s integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. The immediately adjacent sidewalk is not a character-defining element of the building’s significance, and therefore, the proposed narrowing of the sidewalk in front of the historic property would not cause a direct or indirect effect on the historic building. Therefore, this alternative would not result in adverse effects on this historic property.



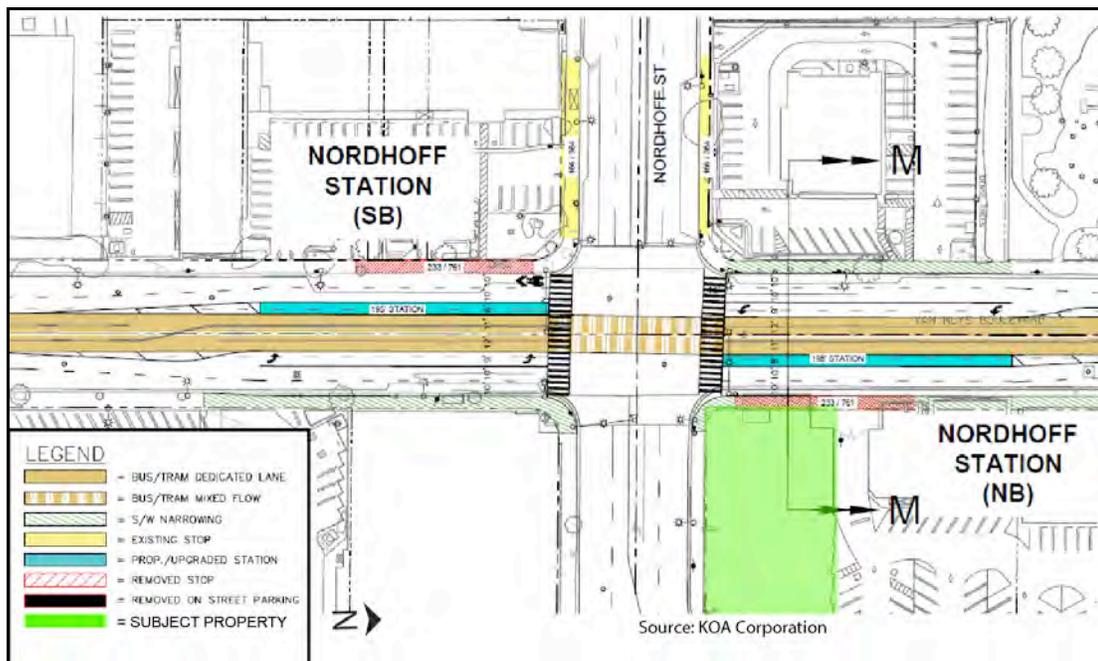
5. 8324 Van Nuys Boulevard

Under Alternative 3, the proposed northbound Roscoe Station would be constructed along Van Nuys Boulevard north of its intersection with Roscoe Street. While the historic property (indicated with green highlighting) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building. There would be two lanes of traffic separating the property from the proposed Low-Floor LRT/Tram station. The primary views of the building from the east side of Van Nuys Boulevard would not be adversely affected by a new visual element. While the view might be obscured from the west side of Van Nuys Boulevard, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new Low-Floor LRT/Tram station and OCS would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Also, the adjacent sidewalk is not a character-defining feature of the historic property, and the removal of the existing bus stop and narrowing of the sidewalk would not cause a direct or indirect effect to the historic property. Therefore, this alternative would not result in adverse effects on this historic property.



6. 9110 Van Nuys Boulevard

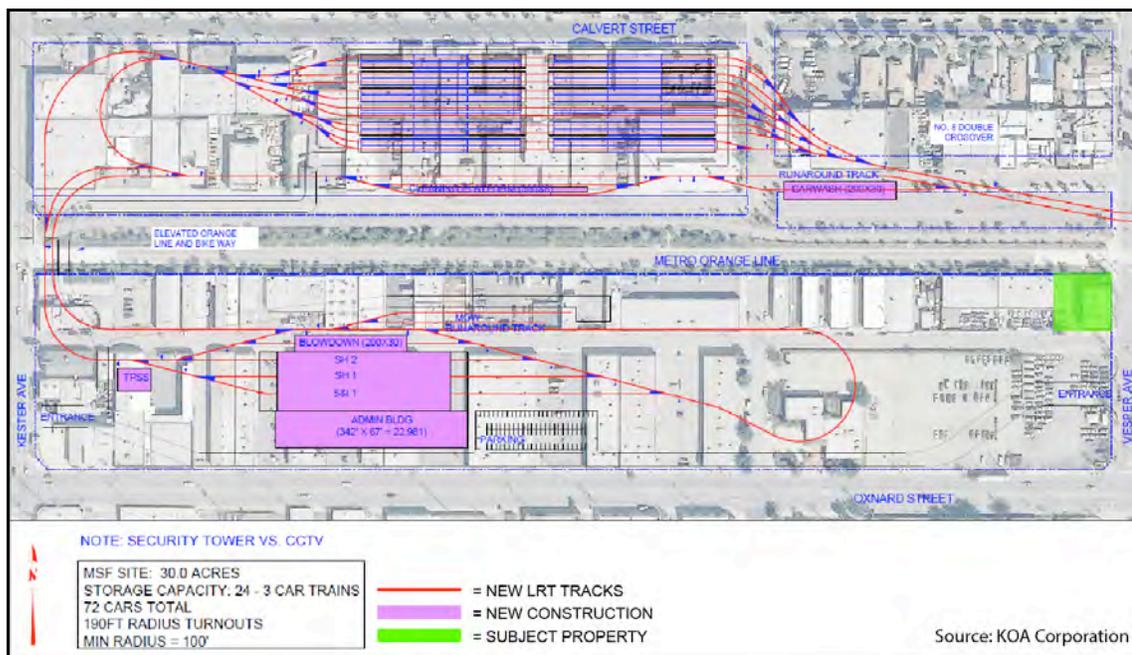
Under Alternative 3, the proposed northbound Nordhoff Station would be constructed near the center of Van Nuys Boulevard north of its intersection with Nordhoff Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed Low-Floor LRT/Tram station. The sidewalks would be narrowed, and an existing bus stop—consisting of a bench and signage—would be removed. The primary views of the building from the east side of Van Nuys Boulevard and Nordhoff Street would not be adversely affected by a new visual element. While the view might be obscured from the west side of Van Nuys Boulevard, the distinctive signage and marquee would likely still be visible over the 10- to 12-foot canopy. The property’s integrity of setting has already been diminished through the introduction of infill construction, but the property is still able to convey its significance through its other aspects of integrity. In addition, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new Low-Floor LRT/Tram station and OCS, and the narrowing of the sidewalk would not further diminish the property’s integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. The removal of the existing bus stop and the narrowing of the sidewalks would not cause a direct or indirect effect on the historic property. Therefore, this alternative would not result in adverse effects on this historic property.



7. 14601-3 Aetna Street

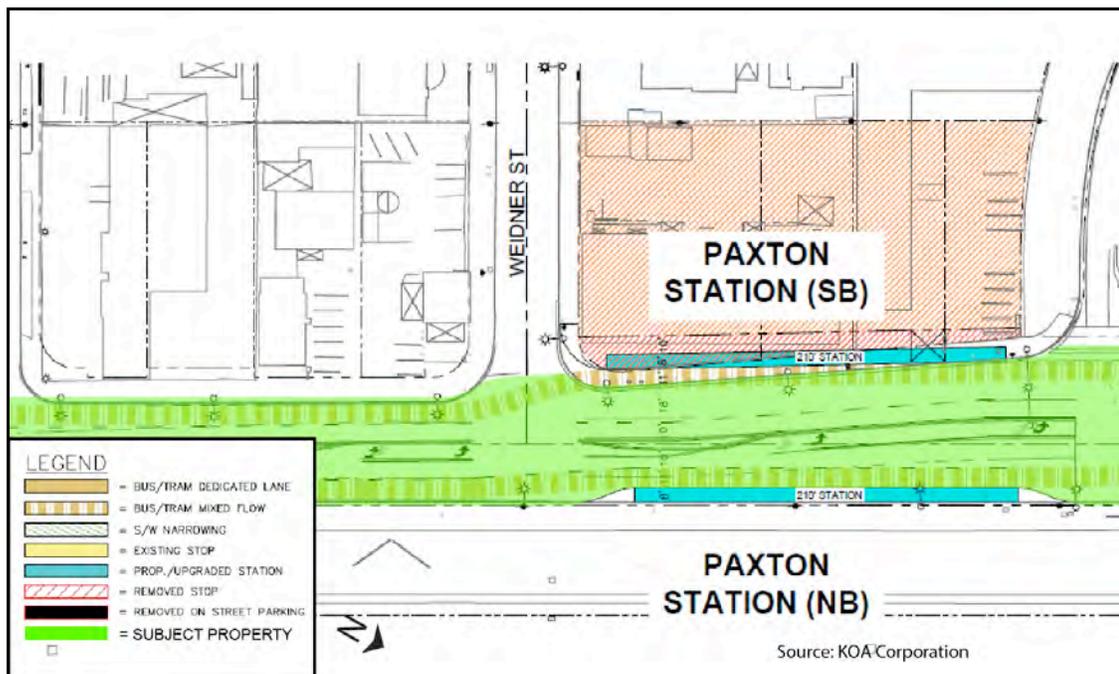
Under Alternative 3, a proposed MSF site would be generally bounded by Calvert Street to the north, Oxnard Street to the south, Vesper Avenue to the east, and Kester Avenue to the west. While the historic property (indicated with green shading) is within these boundaries, it will not be acquired as a part of this project. LRT tracks (indicated with red lines) would be constructed to the north and west of the historic property. Structures related to the MSF site (indicated with pink shading), including an administration building, carwash, and cleaning platform, will also be constructed within these boundaries. The primary views of the historic property are from Aetna Street and Vesper Avenue. The nearest new element, a set of proposed tracks, are over 100 feet to the rear of the historic property. The proposed tracks would be at grade, and would therefore not obscure either of the primary views of the building. The nearest new structure is the proposed car wash. Its proposed location is more than 350 feet to the rear of the historic property. As such, it would not obscure the primary views of the property from the front and sides. Furthermore, the historic property would be visually separated from these proposed elements by the existing Metro Orange Line alignment.

The property's integrity of setting has already been somewhat diminished by the introduction of infill construction, including the Metro Orange Line, but the property is still able to convey its significance through its other aspects of integrity. In addition, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as overhead power lines, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new MSF site would not further diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



8. San Fernando Road

Under Alternative 3, the proposed Paxton Station would be constructed on San Fernando Road between its intersection with Weidner Street and the 118 Freeway ramps, south of Paxton Street. While the proposed station (indicated with light blue shading) would be constructed on the historic property (indicated with green shading), the station would not diminish the property's integrity in such a way that it would no longer be eligible for the NRHP. In the previous evaluation, the property's significance was determined to be directly tied to its historic alignment rather than other physical attributes, such as materials or design. Because there are no proposed changes or adjustments to the existing alignment as part of the project, this alternative would not result in adverse effects on this historic property as the historic alignment, and the property's significance, would remain unchanged.



Cumulative Impacts

Under the Low-Floor LRT/Tram Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on the properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

Construction mitigation measures are not required since there are no anticipated construction effects on historic properties as a result of the construction of the proposed transit facilities.

Operational Mitigation Measures

Operational mitigation measures are not required since there would be no anticipated operational effects on historic properties.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

Impacts under CEQA would be less than significant.

Alternative 4

Construction Impacts

Alternative 4 (LRT Alternative) would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink Station to the north, to the Van Nuys Metro Orange Line Station to the south. Portions of the LRT line would be similar to existing Metro LRT lines, such as the Metro Expo Line and the Metro Gold Line.

Alternative 4 would be electrically powered using overhead wires and would travel along the median of Van Nuys Boulevard for most of the route, with an underground segment of approximately 2.5 miles. This alternative includes supporting facilities, such as an overhead contact system (OCS), traction power substations, (TPSS), signaling, and a maintenance and storage facility (MSF).

Stations for the LRT Alternative would be constructed, both above and below ground, at approximately 1-mile intervals. There would be three underground stations: Roscoe Station, Keswick/Metrolink Station, and Sherman Way Station. Entry to the underground stations would be provided by an entry plaza and portal. The portals would include stairs, escalators and elevators. Fourteen stations are proposed with the LRT Alternative:

1. Sylmar/San Fernando Metrolink Station
2. Maclay Station (Maclay Avenue and Antelope Valley Metrolink Railroad Corridor)
3. Paxton Station (Paxton Street and Antelope Valley Metrolink Railroad Corridor)
4. Pacoima Station (Van Nuys Boulevard and San Fernando Road)

5. Laurel Canyon Station (Laurel Canyon and Van Nuys Boulevards)
6. Arleta Station (Arleta Avenue and Van Nuys Boulevard)
7. Woodman Station (Woodman Avenue and Van Nuys Boulevard)
8. Nordhoff Station (Nordhoff Street and Van Nuys Boulevard)
9. Roscoe Station (Roscoe and Van Nuys Boulevards) - Underground
10. Keswick/Metrolink Station (Van Nuys Boulevard and Keswick Street) - Underground
11. Sherman Way Station (Van Nuys Boulevard and Sherman Way) - Underground
12. Vanowen Station (Vanowen Street and Van Nuys Boulevard)
13. Victory Station (Victory and Van Nuys Boulevards)
14. Metro Orange Line Station (Van Nuys Boulevard and Metro Orange Line)

The new station platforms for Alternative 4 would be located near the center of the street. The platforms would be raised up to 3 feet 3 inches from the street with an ADA-accessible ramp. On the platform, there would be a ticketing portal, seating, and an informational kiosk. The seating would be located under a station canopy. The metal canopy would be approximately 10 to 12 feet high, 8 to 10 feet wide and approximately 150 feet long. The total platform would be approximately 270 to 670 feet long, depending on the location. The kiosk and ticketing portal would be approximately 12 to 14 feet high. OCS poles would be approximately 30 feet tall and placed every 90 to 170 feet between the two tracks. The TPSSs, electrical substations, would be placed every 1 to 1.5 miles, with approximately seven along the entire route; TPSSs would be approximately 60 by 80 feet and 12 to 14 feet high.

Three possible MSF sites are proposed:

- MSF Option A – Van Nuys Boulevard/Metro Orange Line
- MSF Option B – Van Nuys Boulevard/Keswick Street
- MSF Option C – Van Nuys Boulevard/Arminata Street

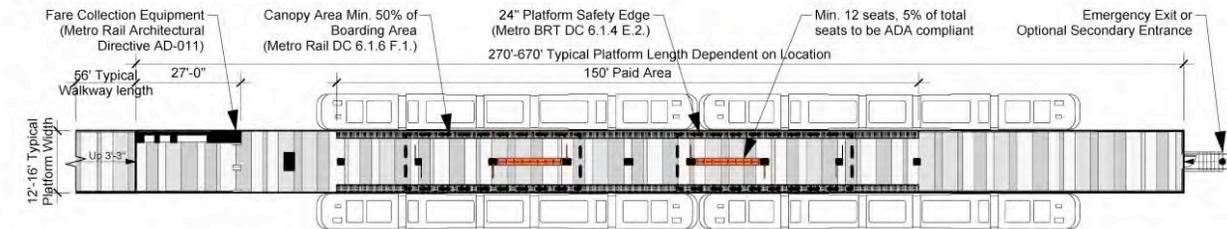
The MSF site would be an operational and administrative facility. The site would be comprised of maintenance and repair shops, storage areas for vehicles, materials, and tools, staff offices, break rooms, and dispatcher work areas. The MSF would serve as a point of origin and terminus for daily service.

Figure 4.16-12 and Figure 4.16-13 illustrate a typical station with a canopy that would be constructed under Build Alternative 4.

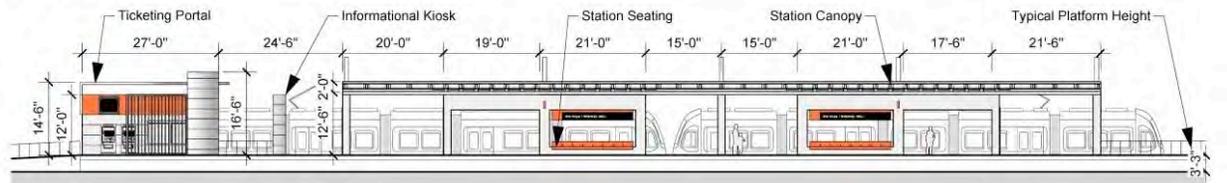
Figure 4.16-12: Illustrative Design Details for LRT Alternative



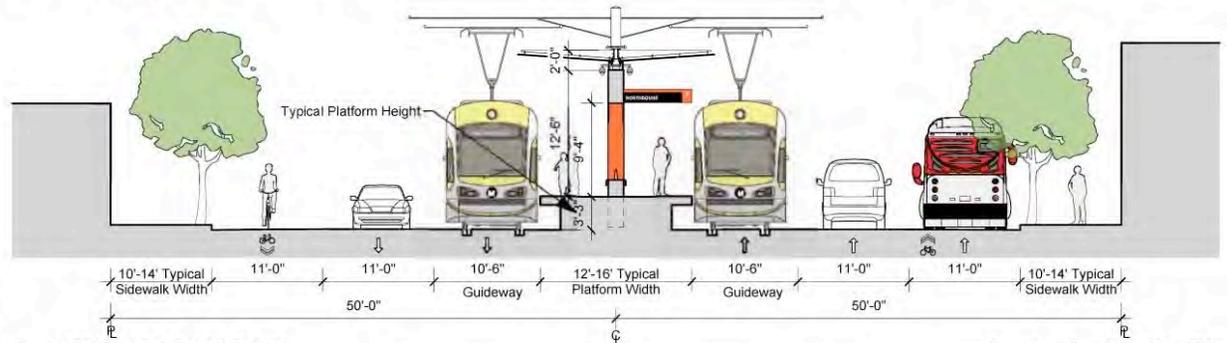
01 LRT ENTRY PORTAL ILLUSTRATION



02 TYPICAL MEDIAN LRT PLATFORM
Scale: 1:500



03 MEDIAN LRT PLATFORM ELEVATION
Scale: 1/32" = 1'-0"



04 MEDIAN LRT @ 100' R.O.W.
Scale: 1/16" = 1'-0"

A4a ALTERNATIVE 4_MEDIAN RUNNING LRT
DEIS/DEIR PROJECT DESCRIPTION
Date: 3/5/14

Metro **M** John Kaliski Architects
www.johnkaliski.com
3780 Wilshire Boulevard, Suite 300
Los Angeles, California 90010
(213) 383-7980 pp
(213) 383-7981 fax

For: **KOA CORPORATION**
PLANNING & ENGINEERING

Figure 4.16-13: Architectural Rendering for LRT Alternative



Under Alternative 4, there are 3 historic properties that have a potential to be affected by the construction of proposed aboveground LRT stations. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground station is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

1. 130 N. Brand Boulevard– Approximately 600 feet from proposed Maclay Station
2. 6353 Van Nuys Boulevard – Approximately 75 feet from proposed Victory Station
3. 9110 Van Nuys Boulevard – Approximately 40 feet from proposed Nordhoff Station

As the above 3 properties are located more than 25 feet away from the proposed construction areas, equipment used for the construction of an aboveground station would not exceed the predicted FTA damage risk vibration limits.

Under Alternative 4, pile drivers could be used in the construction of underground stations. Pile drivers may be capable of producing the higher predicted vibration levels shown in Table 4.16-7. Two historic properties have the potential to be affected by the construction of proposed underground stations.

1. 8201 Van Nuys Boulevard – Approximately 600 feet from proposed Roscoe Station
2. 8324 Van Nuys Boulevard – Approximately 100 feet from proposed Roscoe Station

Table 4.16-7: Construction Vibration Predictions for Pile Drivers

Equipment	PPV at 25 ft (in/sec)	PPV at 50 ft (in/sec)
Pile Driver (Impact)	1.52	0.54
Pile Driver (Sonic)	0.73	0.26
Source: ATS Consulting, 2014.		

Because these two properties are at least 100 feet away from the proposed underground station, the use of a pile driver is unlikely to exceed the predicted FTA damage risk vibration limits at that distance.

Under Alternative 4, there is one historic property that has the potential to be affected by the construction of MSF Option A – Van Nuys Boulevard/Metro Orange Line. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for an aboveground MSF site is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet (see Tables 4.16-5 and 4.16-6 for additional information regarding the FTA construction damage criteria and predictions of vibration caused by typical construction equipment).

2. 14601-3 Aetna Street – Approximately 120 feet from proposed LRT tracks at MSF site

As the historic property is located more than 100 feet away from the nearest new element proposed as part of the MSF (entry tracks), the equipment used for the construction of the MSF would not exceed the predicted FTA damage risk vibration limits.

Therefore, this alternative would not result in adverse effects on any historic properties during construction.

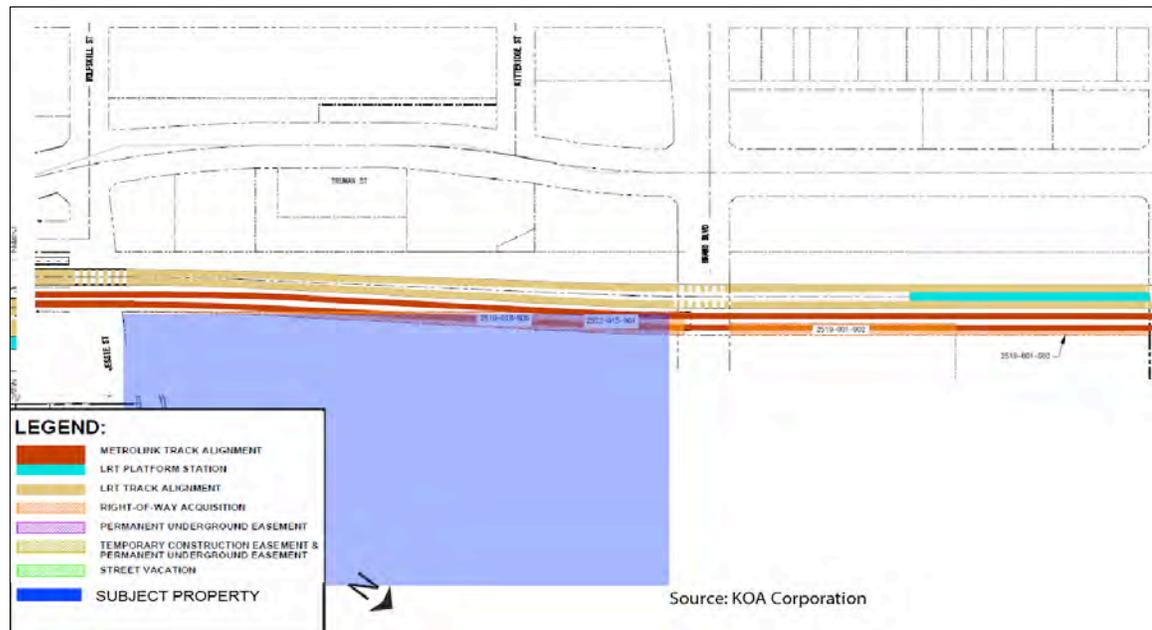
Operational Impacts

As the operation of a LRT will not involve a change in use, demolition, alteration, removal, or neglect of a property, nor are any of the historic properties within the study area under federal ownership, the only potential operational impacts or effects that could occur under Alternative 4 would be potential visual effects (see Section 4.16.1.3 for a list of criteria for adverse effect). Therefore, the applicable Criterion for adverse effect would be Criterion v: introduction of visual, atmospheric, or audible elements that diminish the integrity of the property’s significant historic features. Criterion v generally addresses potential changes to a historic property’s integrity of setting. Under Criterion v, this alternative would not result in atmospheric or audible elements that could diminish significant historic features of any properties; therefore, the impacts analysis focuses on the introduction of visual elements.

There are 10 historic properties in the APE. Four of the historic properties have a potential to be affected by the introduction of the introduction of new visual elements under Alternative 4; however, based on the evaluations below, Alternative 4 would not cause an adverse effect on any historic properties because none of the new features would diminish the setting of any historic property in a manner that the property would no longer be eligible for the NRHP.

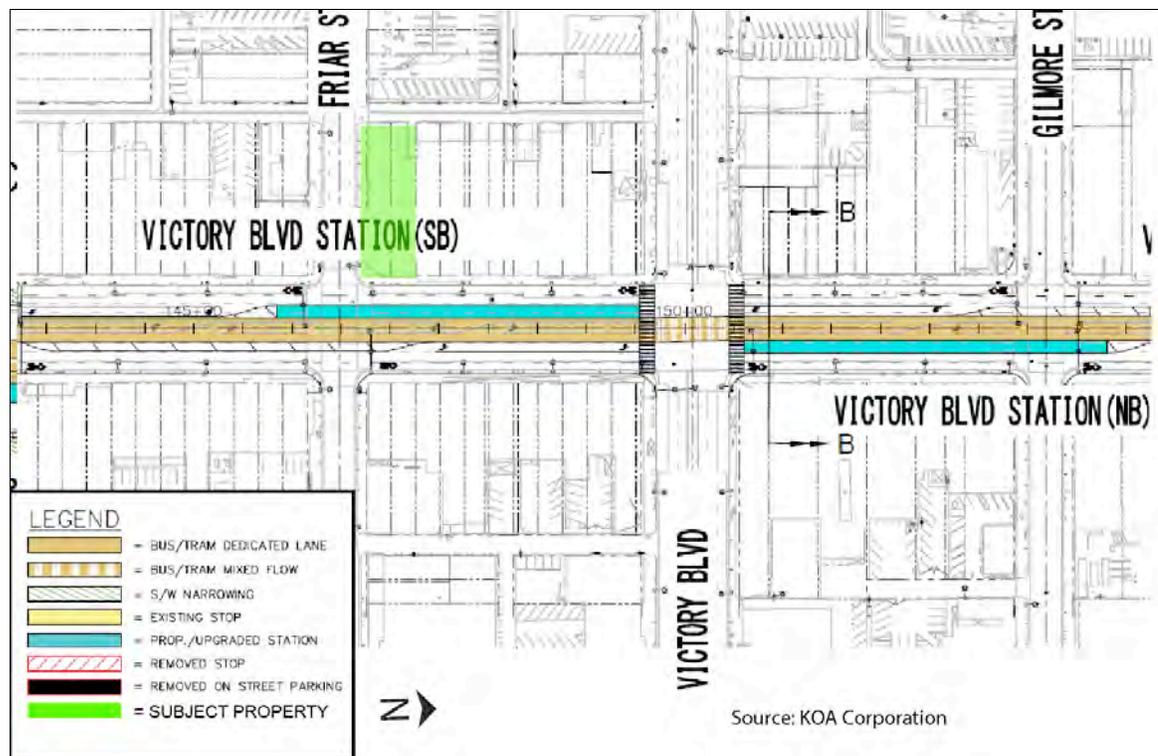
1. 130 N. Brand Avenue

Under Alternative 4, the proposed Maclay Station would be constructed on the Antelope Valley Metrolink Railroad Corridor, south of its crossing with Maclay Street. While the school campus (indicated with purple shading) is near the proposed station (indicated with light turquoise shading), the station would not be constructed near the historic properties on the campus. The Auditorium, Science Building, and Boys' Gymnasium are set back onto the campus, and would be visually separated from the proposed station by other, non-historic school buildings, and the primary views of the historic properties would not be adversely affected by a new visual element. The properties' integrity of setting has already been diminished through the introduction of new school buildings, but the properties are still able to convey their significance through other aspects of integrity. Furthermore, the three properties are significant for their architecture. Properties significant for this reason are able to convey their significance even if their integrity of setting has been diminished (e.g., architectural specimens that have been moved from their original locations can still be eligible for the NRHP regardless of setting). The property is already located along the railroad track, which is an early alignment that predates the historic school buildings. Therefore, the introduction of the new LRT station and increased use of the existing railroad tracks would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP. All other aspects of integrity would remain unchanged. There would be no other anticipated effects. Therefore, this alternative would not result in adverse effects on this historic property.



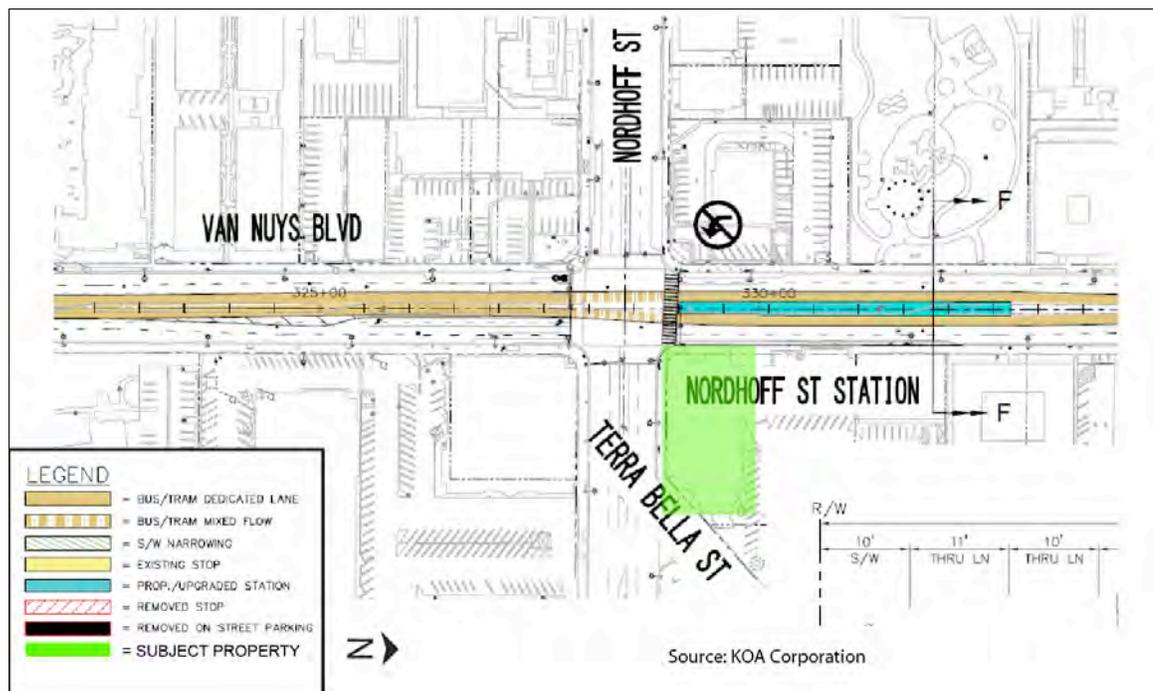
2. 6353 Van Nuys Boulevard

Under Alternative 4, the proposed southbound Victory Station would be constructed near the center of Van Nuys Boulevard approximately between the intersection of Victory Boulevard and Friar Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed rail station. The primary views of the building from the west side of Van Nuys Boulevard and Friar Street would not be adversely affected by a new visual element. While the view might be obscured from the east side of Van Nuys Boulevard, the property is already located in a dense urban area with existing transit service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Furthermore, the property's setting is not an essential aspect of integrity for the property to convey its significance. Therefore, the introduction of the new LRT station and OCS would not diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. No other potential effects are anticipated. Therefore, this alternative would not result in adverse effects on this historic property.



3. 9110 Van Nuys Boulevard

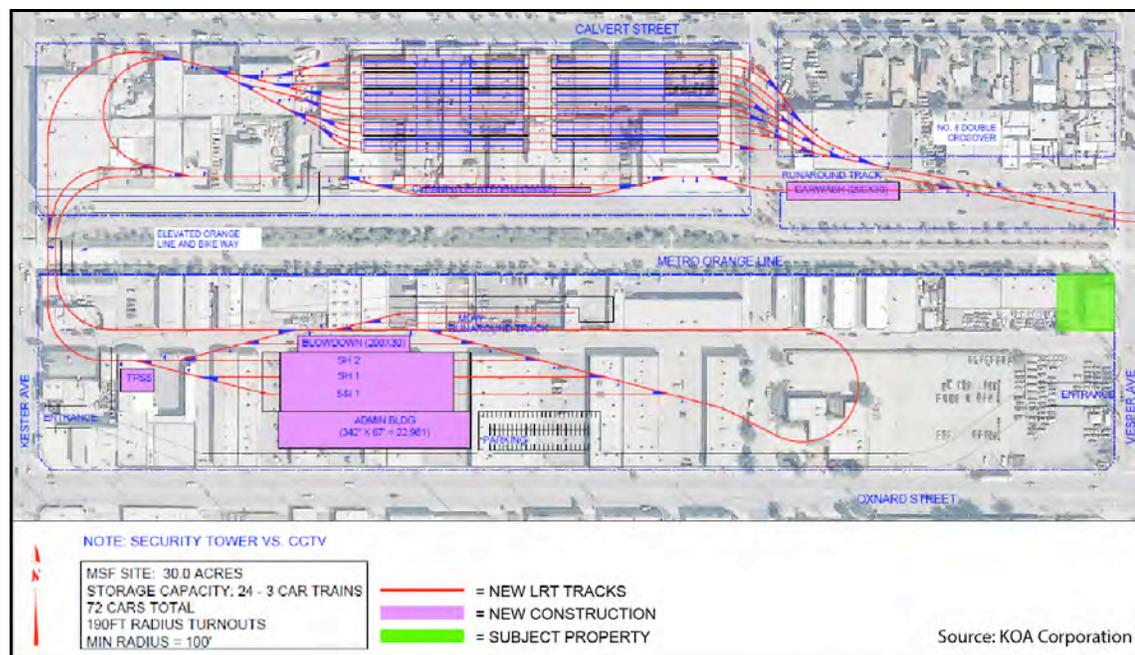
Under Alternative 4, the proposed northbound Nordhoff Station would be constructed near the center of Van Nuys Boulevard north of its intersection with Nordhoff Street. While the historic property (indicated with green shading) is near the proposed station (indicated with light blue shading), the station would not be constructed directly in front of the building; there would be two lanes of traffic separating the property from the proposed LRT station. The primary views of the building from the east side of Van Nuys Boulevard and Nordhoff Street would not be adversely affected by a new visual element. While the view might be obscured from the west side of Van Nuys Boulevard, the distinctive signage and marquee would likely still be visible over the 10- to 12-foot high canopy. The property's integrity of setting has already been diminished through the introduction of infill, but it is still able to convey its significance through its other aspects of integrity. The property's setting is not an essential aspect of integrity for it to convey its significance. In addition, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as overhead power lines, billboards, bus stops, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new LRT station and OCS would not further diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



4. 14601-3 Aetna Street

Under Alternative 4, a proposed MSF site would be generally bounded by Calvert Street to the north, Oxnard Street to the south, Vesper Avenue to the east, and Kester Avenue to the west. While the historic property (indicated with green shading) is within these boundaries, it will not be acquired. LRT tracks (indicated with red lines) would be constructed to the north and west of the historic property. Structures related to the MSF site (indicated with pink shading), including an administration building, carwash, and cleaning platform, will also be constructed within these boundaries. The primary views of the historic property are from Aetna Street and Vesper. The nearest new element, the LRT tracks, are presumed to be at grade and would therefore not obscure the building from view. Furthermore, the nearest tracks are more than 100 feet away from the historic property. The nearest new structure, the car wash, is approximately 360 feet away from the historic property, and the existing Metro Orange Line would visually separate the historic property from the proposed car wash.

The property's integrity of setting has already been diminished through the introduction of infill construction, including the Metro Orange Line, but the property is still able to convey its significance through its other aspects of integrity. In addition, the property is already located in a dense urban area with existing bus service and other vehicular traffic. Streetscape elements, such as overhead power lines, lighting, and other transportation infrastructure, already exist in the area immediately surrounding the property. Therefore, the introduction of the new MSF site would not further diminish the property's integrity of setting in such a way that it would no longer be eligible for the NRHP, and all other aspects of integrity would remain unchanged. Therefore, this alternative would not result in adverse effects on this historic property.



Cumulative Impacts

Under the LRT/Tram Alternative, there would be no adverse effects or impacts to historic properties; therefore, this alternative would not contribute to cumulative impacts on the properties identified as part of this study or as a result of any other planned projects within the region.

Mitigation Measures

Construction Mitigation Measures

Construction mitigation measures are not required since there are no anticipated construction effects on historic properties as a result of the construction of the proposed transit facilities.

Operational Mitigation Measures

Operational mitigation measures are not required since there are no anticipated operational effects on historic properties as a result of operation of the proposed transit facilities.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect under NEPA would occur.

CEQA Determination

Impacts under CEQA would be less than significant.

4.16.3.3 Paleontological Resources

No-Build Alternative

Construction Impacts

The No-Build Alternative would result in no excavation activities. There would be no construction impacts to paleontological resources associated with the No-Build Alternative.

Operational Impacts

The No-Build Alternative would not result in new facilities due to the proposed project and consequently it would not result in any operational impacts on paleontological resources.

Cumulative Impacts

The No-Build Alternative would not result in any adverse effects or impacts to paleontological resources; therefore, it would not contribute to any cumulative paleontological resources impacts.

Mitigation Measures

Construction Mitigation Measures

No construction mitigation measures are required.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect would occur under NEPA.

CEQA Determination

No impact would occur under CEQA.

TSM Alternative

Construction Impacts

Only shallow grading activities for bus stops amenities and signalization improvements may be required under the TSM Alternative. Typically these sorts of excavations are less than five feet deep and in California, Holocene²² valley deposits are typically more than eight feet deep. Assuming construction impacts are less than eight feet deep, there would be no construction impacts to paleontological resources associated with the TSM Alternative.

Operational Impacts

The operational improvements proposed under the TSM Alternative would have no impact on paleontological resources.

Cumulative Impacts

No impacts to paleontological resources would occur under the TSM Alternative; therefore, this alternative would not contribute to any cumulative paleontological resources impacts.

Mitigation Measures

Construction Mitigation Measures

No construction mitigation measures are required.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

No adverse effect would occur under NEPA.

CEQA Determination

No impact would occur under CEQA.

²² The Holocene Epoch ranges from approximately 10,000 years ago until present day. It is the most recent and superficial of sedimentary remains.

Alternative 1

Construction Impacts

The Curb-Running BRT Alternative would involve excavation within the Quaternary alluvium during station upgrades and sidewalk widening and removal. All earthmoving activities are anticipated to be restricted to the shallow, surficial sediments, which are too young in age to contain fossils. This alternative would have no impact on paleontological resources.

Operational Impacts

Operation of the Curb-Running BRT Alternative would result in no impacts or effects on paleontological resources.

Cumulative Impacts

Under the Curb-Running BRT Alternative, there would be no adverse effects or impacts to paleontological resources; therefore, this alternative would not contribute to cumulative impacts on paleontological resources as part of this project or as a result of any other planned projects within the region.

Mitigation Measures

Compliance Requirements and Design Features

There are no specific design features or regulatory compliance requirements that are applicable to paleontological resources.

Construction Mitigation Measures

Although no impacts to paleontological resources are anticipated under Alternative 1 due to the anticipated shallow depth of excavation, the following construction mitigation measure is proposed should excavation depths be greater than anticipated and construction impacts to paleontological resources occur.

MM-PR-1: Metro shall retain the services of a qualified paleontologist (minimum of graduate degree, 10 years of experience as a principal investigator, and specialty in vertebrate paleontology) to oversee execution of this mitigation measure. Metro's qualified principal paleontologist shall then develop a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) acceptable to the collections manager of the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County. Metro will implement the PRMMP during construction. The PRMMP will clearly demarcate the areas to be monitored and specify criteria. At the completion of paleontological monitoring for the proposed project, a paleontological resources monitoring report will be prepared and submitted to the Natural History Museum of Los Angeles County to document the results of the monitoring activities and summarize the results of any paleontological resources encountered.

The PRMMP shall include specifications for processing, stabilizing, identifying, and cataloging any fossils recovered as part of the proposed project. Metro's qualified principal paleontologist shall prepare a report detailing the paleontological resources recovered, their significance, and arrangements made for their curation at the conclusion of the monitoring effort.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation would reduce the potential remaining effects to paleontological resources to no adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would reduce the potential remaining impacts to paleontological resources to a less-than-significant level under CEQA.

Alternative 2

Construction Impacts

The Median-Running BRT Alternative would involve shallow excavation within the Quaternary alluvium during bus stop platform construction in the median, station upgrades, and sidewalk widening. These shallow earthmoving activities would not affect paleontological resources, since the sediments that would be disturbed by construction are too young in age to contain fossils.

Operational Impacts

Operation of Alternative 2 would not result in any impacts or effects on paleontological resources.

Cumulative Impacts

Under the Median-Running BRT Alternative, there would be no adverse effects or impacts on paleontological resources; therefore, this alternative would not contribute to cumulative impacts on paleontological resources as part of this project or as a result of any other planned projects in the region.

Mitigation Measures

Construction Mitigation Measures

See MM-PR-1 under Alternative 1 above.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

If paleontological resources are encountered, mitigation measures MM-PR-1 would reduce effects to no adverse effects under NEPA.

CEQA Determination

If paleontological resources are encountered, MM-PR-1 would reduce the potential impacts to paleontological resources to a less-than-significant level under CEQA.

Alternative 3

Construction Impacts

The Low-Floor LRT/Tram Alternative would involve shallow excavation within the Quaternary alluvium during bus stop platform construction in the median, station upgrades, and sidewalk widening. These shallow earthmoving activities would not adversely affect paleontological resources, since the disturbed sediments are too young in age to contain fossils.

No paleontological resources are recorded within the three proposed MSF sites - Arminta Street, Keswick Street, and Aetna Street. Although there has been prior construction in these MSF sites, fossils in valley areas are located subsurface. If excavation extends into native sediments, e.g., for sewer and water lines as well as for underground storage tanks, significant impacts/adverse effects to any paleontological resources that are encountered could occur.

Operational Impacts

Operation of Alternative 3 would result in no impacts or effects on paleontological resources.

Cumulative Impacts

Other related projects could require excavation to depths containing fossil bearing soils and could result in the destruction of fossil resources, a potentially significant impact. However, potential impacts to any paleontological resources that may be encountered during construction of Alternative 3 would be mitigated to a less-than-significant-level. Additionally, the related projects may also include mitigation measures that would minimize or reduce potential impacts to a less-than-significant level. Therefore, Alternative 3, after mitigation, would not contribute to any cumulative impacts to paleontological resources.

Mitigation Measures

Construction Mitigation Measures

See mitigation measure MM-PR-1 above.

The following construction mitigation measure is proposed to mitigate potentially significant impacts to paleontological resources that could occur during construction.

MM-PR-2: Prior to the start of construction a qualified Principal Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) that includes the following requirements:

- All project personnel involved in ground-disturbing activities shall receive paleontological resources awareness training before beginning work.
- Excavations, excluding drilling, deeper than 8 feet below the current surface in the Quaternary alluvium shall be periodically spot checked to determine when older sediments conducive to fossil preservation are encountered. Once the paleontologically sensitive older alluvium is reached, a qualified paleontologist shall perform full-time monitoring of construction. Should sediments in a particular area be determined by the paleontologist to be unsuitable for fossil preservation, monitoring shall be suspended in those areas. A paleontologist shall be available to be on call to respond to any unanticipated discoveries and may adjust monitoring based on the construction plans and field visits.
- Sediment samples from the Quaternary older alluvium shall be collected and screened for microfossils.

- Recovered specimens shall be stabilized and prepared to the point of identification. Specimens shall be identified to the lowest taxonomic level possible and transferred to an accredited repository for curation along with all associated field and lab data.
- Upon completion of project excavation, a Paleontological Mitigation Report (PMR) documenting compliance shall be prepared and submitted to the Lead Agency under CEQA.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation would reduce potential effects on paleontological resources to no adverse effect under NEPA.

CEQA Determination

The proposed mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level under CEQA.

Alternative 4

Construction Impacts

The LRT Alternative would involve shallow excavations for rail station platform construction in the median, station upgrades, and sidewalk widening. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. Additionally the LRT Alternative includes an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

Shallow earthmoving activities would not affect paleontological resources, since the affected sediments are too young in age to contain fossils. However deeper excavations have the potential to significantly affect the paleontologically sensitive Quaternary older alluvium that underlies the surficial Quaternary alluvium at variable depths across the project area. Pleistocene fossils are known from the Quaternary older alluvium at depths between 14 and 100 feet below the surface in the San Fernando Valley.

Two methods are being proposed for tunnel construction; Cut and Cover method and Tunnel Boring Machine (TBM) method, both of which have the potential to significantly affect paleontological resources. Impacts can be mitigated through monitoring efforts if the cut and cover method is adopted but can not be mitigated if the TBM is used as it damages or destroys paleontological resources in its path.

No paleontological resources are recorded within the three proposed MSF sites, Arminta Street, Keswick Street, and Aetna Street. Although there has been prior construction in these MSF sites, fossils in valley areas are located subsurface. If excavation extends into native sediments, e.g., for sewer and water lines as well as for underground storage tanks, significant impacts/adverse effects to any paleontological resources that are encountered could occur.

Operational Impacts

The LRT Alternative would result in no operational impacts or effects on paleontological resources.

Cumulative Impacts

As stated above for Alternative 3, other related projects could require excavation to depths containing fossil bearing soils and could result in the destruction of fossil resources, resulting in a potentially significant impact. Only the subsurficial excavations of the LRT Alternative have a high potential to affect fossils as this is the only build alternative with excavations planned in geologically sensitive units. Although the project and cumulative impacts could be significant, implementation of the mitigation measures described below would reduce the project and cumulative impacts to a less-than-significant level.

Mitigation Measures

Construction Mitigation Measures

See mitigation measures MM-PR-1 and MM-PR-2 above.

Operational Mitigation Measures

No operational mitigation measures are required.

Impacts Remaining After Mitigation

NEPA Finding

The proposed mitigation would reduce the potential remaining effects to paleontological resources for Alternatives 1 to 3 to no adverse effect under NEPA. However, if a TBM is used to excavate the subway portion of the Alternative 4 alignment, and if there are any significant paleontological resources located in the path of the TBM, then those resources could be damaged or destroyed by the TBM and the impacts would be substantial adverse.

CEQA Determination

The proposed mitigation measures would reduce the potential remaining impacts to paleontological resources to a less-than-significant level under CEQA. However, if a TBM is used to excavate the subway portion of the Alternative 4 alignment, and if there are any significant paleontological resources located in the path of the TBM, then those resources could be damaged or destroyed by the TBM and the impacts would be unavoidable and significant.