4.19 Construction Impacts

This section describes the potential impacts or effects that could occur during construction of the project alternatives. Potential construction impacts are also described in the individual environmental impact sections included elsewhere in this chapter and in Chapter 3.

4.19.1 Regulatory Framework and Methodology

4.19.1.1 Regulatory Framework

The applicable federal, state, and local regulations that are relevant to an analysis of the proposed project's construction impacts are identified in the environmental impact sections in this chapter and in Chapter 3. For more detailed descriptions of the applicable regulations, the reader is referred to the respective resource section of this draft environmental impact statement/environmental impact report (DEIS/DEIR).

4.19.1.2 Methodology

The descriptions of methodologies used in the analyses of construction impacts are included in the environmental impact sections in this chapter and in Chapter 3.

4.19.1.3 Significance Thresholds

The CEQA significance thresholds are identified in the environmental impact sections in this chapter and in Chapter 3. NEPA does not include specific significance thresholds. According to the Council on Environmental Quality (CEQ) Regulations for Implementing 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.

4.19.2 Description of Construction Methods, Techniques, and Equipment

This section summarizes construction methods, techniques and equipment expected to be used for the East San Fernando Valley Transit Corridor Project. As described in previous sections, the build alternatives would include BRT, Low-Floor LRT/Tram, and LRT alternatives. In general, conventional construction techniques and equipment would be used under all build alternatives, as typically performed in the southern California region. However, based on components of each build alternative, some alternatives would require a greater amount of construction than other alternatives. The following discusses the major construction methods and techniques that are considered likely to be used to construct the build alternatives. Actual construction methods and equipment will be determined based upon a competitive bidding process and therefore the information shown below should be regarded as illustrative of typical construction methods.

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

This description of construction is based on information currently known about construction of the proposed project. Details of the construction process may well differ from this description; for example, different construction staging areas may be used or different construction sequencing may be followed. Major project elements for the build alternatives would include stations, maintenance and storage facilities, track work, ventilation equipment, fire-life safety features, power, lighting architecture, aesthetics, turnarounds for stations, landscaping and for the LRT Alternative, a tunnel. Street work refers to work related to curbs, gutters, striping, traffic signals, and sidewalks. Signaling equipment, traction power and communication equipment would also be used under the alternatives.

4.19.2.1 Construction Process

Construction activities would likely begin simultaneously at several locations along the project corridor, to accommodate areas of work requiring lengthy construction times and to bring the different segments of the project to completion in order to meet the project completion schedule. Many contractors specializing in various methods of construction would be working on the project during the construction period. Construction of the project would follow all applicable local, state, and federal laws for building and safety. Working hours would vary to meet special circumstances and restrictions and efforts would be made to ensure working hours are appropriate for the community. Efforts will be made communicating to keep residents and businesses informed. Standard construction methods would be used for traffic, noise, vibration, and dust control, consistent with all applicable laws, and as described in the following sections.

The subsequent sections of this report discuss proposed construction under the build alternatives, as the No-Build would not include construction activities under the proposed project and the TSM Alternative would involve minimal construction as needed to upgrade existing bus stops and add more buses. Specifically, components of the BRT alternatives (Alternatives 1 and 2), the Low-Floor LRT/Tram (Alternative 3), and the LRT Alternative (Alternative 4) are described. The expected construction schedules are summarized at the end of each of these sections. Generally, construction would be divided into a series of activities, which would often overlap to minimize the duration of construction and the associated impacts.

The two BRT alternatives would require less extensive infrastructure improvements; therefore, construction activities would be shorter in duration compared to the Low-Floor LRT/Tram and LRT Alternatives. The two LRT alternatives would require more extensive infrastructure improvements, including OCS, TPSSs, and MSF, and larger station platforms than the BRT alternatives, thereby requiring a longer construction period. The LRT Alternative would require tunneling to construct underground portions of the alignment, as well as underground stations, and would require the most extensive construction of the four build alternatives.

The build alternatives being evaluated as part of this DEIS/DEIR have preliminary capital costs estimates that range between $294 million for bus rapid transit (BRT) to $2.7 billion for light rail transit (LRT) Year of Expenditure 2018 dollars. The East San Fernando Valley Transit Corridor Project only has approximately $170.1 million reserved as part of Metro's 2009 Long Range Transportation Plan. Any costs in excess of this amount will need to be funded by other sources

Table 4.19-1 shows construction scenario similarities and differences between the build alternatives.

Table 4.19-1: Summary of Construction Scenarios for Project Alternatives

	No-Build	TSM	Curb Running Alternative (Alternative 1)	Median-Running Alternative (Alternative 2)	Low-Floor LRT/Tram (Alternative 3)	LRT Alternative (Alternative 4)
Construction Duration*	None	None	18 months	24 months	48 months	60 months
Utility Relocations	None	None	No	No	Yes	Yes
Tunnel Excavation	None	None	No	No	No	Yes
Road and Street Work	None	None	Yes	Yes	Yes	Yes
Power and Communications Upgrades	None	None	No	No	Yes	Yes

*This refers to overall construction duration. Construction would occur in phases and would be divided into a series of activities, which would often overlap to minimize the duration of overall construction. Constructing in segments would also minimize the length of time construction activities occur in front of a particular block of properties, so properties are not affected during the entire duration of construction, but mainly when activities are occurring on that particular block.
Source: ICF International, 2015.

4.19.2.2 Alternative 1 – Curb-Running Bus Rapid Transit (BRT) Alternative

Under the Curb-Running BRT Alternative, the BRT lanes would be constructed along 6.7 miles of existing curb lanes along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would also include a 2.5-mile segment where buses would operate in mixed-flow curb lanes along San Fernando Road and Truman Street between Van Nuys Boulevard and the Sylmar/San Fernando Metrolink Station.

Construction Scenario

Proposed construction activities would generally occur in phases, over a period of approximately 18 months. For the purposes of this report, the phases have been simplified and have been identified as follows:

- Preconstruction and Site Preparation
- Construction of Transit Structures and Infrastructure
- Construction of Support Systems and Finish Work.

All construction activities conducted during these phases would conform to industry specifications and standards and construction activities would be generally confined to public rights-of-way. Project construction would employ conventional construction techniques and equipment typically used in the Southern California region. Installation of bus shelters and street work, including curb, gutter, sidewalk, striping, signal, and lighting may be required. Landscaping may also be included.

Preconstruction and Site Preparation

The construction process would begin with the preconstruction and site preparation phase. During this phase, plans and programs (described below) would be developed to manage the construction process and minimize disruption to the community and adverse effects on the environment. Included among these plans would be a community outreach program, which would be developed prior to any physical construction. The purpose of the outreach plan would be to inform the public about the construction process and notify residents, businesses, and emergency response service of the proposed construction schedule including dates and duration of anticipated road closures. Public awareness strategies would include various methods to reach out to and educate and inform the public, businesses, and the community about the construction process and activities. The outreach program may also include surveys of individual businesses to identify business usage, delivery and shipping patterns, and critical times of the day or year for business activities. This information would be used by Metro to develop construction requirements and worksite traffic control plans and to identify alternative access routes and requirements to maintain critical business activities.

Additional site investigations may also be required during this phase and prior to construction to confirm the presence or absence of sensitive resources (e.g., buried archaeological or paleontological resources) and hazardous materials.

Site preparation would include developing safety plans, preparation of the work site, accepting construction crews and equipment, and could include street/sidewalk closures, detours, redirection for parking, and clearing (existing street furniture, street trees, or vegetation), grubbing, grading, and the relocation of utilities (see relocation discussion below) during site preparation. Some curb lane closures would also be necessary and bus stops would need to be temporarily relocated outside of the work areas.). During site preparation, some curb lane closures and work related to pot holes and utilities would be necessary and bus stops would need to be temporarily relocated outside of the work areas. In some instances, existing stops may need to be closed for some time and the nearest bus stops would serve patrons of the temporarily closed stop(s). This information would be disseminated prior to beginning construction activities. A minimum of one-week advance notice would be provided to individual owners (businesses and residences), owner's agents, and tenants of buildings adjacent to work sites before altering access to those locations and adjacent public sidewalks or before prohibiting stopping and/or parking of vehicles. Additionally, special temporary signs would be used to inform customers that merchants and other businesses are open, and to provide special access directions, if warranted.

Traffic Management Plan

Several aspects of the preconstruction and site preparation phase would be addressed by the Traffic Management Plan (TMP), which would be prepared and implemented by the construction contractor to mitigate construction traffic impacts. The TMP will require review and approval by Metro and the Cities of Los Angeles and San Fernando. The TMP would address the mobility and safety needs of the motoring public, construction workers, businesses, bicyclists, and the community, as well as facilitate the flow of automobile and pedestrian traffic during construction. The TMP would consist of a temporary traffic control plan that addresses both transportation operations and public information components. Measures may include traffic control devices and possibly flagmen and/or traffic officers, frequent street sweeping, and the implementation of diversions/detours to facilitate traffic flow throughout the construction zones. The specific measures that will be implemented will vary during the course of construction in response to site specific requirements and as necessary to safely and efficiently

manage traffic flow. Metro has utilized full street closures to expedite construction in past projects, and this option could be utilized to expedite construction on this project. However, to the extent practical, at this time it is anticipated that at least one traffic lane would be maintained in both directions, particularly during the morning and afternoon peak hours, and access to adjacent businesses via existing or temporary driveways would be maintained throughout the construction period. Additionally, a minimum 3-foot wide route for pedestrians would be provided along sidewalks; however, it's possible that some temporary sidewalk closures may be required, particularly during the early stages of construction. The construction contractor would also be responsible for developing detour plans and worksite traffic control plans and identifying haul routes in consultation with the City of Los Angeles (Department of Transportation) and City of San Fernando.

Coordination with School Districts, Cities of Los Angeles and San Fernando, and Emergency Responders

Temporary road closures may be required and access may be temporarily disrupted during construction activities. Coordination with local school districts would be conducted to disclose potential road closures and suggest detour routes for carpooling and access to schools. Additionally, coordination with fire and police departments of both the City of Los Angeles and City of San Fernando would also occur at this time. The Cities of Los Angeles and San Fernando would be given 30-45 day notices of upcoming roadway and sidewalk modifications to coordinate with relevant city personnel and to help coordinate public information regarding said roadway/sidewalk modifications. The intent of such coordination would be to identify and ensure adequate access routes are maintained and emergency services response times are maximized.

Haul Routes

The construction contractor would coordinate with the local jurisdictions to designate and identify haul routes for trucks and to establish hours of operation. The selected routes would be chosen in order to facilitate construction vehicles leaving the immediate area as expeditiously as practicable and thereby minimize noise, vibration, and other effects associated with construction hauling. Street sweeping would be implemented to keep haul routes clean and clear of debris.

Construction Phasing and Staging Plan

The preconstruction and site preparation phase would include the development and implementation of the Construction Phasing and Staging Plan by the construction contractor. This Plan would be required to control the impacts of construction in any segment by limiting the areas that may be constructed at a particular time. The goal of the Construction Phasing and Staging Plan would be to maximize the work area under construction while minimizing the inconvenience to businesses and the motoring public. Staging areas identified by the contractor, will be included in the Plan or in a supplemental document, as required by Metro. Typically, staging areas would be located on parking lots, vacant private properties, or within public rights-of-way (including the curb lane), and may require temporary easements and city encroachment permits be obtained by the construction contractor.

Utility Relocations

Construction of the Curb-Running BRT Alternative may require utility relocations, including power pole relocations, along the alignment. During preconstruction, existing utilities may be more closely inspected and evaluated including the depth, condition, and exact location. An operation called potholing is typically done to physically locate certain utilities so that they can be appropriately

marked and protected. Any utilities in conflict with construction activities would need to be relocated, modified, or protected in place. Protecting in place is the method of choice, as this is less disruptive to streets and less costly. In some instances, utility relocation may also be required to ensure access is provided for utility service providers to inspect and maintain their utility infrastructure.

Construction of Transit Structures and Infrastructure

This phase would involve construction of the dedicated BRT lanes and mixed-flow BRT lanes, sidewalk reconstruction, and relocation of bus stops (which would require approval of City of Los Angeles for stops within the city) including installation of new bus stop infrastructure such as shelters and seating.

The Curb-Running BRT Alternative would require pavement breaking, excavation and removal of the existing roadway pavement, the removal of curbs and gutters, grading of the roadbed to prepare it for paving, paving (an asphalt concrete overlay would be provided in place of the existing pavement for the dedicated BRT lanes and mixed-flow BRT lanes), installation of surface and subsurface drainage systems, reconstruction of sidewalks, and concrete finish work. With commencement of construction, public access to parking spaces, bus stops, curb lanes, and bicycle lanes within each work area would be prohibited. As described below, the duration of construction within each work zone is anticipated to be less than two weeks. At the start of construction within each work area, on-street parking areas would be removed for project-related construction activities. Temporary lane and street closures may be necessary under this alternative. The extent and duration of the closures would depend on a number of factors, including the construction contract limits and individual contractor's choices, and would be coordinated with the Cities of Los Angeles and San Fernando, as necessary. Restrictions on the extent and duration of the closures can be incorporated in the project construction specifications. In some cases, short-term full closures might be substituted for extended partial closures to reduce overall impacts.

Under this alternative, the construction contractor would develop detour routes, if required, to facilitate traffic movement through construction zones without significantly increasing cut-through traffic in adjacent residential areas. Additionally, where feasible, Metro would temporarily restripe roadways including restriping turn lanes, through lanes, and parking lanes at the affected intersections to maximize the vehicular capacity at those locations affected by construction closures. A majority of construction-related travel (i.e., deliveries, hauling, and worker trips) would be scheduled during the off-peak hours.

The construction of BRT guideways typically requires a range of equipment though prolonged use of heavy construction equipment is not anticipated. The types of equipment could range from hand-held pneumatic tools to jack-hammers, rock drills, and equipment to break the sidewalk and roadway surface, to compactors, graders, scrapers, pavers, front end loaders, dump trucks, mobile cranes, sweepers, concrete pumps, generators, and compressors used in roadway reconstruction. The photographs in Figures 4.19-1 through 4.19-3 depict construction activities and some of the equipment that would be required to construct the Curb-Running BRT Alternative.

This alternative also proposes the construction of 18 new bus stops, which would include new bus shelters and associated infrastructure such as seating and lighting. Proposed bus shelters and associated infrastructure would be similar to bus shelters Metro typically uses. Construction associated with the bus stops would include installation of benches and canopies and the construction of BRT platforms on the curbside. Construction of BRT platforms would include the construction of adjacent bus pads (which would require pavement breaking and excavation), establishment of subgrade and footings for canopies, installation of canopy supports and canopies, concrete paving, and installation of bus stop signage. In some cases, bicycle parking and landscaping at the stations would be provided. Storage space for buses may also be included at some of the stops.

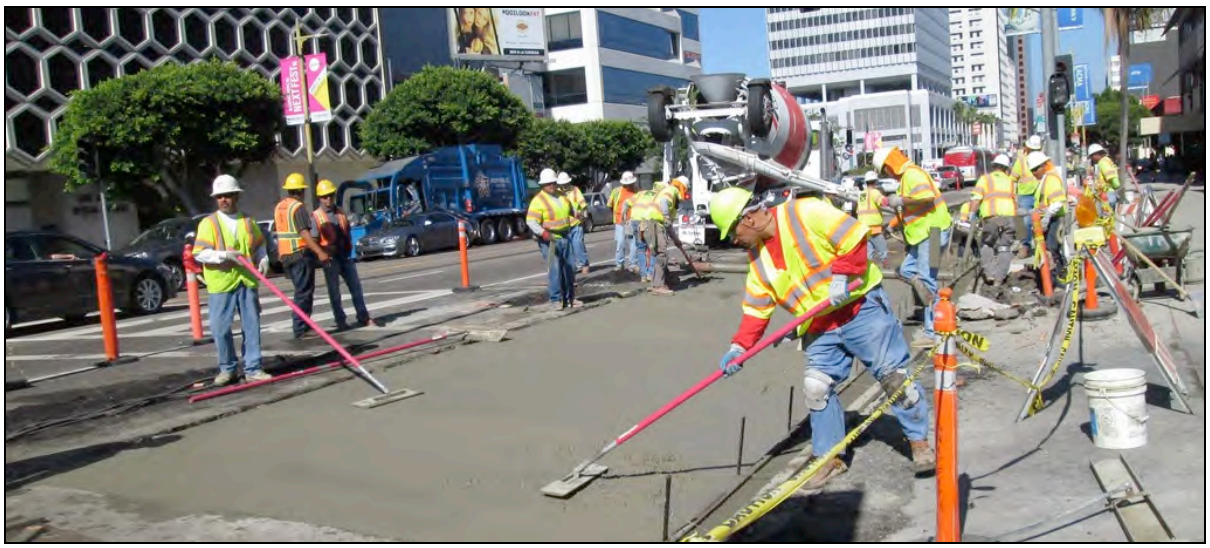
Figure 4.19-1: Roadway Bed Grading and Paving

Source: Metro, 2015.

Figure 4.19-2: Concrete Pour for Bus Lane Surface

Source: Metro, 2015.

Figure 4.19-3: Concrete Finishing for Bus Lane Surface



Source: Metro, 2015.

Construction under this phase is likely to occur simultaneously at several locations along the alignment and construction of the various project elements would overlap.

Construction of Support Systems and Finish Work

This phase would include installation of electrical, mechanical, communications, and traffic control systems and signals; street lighting (street lighting would be upgraded to provide consistent illumination along the alignment); landscaping; and signage. Additionally, the BRT lanes would be striped, any detours would be closed, cleanup of work areas would occur, and systems would be tested.

Construction Schedule

Construction of the Curb-Running BRT Alternative is expected to occur over an approximately 18-month period. However, the duration of construction within each work zone along the project corridor would likely be less than two weeks.

The approximate time frames for each of the general construction phases described above are presented below. It should be noted that these are rough estimates that will vary depending on conditions in the field and will be determined by the contractor. Also, the phases are likely to overlap to some degree and the sequence of construction activities may also vary to some extent from what was described above.

- Preconstruction and Site Preparation 3 to 4 months
- Construction of Transit Structures and Infrastructure 12 to 18 months
- Construction of Support Systems and Finish Work. 12 to 18 months

Project construction would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code Section 41.40(a) and between 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with San Fernando City Code Section 34-28(10). Construction activities would be minimized during weekday AM and PM peak traffic periods (typically 7 to 9 a.m. and 4 to 6 p.m.).

4.19.2.3 Alternative 2 – Median Running BRT Alternative

The Median-Running BRT Alternative would consist of approximately 6.7 miles of dedicated median-running bus lanes along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line and 2.5 miles along San Fernando Road and Truman Street between Van Nuys Boulevard and Sylmar/San Fernando Metrolink Station where the buses would operate in mixed-flow median lanes.

Construction Scenario

Similar to the Curb-Running BRT Alternative, construction of the Median-Running BRT Alternative would occur in phases. Construction activities would also be the same as those described above for the Curb-Running BRT Alternative. However, this alternative would not require the relocation of existing bus stops in the curb lanes as would occur under the Curb-Running BRT Alternative. Additionally, construction of the BRT lanes and associated bus stops and platforms in the median of Van Nuys Boulevard would result in more extensive construction over a longer period of time.

Construction Schedule

The duration of construction activities is anticipated to be greater under this alternative than the Curb-Running BRT Alternative, and would last approximately 24 months. The approximate time frames for each of the general construction phases are presented below. As discussed above for the Curb-Running BRT Alternative, these are rough estimates and are likely to vary based on conditions in the field. The phases are likely to overlap to some degree and the sequence of construction activities may also vary.

- Preconstruction and Site Preparation 4 to 6 months
- Construction of Transit Structures and Infrastructure 18 to 24 months
- Construction of Support Systems and Finish Work. 18 to 24 months

Construction of the Median-Running BRT Alternative would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code Section 41.40(a) and between 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with San Fernando City Code Section 34-28(10). Construction activities would be minimized during weekday AM and PM peak traffic periods (typically 7 to 9 a.m. and 4 to 6 p.m.).

4.19.2.4 Alternative 3 – Low-Floor LRT/Tram Alternative

The Low-Floor LRT/Tram Alternative would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink station in the north to the Van Nuys Metro Orange Line station to the south, The Low-Floor LRT/Tram Alternative would operate in a median dedicated guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The Low-Floor LRT/Tram Alternative would operate in mixed-flow traffic lanes on San Fernando Road from the intersection of San Fernando Road/Van Nuys Boulevard to just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink station, the Low-Floor LRT/Tram Alternative would operate in a dedicated median guideway.

Construction Scenario

Construction of the Low-Floor LRT/Tram Alternative would proceed in three phases, similar to those identified for the BRT alternatives. Differences between activities in each of the phases under this alternative and what is described above are highlighted in the discussions below.

Preconstruction and Site Preparation

The construction process under this alternative would begin with the site preparation and the pre-construction phase. The general activities under this phase would be similar to the activities described above for the BRT alternatives; however, unlike those alternatives, a number of properties would need to be acquired for the right-of-way required for project facilities. These facilities would include the MSF, which would occupy a site approximately 25 to 30 acres in size, and the TPSS, which would be spaced approximately 1.0 to 1.5 miles apart along the alignment. The MSF would be located at one of the three industrial sites near the intersections identified below:

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

The MSF site ultimately selected could also serve as a staging area for construction equipment and materials. The acquisitions for Alternative 3, including MSF options, are summarized below in Table 4.19-2.

Table 4.19-2: Summary of Acquisitions for Alternative 3 MSF Options

Alternative and MSF Options		Affected Parcels			
		Full	Partial	PUE	Total
Alternative 3	MSF Option A	87	3	0	90
	MSF Option B	62	3	0	65
	MSF Option C	66	4	0	70

Note:
Full = Full Acquisition, Partial = Partial Acquisition, PUE = Permanent Underground Easement
Source: KOA Corporation.

Construction Phasing and Staging Plan

The preconstruction and site preparation phase would include the development and implementation of the Construction Phasing and Staging Plan by the construction contractor. This Plan would be required to control the impacts of construction in any segment by limiting the areas that may be constructed at a particular time. The goal of the Construction Phasing and Staging Plan would be to maximize the work area under construction while minimizing the inconvenience to businesses and the motoring public. Staging areas identified by the contractor, will be included in the Plan or in a supplemental document, as required by Metro. Typically, staging areas would be located on parking lots, vacant private properties, or within public rights-of-way (including the curb lane), and may require temporary easements and city encroachment permits be obtained by the construction contractor.

Utility Relocations

Utility relocations as was described above for the BRT alternatives (see Curb-Running BRT Alternative) will be required. However, for the rail alternatives (Low-Floor LRT/Tram Alternative and LRT Alternative), additional restrictions will apply to existing and new utilities in the vicinity of the track to protect both the utility and the guideway. The guideway being defined as that portion of the rail line that supports the track and its appurtenant structures. The restricted area is referred to as the Restricted Utility Area (RUA). Existing longitudinal oriented utilities would not be generally permitted with the RUA but will be addressed on a case-by-case basis. Existing utilities that cross the guideway may remain if the vertical distance from the top of the rail to the top of the utility (or encasement) is not less than 4 feet; the material type, condition, and load capacity meet LRT requirements; and the distance from the centerline of an OCS support pipe foundation to the face of the utility or encasement is not less than 4 feet. Existing utilities crossing the track within the RUA would be relocated (lowered) to provide a minimum vertical distance from the top of rail to the top of encasement of 5.5 feet extending to the outside of the RUA. Access to longitudinal or crossing utilities would be made from outside the guideway.

Construction of the Transit Structures and Infrastructure

Because the Low-Floor LRT/Tram vehicles would operate on rail tracks and would be powered by overhead electrical wires, power duct bank, additional transit structures and associated infrastructure would be required to operate this alternative that would differ from those described above for the BRT alternatives. These additional structures and infrastructure would include the rail track guideway, overhead contact system, power duct bank, TPSS, Low-Floor LRT/Tram signaling systems, and MSF.

Temporary Street and Lane Closures, Detour Routes

At the start of construction within each work area, on-street parking areas would be removed for project-related construction activities. Temporary street and lane closures may be necessary under this alternative. Figure 4.19-4 shows an example of a temporary lane closure along a major street, similar to what could be expected to occur along Van Nuys Boulevard. The extent and duration of the closures would depend on a number of factors, including the construction contract limits and individual contractor's choices, and would be coordinated with the Cities of Los Angeles and San Fernando, as necessary. Restrictions on the extent and duration of the closures can be incorporated in the project construction specifications. In some cases, short-term full closures might be substituted for extended partial closures to reduce overall impacts. Community outreach to keep the public and businesses advised as to closures would be provided. Signage and access to businesses would also be provided.

Under this alternative, the construction contractor would develop detour routes to facilitate traffic movement through construction zones without significantly increasing cut-through traffic in adjacent residential areas. Additionally, where feasible, Metro would temporarily restripe roadways including restriping turn lanes, through lanes, and parking lanes at the affected intersections to maximize the vehicular capacity at those locations affected by construction closures. A majority of construction-related travel (i.e., deliveries, hauling, and worker trips) would be scheduled during the off-peak hours.

On-street parking may be removed to maximize vehicular capacity at those locations affected by construction closures. Additionally, traffic control officers may be placed at major intersections during peak hours to minimize delays related to construction activities.

Construction of the Tram Guideway

The construction of the Low-Floor LRT/Tram guideway would require the use of earth-moving equipment, pneumatic tools, generators, concrete pumps, and similar equipment. Demolition, clearing, and earthwork would be required under this alternative. This would include excavation and demolition associated with the roadway, pile driving for structures, removal of curbs and gutters, and removal of sidewalks. Additionally, a pedestrian bridge would be constructed at the Sylmar station from the proposed platform to the Metrolink platform.

Construction of the Proposed Stations and Associated Infrastructure

Stations

Under this alternative, 28 stations would be constructed at approximately 1-mile intervals along the entire route. The Low-Floor LRT/Tram stations would be ADA compliant. The typical Low-Floor LRT/Tram station platform would be 8 feet wide for a side platform station to 16 feet wide for a center platform station, 180 feet long, and rise from the street and sidewalk level via ADA compliant accessible ramps to a 14-inch height. Access to the Low-Floor LRT/Tram station platforms would be from crosswalks. Canopies at the Low-Floor LRT/Tram stations would be approximately 13 feet high and would incorporate Low-Floor LRT/Tram station stop lighting to enhance safety.

Figure 4.19-4: Example of Temporary Traffic Control at Intersections During Construction

Source: Metro, 2015.

The proposed stations would be constructed using standard construction techniques used by Metro. Common elements that would be installed during construction would include signage, maps, fixtures, furnishings, lighting, and communications equipment. Low-Floor LRT/Tram station platforms may include one or two entry ways; for stations with only one public access point, an emergency exit and stair would provide an exit. Low-Floor LRT/Tram stations would provide bench seating and contain ticket vending machines, video message signs, route maps, and stand-alone validators, as well as include the name and location of the Low-Floor LRT/Tram station.

Construction of the at-grade stations would involve cast-in place concrete or pre-cast panels to construct a platform. Station furnishings, including canopy, railings, lighting, seating, signage and fare vending equipment, would then be installed. The stations would be constructed of standard building materials such as concrete, steel, and other materials per Metro design criteria. Steel-wheeled or rubber-tired compactors, graders, and small bulldozers would be required for subgrade preparation below the platform. Construction of the stations would also require trucks for the removal of excavated soil; transit mix concrete trucks and concrete pumps; trucks to deliver forms, reinforcing steel, and other materials; and water trucks for dust control.

Stations would also include bike lockers at the stations or in close proximity to stations. In addition, signage and safety and security equipment, such as closed-circuit televisions, public announcement systems, passenger assistance telephones, and variable message signs (providing real-time information), would be installed.

Overhead Contact System

The Overhead Contact System (OCS) would consist of a set of two copper wires-a contact wire and a messenger wire-supported by steel poles mounted on reinforced concrete foundations. The Low-Floor LRT/Tram vehicles would include a telescoping pantograph or "arm" on the roof of the vehicles that would slide along the underside of the contact wire and deliver electric power to the vehicles. The OCS poles would be approximately 30 feet tall and typically located every 90 to 170 feet between two Low-Floor LRT/Tram tracks. Where the available public right-of-way width is extremely limited, the OCS poles would be placed on the sidewalk.

Construction of the OCS would initially involve constructing the foundations for the OCS poles. This would be accompanied by construction of duct banks and conduit for the underground electrical feeder lines from the TPSSs, followed by the installation of the OCS poles. The final stage would involve the installation of the TPSS feeder cables and overhead catenary lines, which would occur after guideway construction. Construction of the foundations and ducts, and installation of the poles and feeder cables, would require augers, cranes, back hoes, and concrete and material trucks. The overhead wires would be installed from the guideway using special vehicles, such as high-rail.

Traction Power Substations

TPSSs would be typically placed every 1.0 to 1.5 miles. The Low-Floor LRT/Tram vehicles would be powered by approximately nine TPSS units, which would be spaced relatively evenly along the alignment to provide direct current to the Low-Floor LRT/Tram vehicles. TPSSs would be located at points along the alignment where maximum power draw is expected (such as at stations and on inclines).

The size of each TPSS unit would be approximately 20 feet by 50 feet and about 12 to 14 feet high. The unit would require access to the local road network for equipment installation and maintenance. Construction and installation would require power to be fed to the OCS through underground feeders in duct banks and up a pole to a connection with the contact wire.

The TPSS units may be located within the public right-of-way, in parking lots, or in acquired parcels. For the purposes of analysis in this DEIS/DEIR, potential or typical TPSS locations were evaluated. However, other more suitable locations could be selected if they become available and are comparable to the potential locations analyzed herein.

Each TPSS site would be cleared and graded, and a concrete slab would be constructed with the appropriate underground utility connections. A grounding mat would be installed around the perimeter of the site. The TPSS is a prefabricated structure. It would be delivered, mounted on the slab, and connected to the utilities. Fencing or another type of barrier would be installed around the perimeter of the site, and architectural and landscaping treatments would be applied as feasible and in accordance with Metro design criteria. Graders, bobcats, forklifts, cranes, and concrete and materials/equipment trucks would be required to construct the TPSS facilities.

Maintenance and Storage Facilities

This alternative would include construction of a new MSF. The construction of the MSF would include standard methods associated with construction of track work and buildings, such as leveling of land, and construction of new sheds/maintenance buildings, as well as track work for storage of the rail vehicles. The MSF site would be approximately 25 to 30 acres in size. Described below are the rail connections that would need to be constructed for the rail vehicles to access the MSF site.

- For MSF Option A, right-of-way would be required for vehicles to travel between Van Nuys Boulevard and the MSF site, in an alignment between the Metro Orange Line and Bessemer Street.
- For MSF Option B, a turnoff south of the Van Nuys Metrolink Station is proposed where the LRT vehicles would travel to an MSF site located within the industrial areas just south of Raymer Street.
- For MSF Option C, a turnoff north of the Van Nuys Metrolink Station would lead west to the MSF site located north and south of Arminta Street.

In addition, parcel acquisitions would be required for the placement of traction power substations (TPSS) approximately 1.0 to 1.5 miles apart along the alignment.

Communications and Signaling

Coordination with traffic signal timing and Low-floor LRT/Trams equipped with transit signal priority equipment will allow for safe and improved operations and on-time performance. The Low-Floor LRT/Tram would receive a green light only when conflicting traffic has a red light. Low-floor LRT/Trams would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

Construction of Support Systems and Finish Work

Construction activities associated with this phase would be the same as those described for the BRT alternatives above and would include installation of other system elements (mechanical, signals, gates, ticket vending, etc.) This could also include installation of communication systems, traffic signals, traffic control system installation, street lighting, landscaping, signing, and striping, closure of detours, cleanup activities, and testing and final commissioning of the system. With regards to traffic signals, the Low-Floor LRT/Trams would be controlled by the traffic signals that govern vehicular traffic on Van Nuys Boulevard. Every traffic signal on Van Nuys Boulevard would be modified to provide for Low-Floor LRT/Tram signals.

Construction Schedule

Under this alternative, construction is estimated to occur over a period of approximately 4 years. The construction period would be longer than for the BRT alternatives because of the additional structures, infrastructure, and support facilities required under this alternative.

The approximate time frames under this alternative for each of the general construction phases are presented below. As discussed above for the Curb-Running BRT Alternative, these are rough estimates and are likely to vary based on conditions in the field. The phases are likely to overlap to some degree and the sequence of construction activities may also vary.

- Preconstruction and Site Preparation — 6 to 12 months
- Construction of Transit Structures and Infrastructure — 40 to 48 months
- Construction of Support Systems and Finish Work. — 40 to 48 months

Also, similar to the BRT alternatives, project construction would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code Section 41.40(a) and 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with San Fernando City Code Section 34-28(10). However, Metro may seek a variance from these Municipal Code Sections, to construct particular portions of the alignment outside of these hours.

As stated previously, the project corridor would most likely be divided into work zones for the purposes of construction. Therefore, each work zone may undergo a different level of construction at any given time.

4.19.2.5 Alternative 4 – LRT Alternative

Under Build Alternative 4, an LRT line would be constructed in a dedicated 9.2-mile guideway that would travel south from the Sylmar/San Fernando Metrolink station along San Fernando Road to Van Nuys Boulevard, and along Van Nuys Boulevard from San Fernando Road south to the Van Nuys Metro Orange Line Station. The LRT Alternative would include a segment in exclusive right-of-way within the Antelope Valley Metrolink railroad corridor, a segment within semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground 2.5-mile segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street. The acquisitions for Alternative 4, including MSF options, are summarized below in Table 4.19-3.

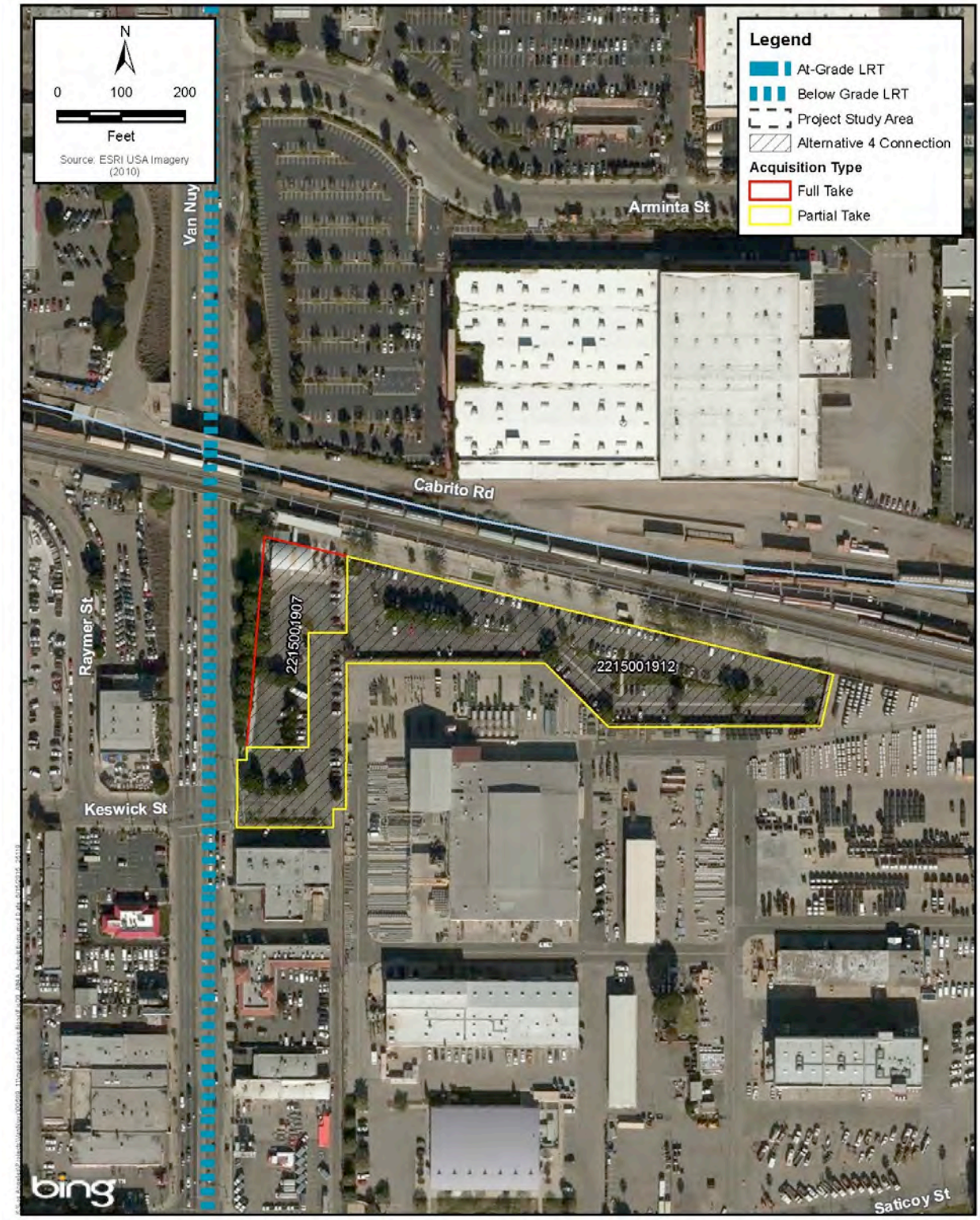
Table 4.19-3: Summary of Acquisitions for Alternative 4

Alternative and MSF Options		Affected Parcels			
		Full	Partial	PUE	Total
Alternative 4	MSF Option A	109	11	0	120
	MSF Option B	93	11	6	110
	MSF Option C	97	12	8	117

Note:
Full = Full Acquisition, Partial = Partial Acquisition, PUE = Permanent Underground Easement
Source: KOA Corporation.

Under Alternative 4, the existing Metrolink tracks would need to be moved to the northern portion of the rail ROW. Figures 4.19-5 through 4.19-7 show MSF Options Acquisitions.

Figure 4.19-5: MSF Option A Acquisitions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100
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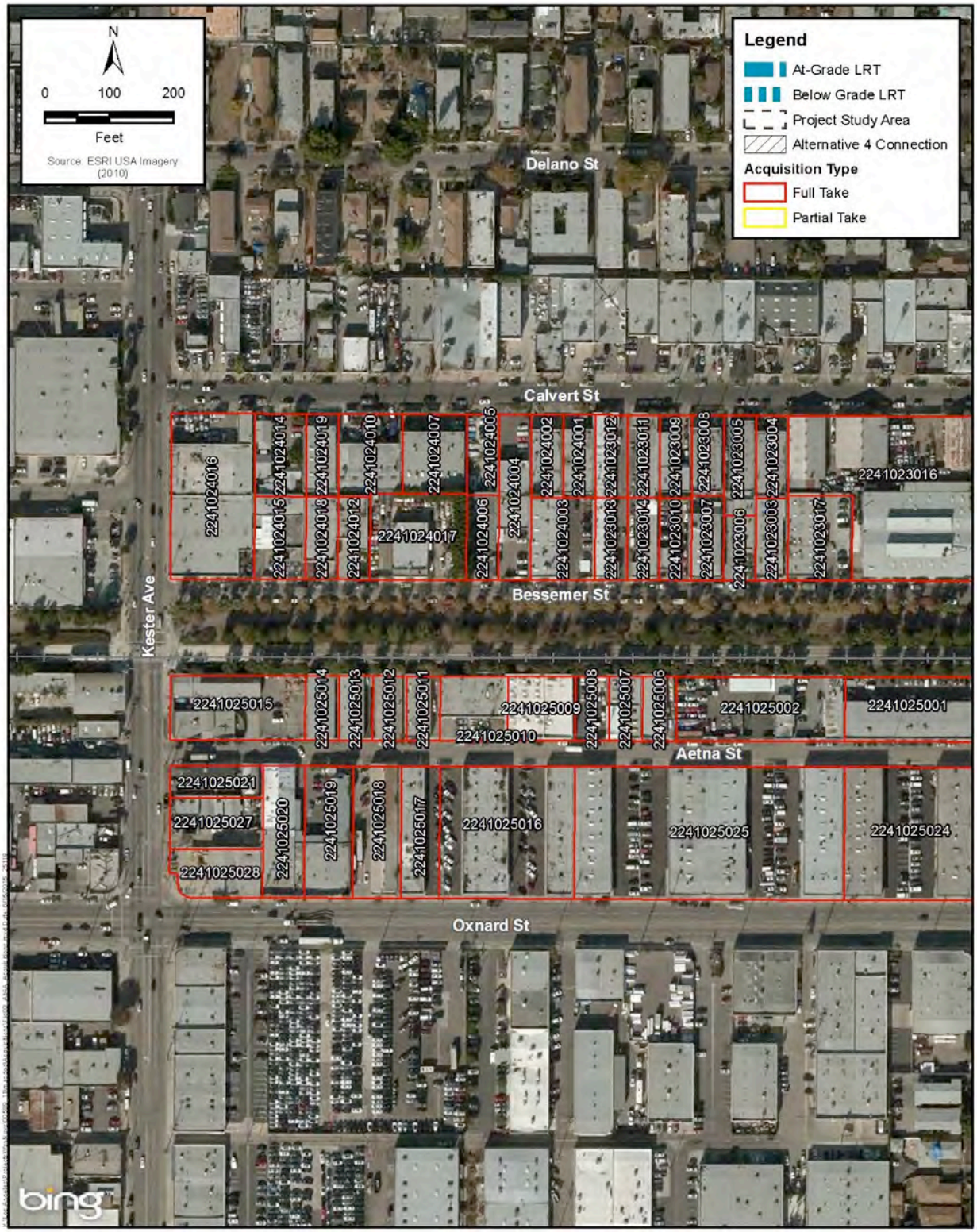
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Van Nuys
Arminta St
Cabrito Rd
Raymer St
Keswick St
2215001907
2215001912
Saticoy St
bing


N
0
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Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Delano St
Calvert St
Bessemer St
Kester Ave
Aetna St
Oxnard St
2241024016
2241024014
2241024019
2241024010
2241024007
2241024005
2241024002
2241024001
2241023012
2241023011
2241023009
2241023008
2241023005
2241023004
2241023016
2241024015
2241024018
2241024012
2241024017
2241024006
2241024004
2241024003
2241023013
2241023014
2241023010
2241023007
2241023006
2241023003
2241023017
2241025015
2241025014
2241025013
2241025012
2241025011
2241025009
2241025008
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2241025006
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2241025001
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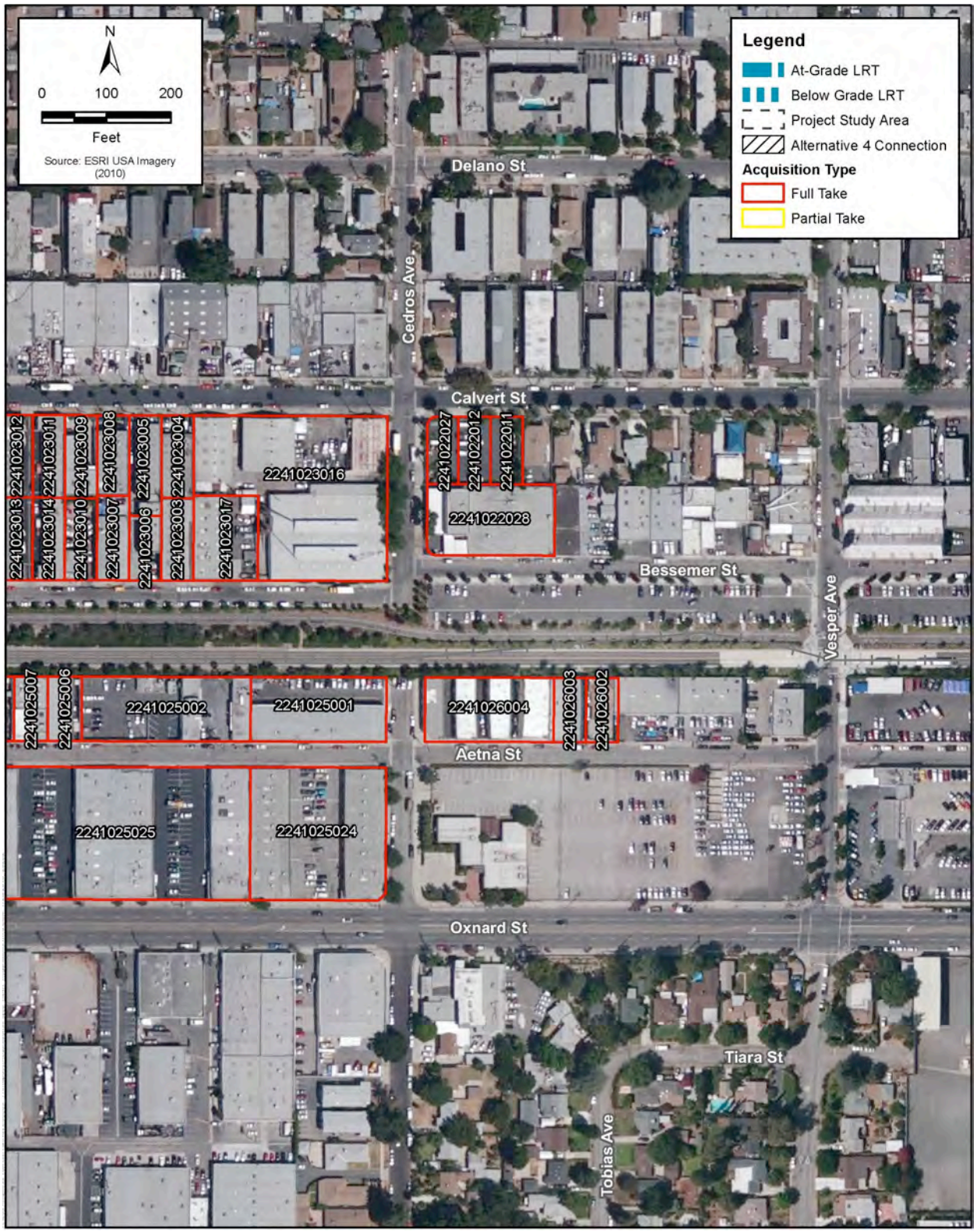
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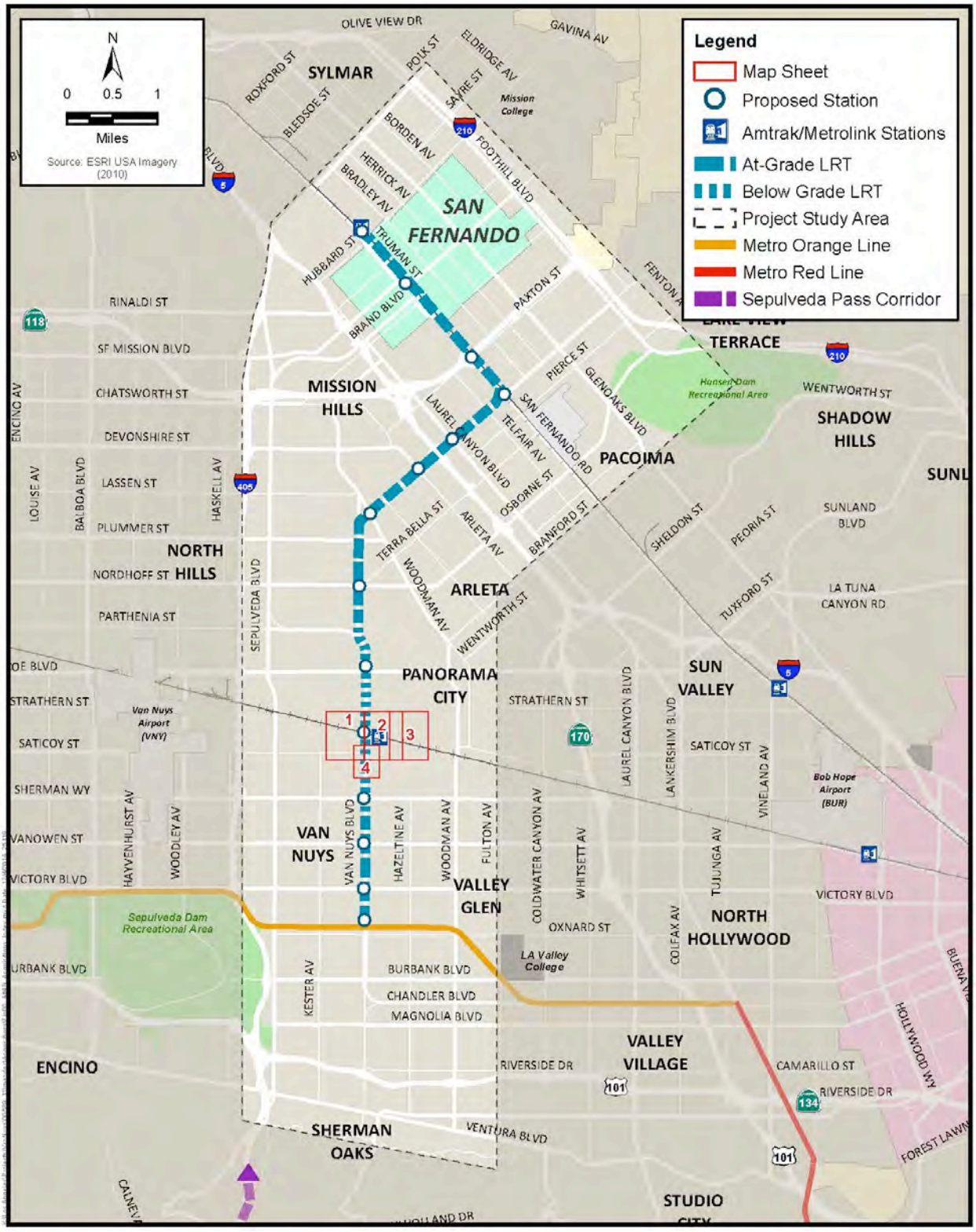
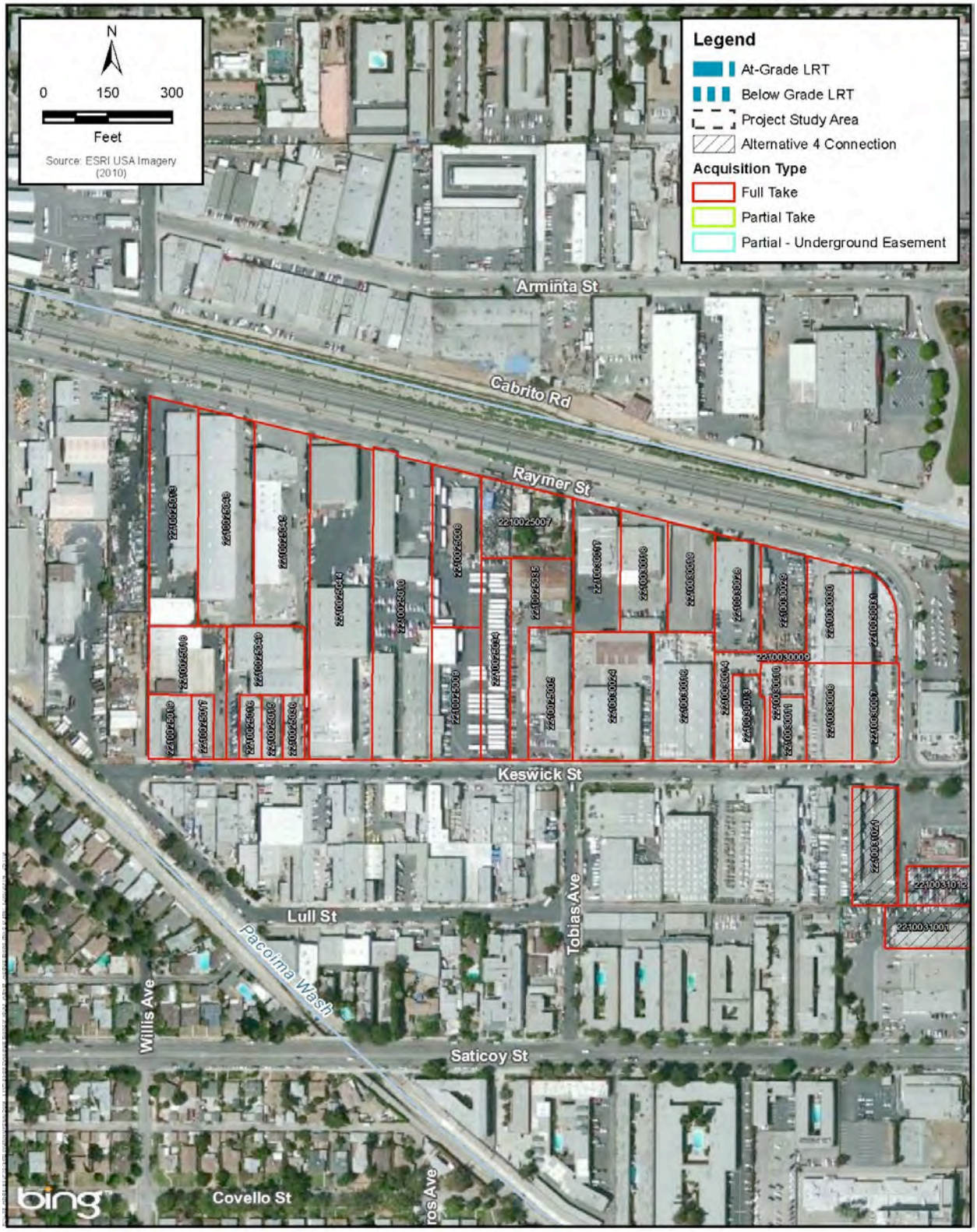
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Delano St
Cedros Ave
Calvert St
Bessemer St
Vesper Ave
Aetna St
Oxnard St
Tiara St
Tobias Ave
2241023012
2241023011
2241023009
2241023008
2241023005
2241023004
2241023016
2241023013
2241023014
2241023010
2241023007
2241023006
2241023003
2241023017
2241022027
2241022012
2241022011
2241022028
2241025007
2241025006
2241025002
2241025001
2241026004
2241026003
2241026002
2241025025
2241025024


N
0
100
200
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Delano St
Calvert St
Bessemer St
2241027003
026007
Van Nuys Blvd
2240008905
Aetna St
Vesper Ave
Oxnard St
Tiara St
bing

Figure 4.19-6: MSF Option B Acquisitions

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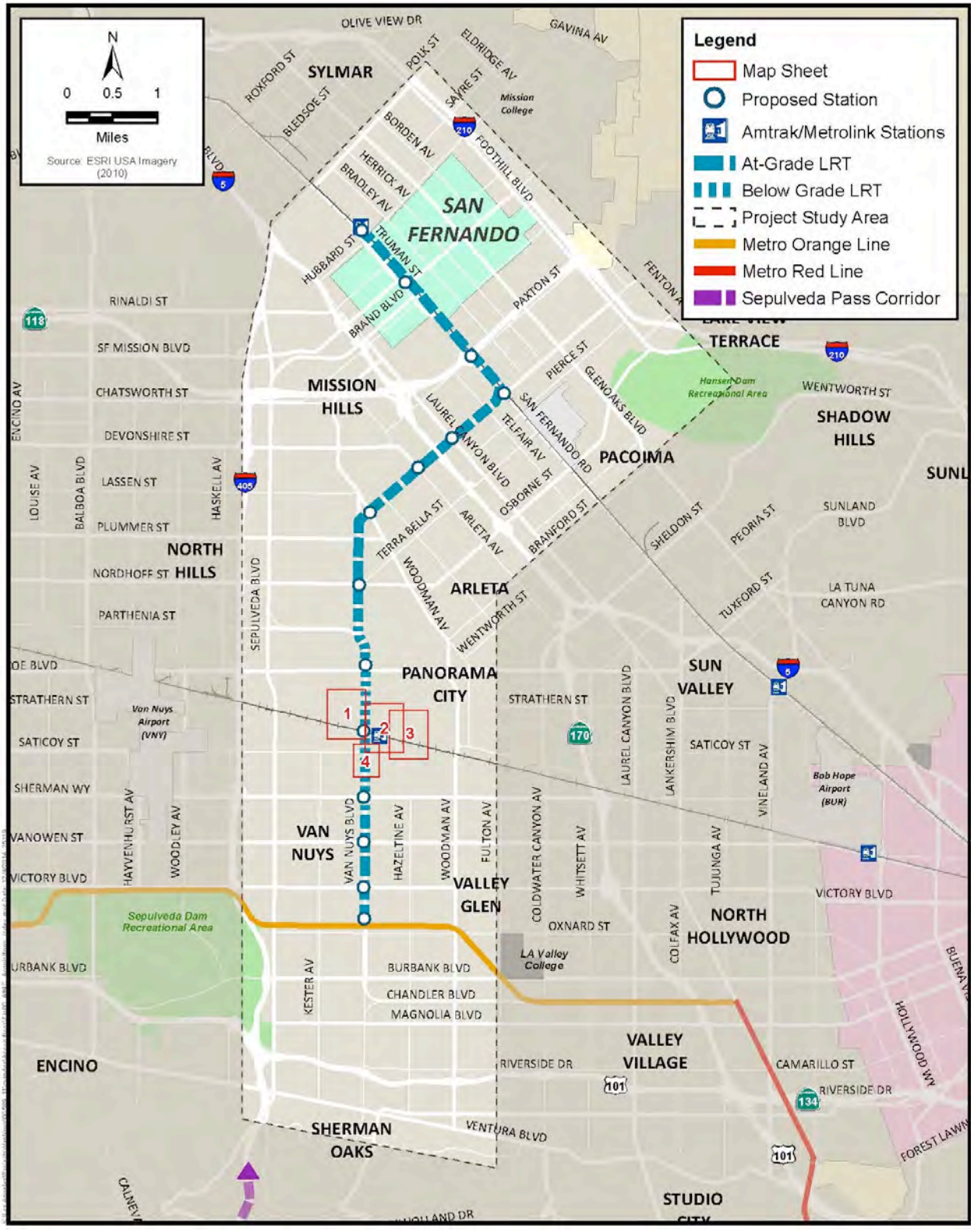
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Arminta St
Cabrito Rd
Raymer St
Keswick St
Lull St
Pacoima Wash
Willis Ave
Tobias Ave
Saticoy St
Covello St
bing

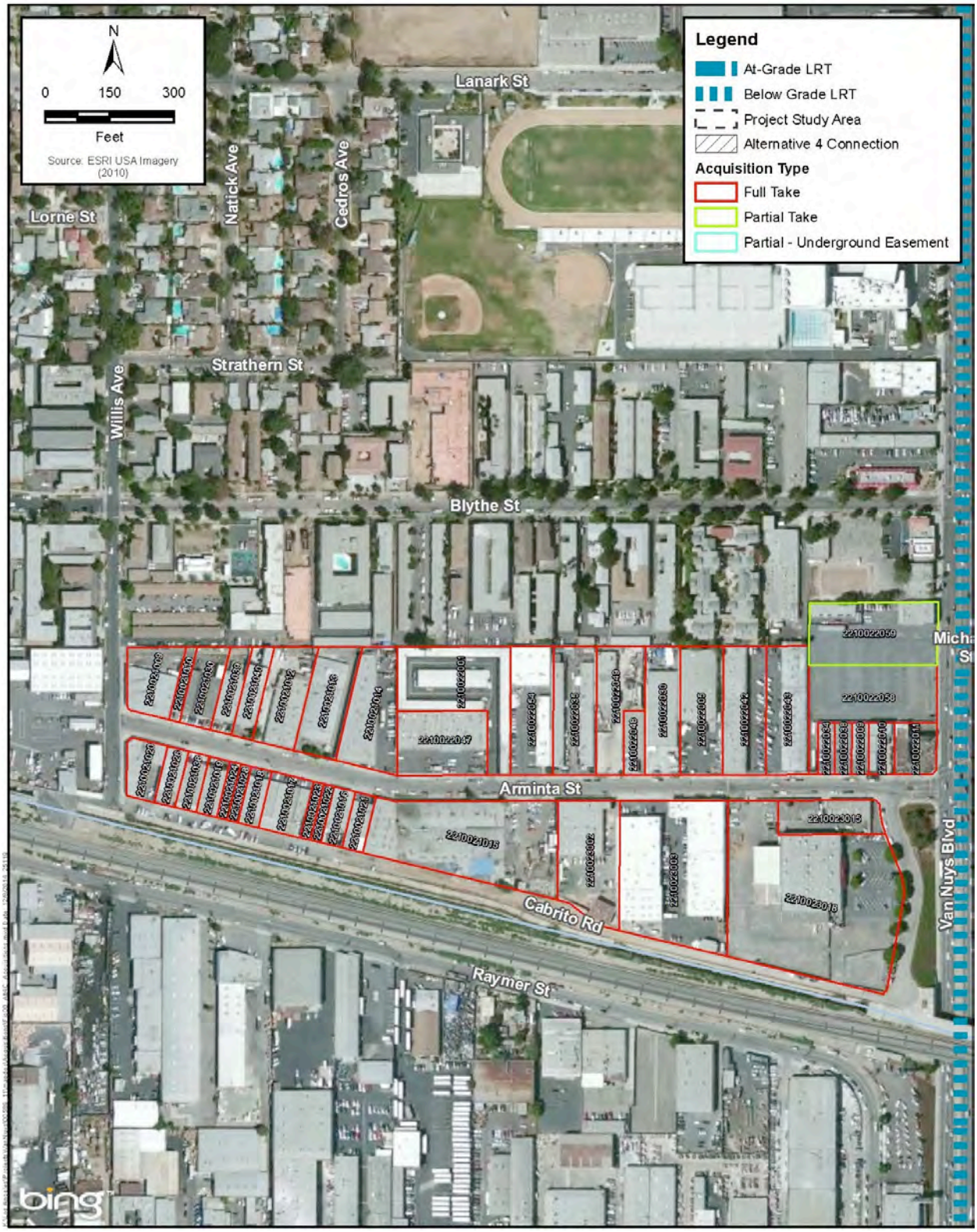

N
0
150
300
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Michaels St
Nollan Pl
Arminta St
Cabrito Rd
Van Nuys Blvd
Saticoy St
Tyrone Ave
bing


N
0
150
300
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Nelson Rd
Stansbury Ave
Hazeltine Ave
Arminta St
Stagg St
Stroud St
Cabrito Rd
Saticoy St
bing


N
0
100
200
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
2210031012
2210031001
2215028020
2215028014
2215028012
Saticoy St
2215001007
2215001008
Covello St
2215026001
Cohasset St
Pacoima Wash
Van Nuys Blvd
2215026002
2215026003
Runnymede St
Vista del Monte Ave
2215026048
Sylmar Ave
Valerio St
bing

Figure 4.19-7: MSF Option C Acquisitions

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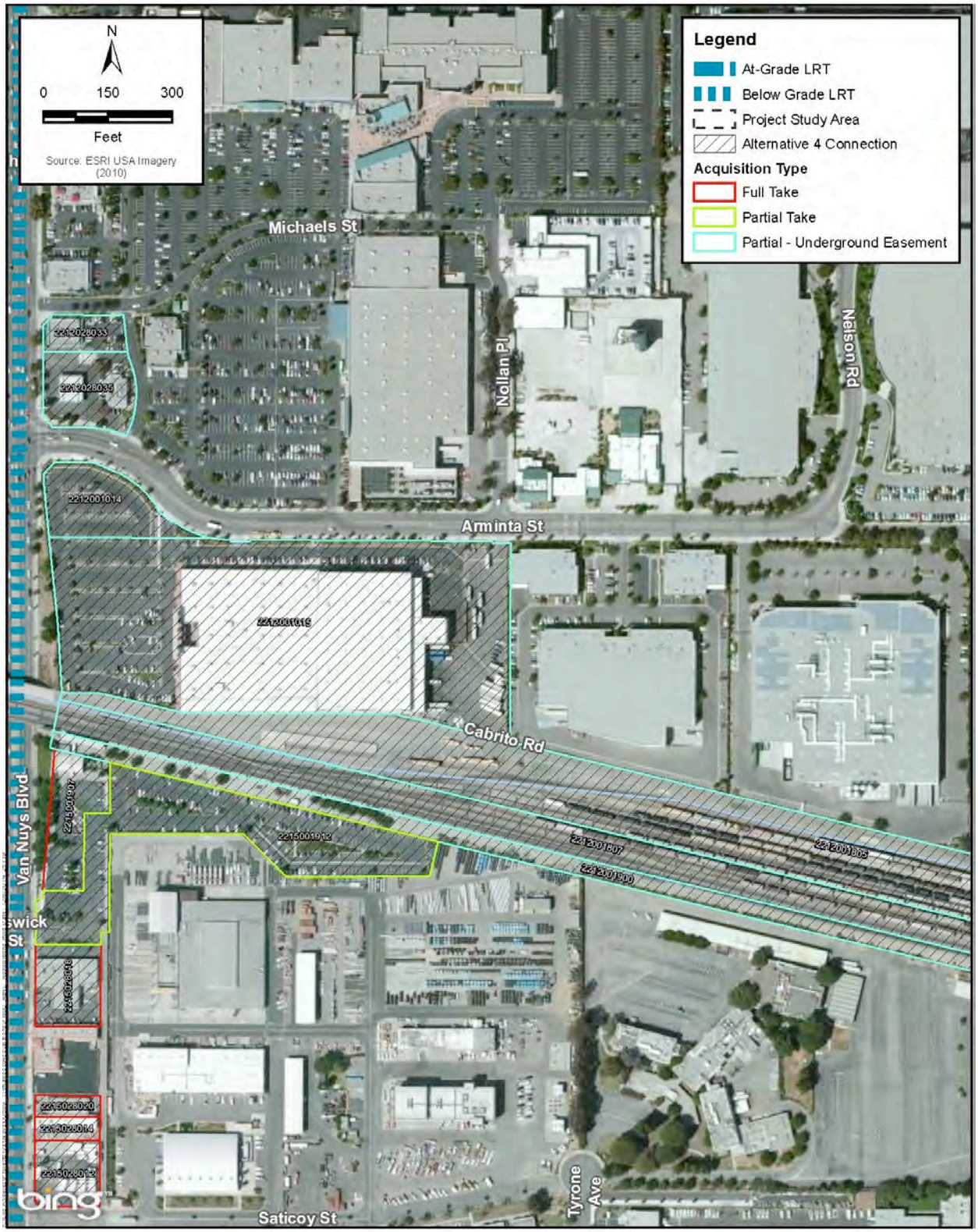
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Lanark St
Natick Ave
Cedros Ave
Lorne St
Strathern St
Willis Ave
Blythe St
Arminta St
Cabrito Rd
Raymer St
Van Nuys Blvd
bing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Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Michaels St
Nollan Pl
Nelson Rd
Arminta St
Cabrito Rd
Van Nuys Blvd
Saticoy St
Tyrone Ave
bing


N
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150
300
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
Nelson Rd
Stansbury Ave
Hazeltine Ave
Arminta St
Stagg St
Stroud St
Cabrito Rd
Saticoy St
bing


N
0
100
200
Feet
Source: ESRI USA Imagery (2010)
Legend
At-Grade LRT
Below Grade LRT
Project Study Area
Alternative 4 Connection
Acquisition Type
Full Take
Partial Take
Partial - Underground Easement
2215028020
2215028014
2215028012
Saticoy St
2215001007
2215001008
Covello St
2215026001
2215026002
2215026003
2215026048
Van Nuys Blvd
Pacoima Wash
Cohasset St
Runnymede St
Sylmar Ave
Vista del Monte Ave
Valerio St
bing

Construction Scenario

Proposed construction activities would generally occur in phases, identified below, over a period of approximately 5 years.

- Preconstruction and Site Preparation
- Construction of Transit Structures and Infrastructure
- Construction of Support Systems and Finish Work.

The text that follows focuses on the construction features or methods unique to this alternative.

Preconstruction and Site Preparation

The activities under this phase would be the same as those described above for the Low-Floor LRT/Tram Alternative. However, a slightly larger number of properties would need to be acquired, primarily as a result of the right-of-way way required in the subway portal areas.

Additional investigations will also be required for this alternative to determine subsurface geotechnical conditions and to assess the conditions of existing buildings and other structures in proximity to the stations, tunnels, and other underground structures and to determine whether additional measures would be necessary to protect adjacent structures during excavation activities.

Construction Phasing and Staging Plan

The preconstruction and site preparation phase would include the development and implementation of the Construction Phasing and Staging Plan by the construction contractor. This Plan would be required to control the impacts of construction in any segment by limiting the areas that may be constructed at a particular time. The goal of the Construction Phasing and Staging Plan would be to maximize the work area under construction while minimizing the inconvenience to businesses and the motoring public. Staging areas identified by the contractor, will be included in the Plan or in a supplemental document, as required by Metro. Typically, staging areas would be located on parking lots, vacant private properties, or within public rights-of-way (including the curb lane), and may require temporary easements and city encroachment permits be obtained by the construction contractor.

Construction of Transit Structures and Infrastructure

Construction of the Proposed Stations and Associated Infrastructure

Under this alternative 14 stations would be constructed at approximately one-mile intervals along the entire route. Three stations would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Construction activities for the at-grade stations would be the same as those described under Alternative 3, above.

Figure 4.19-8 is a photograph providing an example of construction of an LRT station in the street median.

Entry to the three underground stations would require the construction of an entry plaza and portal. Figures 4.19-9 through 4.19-11 show examples of construction activities required for the construction of the underground station portals. Figure 4.19-12 shows a typical below-grade LRT Station.

Figure 4.19-8: Example of Street Median LRT Station Construction

Source: Metro, 2015.

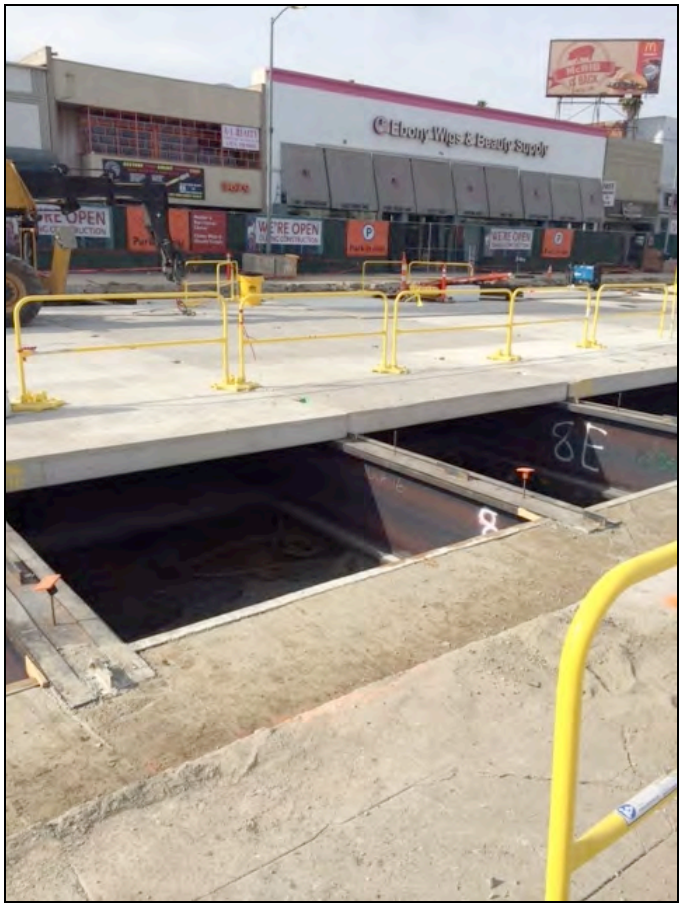
Figure 4.19-9: Example of In-Street Excavation

Source: Metro, 2015.

Figure 4.19-10: Example of Tunnel Portal Beam Installation

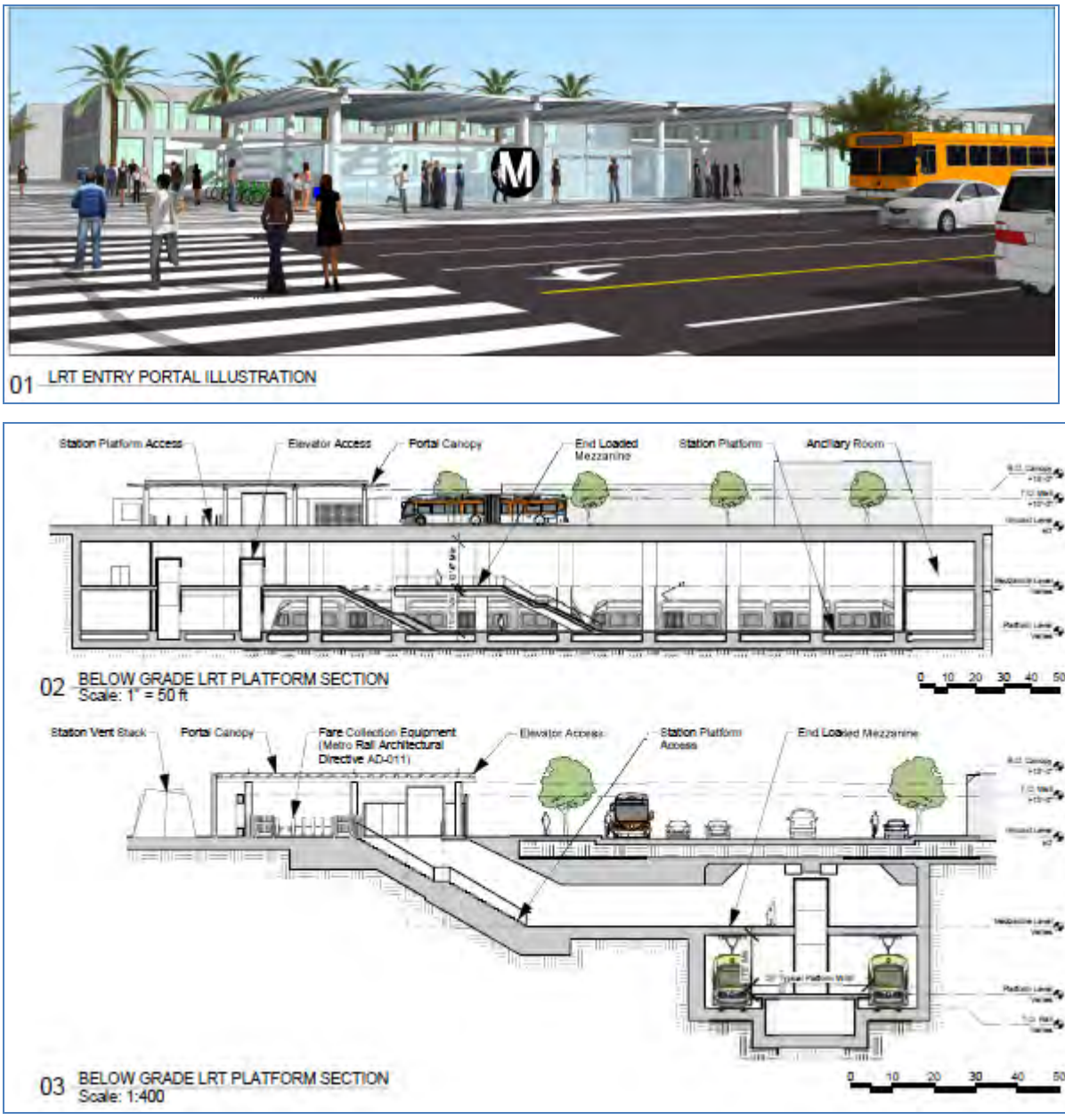
Source: Metro, 2015.

Figure 4.19-11: Example of Tunnel Portal Decking



Source: Metro, 2015.

Figure 4.19-12: Alternative 4 (Typical Below-Grade LRT Station)



Source: Metro, John Kaliski Architects, 2014.

The entry plaza would be approximately 150 feet long and 90 feet deep and contain centrally placed and approximately 100 feet long by 60 feet wide entry structures rising to a height of approximately 15 feet. Each plaza would also contain landscape planting, and bicycle racks and/or storage. The entry portals would be covered with canopies, and the entry areas would contain ticket vending machines, video message signs, and route maps. The entry portals would provide access to stairs, escalators, and elevators leading to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms that would be 28 feet wide.

Subway Construction

The subway portion of the alignment would be constructed using cut-and-cover techniques or a tunnel boring machine, or a combination of both. The method will be determined by the construction contractor, who will take into consideration a number of factors in determining which method would be the most appropriate for the subway portion of the LRT alignment. Each method is described in greater detail below. The descriptions below are based on information presented in the *Construction Methods Report* (March 2012) prepared for the Final EIS/EIR for the Westside Extension Project.

Cut-and-Cover

Cut-and-cover construction generally begins with the installation a system of temporary shoring to support the excavation in which the permanent structure would be constructed with temporary decking above the excavation. The temporary shoring, which would also be designed to support loads from adjacent building foundations, would be constructed in stages, first one side of the excavation and then the other. Soldier piles and timber lagging is a shoring method that has been used successfully on previous Metro projects. Soldier piles are steel beams that are concreted into pre-drilled holes, which carry the loads from the timer lagging placed against the excavated earth surface. Large steel struts would support the soldier piles. For typical on-street station construction, the top six to 12 feet of soil below the existing roadway would be removed and a decking would be installed across the roadway. The typical concrete decking would be flush with the existing street level so that traffic can continue to flow. Once the temporary shoring has been constructed and decking has been installed, excavation commences inside the area supported by the shoring and below the decking. Utilities are supported from the steel beams as the soil is excavated around them. At subway station areas, the station box structure would be built within the excavated space, backfilled up to the surface or street level, and surface restored. Typical off-street station construction involves a similar process; however, the decking is not required and the area would remain uncovered to provide access at these locations.

The excavated soils or soils would be moved to an off-street work site or closed parking/traffic lane and loaded into haul trucks. The estimated volume of to be excavated would total approximately 1,539,722 cubic yards. Assuming the use of 15-cubic-yard haul trucks, and 10-cubic-yard haul trucks at restricted locations, the total number of haul truck loads would range from approximately 102,648 to 153,972 or an estimated 112 to 169 trucks per day on average.

Contaminated soils would be separated as soon as they are identified during excavation, and would also be separated into temporary stockpiles. The soils would be handled, transported, and disposed of in accordance with all applicable regulations.

Excavated materials may be hauled at night, where possible, due to the congested freeways and surface streets around or near the excavation sites during daytime hours. The contractor would develop an excavation plan that defines haul routes, dust control, sweeping, and disposal sites.

Tunnel Boring

Under this scenario, excavation of the tunnel would be conducted using a tunnel boring machine (TBM). A TBM is a large machine that bores a circular tunnel by excavating rock and soil and installing precast concrete segments to support the ground around the tunnel opening. There are two classes of TBMs, hard rock and soft ground. Soft-ground TBMs are further divided into pressurized – face machines and no-pressurized face machines. Pressurized-face machines provide much better control of ground settlement and the ingress of ground water and gas into the tunnel. The

appropriate TBM will be determined based on the results of further geotechnical investigations of subsurface conditions. Under this alternative, two circular tunnels approximately 20 to 21 feet in diameter would be constructed.

One of the three subway stations would be excavated first so it's ready to receive the TBM(s). A slurry processing plant and other TBM support facilities would be constructed on a laydown and storage site at the station so that they are ready to support delivery of the TBMs. Excavation of a TBM retrieval shaft would follow excavation at the station site that would receive the TBM. Use of the TBM(s) may require that they be removed through the retrieval shaft, and returned by road to station excavation site, where they would be reassembled and used to excavate the remaining portion of the tunnel.

As the TBM bores the tunnel, excavated materials (spoils) would be moved to the rear of the TBM by a screw conveyor and deposited on a conveyor belt that would then drop the spoils into hoppers-type mine cars that are then taken back to the launching area by a locomotive operating on temporary rail tracks fastened to the bottom of the tunnel. At the shaft, the mine cars are lifted out by crane or hoist, and the material is loaded into trucks or temporarily stockpiled for off-site disposal. Alternatively, belt conveyor or pipe systems could be used to transport spoils through the tunnel and from the shaft to the surface. Depending on the type of TBM, the spoils may need to undergo partial treatment before being loaded onto trucks for disposal.

For a typical tunnel excavation, boring two tunnels at approximately 20 feet per 10-hour shift, the rate of spoil removal would be approximately 75 loose CY per hour, or approximately 5 trucks per hour, or 1 truck every 10 to 12 minutes. With temporary stockpiling of spoils on the site, the hauling could be partially deferred to nights and weekends.

Once a tunnel is clear of tunneling equipment, excavation and construction of tunnel cross-passages, tunnel invert, and walkways would commence.

Construction of the subway station structures would commence as soon as the tunnel work is completed, or when access to the tunnels through a particular station location is no longer required. Once the subway station structure is fully enclosed, the excavation above the station would be backfilled, station appendages would be constructed, and the street decking would be removed. Track work and support facilities (OCS) could then be installed.

Construction of Support Systems and Finish Work

Construction activities associated with this phase would be the same as those described for the BRT alternatives above and would include installation of other surface-level system elements (mechanical, signals etc.) This could also include installation of communication systems, traffic signals, traffic control system installation, street lighting, landscaping, signing, and striping, closure of detours, cleanup activities, and testing of systems. With regards to traffic signals, the Low-Floor LRT/Trams would be controlled by the traffic signals that govern vehicular traffic on Van Nuys Boulevard. Every traffic signal on Van Nuys Boulevard would be modified to provide for Low-Floor LRT/Tram signals.

Construction Schedule

Under this alternative, the duration of construction is estimated to be approximately 5 years. The construction period would be longer than for the Low-Floor LRT/Tram Alternative because of the subway segment of the alternative.

The approximate time frames under this alternative for each of the general construction phases are presented below. As discussed above for the other alternatives, these are rough estimates and are likely to vary based on conditions in the field. The phases are likely to overlap to some degree and the sequence of construction activities may also vary.

- Preconstruction and Site Preparation 0 to 6 months
- Construction of Transit Structures and Infrastructure 48-60 months
- Construction of Support Systems and Finish Work. 48-60 months

Also, similar to the other alternatives, project construction would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code Section 41.40(a) and 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with San Fernando City Code Section 34-28(10). Construction activities would be minimized during weekday AM and PM peak hours (typically 7 to 9 a.m. and 4 to 6 p.m.). Nighttime construction for tunnel excavation may be required and truck hauling of spoils may be required at night to avoid congested surface streets and highways.

4.19.3 Environmental Consequences, Impacts, and Mitigation Measures

4.19.3.1 No-Build Alternative

Under the No-Build Alternative, no new transportation infrastructure would be built within the project study area, aside from projects that are currently under construction or funded for construction and operation by 2040. Because the No-Build Alternative would not propose new construction, it would not result in any construction effects or impacts.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No effects would occur.

CEQA Determination

No impacts would occur under the No-Build Alternative.

4.19.3.2 Transportation Systems Management Alternative (TSM)

Land Use

Construction activities under the TSM Alternative would be minimal, limited to installation of new bus stops and signage and possibly minor roadway improvements. Typical construction methods would be used for the minor bus stop and roadway improvements. Bus stops and other minor roadway improvements would be constructed within the existing public street right-of-way; however, extended street or lane closures would be unnecessary, and mobility would not be substantially reduced during construction. Construction activities would not divide an established community. The minor construction activities that would occur under this alternative would not be inconsistent with local plans or incompatible with existing land uses.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

No adverse impacts would occur.

Real Estate and Acquisitions

The TSM alternative would consist primarily of transportation system upgrades, such as increased bus efficiencies and service and minor physical improvements to existing roadways and bus stops. Construction of the physical improvements would not require any property acquisitions or result in displacement of existing uses. Therefore, no adverse impacts or effects associated with displacements or relocations would occur.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

No impacts would occur.

Economic and Fiscal Impacts

The TSM Alternative would require no parcel acquisitions and consequently construction would result in no adverse economic or fiscal impacts or effects.

The estimated cost to construct the relatively minor physical improvements (e.g., bus stop improvements and minor modifications to the roadway network including traffic signal improvements) proposed under the TSM Alternative is $8.6 million. The TSM Alternative would generate an estimated 111 jobs based on this estimated construction cost. Of these jobs, 66 would be generated directly by construction and 19 would be generated indirectly. An additional 26 jobs would be induced through increased household spending by direct and indirect employees.

Total labor income for the TSM Alternative would be about $6.8 million, with $4 million of this being the result of direct construction impacts. Labor income for jobs created via indirect impacts would be about $1.4 million. Labor income for induced jobs would also be about $1.4 million.

Total output for this alternative would be just over $16 million, $8.6 million of which would be generated directly by construction. Output generated by indirect impacts amounts to about $3.7 million. Induced impacts of construction could generate nearly $3.8 million of output.

The TSM Alternative would generate an estimated $8.5 million in value added, with about $4.1 million resulting from the direct impacts of construction. Indirect impacts would generate an estimated $2.1 million in value added. Induced value added would amount to about $2.4 million.

Construction Mitigation Measures

None required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

The TSM Alternative would not adversely affect the economic and fiscal health of communities in the project area beyond minor disruption associated with construction, which can be mitigated. The TSM Alternative would not result in any significant direct, indirect, or cumulative impacts. The TSM Alternative offers modest mobility improvements relative to the baseline but less than the build alternatives as it does not have a dedicated right-of-way (ROW). It also would not serve as a catalyst for economic revitalization to the extent of the build alternatives.

Communities and Neighborhoods

The TSM Alternative may include minor bus stop and roadway improvements. Given the very limited extent of potential physical improvements, construction activities would likely have no or very minimal impacts on any nearby communities and neighborhoods.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse or would be beneficial.

CEQA Determination

Impacts under CEQA would be less than significant or beneficial.

Visual Qualities and Aesthetics

The TSM Alternative may include minor bus stop and roadway improvements. Given the very limited extent of potential physical improvements, construction activities would likely have no or very minimal impacts on visual and aesthetic resources.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No effects or no adverse effects would occur under NEPA.

CEQA Determination

No or less-than-significant impacts would occur under CEQA.

Air Quality

Bus service enhancements anticipated to occur under the TSM Alternative would not require construction of a new, or expansion of an existing, bus maintenance facility and no substantial physical improvements would be constructed. Consequently, no or very minor amounts of criteria pollutant emissions or toxic air contaminant emissions would be generated. No significant or substantial adverse construction-related impacts under CEQA or NEPA would occur as result of the TSM Alternative.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No effects or no adverse effects would occur under NEPA.

CEQA Determination

No or less-than-significant impacts would occur under CEQA.

Climate Change

The TSM Alternative may include minor physical improvements to bus stops and roadways; consequently, there would be no or very minor construction-related GHG emissions.

Construction Mitigation Measures

No construction mitigation measure would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Noise and Vibration

The TSM Alternative would include relatively low-cost transit service improvements such as increased bus frequencies, or very minor improvements to bus stops and the roadway network. Because proposed physical improvements would only require light construction equipment and any construction would be of very short duration, no adverse construction noise or vibration impacts are expected to occur under the TSM Alternative.

Construction Mitigation Measures

No noise or vibration mitigation measures are required or recommended for the TSM Alternative.

Impacts Remaining after Mitigation

NEPA Finding

No adverse noise or vibration effects would occur.

CEQA Determination

No noise or vibration impacts would occur

Geology and Soils

The TSM Alternative would consist of cost-efficient service improvements and could include minor physical improvements to the roadway network and to bus stops. Given the very limited amount of construction that could occur under this alternative, geological and flooding hazards in the project area are not likely to affect or be affected by construction activities. Therefore, no or very minor impacts/effects would occur during construction.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Hazardous Waste and Materials

The amount of construction that could occur under this alternative would be very minor and would be generally limited to minor roadway modifications and bus stop amenities/improvements. Consequently, it's unlikely that significant amounts of materials, soil or groundwater containing hazardous materials or wastes would be encountered during construction. Therefore, potential construction impacts would be less than significant under CEQA and would not be adverse under NEPA.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Energy

The TSM Alternative would consist of relatively low-cost transit service improvements, such as increased bus frequencies, and minor physical improvements. Construction activities that would occur under the TSM Alternative would be limited to minor roadway modifications and bus stop enhancements. As such, construction would require minimal amounts of energy and construction activities would comply with the Metro Green Construction Policy. No buildings subject to energy standards required by Title 24 of the California Code of Regulations would be constructed under the TSM Alternative. Construction impacts on energy would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No mitigation measures would be necessary.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Ecosystems and Biological Resources

The TSM Alternative proposes transportation systems upgrades, which may include relatively low-cost transit service improvements and minor physical improvements that would be limited to the public roadway right-of-way. As a consequence, no or very minor construction impacts or adverse effects would occur.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

The TSM Alternative would not result in adverse effects under NEPA.

CEQA Determination

The TSM Alternative would result in less than significant impacts under CEQA.

Hydrology and Water Quality

Any construction activities required under the TSM Alternative would be minimal (e.g., construction of bus stop amenities, signage, and minor roadway improvements); therefore, no or very minor construction impacts/effects would occur.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

Less than significant impacts would occur.

Safety and Security

The TSM Alternative could include minor physical improvements; as a consequence, construction activities would be limited in scope and duration. When construction activities would occur, all construction sites and equipment would be secured to prevent tampering and vandalism, and all applicable Metro guidelines pertaining to construction sites would be followed. As required by the City of Los Angeles Bureau of Engineering Master Specifications, the contractor would be required to keep all equipment, field offices, storage facilities, and other facilities free of graffiti. Any graffiti would be painted over, masked, or cleaned off within 24 hours after notification by the inspector. Therefore, construction impacts/effects would be minor, and no significant or substantial adverse impacts/effects would occur.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

Parklands and Community Facilities

The TSM Alternative may include minor bus stop and roadway improvements. Given the very limited extent of potential physical improvements, construction activities would likely have no or very minimal impacts on any nearby parklands and community facilities.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse or would be beneficial.

CEQA Determination

Impacts under CEQA would be less than significant or beneficial.

Environmental Justice

The TSM Alternative may include minor bus stop and roadway improvements as well as operational enhancements to the existing bus system. Given the very limited extent of potential physical improvements, construction activities would likely have no or very minimal impacts on the social, economic, and physical conditions of the communities and neighborhoods in the project study area.

These minor temporary effects are anticipated to affect all communities within the project study area comparably, regardless of the block groups' socioeconomic or demographic characteristics. Therefore, the TSM Alternative would not result in disproportionately high and adverse effects on minority and low-income populations with respect to construction.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects under NEPA would occur.

CEQA Determination

There are no thresholds of significance in CEQA for environmental justice impacts. Therefore, no CEQA determination can be made for environmental justice impacts resulting from this alternative.

Growth-Inducing Impacts

The TSM Alternative would consist primarily of low-cost transit service improvements. Physical improvements to the transportation network would be minor. Therefore, construction activities associated with this alternative would be minimal and no growth inducement impacts would occur as result.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

4.19.3.3 Build Alternative 1 – Curb-Running Bus Rapid Transit Alternative

Land Use

Division of an Established Community

Construction of Alternative 1 would require temporary road, lane, and sidewalk closures, which would reduce pedestrian and vehicle mobility and access within and between local communities throughout the study area. However, these closures would be temporary and are not expected to substantially divide or diminish access to existing communities or neighborhoods. Additionally, implementation of a Traffic Management Plan and a Construction Phasing and Staging Plan would further reduce the disruption caused by construction activities and access to businesses and residential areas would be maintained to the extent feasible. Therefore impacts/effects would be less than significant under CEQA and non-adverse under NEPA.

Conflicts with Local Land Use Plans

Construction activities would be conducted in compliance with local land use plans and codes. Project construction would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code and between 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with the San Fernando City Code. Municipal Code requirements. However, some construction may be required during nighttime hours. If it is necessary for construction to occur outside of these hours, Metro may seek a variance from Municipal Code requirements. In accordance with San Fernando City Code Section 34-28(10), noise sources associated with construction, repair, remodeling or grading of any real property would be allowed up to 70 decibels (dB) measured at the property line, provided such activities do not take place between the hours of 6:00 p.m. and 7:00 a.m. on weekdays and 6:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sundays or on federal holidays. Construction activities would be minimized during weekday AM and PM peak traffic periods (typically 7 to 9 a.m. and 4 to 6 p.m.). Therefore, substantial conflicts with local land use plans during the construction period are not expected to occur and impacts/effects would be less than significant under CEQA and non-adverse under NEPA.

Incompatibility with Adjacent and Surrounding Land Uses

Construction activities along the alignment would result in temporary nuisance impacts (e.g., noise, air quality impacts) on nearby land uses. Construction noise would result from the use of heavy equipment during construction activities, such as excavation, grading, ground clearing, and installing foundations and structures, as well as from trucks hauling materials to and from the construction areas. Air quality impacts would result from the generation of fugitive dust during ground disturbing activities, and from the operation of heavy-duty, diesel-fueled equipment, such as bulldozers, trucks, and scrapers. Additionally, construction staging areas would be established near the project alignment

and used for equipment and material storage. The staging areas would be located within the right-of-way, parking lots, or on vacant land and would not require land from adjacent properties. No land acquisitions would be required for construction staging areas. Nonetheless, activities at the construction staging areas, similar to other construction activities along the alignment, would result in nuisance impacts on nearby sensitive land uses. Where temporary construction impacts on nearby land uses are determined to be significant (e.g., noise impacts), the land use incompatibility impacts would also be considered to be significant. Therefore, impacts/effects would be potentially significant under CEQA and potentially adverse under NEPA.

Construction Mitigation Measures

Please see other sections (e.g., 4.8 Noise and Vibration, 4.6 Air Quality) for measures to mitigate potentially significant adverse construction impacts on sensitive land uses near proposed construction. Specifically, Mitigation Measures MM-NOI-1a through MM-NOI-1d would require development of a Noise Control Plan, public notification of construction schedules, scheduling most construction activities during the daytime, as much as feasible, and use of methods and equipment that reduces noise, to the extent practicable. In addition, Mitigation Measure MM-VIB-1 also specifies use of equipment and methods to reduce vibration impacts. Mitigation Measures MM-AQ-1 through MM-AQ-6 would require that the construction contractor limit vehicle trips, idling of heavy equipment, and use of methods and equipment that reduces potential emissions and pollutants, to the extent feasible,

Impacts Remaining after Mitigation

NEPA Finding

The effects would not be adverse under NEPA.

CEQA Determination

Construction impacts would be less than significant after mitigation.

Real Estate and Acquisitions

Alternative 1 would not require the permanent acquisition of any property within the study area because it would involve primarily dedication of the existing curb lanes to bus service. No new facilities beyond bus stop improvements would be required. All improvements associated with Alternative 1 would take place within the existing transportation ROW. Therefore, no impacts associated with acquisitions of property would occur under Alternative 1.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

No impacts would occur.

Economic and Fiscal Impacts

Alternative 1 – Curb-Running BRT would require no parcel acquisitions. Other than potential minor economic impacts on local businesses due to reduced visibility (due to sign blockage) and diminished access resulting from temporary sidewalk or lane closures, loss of on-street parking during construction, and permanent removal of on-street parking to accommodate the Alternative 1 alignment, no adverse fiscal and economic impacts would occur.

The construction costs for Alternative 1 are estimated at $260.0 million. Alternative 1 would generate an estimated 3,368 jobs. Of these jobs, an estimated 2,000 would be generated directly by construction and 577 would be generated indirectly.

Total labor income for Alternative 1 would be about $206.6 million, with $120.8 million of this being the result of direct construction impacts. Labor income for jobs created via indirect impacts would be about $43.4 million.

Total economic output for this alternative would be about $486.8 million, $259.8 million of which would be generated directly by construction. Output generated by indirect impacts would amount to approximately $112.7 million. Induced impacts of construction would generate nearly $114.3 million of output.

Alternative 1 would generate about $257.7 million in value added, with about $123.4 million coming from direct impacts of construction. Indirect impacts would generate approximately $62.2 million in value added. Induced value added would amount to about $72.1 million.

Construction Mitigation Measures

None required.

Impacts Remaining after Mitigation

NEPA Finding

Potential effects would not be adverse.

CEQA Determination

The Curb-Running BRT alternative would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The Curb-Running BRT alternative offers much greater mobility benefits than the TSM and No-Build Alternatives. The Curb-Running BRT alternative also may provide marginal increased development resulting from improved mobility along the corridor. This BRT alternative would not result in any significant direct, indirect, or cumulative impacts and would provide travel time and mobility improvements.

Communities and Neighborhoods

Mobility and Access Impacts

Under Alternative 1, the Curb-Running BRT Alternative, construction of stations and the alignment would require temporary sidewalk, lane, and possibly road closures, and temporary removal of parking on Van Nuys Boulevard, San Fernando Road, Truman Street, and their cross streets. These closures could reduce pedestrian, bicycle, and vehicle mobility between communities and neighborhoods along the project corridor during construction.

Road and sidewalk closures, along with the addition of construction vehicles and equipment on primary streets in the Cities of Los Angeles and San Fernando, could also reduce public access to annual festivals and events in the various communities along the alignment. In addition, construction could disrupt traffic patterns and make public access to businesses and community resources more difficult. Lane closures, traffic detours, and designated truck routes associated with construction could also result in decreased access for emergency vehicles and delayed response times for emergency services.

Lane and/or road closures would be scheduled to minimize disruptions, and a Traffic Management Plan (TMP) would be approved in coordination with both the Cities of Los Angeles and San Fernando prior to construction. Therefore, mobility and access impacts during construction would not be adverse under NEPA and would be less than significant under CEQA.

Social and Economic Impacts

Construction of Alternative 1 would not be expected to result in substantial changes to the existing population in the project study area. Because of the temporary nature of construction jobs and given that a substantial employment base currently exists in the San Fernando Valley within commuting distance of the project corridor, employment opportunities that could occur due to construction of this alternative would not result in the migration of a substantial number of residents to the project study area and would not induce permanent substantial population growth in communities and neighborhoods in the project study area.

Construction activities would likely result in a decrease in accessibility to many businesses and result in the loss of on-street or off-street parking within construction zones. This could negatively affect business activity levels because the number of customers may temporarily decline. All attempts would be made to provide adequate detours and to minimize road closures; however, some consumers may avoid the area altogether, which could have an indirect effect on businesses within the project area.

The required construction easements (i.e., the areas needed temporarily during construction in addition to the actual project footprint) would vary along the alignment, depending on the type of construction and the adjacent land use. Storage areas for construction equipment and materials would be established near the project alignment and used for equipment and material storage. The storage areas would be located within the right-of-way, parking lots, or vacant lands. No parcels would be acquired for Alternative 1, and no businesses would be displaced for the construction of this alternative. Therefore, social and economic impacts during construction would be non-adverse under NEPA and less than significant under CEQA.

Physical Impacts

Construction of Alternative 1 would not likely result in changes to land use patterns or physical division of communities because construction would be short-term and would not affect land use designations or introduce barriers that would divide communities. However, construction activities would result in a number of other physical impacts and intrusions, including noise, dust, odors, and traffic delays resulting from haul trucks and construction equipment located on public streets and staging areas. Local neighborhoods, businesses, and community facilities may be inconvenienced temporarily (approximately 18 months), and community activities could be disrupted by these activities.

Construction of Alternative 1 may also result in several visual impacts on viewers within and surrounding the project corridor. Construction areas could be visible from residential land uses on some of the adjacent parcels, either directly through fencing, through entrance gates, or over fencing

from second story and higher windows. Construction activities may include the use of considerable heavy equipment such as cranes and associated vehicles, including bulldozers, backhoes, graders, scrapers, and trucks, which could be visible from public streets, sidewalks, and adjacent properties.

Viewers in the construction area may be affected by the presence of this equipment, as well as stockpiled construction-related materials. In addition, mature vegetation, including trees, could be temporarily removed from some areas. Construction impacts associated with noise, air quality, visual quality/aesthetics, and traffic could be reduced or minimized through construction management and abatement measures.

Construction of Alternative 1 could also have temporary effects on public safety and security within the project study area. During construction, motorists, pedestrians, and bicyclists would be exposed to additional safety hazards because of proximity to construction activities. The potential for safety and security impacts would be minimized by compliance with Occupational Safety and Health Administration (OSHA), California Occupational Safety and Health Administration (Cal/OSHA), and Metro safety and security programs, which are designed to reduce potential construction impacts. In addition, an adequate level of signage, construction barriers, and supervision of trained safety personnel would be implemented during the construction phase to ensure that pedestrian and motorist safety is maintained during construction.

Incidents of crime adjacent to the project alignment would not likely increase during construction of Alternative 1. Theft of construction machinery and materials could occur at construction sites, but these incidents would be minimized through implementation of standard site security practices.

Alternative 1 would result in significant impacts under CEQA, during construction. The reader is referred to the air quality section of this chapter for more information on the significance and extent of these potential physical impacts.

Construction Mitigation Measures

The reader is referred to the following sections in this DEIS/DEIR for mitigation measures to reduce or avoid potential construction and operational impacts on communities and neighborhoods: Chapter 2-Transportation, Transit, Circulation, and Parking; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security. These measures include requirements to maintain access to businesses and residences within the adjacent neighborhoods and communities, detours, design and location of project elements to avoid obstructing views to and from the community, requirements for use of equipment and methods to reduce air quality emissions, attenuation of noise and vibration impacts to the extent feasible by use of alternate equipment or methods, or use of noise and vibration reducing track, and coordination with public safety and transit providers to ensure adequate access for emergency response to these communities and neighborhoods. During project operation and construction, these measures would minimize direct impacts that could adversely affect the quality of the human environment within the communities and neighborhoods of the study area

Impacts Remaining after Mitigation

NEPA Finding

The potential operational effects on bicycle access and safety would be adverse after mitigation. All other effects would not be adverse.

CEQA Determination

The potential operational impacts on bicycle access and safety would be significant after implementation of proposed mitigation measures. All other impacts would be less than significant.

Visual Qualities and Aesthetics

Construction of Alternative 1 could result in temporary visual impacts within and surrounding the project corridor. Construction areas would be visible to all viewer groups from areas within and adjacent to the project corridor, including residential and recreational areas. Construction activities in staging areas and at proposed stations may include the use of large equipment such as cranes and associated vehicles, including bulldozers, backhoes, graders, scrapers, and trucks, which could be visible from public streets, sidewalks, and adjacent properties.

Viewers in the construction area may be affected by the presence of this equipment, as well as stockpiled construction-related materials. In addition, mature vegetation, including trees, may need to be temporarily or permanently removed from some areas.

The construction impacts under Alternative 1 could be potentially adverse under NEPA and significant under CEQA.

Construction Mitigation Measures

MM-VIS-1: Construction staging shall be located away from residential and recreational areas, and shall be screened to minimize visual intrusion into the surrounding landscape. Lighting within construction areas shall face downward and shall be designed to minimize spillover lighting into adjacent properties.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction effects on visual and aesthetic resources would be minor and adverse after implementation of proposed mitigation measures.

CEQA Determination

The potential construction impacts on visual and aesthetic resources would be less than significant after implementation of proposed mitigation measures.

Air Quality

Project construction under Alternative 1 would result in the short-term generation of criteria pollutant emissions. Emissions would include: (1) fugitive dust generated from curb/pavement demolition, site work, and other construction activities; (2) hydrocarbon (ROG) emissions related to the application of architectural coatings and asphalt pavement; (3) exhaust emissions from powered construction equipment; and (4) motor vehicle emissions associated with construction equipment, worker commute, and debris-hauling activities.

During construction, the proposed project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities, per se, but rather sets forth requirements for all construction sites (as well as other fugitive dust sources) in the Basin. In general, Rule 403 prohibits a project from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) to remain visible in the atmosphere beyond the property line of the emissions source.

The total amount of construction, the duration of construction, and the intensity of construction activity would have a substantial affect on the amount of daily construction pollutant emissions, pollutant concentrations, and the resulting impacts occurring at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction would occur in a relatively intensive manner. Because of these conservative assumptions, actual emissions could be less than those forecasted. For example, if construction is delayed or occurs over a longer time period, emissions would be reduced because of: (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., fewer daily emissions occurring over a longer time interval).

For the purpose of this impact analysis, Alternative 1 construction assumes an 18-month construction-period, for air quality emissions estimating purposes. However, it should be noted that work would generally proceed in a linear sequence so most locations would be affected for a shorter period than 18 months. Combustion exhaust and fugitive dust (PM_{10} and $PM_{2.5}$) mass emissions were estimated using the SCAQMD-recommended CalEEMod, version 2013.2.2. Detailed construction equipment use assumptions (quantity and use hours), among other assumptions, are documented in the CalEEMod modeling output sheets provided in the appendix to the Air Quality Technical Report (see Appendix L). Fugitive PM_{10} and $PM_{2.5}$ emissions estimates take into account compliance with SCAQMD Rule 403. The same assumptions of construction equipment and use of CalEEMod were also used for estimating construction emissions for all build alternatives, with only the length of the construction period and soil estimates differing per alternative. Construction-period emissions anticipated to occur under Alternative 1 are discussed below.

Criteria Pollutant Emissions

The estimate of construction-period regional mass emissions is shown in Table 4.19-4. As shown in the table, regional emissions are not expected to exceed the SCAQMD regional emissions thresholds. Impacts would be less than significant under CEQA and non-adverse under NEPA.

With respect to local impacts, SCAQMD has developed a set of local mass emission thresholds to evaluate localized impacts. According to SCAQMD, only those emissions that occur on site are to be considered in the localized significance threshold (LST) analysis. Consistent with SCAQMD LST evaluation guidelines, emissions related to haul truck and employee commuting activity during construction are not considered in the evaluation of localized impacts. As shown in Table 4.19-5, localized PM_{10} and $PM_{2.5}$ emissions during construction would exceed local thresholds. As such, short-term local mass emissions would be significant under CEQA and adverse under NEPA prior to implementation of mitigation measures.

Table 4.18-4: Alternative 1 – Estimated Worst-case Regional Construction Mass Emissions (pounds per day)

Construction Year/Facility	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 2017						
Roadway Improvements, Sidewalks/Curbs, and Stations	6	63	49	<1	10	6
Year 2018						
Roadway Improvements, Sidewalks/Curbs, and Stations	39	56	46	<1	10	6
Maximum Daily Emissions	39	63	49	<1	10	6
Regional Construction Threshold	75	100	550	150	150	55
Exceed Thresholds?	No	No	No	No	No	No
Source: CalEEMod emissions modeling by ICF International 2015.						

Table 4.19-5: Alternative 1 – Estimated Maximum Localized Construction Mass Emissions (pounds per day)

Construction Phase	NO_x	CO	PM_{10}[a]	$PM_{2.5}$[a]
Median Improvements, Sidewalks/Curbs, and Stations	63	49	10	6
Localized Significance Thresholds [b]	80	498	4	3
Exceed Thresholds?	No	No	Yes	Yes

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.
[b] The project site is in SCAQMD SRA Number 7 (Eastern San Fernando Valley). LSTs shown herein are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the approximate local project construction size (1 acre).
Source: CalEEMod emissions modeling by ICF International 2015.

Toxic Air Contaminant Emissions (TAC)

With respect to construction-period impacts, the greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during project construction. Construction activities associated with the project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period; however, Alternative 1 construction is anticipated to have a duration of approximately 18 months. Because exposure to diesel exhaust would be well below the 70-year exposure period, project construction is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

The following measures are prescribed and shall be implemented to reduce short-term construction emissions that exceed SCAQMD significance thresholds:

MM-AQ-1 (All Build Alternatives): Construction vehicle and equipment trips and use shall be minimized to the extent feasible and unnecessary idling of heavy equipment shall be avoided.

MM-AQ-2 (All Build Alternatives): Solar powered, instead of diesel powered, changeable message signs shall be used.

MM-AQ-3 (All Build Alternatives): Electricity from power poles, rather than from generators, shall be used where feasible.

MM-AQ-4 (All Build Alternatives): Engines shall be maintained and tuned per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies. Periodic, unscheduled inspections shall be conducted to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

MM-AQ-5 (All Build Alternatives): Any tampering with engines shall be prohibited and continuing adherence to manufacturer's recommendations shall be required.

MM-AQ-6 (All Build Alternatives): New, clean (diesel or retrofitted diesel) equipment meeting the most stringent applicable federal or state standards shall be used and the best available emissions control technology shall be employed. Tier 4 engines shall be used for all construction equipment. If non-road construction equipment that meets Tier 4 engine standards is not available, the Construction Contractor shall be required to use the best available emissions control technologies on all equipment.

MM-AQ-7 (All Build Alternatives): EPA-registered particulate traps and other appropriate controls shall be used where suitable to reduce emissions of diesel particulate matter (PM) and other pollutants at the construction site.

Impacts Remaining after Mitigation

With the implementation of the mitigation measures identified above, construction emissions under Alternative 1 would be reduced, but would exceed the LSTs for PM_{10} and $PM_{2.5}$, as shown in Table 4.19-6. Based on the reduction of emissions, effects under NEPA would not be adverse. However, based on the emissions of PM_{10} and $PM_{2.5}$ exceeding the LSTs, impacts would remain significant under CEQA after the implementation of proposed mitigation measures.

NEPA Finding

Construction effects would not be adverse under NEPA after the implementation of mitigation measures.

CEQA Determination

Construction impacts under Alternative 1 would be significant under CEQA after the implementation of mitigation measures, and thus would require Metro to adopt a Statement of Overriding Considerations for approval of this alternative.

Table 4.19-6: Alternative 1 – Estimated Mitigated Maximum Localized Construction Mass Emissions (pounds per day)

Construction Activity	NO_X	CO	PM_{10}[a]	$PM_{2.5}$[a]
Median Improvements, Sidewalks/Curbs, and Stations	14	31	8	4
Localized Significance Thresholds [b]	80	498	4	3
Exceed Thresholds?	No	No	Yes	Yes

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.
[b] The project site is in SCAQMD SRA Number 7 (Eastern San Fernando Valley). LSTs shown herein are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the approximate local project construction size (1 acre).
Source: CalEEMod emissions modeling by ICF International 2015.

Climate Change

Construction activities under Alternative 1 would involve roadway and sidewalk modifications as well as the installation of canopies at stops. These activities would result in the emission of approximately 1,280 metric tons of CO_2e over the course of the construction period. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 43 metric tons of CO_2e.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Noise and Vibration

The construction of the Curb-Running BRT Alternative would require the use of heavy earthmoving equipment, pneumatic tools, generators, concrete pumps, and similar equipment. Project construction would typically take place between the hours of 7 a.m. and 9 p.m. within the City of Los Angeles, in accordance with the Los Angeles Municipal Code and between 7 a.m. and 6 p.m. within the City of San Fernando, in accordance with the San Fernando City Code.

Actual construction noise levels would depend on means and methods decided upon by the contractor, which are not available at this time. The predicted construction noise levels are based on a hypothetical scenario for the purposes of modeling. The predicted noise level from a typical 8-hour work-shift is 86 dBA (8-hour L_{eq}) at 50 feet, which is about 15 to 20 decibels higher than the ambient noise level. The NEPA and CEQA significance threshold is construction noise levels exceeding existing ambient noise levels by 10 dBA or more at a sensitive land use. Therefore, the Curb-Running BRT Alternative could result in a significant adverse construction noise impact/effect under CEQA and NEPA.

Many construction activities, such as pavement breaking, and the use of tracked vehicles, such as bulldozers, could result in noticeable levels of ground-borne vibration. These activities would be limited in duration and vibration levels are likely to be well below thresholds for minor cosmetic building damage. However, the predicted vibration levels for equipment that produces the highest levels of vibration, such as a vibratory roller, could exceed the construction vibration NEPA and CEQA significance threshold for non-engineered and timber masonry buildings at a distance of 25 feet. Mitigation measures are proposed for these high-vibration-generating activities.

Construction Mitigation Measures

Construction noise impacts can be reduced with operational methods, scheduling, equipment choice, and acoustical treatments. The following best-practice noise mitigation measures shall be implemented to minimize annoyance from construction noise:

MM-NOI-1a: Specific measures to be employed to mitigate construction noise impacts shall be developed by the contractor and presented in the form of a Noise Control Plan. The Noise Control Plan shall be submitted for review and approval before the beginning of construction noise activities.

MM-NOI-1b: The contractor shall adequately notify the public of construction operations and schedules no less than 72 hours in advance of construction through a construction notice with confirmed details and a look-ahead briefing several weeks in advance.

MM-NOI-1c: If a noise variance from Section 41.40(a) of the Los Angeles Municipal Code is sought for nighttime construction work, a noise limit shall be specified. The contractor shall employ a combination of the noise-reducing approaches listed in MM-NOI-1d to meet the noise limit.

MM-NOI-1d: Where feasible, the contractor shall use the following noise-reducing approaches:

- The contractor shall use specialty equipment with enclosed engines and/or high-performance mufflers.
- The contractor shall locate equipment and staging areas as far from noise-sensitive receivers as possible.
- The contractor shall limit unnecessary idling of equipment.
- The contractor shall install temporary noise barriers to enclose stationary noise sources, such as compressors, generators, laydown and staging areas, and other noisy equipment.
- The contractor shall reroute construction-related truck traffic away from residential buildings to the extent practicable.
- The contractor shall sequence the use of equipment so that simultaneous use of the loudest pieces of equipment is avoided as much as practicable.
- The contractor shall avoid the use of impact equipment and, where practicable, use non-impact equipment. Non-impact equipment could include electric or hydraulic-powered equipment rather than diesel and gasoline-powered equipment where feasible.
- The contractor shall use portable noise control enclosures for welding in the construction staging area.

When feasible, contractor shall use strobe lights or other OSHA-accepted methods rather than back-up alarms during nighttime construction, utilizing **MM-VIB-1:**

Where equipment, such as a vibratory roller, that produces high levels of vibration is used near buildings, the Construction Noise Vibration Control Plan shall also include mitigation measures to minimize vibration impact during construction. Recommended construction vibration mitigation measures that shall be considered and implemented where feasible include:

- The contractor shall minimize the use of tracked vehicles.
- The contractor shall avoid vibratory compaction.
- The contractor shall monitor vibration levels near sensitive receivers during activities that generate high vibration levels to ensure thresholds are not exceeded.

Impacts Remaining after Mitigation

NEPA Finding

The noise and vibration from construction of the Curb-Running BRT Alternative would not result in adverse effects after implementation of proposed mitigation measures.

CEQA Determination

The noise and vibration from the construction of the Curb-Running BRT Alternative would result in a less-than-significant impact with mitigation incorporated.

Geology and Soils

Potential impacts due to construction of Alternative 1 would be the same as those that would occur as result of a typical construction project and would include avoiding damage to existing utilities and taking measures to prevent undermining of existing structures and reducing potential geologic/soils hazards to construction workers. Compliance with best construction practices and adherence to regulatory requirements would reduce potential risks to existing structures, the public, and construction workers. Therefore, the construction impacts/effects under this alternative would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Hazardous Waste and Materials

Construction of proposed improvements may encounter hazardous materials during grading and excavation within the ROW. The construction work associated with this alternative would generally be limited to within the upper 5 feet of soil. The environmental site assessment (ESA) indicated that in or adjacent to the project ROW, there are potential instances of leaking underground storage tanks (LUSTs) and hazardous substances from industrial activities. In addition, it is likely that lead and arsenic may have been deposited within the soil along the project alignment and may occur at hazardous levels. Also, as noted above, any yellow thermoplastic paint markings on pavement to be removed may contain lead and other heavy metals such as chromium. The risk of encountering hazardous materials is a potentially significant impact under CEQA and an adverse effect under NEPA. However, these impacts/effects would be eliminated or reduced to less than significant or non-adverse as a result of compliance with the requirements and design features and implementation of the mitigation measures described below. In addition, dust created from construction activities may contain hazardous contaminants, a potentially significant impact under CEQA and adverse effect under NEPA.

Construction equipment contains fuel, hydraulic oil, lubricants, and other hazardous materials, which could be released accidentally during operation of the equipment, a potentially significant impact under CEQA and an adverse effect under NEPA. Compliance with federal, state, and local regulations, however, would reduce the impact to less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

MM-HAZ-1 (All Build Alternatives): An environmental investigation shall be performed during design for above-grade or below-grade transit structures, stations, and the maintenance yard. The environmental investigation shall collect soil, groundwater, and/or soil gas samples to delineate potential areas of contamination that may be encountered during construction or operations. The environmental investigation shall include the following:

- Properties potentially to be acquired are listed on multiple databases and shall be evaluated further for contaminants that were manufactured, stored, or released from the facility. If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.
- Phase II subsurface investigations for potential impacts from adjoining current or former underground storage tank (UST) sites and nearby LUST sites may be recommended pending the selection of the preferred alternative, potential ROW acquisitions, the depth of excavation, and the result of a review of archives on file with the City of Los Angeles Fire Department (LAFD) and Regional Water Quality Control Board (RWQCB).
- A Phase II subsurface investigation to evaluate potential presence of perchloroethylene (PCE) shall be performed along the portions of the project alignment that are adjacent to former and current dry cleaners. If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.
- If construction encroaches into the two former plugged and abandoned dry-hole oil exploration wells mapped adjacent to the proposed project ROW, the project team shall consult with the Division of Oil, Gas, and Geothermal Resources (DOGGR) regarding the exact locations of the abandoned holes and the potential impact of the wells on proposed construction.
- The locations of proposed improvements involving excavations adjacent to (within 50 feet of) the electrical substation shall be screened prior to construction by testing soils within 5 feet of the existing ground surface for Polychlorinated biphenyls (PCBs). If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.
- Buildings that will be demolished shall have a comprehensive asbestos containing materials (ACM) inspection prior to demolition. In addition, ACM may be present in the existing bridge crossings at the Pacoima Diversion Channels. If improvements associated with the corridor alternative selected for final design will disturb the existing bridge crossings, then these structures shall be evaluated for suspect ACM. If ACM is found, it shall be removed, and transported to an approved disposal location according to state law.
- Areas along the project alignment where soil may be disturbed during construction shall be tested for aerially deposited lead (ADL) according to Caltrans ADL testing guidelines. If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.
- Lead and other heavy metals, such as chromium, may be present within yellow thermoplastic paint markings on the pavement. These surfacing materials shall be tested for lead-based paint (LBP) prior to removal. If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.
- Former railroad ROWs that crossed or were adjacent to the project ROW may contain hazardous materials from the use of weed control, including herbicides and arsenic, and may also contain Treated Wood Waste (TWW). Soil sampling for potentially hazardous weed control substances shall be conducted for health and safety concerns in the event that construction earthwork involves soil removal from the former railroad ROWs. If encountered during construction, railroad ties designated for reuse or disposal (including previously salvaged railroad ties in the project ROW) shall be managed or disposed of as TWW in accordance with Alternative Management Standards provided in CCR Title 22 Section 67386.

MM-HAZ-2 (All Build Alternatives): Groundwater removed during construction shall be tested for potential presence of contamination and disposed of in accordance with state requirements.

MM-HAZ-3 (All Build Alternatives): The contractor shall implement a Worker Health and Safety Plan.

MM-HAZ-4 (All Build Alternatives): The contractor shall implement a Contaminated Soil/Groundwater Management Plan during construction.

MM-HAZ-5 (All Build Alternatives): The contractor shall properly maintain equipment and properly store and manage related hazardous materials, so as to prevent motor oil, or other potentially hazardous substances used during construction, from spilling onto the soil. If contaminated soil is found, it shall be removed, transported to an approved disposal location, and remediated according to state law.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Energy

Under Alternative 1, modifications to roadways, sidewalks, and bus stops would be required. As shown in Appendix A of the Energy Technical Report (see Appendix R) approximately 18,000 MMBTU would be consumed during the construction of Alternative 1, most of which would be in the form of diesel fuel used by construction equipment and vehicles. Although an estimated 127,000 gallons of fuel would be consumed by construction vehicles and equipment, the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013 (California Energy Commission 2014b). Given the extensive network of fueling stations throughout the project vicinity and the fact that construction would be short-term, it's anticipated that no new or expanded sources of energy or infrastructure would be required to meet the energy demands due to Alternative 1 construction activities. Additionally, construction activities would comply with the Metro Green Construction Policy and all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised. Therefore, Alternative 1 would not result in the wasteful or inefficient use of energy. Impacts related to regional energy supply, demand, and conservation during the construction period would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No mitigation measures would be necessary.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Ecosystems and Biological Resources

Special-status Plants

Because the project area is already disturbed due to urban development and infrastructure including sidewalks, buildings, roadways, parking areas, retail businesses, etc., the site currently possesses almost no value to special-status plant species. No special-status plant species, as documented in Table 3-1 of the *Ecosystems/Biological Resources Impacts Report,* are expected to occur within the biological resources study area. Therefore, construction of this alternative would have no impact and no effect on special-status plants.

Special-status Animals

There is a potential for pallid bat (*Antrozous pallidus*), western yellow bat (*Lasiurus xanthinus*), and big free-tailed bat (*Nyctinomops macrotis*) to occur in the biological resources study area. No bats or signs of bats (i.e., urine staining and guano droppings) were visually observed at the time of the site visits; however, it should be noted that specific focused surveys for bats were not conducted. The existing bridges over the Pacoima Wash, Pacoima Diversion Canal, and East Canyon Creek; the existing overpasses at I-5, State Route 118, and the Union Pacific Railroad (on Van Nuys Boulevard); and adjacent vegetation (in particular, palm trees and trees with cavities, crevices, exfoliating bark, and bark fissures) may support roosting habitat for special-status bat species. Construction activities that could affect these structures and adjacent vegetation could disturb or destroy bat roost sites, a potentially significant impact under CEQA and adverse effect under NEPA.

Implementation of Mitigation Measure BIO-1 (described two pages below under the subheading Construction Mitigation Measures) would reduce the impact or effect on bats due to removal of trees occupied by roost sites or removal of other roosting habitat to a less-than-significant level under CEQA and non-adverse under NEPA.

Migratory Bird Treaty Act/California Fish and Game Code

Although there is a lack of natural plant communities within the biological resources study area, the ornamental landscaping, including mature trees, provides marginal foraging and nesting habitat for a small number of small mammals, reptiles, and invertebrates. The ornamental landscaping could provide a source of prey for a variety of common and special-status birds (including passerines and both local and wintering raptors) and large mammal species.

The biological resources study area supports nesting birds throughout the urban landscape. As currently proposed, this alternative would include upgrades to all existing Metro Rapid bus stops (18 in total) including stops at the Sylmar/San Fernando Metrolink station and Metro Orange Line Van Nuys station. Upgrades would consist of bus stop canopies installed at each location that would be approximately 13 feet in height. Modifications to bus stop lengths are also proposed and the modified bus stops would range between 80 feet and 150 feet in length. If proposed improvements

under this alternative require removal of vegetation where there are nesting birds present, a violation of the Migratory Bird Treaty Act and/or California Fish and Game Code, which protect nesting birds, could occur. To ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code, Mitigation Measure BIO-2 is proposed. The biological impact/effect of lost nests for common urban bird species would be less than significant under CEQA and non-adverse under NEPA.

Jurisdictional Waters

Three jurisdictional drainages, the Pacoima Wash, the Pacoima Diversion Canal, and East Canyon Creek all occur within the proposed alignment for this alternative. Under this alternative, only street level modifications would be made along the existing roads. No work, including reinforcement of structures, would be needed at the bridges. Therefore, implementation of this alternative would not directly affect a federal or state jurisdictional drainage under CEQA or NEPA. However, please see Mitigation Measure BIO-3 for best management practices that are proposed when working near jurisdictional drainages to avoid or minimize potential indirect effects.

Wildlife Corridors

The Pacoima Wash, Pacoima Diversion Canal, and East Canyon Creek are concrete channel waterways, are not expected to function as significant wildlife movement corridors. As a consequence and because no construction activities are proposed in the channels that would block movement through the area; no impact/affect to wildlife movement would occur under CEQA or NEPA.

Conflict with Local Policies

Two tree species that occur in the biological resources study area are protected under the City of Los Angeles Tree Ordinance 177404: coast live oak and western sycamore. The City of San Fernando Comprehensive Tree Management Program Ordinance (Ordinance No. 1539) does not specify "protected" trees as does the City of Los Angeles. However, Ordinance No. 1539 does require prior consultation with the public works director regarding removal or trimming of "City-owned trees," which are any trees on public property.

Construction of new bus stop canopies could require the removal of trees protected by the City of Los Angeles and/or City of San Fernando tree ordinances. Removal of protected trees would conflict with the City ordinances, which would be a significant impact under CEQA and adverse effect under NEPA. If protected trees are to be removed, implementation of Mitigation Measure BIO-4 would be required to ensure compliance with City ordinances. The biological consequence of removing or trimming urban trees would be less than significant under CEQA and a non-adverse effect under NEPA with implementation of Mitigation Measure BIO-4.

Construction Mitigation Measures

MM-BIO-1: Avoid and Minimize Project-Related Impact on Special-Status Bat Species. In the maternity season (April 15 through August 31) prior to the commencement of construction activities, a field survey shall be conducted by a qualified biologist to determine the potential presence of colonial bat roosts (including palm trees) on or within 100 feet of the project boundaries. Should a potential roost be identified that will be affected by proposed construction activities, a visual inspection and/or one night emergence survey shall be used to determine if it is being used as a maternity-roost.

To avoid any impacts on roosting bats resulting from construction activities, the following measures shall be implemented:

Bridges and Overpasses

- Should potential bat roosts be identified that will require removal, humane exclusionary devices shall be used. Instillation would occur outside of the maternity season and hibernation period (February 16-April 14 and August 16-October 30, or as determined by a qualified biologist) unless it has been confirmed as absent of bats. If the roost has been determined to have been used by bats, the creation of alternate roost habitat shall be required, with CDFW consultation. The roost shall not be removed until it has been confirmed by a qualified biologist that all bats have been successfully excluded.
- Should an active maternity roost be identified, a determination (in consultation with the California Department of Fish and Wildlife or a qualified bat expert) shall be made whether indirect effects of construction-related activities (i.e., noise and vibration) could substantially disturb roosting bats. This determination shall be based on baseline noise/vibrations levels, anticipated noise-levels associated with construction of the proposed project, and the sensitivity to noise-disturbances of the bat species present. If it is determined that noise could result in the temporary abandonment of a day-roost, construction-related activities shall be scheduled to avoid the maternity season (April 15 through August 31), or as determined by the biologist.

Trees

All trees to be removed as part of the project shall be evaluated for their potential to support bat roosts. The following measures would apply to trees to be removed that are determined to provide potential bat roost habitat by a qualified biologist.

- If trees with colonial bat roost potential require removal during the maternity season (April 15 through August 31), a qualified bat biologist shall conduct a one-night emergence survey during acceptable weather conditions (no rain or high winds, night temperatures above 52˚F) or if conditions permit, physically examine the roost for presence or absence of bats (such as with lift equipment) before the start of construction/removal. If the roost is determined to be occupied during this time, the tree shall be avoided until after the maternity season when young are self-sufficiently volant.
- If trees with potential colonial bat roost potential require removal during the winter months when bats are in torpor, a state in which the bats have significantly lowered their physiological state, such as body temperature and metabolic rate, due to lowered food availability. (October 31 through February 15, but is dependent on specific weather conditions), a qualified bat biologist shall physically examine the roost if conditions permit for presence or absence of bats (such as with lift equipment) before the start of construction. If the roost is determined to be occupied during this time, the tree shall be avoided until after the winter season when bats are once again active.
- Trees with potential colonial bat habitat can be removed outside of the maternity season and winter season (February 16 through April 14 and August 16 through October 30, or as determined by a qualified biologist) using a two-step tree trimming process that occurs over 2 consecutive days. On Day 1, under the supervision of a qualified bat biologist, Step 1 shall include branches and limbs with no cavities removed by hand (e.g., using chainsaws). This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately (rarely) or, after emergence, will avoid returning to the roost. On Day 2, Step 2 of the tree removal may occur, which would be removal of the remainder of the tree. Trees that are only to be trimmed and not removed would be processed in the same manner; if a branch with a potential roost must be removed, all surrounding branches would be trimmed on Day 1 under supervision of a qualified bat biologist and then the limb with the potential roost would be removed on Day 2.

- Trees with foliage (and without colonial bat roost potential), such as sycamores, that can support lasiurine bats, shall have the two-step tree trimming process occur over one day under the supervision of a qualified bat biologist. Step 1 would be to remove adjacent, smaller, or non-habitat trees to create noise and vibration disturbance that would cause abandonment. Step 2 would be to remove the remainder of tree on that same day. For palm trees that can support western yellow bat (the only special-status lasiurine species with the potential to occur in the project area), shall use the two-step tree process over two days. Western yellow bats may move deeper within the dead fronds during disturbance. The two-day process will allow the bats to vacate the tree before removal.

MM BIO-2: Avoid Impacts on Nesting Birds (including raptors). To avoid any impacts on migratory birds, resulting from construction activities that may occur during the nesting season, March 1 through August 31, the following measures shall be implemented:

- A qualified biologist shall conduct a preconstruction survey of the proposed construction alignment with a 150-foot buffer for passerines and 500-feet for raptors around the site. This preconstruction survey shall commence no more than 3 days prior to the onset of construction, such as clearing and grubbing and initial ground disturbance.
- If a nest is observed, an appropriate buffer shall be established, as determined by a qualified biologist, based on the sensitivity of the species. For nesting raptors, the minimum buffer shall be 150 feet. The contractor shall be notified of active nests and directed to avoid any activities within the buffer zone until the nests are no longer considered to be active by the biologist.

MM BIO-3: Jurisdictional Waters. Any work resulting in materials that could be discharged into jurisdictional features shall adhere to strict best management practices (BMPs) to prevent potential pollutants from entering any jurisdictional feature. Applicable BMPs to be applied shall be included in the Stormwater Pollution Prevention Plan and/or Water Quality Management Plan.

MM BIO-4: A Project Tree Report Shall Be Approved by the City of Los Angeles and City of San Fernando. Prior to construction, the contractor shall review the approved alternative alignment to determine whether any trees protected by the City of Los Angeles Tree Ordinance 177404 and City of San Fernando Comprehensive Tree Management Program Ordinance (Ordinance No. 1539) will be removed or trimmed. A tree report must be prepared, by a qualified arborist, for the project and approved by each City. Trees approved for removal (or replacement) shall be done in accordance to the specifications outlined in the City ordinances.

Impacts Remaining after Mitigation

NEPA Finding

Biological resources impacts would not be adverse following implementation of proposed mitigation measures.

CEQA Determination

Biological resources impacts would be less than significant following implementation of proposed mitigation measures.

Hydrology and Water Quality

Water Quality

Construction of Alternative 1 could include reconstruction of sidewalks, paving, and striping, which could result in an increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes. Water quality would be temporarily affected if disturbed sediments were discharged via existing stormwater collection systems. Increased turbidity and other pollutants resulting from construction-related discharges can ultimately introduce compounds toxic to aquatic organisms, increase water temperature, and stimulate the growth of algae.

The delivery, handling, and storage of construction materials and wastes, along with use of construction equipment, could also introduce the risk of stormwater contamination. Staging areas or building sites can be sources of pollution because of the storage and use of paints, solvents, cleaning agents, and concrete during construction. Larger pollutants, such as trash, debris, and organic matter, are additional pollutants that could be associated with construction activities. Without implementation and maintenance of BMPs, construction impacts on water quality are potentially significant under CEQA and adverse under NEPA and could lead to exceedance of water quality objectives or criteria.

Since construction activities would disturb more than 1 acre, the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) would be required, in accordance with the statewide National Pollutant Discharge Elimination System DES General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-0009-DWA, NPDES No. CAR000002) (Construction General Permit). The SWPPP would list BMPs that would be implemented to protect stormwater runoff and include monitoring of BMP effectiveness. At a minimum, BMPs would include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives, concrete) with stormwater. The SWPPP would specify properly designed, centralized storage areas that keep these materials covered or out of the rain. If land disturbance activities must be conducted during the rainy season, the primary BMPs selected would focus on erosion control (i.e., keeping sediment on the site) and construction activities would temporarily cease during rain events.

The SWPPP would specify BMPs to ensure that water quality standards or waste discharge requirements are not violated. BMPs selected would be designed to comply with the requirements of the RWQCB and may be subject to review and approval by the Cities of Los Angeles and San Fernando. BMPs during construction may include but not be limited to the following:

- Silt fence
- Fiber roll
- Street sweeping and vacuuming
- Stockpile management
- Vehicle and equipment maintenance
- Erosion control mats and spray-on applications
- Desilting basin
- Gravel bag berm
- Sandbag barrier
- Spill prevention and control

- Concrete waste management
- Water conservation practices

Such measures are routinely developed for construction sites and are proven to be effective in reducing pollutant discharges from construction activities. Implementation of the SWPPP during construction would ensure water quality objectives, standards, and wastewater discharge thresholds would not be violated. The SWPPP would be prepared by the project applicant (i.e., Metro) or the construction contractor and would be approved by the Cities of Los Angeles and San Fernando prior to commencement of construction activities (i.e., approval of grading plans).

Other impacts to water quality that can occur during construction projects include the discharge of dredged or fill material into waters of the United States. These impacts could affect beneficial uses of the wetlands, such as estuarine and wildlife habitat. None of the alternatives, including the Curb-Running BRT Alternative, would require in-water work or work that would affect wetlands.

With compliance with the Construction General Permit, grading permits, and other relevant regulations, impacts/effects from construction on water quality would be less than significant under CEQA and non-adverse under NEPA.

Groundwater Supplies and Recharge

Existing utilities that would interfere with construction of the corridor improvements would be removed and relocated for continuing service. A geotechnical survey found that groundwater depths in the vicinity of the project alignment varied from 15 to more than 100 feet below the ground surface during the dry season, with depth to groundwater generally increasing from west to east. Excavation for utility improvements may result in contact with groundwater depending on the season and location within the corridor. Should dewatering be necessary, a General Dewatering Permit would be obtained from the Los Angeles RWQCB. Residual contaminated groundwater could be encountered during dewater activities. Groundwater extracted during dewatering activities would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Local groundwater is one of several sources of water supplies to the City of Los Angeles. If groundwater is used during construction for dust control, concrete pouring, etc., the amount would be minimal and temporary, and therefore would not result in substantial depletion of groundwater supplies.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would not be adverse under NEPA.

Stormwater and Drainage

Construction activities, such as grading and excavation, could result in increased erosion. In addition, minor modifications to City street storm drains would be required. However, these modifications would not include culvert widening or conversion of open channels to closed conduits and drainage patterns would remain approximately the same as currently exists. Additionally, construction of the proposed project would not alter the course of any streams or rivers.

Temporary drainage facilities could be required to redirect runoff from work areas during utility relocations. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. Storm drain relocation may require the need for groundwater dewatering at locations with a high water table. Residual contaminated groundwater may be encountered during dewatering activities. As described

above, if dewatering is necessary, the project contractor would be required to comply with Los Angeles RWQCB's General Dewatering Permit. Groundwater extracted during dewatering activity would either be treated prior to discharge or disposed of at a wastewater treatment facility. In addition, compliance with the Construction General Permit, and SWPPP BMPs would be implemented during construction to prevent or minimize the potential for erosion sedimentation on- or off-site, and for discharge of polluted runoff into storm drains. Because the proposed project would be in compliance with the conditions of the Construction General Permit and other relevant regulations, impacts/effects related to erosion and siltation and impacts on stormwater runoff would be less than significant under CEQA and non-adverse under NEPA.

Flooding and Flood Hazards

A few small areas within the project study area were identified as being within the FEMA 100-year flood zone (Zone A). However, these areas are fully contained within county flood channels and drainage facilities. Therefore, the project study area is not highly prone to flooding during a 100-year storm event. Additionally, no construction would occur within the areas designated as 100-year floodplains, and construction activities would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map.

There are no levees located within the project study area, and therefore no associated flood impacts with levee failure would occur. The proposed Curb-Running BRT Alternative, however, would be located in an inundation zone area, as shown on Figure 4.19-13, which would be caused by a dam failure. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area, and therefore there is risk of dam failure. However, project construction activities would not increase the present risk of dam failure, which is considered low, and would not place construction workers, equipment, or temporary structures in an area where there is a significant risk and high probability of flooding.

As noted above, temporary drainage facilities could be required to redirect runoff from work areas. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. As a consequence, overall drainage patterns would remain the same, and therefore, construction activities are not expected to have a substantial effect on flood capacities due to temporary changes in drainage patterns or facilities. Therefore, the impacts/effects during construction related to flooding and flood hazards would be less than significant under CEQA and non-adverse under NEPA.

Seiche, Tsunami, and Mudflow Hazards

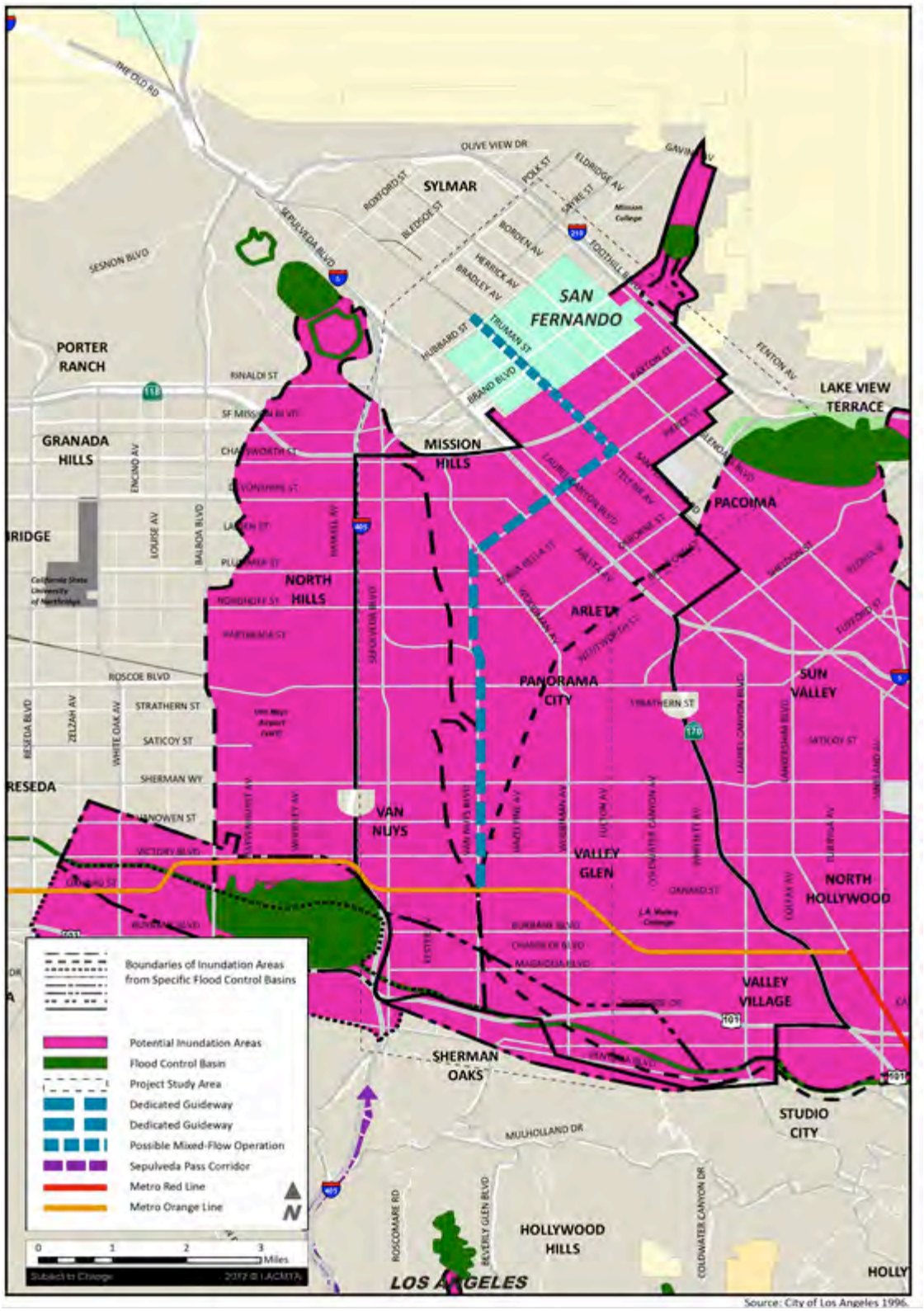
As noted above, the project study area is outside of potential tsunami inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the

Hanson Flood Control Basin reservoir is low. Therefore, construction activities are not expected to substantially affect or be affected by seiche, tsunami, or mudflow hazards. Construction impacts/effects due to the Curb-Running BRT Alternative would be less than significant under CEQA and non-adverse under NEPA.

Surface Water Use and Flows

Construction of Alternative 1 would not require the use of substantial volumes of surface water. Additionally, construction activities would not substantially change the overall impervious area, nor would construction substantially change stormwater flows that could affect either the volume or movement of water in surface water bodies. Impacts and effects would be less than significant under CEQA and non-adverse under NEPA.

Figure 4.19-13: Inundation Areas within the Project Vicinity



Source: Diaz•Yourman & Associates, 2015.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 1 would not result in adverse effects to hydrology and water resources during construction.

CEQA Determination

Alternative 1 would result in less-than-significant impacts to hydrology and water resources during construction.

Safety and Security

Construction activities within public rights-of-way are not typically considered to be adverse due to their short-term nature, particularly with implementation of construction management and abatement measures. All work would conform to industry standards and specifications. During construction, lane closures, traffic detours, and designated truck routes may be required, which could adversely affect emergency vehicle response times, a potentially significant impact and adverse effect. Maintaining an adequate level of signage, construction barriers, and supervision of trained safety personnel as part of the construction team would ensure that pedestrian and motorist safety is maintained during construction. Implementation of mitigation measures MM-SS-16 through MM-SS-18 would further reduce and minimize potential temporary impacts during construction.

Construction Mitigation Measures

MM-SS-1 (All Build Alternatives): Alternate walkways for pedestrians shall be provided around construction staging sites in accordance with American with Disability Act (ADA) requirements.

MM-SS-2 (All Build Alternatives): All pedestrian and bicycle detour locations around staging sites shall be signed and marked in accordance with the Manual on Uniform Traffic Control Devices “work zone” guidance, and other applicable local and state requirements.

MM-SS-3 (All Build Alternatives): Work plans and traffic control measures shall be coordinated with emergency responders to prevent effects to emergency response times.

Impacts Remaining after Mitigation

NEPA Finding and CEQA Determination

Under NEPA and CEQA, the potential for increased conflicts between bicyclists and motor vehicles and increased delay for emergency responders during project construction are potentially adverse effects and unavoidable significant impacts, however, implementation of mitigation measures MM-SS-1 through MM-SS-3 would further reduce and minimize potential temporary impacts during construction.

Parklands and Community Facilities

Direct Impacts

Physical Acquisition, Displacement, or Relocation of Parklands and Community Facilities

Alternative 1, the Curb-Running BRT Alternative, would not require the physical acquisition, displacement, or relocation of parklands or community facilities during construction.

Noise, Air Quality, Traffic, and Visual Impacts on Parklands and Community Facilities

Construction activities associated with Alternative 1 would result in noise, dust, odors, and traffic delays resulting from haul trucks and construction equipment in public streets and staging areas. These temporary impacts could adversely affect the recreational values of adjacent parklands or could cause disturbance to community facilities that are sensitive to these impacts, such as schools, libraries, hospitals, day care facilities, and senior facilities. As described in Sections 4.6 and 4.8 of this Draft EIS/EIR, respectively, localized air quality impacts and noise impacts on nearby sensitive uses during construction of Alternative 1 could be significant under CEQA and adverse under NEPA. Odor impacts during construction would be minor. Construction traffic impacts on access to parklands and community facilities could be significant.

Construction of the build alternatives may also result in visual impacts on viewers within and surrounding the project corridor. Views of construction areas could be possible from parklands and community facilities on some of the adjacent parcels, either directly through fencing, through entrance gates, or over fencing from second story and higher windows. Construction activities at staging areas and construction sites may introduce considerable heavy equipment such as cranes and associated vehicles, including bulldozers, backhoes, graders, scrapers, and trucks, into the view corridor of public streets, sidewalks, and properties. In addition, mature vegetation, including trees, could temporarily or permanently be removed from some areas. These visual impacts on nearby visually sensitive uses (see Section 4.5 for additional details on potential visual impacts) could be significant under CEQA and adverse under NEPA; however, they could be reduced to less-than-significant and non-adverse levels with implementation of proposed mitigation measures.

Indirect Impacts

Induced Population Growth and Increased Demand for Parklands and Community Facilities

Construction of Alternative 1 would not be expected to result in substantial changes to the existing population in the project study area. A substantial employment base and residential population currently exist in the San Fernando Valley within commuting distance of the project corridor, and the employment opportunities, which would be temporary, would not be expected to result in a substantial migration of additional residents to the project study area and induce substantial population growth in communities and neighborhoods in the project study area.

Proposed new bus stops and BRT patrons could be targets for vandalism and crime, which could result in a potential increase in the demand for police or fire protection services. However, the project corridor is currently a transportation corridor served by bus lines with a number of existing bus stops. In the event of an emergency or safety/security incident on Metro property, personnel from the Transit Services Bureau of LASD would be responsible for responding with assistance provided by LAPD, as

needed. Additionally, all Metro facilities (e.g., bus stops and stations) would be designed in accordance with Metro Design Criteria including Fire/Life Safety Design Criteria. Consequently, the proposed Curb-Running BRT Alternative would not substantially increase the demand for police or fire protection services and it would not require the construction of new police or fire protection facilities.

Changes in Access to Parklands and Community Facilities

Construction of stations and the alignment could require temporary sidewalk, lane, and road closures, and temporary removal of parking on Van Nuys Boulevard, San Fernando Road, Truman Street, and their cross streets. These closures could reduce pedestrian, bicycle, and vehicle access to parklands and community facilities along the project corridor during construction. However, alternative routes would be provided and the impacts would be temporary. Therefore, the impacts of Alternative 1 on access would be less than significant under CEQA and non-adverse under NEPA.

Lane closures, traffic detours, and designated truck routes associated with construction could also result in decreased access for emergency vehicles and delayed response times for emergency services, which would be a potentially significant impact under CEQA and adverse impact under NEPA. However, lane and/or road closures would be scheduled to minimize disruptions, and a Traffic Management Plan would be approved, in coordination with both the Cities of Los Angeles and San Fernando, prior to construction. With the implementation of a Traffic Management Plan, including traffic control measures, access to parklands and community facilities would be maintained during construction and these temporary impacts would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for mitigation measures to reduce or avoid potential construction impacts on parklands and community facilities: Chapter 2-Transportation, Transit, Circulation, and Parking; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

All effects would be non-adverse.

CEQA Finding

All potential impacts would be less than significant with the exception of potential construction air quality impacts on parklands and community facilities, which would remain significant after implementation of proposed mitigation measures.

Environmental Justice

Mobility and Access Impacts

Construction of curb-running BRT stations and the transit alignment would require temporary sidewalk, lane, and road closures, and temporary removal of parking along Van Nuys Boulevard, San Fernando Road, Truman Street, and their cross streets. These closures could reduce pedestrian, bicycle, and vehicle access to areas along the project corridor during construction. These temporary effects are anticipated to affect all communities within the project study area and communities adjacent to the project study area comparably. To minimize potential impacts on pedestrians and

cyclists, adequate pedestrian and bicycle accommodations would be made available during construction, including signage, construction barriers to reduce any conflicts with construction equipment and vehicles, and supervision of trained safety personnel. On-street bicycle detour routes would be used to address temporary effects on bicycle circulation. In addition, signage would be posted, stating that "Bikes May Use Full Lane," and/or alternative route signage would be provided. Uneven surfaces would also be clearly marked.

Road and sidewalk closures, and the addition of construction vehicles and equipment on major City of Los Angeles and City of San Fernando streets, could reduce public access to annual festivals and events in the various communities along the alignment. In addition, construction could disrupt traffic patterns and make public access to businesses and community resources more difficult. Lane closures, traffic detours, and designated truck routes associated with construction could also result in decreased access for emergency vehicles, which could result in a delay in response times. Lane and/or road closures would be scheduled to minimize disruptions, and a Traffic Management Plan (TMP) would be approved in coordination with both the Cities of Los Angeles and San Fernando prior to construction. For these reasons and because the lane and/or road closures, and the potential for temporary effects associated with emergency vehicle response times, would affect all neighborhoods along the alignment, regardless of origin. No disproportionate adverse effects on minority or low-income populations are anticipated.

Social and Economic Impacts

Construction of Alternative 1 would not be expected to result in substantial changes to the existing population in the project study area. A substantial employment base and residential population currently exist in the San Fernando Valley within commuting distance of the project corridor; therefore, employment opportunities would not be expected to result in substantial migration of additional residents to the project study area. In addition, because of the temporary nature of construction jobs, employment opportunities resulting from construction would not be expected to induce substantial population growth in communities and neighborhoods in the project study area.

Construction activities would likely result in a decrease in accessibility to many businesses and could reduce on-street and off-street parking, which may negatively affect business activity levels because the number of customers may temporarily decline. All attempts would be made to provide adequate detours and to minimize road closures; however, some consumers may avoid the area altogether, which could have an indirect effect on businesses within the project area. Construction activities would take place throughout the project corridor, and the temporary decrease in accessibility would affect all businesses comparably.

Displacement of Businesses, Housing, and People

Alternative 1 would be constructed within the curb lanes of an existing roadway, and would not result in the displacement of any housing, people, or businesses. Additionally, no displacements would be required for storage or staging areas for construction equipment and materials. This alternative would not require the construction or expansion of an MSF; therefore, no right-of-way acquisitions associated with an MSF would be required, and Alternative 1 would not result in any effects on minority or low-income populations with respect to displacement.

Physical Impacts

Construction of Alternative 1 would not likely result in changes to existing land use patterns or result in physical division of communities because construction would be short-term, and would not affect land use designations or introduce barriers that would divide communities. However, construction

activities could result in several other physical impacts and intrusions, including noise, dust, odors, and traffic delays resulting from haul trucks and construction equipment in public streets and staging areas. Local neighborhoods, businesses, and community facilities may be inconvenienced temporarily (approximately 18 months), and community activities could be disrupted by construction.

Construction of Alternative 1 may also result in several visual impacts within and surrounding the project corridor. Construction areas could be visible from residential land uses on some of the adjacent parcels, either directly through fencing, through entrance gates, or over fencing from second story and higher windows. Construction activities at staging areas and proposed stations may include the use of considerable heavy equipment such as cranes and associated vehicles, including bulldozers, backhoes, graders, scrapers, and trucks, which could be visible from public streets, sidewalks, and adjacent properties.

Viewers in the construction area may be affected by the presence of this equipment, as well as stockpiled construction-related materials. In addition, mature vegetation, including trees, could be temporarily removed from some areas. Construction impacts associated with noise, air quality, visual quality/aesthetics, and traffic would be reduced or minimized through construction management and abatement measures, as detailed in the respective sections of this Draft EIS/EIR.

Construction of Alternative 1 could also have temporary effects on public safety and security within the project study area. During construction, motorists, pedestrians, and bicyclists would be exposed to additional safety hazards because of proximity to construction activities. The potential for safety and security effects would be minimized by compliance with Occupational Safety and Health Administration (OSHA), California Occupational Safety and Health Administration (Cal/OSHA), and Metro safety and security programs, which are designed to reduce potential construction effects. In addition, an adequate level of signage, construction barriers, and supervision of trained safety personnel would be provided to ensure that pedestrian and motorist safety is maintained during construction.

Incidents of crime adjacent to the project alignment would not likely increase during construction of the build alternatives. Construction machinery and materials could be stolen at construction sites; however, these incidents would be minimized through implementation of standard site security practices.

Since the project would comply with regulatory requirements and measures would be implemented to mitigate construction impacts and because the potential effects are anticipated to affect all communities within the project study area comparably, regardless of the block groups' socioeconomic or demographic characteristics. Alternative 1 would not result in disproportionately high and adverse effects on minority or low-income populations with respect to construction.

Construction Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for measures to reduce or avoid potential construction impacts on communities, including environmental justice populations: Chapter 3-Transportation, Transit, Circulation, and Parking; Section 4.2-Real Estate and Acquisitions; Section 4.4-Communities and Neighborhoods; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 1 would not result in disproportionately high and adverse effects on minority or low-income populations.

CEQA Finding

There are no thresholds of significance in CEQA for environmental justice impacts. Therefore, no CEQA determination can be made for environmental justice impacts resulting from this alternative.

Growth-Inducing Impacts

The growth inducement potential of construction activities under Alternative 1 – Curb-Running BRT and other build alternatives would vary depending on the extent, duration, cost, and number of construction jobs generated by each alternative. However, it is not expected that the increase in construction jobs under any of the build alternatives would result in substantial increases in project study area populations because of the fact that there is a large pool of skilled and unskilled construction workers in Los Angeles County within commuting distance of the project and because of the temporary nature of construction jobs. Consequently, it is unlikely few if any construction workers employed by the proposed project would relocate to the project study area. Therefore, proposed construction activities would not result in a substantial increase in the project study area population.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

4.19.3.4 Build Alternative 2 – Median-Running BRT Alternative

Land Use

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

Construction Mitigation Measures

Please see other sections (Section 4.8 Noise, and Section 4.6 Air Quality) for measures to mitigate potentially significant adverse construction impacts on sensitive land uses near proposed construction activities.

Impacts Remaining after Mitigation

NEPA Finding

The effects would not be adverse under NEPA.

CEQA Determination

Construction impacts would be less than significant.

Real Estate and Acquisitions

Alternative 2 would not require the permanent acquisition of any property along the project corridor because it would involve primarily dedication of the median lane to bus service. No new facilities beyond bus stop improvements would be required. All improvements associated with Alternative 2 would take place within the existing transportation ROW. Therefore, no impacts associated with acquisitions of property would occur under Alternative 2.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

No adverse effects would occur.

CEQA Determination

No impacts would occur.

Economic and Fiscal Impacts

Alternative 2 – Median-Running BRT would not require the acquisition of any parcels. Therefore, adverse economic and fiscal impacts would be limited to potential minor impacts on local businesses due to reduced visibility (e.g., sign blockage) and diminished access resulting from sidewalk or lane closures, loss of on-street parking during construction, and permanent removal of on-street parking spaces to accommodate the Alternative 2 alignment.

The estimated construction cost for Alternative 2 is approximately $362 million. Alternative 2 would generate an estimated 4,693 jobs. Of these jobs, 2,788 would be generated directly by construction and 804 would be generated indirectly. An additional 1,101 jobs would be induced through increased household spending by direct and indirect employees.

Total labor income for Alternative 2 would be about $287.9 million, with $168.4 million of this being the result of direct construction impacts. Labor income for jobs created via indirect impacts would be about $60.5 million. Labor income for induced jobs would be about $59.1 million. Total Output for this alternative would be about $678.4 million, $362.0 million of which would be generated directly by construction. Output generated by indirect impacts would amount to about $157.1 million. Induced impacts of construction generate about $159.2 million of output.

The Median-Running BRT Alternative would generate an estimated $359.2 million in value added, with about $172.0 million coming from direct impacts of construction. Indirect impacts would generate about $86.7 million in value added.

Construction Mitigation Measures

None required.

Impacts Remaining after Mitigation

NEPA Finding

Potential effects would not be adverse.

CEQA Determination

The Median-Running BRT alternative would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The Median-Running BRT alternative offers much greater mobility benefits than the TSM and No-Build Alternatives. This BRT alternative also may provide marginal increased development resulting from improved mobility along the corridor. This BRT alternative would not result in any significant direct, indirect, or cumulative impacts and would provide travel time and mobility improvements.

Communities and Neighborhoods

Construction impacts would be the same as those described above for Alternative 1, except construction would occur over approximately 24 months under Alternative 2.

Construction Mitigation Measures

The reader is referred to the air quality section of this chapter for more information on the significance and extent of these potential physical impacts on communities and neighborhoods.

Impacts Remaining after Mitigation

NEPA Finding

Construction effects would not be adverse under NEPA after implementation of proposed mitigation measures.

CEQA Determination

Construction impacts under Alternative 2 would be less than significant under CEQA after the implementation of proposed mitigation measures.

Visual Qualities and Aesthetics

Construction impacts would be the same as those described above for Alternative 1.

Construction Mitigation Measures

See mitigation measure MM-VIS-1 above under Alternative 1.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction effects on visual and aesthetic resources would not be adverse after implementation of proposed mitigation measures.

CEQA Determination

The potential construction impacts on visual and aesthetic resources would be less than significant after implementation of proposed mitigation measures.

Air Quality

Project construction under Alternative 2 would result in the short-term generation of criteria pollutant emissions, as was also described for Alternative 1. During construction the proposed project would be subject to SCAQMD Rule 403 (Fugitive Dust), which does not require a permit for construction activities, per se, but rather sets forth requirements for all construction sites (as well as other fugitive dust sources) in the Basin.

For the purpose of this impact analysis, Alternative 2 construction assumes a 24-month construction-period duration, for air quality emissions estimating purposes.

Criteria Pollutant Emissions

The estimate of construction-period regional mass emissions is shown in Table 4.19-7. As shown in the table, regional emissions are not expected to exceed the SCAQMD regional emissions thresholds. Impacts would be less than significant under CEQA and non-adverse under NEPA.

With respect to local impacts, SCAQMD has developed a set of local mass emission thresholds to evaluate localized impacts. According to SCAQMD, only those emissions that occur on-site are to be considered in the LST analysis. Consistent with SCAQMD LST evaluation guidelines, emissions related to haul truck and employee commuting activity during construction are not considered in the evaluation of localized impacts. As shown in Table 4.19-8, localized PM_{10} and $PM_{2.5}$ emissions during construction would exceed local thresholds. As such, short-term local mass emissions would be significant under CEQA and adverse under NEPA prior to implementation of mitigation measures.

Table 4.19-7: Alternative 2 – Estimated Worst-case Regional Construction Mass Emissions (pounds per day)

Construction Year/Facility	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 2017						
Median Improvements, Sidewalks/Curbs, and Stations	6	73	56	<1	11	7
Year 2018						
Median Improvements, Sidewalks/Curbs, and Stations	6	66	53	<1	10	6
Year 2019						
Median Improvements, Sidewalks/Curbs, and Stations	34	15	19	<1	2	1
Maximum Daily Emissions	34	73	56	<1	11	6
Regional Construction Threshold	75	100	550	150	150	55
Exceed Thresholds?	No	No	No	No	No	No
Source: CalEEMod emissions modeling by ICF International 2015.						

Table 4.19-8: Alternative 2 – Estimated Maximum Localized Construction Mass Emissions (pounds per day)

Construction Activity	NO_X	CO	PM_{10}[a]	$PM_{2.5}$[a]
Median Improvements, Sidewalks/Curbs, and Stations	73	56	11	7
Localized Significance Thresholds [b]	80	498	4	3
Exceed Thresholds?	No	No	Yes	Yes

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.
[b] The project site is in SCAQMD SRA Number 7 (Eastern San Fernando Valley). LSTs shown herein are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the approximate local project construction size (1 acre).
Source: CalEEMod emissions modeling by ICF International 2015.

Toxic Air Contaminant Emissions

With respect to construction-period impacts, the greatest potential for TAC emissions would be related to DPM emissions associated with operation of heavy construction equipment. Construction activities associated with the project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period; however, Alternative 2 construction is anticipated to have a duration of approximately two years. Because exposure to diesel exhaust would be well below the 70-year exposure period, project construction is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

Mitigation measures MM-AQ-1 through MM-AQ-7 described under Alternative 1 would be implemented to mitigate impacts under Alternative 2.

Impacts Remaining after Mitigation

With the implementation of proposed mitigation measures MM-AQ-1 through MM-AQ-7, construction emissions under Alternative 2 would be reduced, but would exceed the LSTs for PM_{10} and $PM_{2.5}$, as shown in Table 4.19-.9. Based on the reduction of emissions, effects under NEPA would not be adverse. However, based on the emissions of PM10 and PM2.5 exceeding the LSTs, impacts would remain significant under CEQA after the implementation of proposed mitigation measures.

NEPA Finding

Construction effects would not be adverse under NEPA after implementation of proposed mitigation measures.

CEQA Determination

Construction of Alternative 2 would not result in the emission of criteria pollutants in excess of regional thresholds, but emissions would be higher than SCAQMD LSTs for PM_{10} and $PM_{2.5}$. Therefore, construction impacts under Alternative 2 would be significant under CEQA after the implementation of proposed mitigation measures, and thus would require Metro to adopt a Statement of Overriding Considerations for approval of this alternative.

Table 4.19-.9 Alternative 2 – Estimated Mitigated Maximum Localized Construction Mass Emissions (pounds per day)

Construction Activity	NO_X	CO	PM_{10}[a]	$PM_{2.5}$[a]
Median Improvements, Sidewalks/Curbs, and Stations	24	38	9	5
Localized Significance Thresholds [b]	80	498	4	3
Exceed Thresholds?	No	No	Yes	Yes

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.
[b] The project site is in SCAQMD SRA Number 7 (Eastern San Fernando Valley). LSTs shown herein are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the approximate local project construction size (1 acre).
Source: CalEEMod emissions modeling by ICF International 2015.

Climate Change

Construction activities under Alternative 2 would involve roadway, bus stop, and sidewalk modifications to allow for a median-running BRT service. These activities would result in the emission of approximately 2,170 metric tons of CO_2e, as shown in Table 4.19-10. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 72 MT of CO_2e.

Table 4.19-10 Alternative 2 – GHG Emissions in Year 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	77,664,273
2040 Baseline Traffic Emissions	77,663,060
Net Operational Traffic Emissions	1,213
Construction	
Roadway, Sidewalks, and Stations	2,168
30-Year Amortization of Construction Emissions	72
TOTAL	**1,285**
Percent Change Compared to 2040 Baseline	**0.002%**
Source: Emissions modeling by ICF (2015) (See Appendix A of the Climate Change Technical Report).	

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Noise and Vibration

Impacts resulting from the construction of Alternative 2 would be the same as those under Alternative 1 (i.e., the predicted noise levels would not exceed the NEPA or CEQA significance thresholds before mitigation).

Construction Mitigation Measures

Mitigation measures MM-NOI-1a-d and MM-VIB-1 (see discussion above for Alternative 1) are proposed.

Impacts Remaining after Mitigation

NEPA Finding

The noise and vibration from construction of the Median-Running BRT Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the Median-Running BRT Alternative would result in an adverse effect, even with implementation of proposed mitigation measures.

CEQA Determination

The noise and vibration from the construction of the Median-Running BRT Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the Median-Running BRT Alternative would still result in a significant and unavoidable impact, even with mitigation incorporated.

Geology and Soils

The Median-Running BRT Alternative would result in the same impacts as the Curb-Running BRT Alternative.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse

CEQA Determination

Impacts under CEQA would be less than significant.

Hazardous Waste and Materials

The Median-Running BRT Alternative would result in the same construction impacts as the Curb-Running BRT Alternative.

Construction Mitigation Measures

See Mitigation Measures MM-HAZ-1 through MM-HAZ-5 listed above for Alternative 1.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Energy

Under Alternative 2, modifications to roadways, sidewalks, and bus stops would be required in order to construct the infrastructure necessary for median-running BRT service along Van Nuys Boulevard and in mixed-flow along San Fernando Road. As shown in the Energy Technical Report (see Appendix R), approximately 30,000 MMBTU would be consumed during the construction of Alternative 2, most of which would be in the form of diesel fuel used by construction equipment and vehicles. Although an estimated 215,000 gallons of fuel would be consumed by construction vehicles and equipment, the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013 (California Energy Commission 2014b). Given the extensive network of fueling stations throughout the project vicinity and the fact that construction would be short-term, no new or expanded sources of energy or infrastructure are expected to be required to meet the energy demands due to Alternative 2 construction activities. Additionally, construction activities would comply with the Metro Green Construction Policy and all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised. Therefore, Alternative 2 would not result in the wasteful or inefficient use of energy. Impacts related to regional energy supply, demand, and conservation during the construction period would be less than significant under CEQA and would not be adverse under NEPA.

Construction Mitigation Measures

No mitigation measures would be necessary.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Ecosystems and Biological Resources

This alternative could result in impacts on CDFW or USFWS candidate, sensitive, or special-status species or substantially reduce the number, or restrict the range of endangered, rare, or threatened species, or reduction of existing habitats. Impacts from this alternative would be the same as those

expected under Alternative 1 described above. Thus, similar to Alternative 1, this alternative would not result in impacts or effects on any special-status plant species. Construction of new bus stop canopies, some of which have trees potentially used by nesting birds and/or bat species. This alternative also proposes the expansion of the bridge at Van Nuys Boulevard and the Pacoima Wash. Bridge construction activities could affect nesting birds and/or bat species that use the bridge for nesting and roosting. Construction activities would also result in increases in noise, movement, and vibration at the bridges over the Pacoima Wash, Pacoima Diversion Canal, and East Canyon Creek and the existing overpasses at I-5, State Route 118, and the Union Pacific Railroad (on Van Nuys Boulevard). This alternative could result in potentially significant impacts under CEQA and adverse effects under NEPA to nesting birds or roosting bats due to construction activities that would remove vegetation or affect structures used by special-status bat species. However, Mitigation Measures BIO-1 and BIO-2 would reduce potential impacts to less than significant under CEQA and non-adverse under NEPA.

Jurisdictional Waters

Only street level modifications would be made along the existing roads under Alternative 2. No work, including reinforcement of bridge structures, would be needed within existing drainage channels. Therefore, implementation of this alternative would not directly affect a federal or state jurisdictional drainage under CEQA or NEPA. However, please see Mitigation Measure BIO-3 for best management practices that are proposed when working near jurisdictional drainages to avoid or minimize potential indirect effects.

Wildlife Corridors

No construction activities are proposed in the channels that would block movement through the area; therefore, no impact/affect to wildlife movement would occur under CEQA or NEPA.

Conflict with Local Policies

This alternative would require the removal of trees. Removal of any protected trees would conflict with City ordinances, which would be a potentially significant impact under CEQA and an adverse effect under NEPA. If protected trees are removed, implementation of Mitigation Measure BIO-4 would be required to ensure compliance with City ordinances. The biological consequence of removing or trimming urban trees would be less than significant under CEQA and a non-adverse effect under NEPA with implementation of Mitigation Measure BIO-4.

Construction Mitigation Measures

Mitigation Measures BIO-1 through BIO-4 are proposed (see discussion above for Alternative 1).

Impacts Remaining after Mitigation

NEPA Finding

Biological resources impacts would not be adverse following implementation of proposed mitigation measures.

CEQA Determination

Biological resources impacts would be less than significant following implementation of proposed mitigation measures.

Hydrology and Water Quality

Construction impacts under this alternative would be the same as those described above for Alternative 1.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 2 would not result in adverse effects to hydrology and water resources during construction.

CEQA Determination

Alternative 2 would result in less-than-significant impacts to hydrology and water resources during construction.

Safety and Security

Construction effects would be the same as those anticipated to occur under Alternative 1 – Curb-Running BRT. Effects or impacts would be potentially adverse and significant prior to implementation of mitigation measures and non-adverse under NEPA and less than significant under CEQA with implementation of mitigation measures MM-SS-1 through MM-SS-3.

Construction Mitigation Measures

Safety measures MM-SS-1 through MM-SS-3 would be implemented.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Parklands and Community Facilities

Construction impacts would be the same as those described above for Alternative 1.

Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for mitigation measures to reduce or avoid potential construction impacts on parklands and community facilities: Chapter 2-Transportation, Transit, Circulation, and Parking; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

All effects would be non-adverse.

CEQA Finding

The construction air quality impacts on parklands and community facilities would remain potentially significant after implementation of proposed mitigation measures. All other impacts would be less than significant.

Environmental Justice

Construction impacts would be the same as those described in the previous section for Alternative 1. Temporary construction impacts are anticipated to affect all communities within the project study area comparably, regardless of the block groups' socioeconomic or demographic characteristics. Therefore, Alternative 2 would not result in disproportionately high and adverse effects on minority or low-income populations with respect to construction.

Construction Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for measures to reduce or avoid potential construction impacts on local communities, including environmental justice populations: Chapter 3-Transportation, Transit, Circulation, and Parking; Section 4.2-Real Estate and Acquisitions; Section 4.4-Communities and Neighborhoods; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining After Mitigation

NEPA Finding

Alternative 2 would not result in disproportionately high and adverse effects on minority or low-income populations.

CEQA Determination

There are no thresholds of significance in CEQA for environmental justice impacts. Therefore, no CEQA determination can be made for environmental justice impacts resulting from this alternative.

Growth-Inducing Impacts

The construction growth-inducement impacts of Alternative 2 – Median-Running BRT would be the same as the impacts described above for Alternative 1 – Curb-Running BRT.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

4.19.3.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

Land Use

Division of an Established Community

Construction of the Low-Floor LRT/Tram stations would require temporary sidewalk, lane, and street closures, and traffic detours and designated truck routes. Lane and street closures for the Low-Floor LRT/Tram could be greater in number than both Alternatives 1 and 2, due to the construction of additional infrastructure (e.g., OCS, dedicated guideway).

Street, lane, and sidewalk closures could reduce pedestrian and vehicle mobility between communities throughout the study area during construction. However, these closures would be temporary and are not expected to substantially divide existing communities or neighborhoods. Additionally, implementation of a Traffic Management Plan and Construction Phasing and Staging Plan would further reduce the disruption caused by construction activities and access to businesses and residential areas would be maintained to the extent feasible. Therefore, impacts/ effects would be less than significant under CEQA and non-adverse under NEPA.

Conflicts with Local Land Use Plans

Impacts would be potentially greater in extent than the impacts described for Alternatives 1 and 2 due to the more extensive construction under this alternative compared to Alternatives 1 and 2. However, construction activities would be conducted in compliance with local land use plans and codes. Therefore, substantial conflicts with local land use plans during the construction period are not expected to occur and impacts/effects would be less than significant under CEQA and non-adverse under NEPA.

Incompatibility with Adjacent and Surrounding Land Uses

Impacts would be greater in extent than the impacts that would occur under Alternatives 1 and 2. Construction activities along the alignment could result in temporary nuisance impacts (e.g., noise, air quality impacts) on nearby land uses. Construction noise would result from the use of heavy equipment during construction activities, such as excavation, grading, ground clearing, and installing foundations and structures, as well as from trucks hauling materials to and from the construction areas. Air quality impacts would result from the generation of fugitive dust during ground disturbing activities, and from the operation of heavy-duty, diesel-fueled equipment, such as bulldozers, trucks, and scrapers. The construction impacts on nearby sensitive land uses could be potentially significant under CEQA and adverse under NEPA.

Construction Mitigation Measures

Please see other sections (e.g., Chapter 4.8 – Noise and Vibration) for measures to mitigate potentially significant adverse construction impacts on sensitive land uses near proposed construction activities.

Impacts Remaining after Mitigation

NEPA Finding

Construction effects would not be adverse under NEPA.

CEQA Determination

Construction impacts would be less than significant.

Real Estate and Acquisitions

Guideway, Stations, and TPSS

Alternative 3 would require full or partial acquisition of approximately 28 parcels to construct the guideway, stations, and TPSS. The acquisitions would consist of 25 full acquisitions and three partial acquisitions. Eleven property acquisitions would be required along the alignment to accommodate the TPSS facilities, which would be spaced approximately 1 to 1.5 miles apart. In addition, full acquisitions of 15 parcels would be required to accommodate the Low-Floor LRT/Tram guideway at the southwest corner of San Fernando Road and Van Nuys Boulevard and provide the necessary curve to transition the alignment to San Fernando Road. These parcels contain commercial retail businesses, which would require relocation. Two parcels between Weidner Street and the SR-118 on-/off-ramp at San Fernando Road would be acquired to accommodate a station platform.

MSF Sites

In addition to ROW acquisitions required to construct the track and TPSS facilities associated with the rail alternatives, a number of parcels would be acquired to accommodate the MSF. The MSF site would require approximately 25 to 30 acres to provide enough space for storage of the maximum number of train vehicles and accommodate the associated operational needs, such as staff offices, dispatcher workstations, employee break rooms, operator areas, collision/body repair areas, paint booths, and wheel truing machines. Because of the space needs for the MSF, acquisition of between 37 and 61 parcels, depending on the MSF site selected, would be required. A discussion of the ROW acquisition requirements for each of the three proposed alternative MSF sites is presented below.

MSF Option A

MSF Option A would fully acquire 58 parcels between Calvert Street to the north, Oxnard Street to the south, and Kester Avenue to the west. The majority of the property that would be acquired consists of light manufacturing and commercial property, most of which contains businesses oriented toward automobile repair and supplies and other general commercial retail uses. Three parcels would also be fully acquired and though they are zoned for residential use, they are developed with a single parking lot serving an adjacent warehouse business. However, one parcel (2241-024-014) zoned for industrial use appears to include approximately four housing units. Accordingly, residential displacement would occur under MSF Option A.

In addition to the parcels listed above, one additional full acquisition would be required to connect the Alternative 3 guideway to the MSF Option A site.

MSF Option B

MSF Option B would require 37 full acquisitions along Keswick Street and Raymer Street. A majority of the property that would be acquired consists of light manufacturing and commercial property, most of which contains businesses oriented toward automobile repair and supplies or raw materials supply and manufacturing.

MSF Option C

MSF Option C would require the acquisition of 42 parcels including 41 full acquisitions along Arminta Street and Cabrito Road. As with Option B, a majority of the property that would be acquired consists of light manufacturing and commercial property oriented toward automobile repair and raw materials supply and manufacturing.

Alternative 3 could require between 65 and 90 acquisitions of properties, most of which would be full acquisitions. Most of the acquisitions that would be required are commercial or industrial properties (MSF Option A would require the full acquisition of four residential units).

Due to the large number of business displacements, which include a number of industrial/ manufacturing businesses, there may not be enough available real estate in the immediate vicinity of the businesses' existing locations to accommodate all of the displaced businesses. A review of online commercial real estate listings revealed that there were eight industrial properties and 19 commercial properties for sale within 1.5 miles of the project corridor and an additional 105 industrial and 141 commercial spaces for lease as of December 2014.[2] Thus, there appears to be an adequate number of available properties within the immediate study area to accommodate the displaced businesses.

Where acquisition and relocation are unavoidable, Metro would follow the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended and implemented pursuant to the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted by the U.S. Department of Transportation (USDOT), dated February 3, 2005. Metro would apply acquisition and relocation policies to ensure compliance with the Uniform Relocation Act and amendments. All real property acquired by Metro would be appraised to determine its fair market value. Just compensation, which shall not be less than the approved appraisal made to each property owner, would be offered by Metro. Each homeowner, renter, business, or nonprofit organization displaced as a result of the project would be given advance written notice and would be informed of the eligibility requirements for relocation assistance and payments.

Because the study area and surrounding urban area are almost entirely built out and given the number of existing buildings for sale or lease in the immediate area, it is expected that most of the businesses that would be displaced because of Alternative 3 would relocate to existing commercial buildings. Thus, it is not anticipated that construction of a substantial amount of new commercial development that could result in substantial adverse impacts on the environment would occur. Therefore, substantial adverse indirect effects related to displacement and relocation are not anticipated under Alternative 3.

Construction Mitigation Measures

No mitigation measures are required (see discussion above requiring measures required by law).

Impacts Remaining after Mitigation

NEPA Finding

Under NEPA, the effects of Alternative 3 would not be adverse.

[2] LoopNet.com property search by map area. Available: http://www.loopnet.com/. Accessed: December, 9 2014.

CEQA Determination

Alternative 3 would result in impacts that are less than significant under CEQA.

Economic and Fiscal Impacts

This alternative could result in potential minor economic impacts on local businesses due to reduced visibility (e.g., sign blockage) and diminished access resulting from sidewalk or lane closures, loss of on-street parking during construction, and permanent removal of on-street parking spaces to accommodate the Alternative 3 alignment.

The parcel acquisitions and the economic and fiscal impacts resulting from those acquisitions that could occur under this alternative are discussed below.

Parcel Acquisitions

Guideway, Stations, and TPSS

As discussed in the Real Estate and Acquisitions section above, Alternative 3 would require full or partial acquisition of numerous parcels to construct the guideway, stations, and TPSS, as well as an MSF site.

Economic and Fiscal Impacts of Parcel Acquisitions

The Total Assessed Value for Alternative 3 Option A, Option B, and Option C range from a low of about $40.6 million (MSF Option C) to a high of $45.9 million (MSF Option B), requiring potentially 32.1 acres (MSF Option A) to 36.7 acres (MSF Option B) of land.

The number of parcels to be acquired ranges from 63 (MSF Option B) to 90 (MSF Option A) and the total acquisitions square footage ranges from 1.2 million square feet (MSF Option A) to 1.4 million square feet (MSF Option B). Table 4.19-11 summarizes the economic impacts and identifies the affected number of firms, employment, output, value-added, and labor compensation, as well as the potential losses in property and sales tax revenue due to the parcel acquisitions. For an expanded explanation of these impacts by category and MSF Option, please see Section 4.3 of this DEIS/DEIR.

Table 4.19-11: Alternative 3 – Summary of Estimated Employment and Fiscal Impacts

ALT 3	Firms	Jobs	Output	Value Added	Labor Income	Property Tax	Sales Tax
Option A	79	413	$73,905,065	$38,009,745	$22,731,044	$409,143	$41,798
Option B	54	580	$87,838,069	$50,789,184	$29,280,634	$459,873	$184,639
Option C	79	576	$162,736,261	$66,597,176	$37,810,922	$405,679	$62,851
Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.							

Construction Mitigation Measures

Construction would have temporary impacts on commercial and industrial businesses, particularly those near or adjacent to construction sites. Sidewalks or adjacent roadway lanes may be temporarily closed, thereby reducing business access. Business impacts could also include reduced visibility of commercial signs and businesses. These construction impacts could in turn produce minor economic impacts to commercial establishments. There are a number of short-term measures that could be undertaken to temper these impacts (please see Mitigation Measure TRA-7 in Chapter 3 of this Draft EIS/EIR).

Impacts Remaining after Mitigation

NEPA Finding

The potential effects would not be adverse under NEPA.

CEQA Determination

Alternative 3, MSF Options A, B, and C would result in less than significant impacts under CEQA. The rail alternatives (both Low-Floor LRT/Tram and LRT) would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The rail alternatives offer much greater mobility benefits than the TSM and No-Build Alternatives and modestly improved mobility benefits compared to the BRT alternatives. While the rail alternatives would result in minor losses in the tax base and associated revenue, these impacts would not be significant. Moreover, the loss of tax revenue could potentially be offset by increased development near stations and along the LRT alignment, particularly if jurisdictions work to establish and apply TOD zoning and supportive policies. These efforts would create economic opportunity for the communities in the project area. Therefore, the rail alternatives would not result in any significant direct, indirect, or cumulative impacts and would provide travel time and mobility improvements, along with a potential to increase development activity near the proposed rail stations.

Communities and Neighborhoods

More extensive construction would be required to construct Alternative 3 facilities, which would include the OCS, TPSSs, and an MSF, than would be required for the BRT alternatives. In addition, construction activities under Alternative 3 would last approximately 4 years.

During construction, the construction contractor would choose staging locations among the parcels along the alignment to be acquired as needed for construction of Alternative 3. However, construction may require additional permanent right-of-way acquisitions and the permanent displacement of businesses.

Because it is anticipated that most businesses displaced during construction of Alternative 3 would be relocated to nearby properties, construction of this alternative would not be expected to result in substantial changes to the local economic conditions in the project study area. Local business viability may be temporarily affected by the relocations; however, after the businesses become established in their new sites and customers become accustomed to accessing businesses at their new locations, business viability would be expected to return to existing conditions.

Business displacements required for construction of Alternative 3 could result in substantial changes to the local neighborhood character, and potentially to the social fabric of the local community. Neighborhood residents or visitors may be accustomed to accessing businesses in their existing

locations, and the displacement of those businesses could potentially be psychologically or socially disruptive, which could affect professional and social interactions. If relocation sites are available within proximity to the existing businesses, the disruptions to professional and social interactions may be temporary as residents become accustomed to accessing the displaced businesses at their new locations. However, this impact could be substantial and adverse under NEPA. Under CEQA, this alternative would not divide an established community, and therefore, no impact would occur.

Public controversy among community members and business owners could result from business displacements; therefore, early and ongoing public outreach is required to discuss potential concerns and communicate with property owners and community members. With implementation of mitigation measures listed below under Construction Mitigation Measures, impacts on community cohesion and interaction could remain adverse under NEPA.

Construction Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for measures to reduce or avoid potential construction impacts on communities and neighborhoods: Chapter 3-Transportation, Transit, Circulation, and Parking; Section 4.2-Real Estate and Acquisitions; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security. These measures include measures to maintain access to the local communities and neighborhoods in the study area, detours, design and location of project elements to avoid obstructing views to and from these communities, requirements for use of equipment and methods to reduce air quality emissions, attenuation of noise and vibration impacts to the extent feasible by use of alternate equipment or methods, or use of noise and vibration reducing track, and coordination with public safety and transit providers to ensure adequate access to communities and neighborhoods along the project corridor. During project operation and construction, these measures would minimize direct impacts that could adversely affect the quality of the human environment within the communities and neighborhoods in the study area.

In addition, the following measure is proposed:

> **MM-CN-1**: A formal educational and public outreach campaign shall be implemented to discuss potential community and neighborhood concerns, including relocations, visual/aesthetics changes, and fare policies, and to communicate information about the project with property owners and community members.

Impacts Remaining after Mitigation

NEPA Finding

The potential operational effects on bicycle access and safety, construction and operational effects on social and community interactions from business displacements, and operational visual impacts on sensitive viewers in communities and neighborhoods would be adverse after mitigation. All other effects would be non-adverse.

CEQA Determination

The potential operational impacts on bicycle access and safety, construction and operational impacts on social and community interactions from business displacements, and operational visual impacts on sensitive viewers would be significant after implementation of proposed mitigation measures. All other impacts would be less than significant.

Visual Qualities and Aesthetics

More extensive construction would be required to construct Alternative 3 facilities, which would include the OCS, TPSSs, a pedestrian bridge at the Sylmar/San Fernando Metrolink station, an MSF, and larger station platforms than the BRT alternatives. Alternative 3 would also include the most number of new stations out of all of the alternatives, 28 proposed stations. Although construction impacts on visual quality and aesthetics may be more extensive, they would generally be similar to those described above for the BRT alternatives. Consequently, the construction impacts under Alternative 3 could be potentially adverse under NEPA and significant under CEQA.

Construction Mitigation Measures

Please see mitigation measures MM-VIS-1 above under Alternative 1.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction effects on visual and aesthetic resources would be non-adverse after implementation of proposed mitigation measures.

CEQA Determination

The potential construction impacts on visual and aesthetic resources would be less than significant after implementation of proposed mitigation measures.

Air Quality

Construction of Alternative 3 would result in the short-term generation of criteria pollutant emissions, as described for Alternative 1 above. During construction, the proposed project would be subject to SCAQMD Rule 403 (Fugitive Dust), which does not require a permit for construction activities, per se, but rather sets forth requirements for all construction sites (as well as other fugitive dust sources) in the Basin.

For the purpose of this impact analysis, Alternative 3 construction assumes a 24-month construction-period duration for air quality emissions estimating purposes.

Criteria Pollutant Emissions

The estimate of construction-period regional mass emissions is shown in Table 4.19-12. As shown in the table, regional emissions for ROG and NOx are expected to exceed the SCAQMD regional emissions thresholds. Impacts would be significant under CEQA and adverse under NEPA prior to implementation of mitigation measures.

With respect to local impacts, SCAQMD has developed a set of local mass emission thresholds to evaluate localized impacts. According to SCAQMD, only those emissions that occur on site are to be considered in the LST analysis. Consistent with SCAQMD LST evaluation guidelines, emissions related to haul truck and employee commuting activity during construction are not considered in the evaluation of localized impacts. As shown in Table 4.19-13, localized PM_{10} and $PM_{2.5}$ emissions during construction would exceed local thresholds. As such, short-term local mass emissions would be significant under CEQA and adverse under NEPA prior to implementation of mitigation measures.

Table 4.19-12: Alternative 3 – Estimated Worst-Case Regional Construction Mass Emissions (pounds per day)

Construction Year/Facility	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 2017						
Maintenance Facility	6	67	53	<1	11	14
Track Installation, Sidewalks/Curbs, and Stations	8	91	70	<1	13	8
Pedestrian Bridge and TPSS Facilities	3	20	16	<1	1	1
Concurrent Year 2017 Emissions	17	178	139	<1	25	22
Year 2018						
Maintenance Facility	81	24	20	<1	2	2
Track Installation, Sidewalks/Curbs, and Stations	7	82	66	<1	12	7
Pedestrian Bridge and TPSS Facilities	3	18	16	<1	1	1
Concurrent Year 2018 Emissions	91	124	102	<1	15	10
Year 2019						
Maintenance Facility **(Complete)**	—	—	—	—	—	—
Track Installation, Sidewalks/Curbs, and Stations	36	18	34	<1	2	1
Pedestrian Bridge and TPSS Facilities **(Complete)**	—	—	—	—	—	—
Concurrent Year 2019 Emissions	36	18	34	<1	2	1
Maximum Daily Emissions	91	178	139	<1	25	22
Regional Construction Threshold	75	100	550	150	150	55
Exceed Thresholds?	Yes	Yes	No	No	No	No

Source: CalEEMod emissions modeling by ICF International 2015.

Table 4.19-13: Alternative 3 – Estimated Maximum Localized Construction Mass Emissions (pounds per day)

Construction Activity	NO_X	CO	PM_{10}[a]	$PM_{2.5}$[a]
Maintenance Facility	67	53	11	14
Track Installation, Sidewalks/Curbs, and Stations	91	70	13	8
Pedestrian Bridge and TPSS Facilities	20	16	1	1
Localized Significance Thresholds [b]	80	498	4	3
Exceed Thresholds?	Yes	No	Yes	Yes

[a] PM_{10} and $PM_{2.5}$ emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.
[b] The project site is in SCAQMD SRA Number 7 (Eastern San Fernando Valley). LSTs shown herein are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the approximate local project construction size (1 acre).
Source: CalEEMod emissions modeling by ICF International 2015.

Toxic Air Contaminant Emissions

With respect to construction-period impacts, the greatest potential for TAC emissions would be related to DPM emissions associated with operation of heavy construction equipment. Construction activities associated with the project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period; however, Alternative 3 construction is anticipated to have a duration of approximately two years. Because exposure to diesel exhaust would be well below the 70-year exposure period, project construction is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

Mitigation measures MM-AQ-1 through MM-AQ-7 described under Alternative 1 would also mitigate construction-period impacts under Alternative 3.

Impacts Remaining after Mitigation

Without the implementation of proposed mitigation measures, construction-period emissions for ROG and NO_x were forecasted to exceed the SCAQMD regional emissions thresholds under Alternative 3. As shown in Table 4.19-14, with the implementation of proposed mitigation measures MM-AQ-1 through MM-AQ-7, NO_x emissions would be reduced to below regional thresholds. ROG emissions, however, would exceed regional emissions thresholds. Although emissions would be reduced, regional effects under NEPA would be adverse after mitigation due to the exceedance of the NOx regional threshold. Regional impacts would remain significant under CEQA after the implementation of proposed mitigation measures.

With the implementation of mitigation measures MM-AQ-1 through MM-AQ-7, construction emissions under Alternative 3 would be reduced, but would exceed the LSTs for ROG, PM_{10} and $PM_{2.5}$, as shown in Table 4.19-14. Based on the reduction of emissions, effects under NEPA would not be adverse. However, based on the emissions of ROG, PM_{10}, and $PM_{2.5}$ exceeding the LSTs, localized impacts would remain significant under CEQA after the implementation of proposed mitigation measures.

NEPA Finding

Construction effects would be adverse under NEPA after the implementation of mitigation.

CEQA Determination

Construction impacts under Alternative 3 would be significant under CEQA after the implementation of mitigation measures, and thus would require Metro to adopt a Statement of Overriding Considerations for approval of this alternative.

Climate Change

Construction activities under Alternative 3 would involve roadway and sidewalk modifications to allow for median-running Low-Floor LRT/Tram service. In addition, Alternative 3 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, and the installation of TPSS units. In total, these activities would result in the emission of approximately 4,025 metric tons of CO_2e. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 134 metric tons of CO_2e.

Table 4.19-14: Alternative 3 – Estimated Mitigated Worst-Case Regional Construction Mass Emissions (pounds per day)

Construction Year/Facility	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 2017						
Maintenance Facility	2	27	43	<1	10	4
Track Installation, Sidewalks/Curbs, and Stations	3	41	51	<1	11	5
Pedestrian Bridge and TPSS Facilities	<1	4	15	<1	<1	<1
Concurrent Year 2017 Emissions	6	72	109	<1	21	9
Year 2018						
Maintenance Facility	81	3	20	<1	<1	<1
Track Installation, Sidewalks/Curbs, and Stations	3	39	51	<1	10	5
Pedestrian Bridge and TPSS Facilities	<1	4	15	<1	<1	<1
Concurrent Year 2018 Emissions	85	46	86	<1	11	5
Year 2019						
Maintenance Facility **(Complete)**	—	—	—	—	—	—
Track Installation, Sidewalks/Curbs, and Stations	35	3	37	<1	2	1
Pedestrian Bridge and TPSS Facilities **(Complete)**	—	—	—	—	—	—
Concurrent Year 2019 Emissions	35	3	37	<1	2	1
Maximum Daily Emissions	85	72	109	<1	21	9
Regional Construction Threshold	75	100	550	150	150	55
Exceed Thresholds?	Yes	No	No	No	No	No
Source: CalEEMod emissions modeling by ICF International 2015.						

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Noise and Vibration

Construction of the Low-Floor LRT/Tram Alternative would require the use of heavy earth-moving equipment, pneumatic tools, generators, concrete pumps, and similar equipment. Project construction would typically take place between the hours of 7 a.m. and 9 p.m. in the City of Los Angeles in accordance with the Los Angeles Municipal Code and between the hours of 7 a.m. and 6 p.m. in the City of San Fernando in accordance with the San Fernando City Code. If it is necessary for construction to occur outside of these hours, Metro may seek a variance from Municipal Code requirements. Generally, the Low-Floor LRT/Tram Alternative, as well as the LRT Alternative, would result in more extensive construction than the two BRT alternatives.

Actual construction noise levels would depend on means and methods decided upon by the contractor, which are not available at this time. The predicted construction noise levels are based on a hypothetical scenario for the purposes of modeling. The predicted noise level from a typical 8-hour work-shift is 87 dBA (8-hour L_{eq}) at 50 feet, which is about 15 to 20 decibels higher than the ambient noise level. The NEPA and CEQA significance threshold pertains to construction noise levels that exceed existing ambient noise levels by 10 dBA or more at a sensitive land use. Therefore, noise from construction of the Low-Floor LRT/Tram Alternative would result in a significant impact.

Many construction activities, such as pavement breaking and the use of tracked vehicles such as bulldozers could result in noticeable levels of ground-borne vibration. These activities would be limited in duration and vibration levels are likely to be well below thresholds for minor cosmetic building damage. However, the predicted vibration levels for equipment that produces the highest levels of vibration, such as a vibratory roller, is about equal to the construction vibration NEPA and CEQA significance threshold for non-engineered and timber masonry buildings at a distance of 25 feet. Mitigation measures are recommended for these high-vibration-generating activities.

Construction Mitigation Measures

Mitigation Measure NOI-1a-d and VIB-1 are proposed (see discussion above for Alternative 1).

Impacts Remaining after Mitigation

NEPA Finding

The noise and vibration from construction of the Low-Floor LRT/Tram Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the Low-Floor LRT/Tram Alternative would result in adverse effects, even with implementation of proposed mitigation measures.

CEQA Determination

The noise and vibration from construction of the Low-Floor LRT/Tram Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the Low-Floor LRT/Tram Alternative would still result in a significant and unavoidable impact, even with implementation of proposed mitigation measures.

Geology and Soils

The Low-Floor LRT/Tram alternative would result in the same geological construction impacts as the BRT alternatives.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

Hazardous Waste and Materials

The Low-Floor LRT/Tram Alternative would result in impacts mostly the same as those of the BRT alternatives. Additional impacts that could occur include the potential for encountering groundwater contaminated by VOCs due to the deeper construction excavations for the retrofit or replacement of structures crossing the Pacoima Wash or the foundations for the new pedestrian crossing at the San Fernando Metrolink Station. The potential for encountering hazardous materials during construction under this alternative is a potentially significant impact under CEQA and an adverse effect under NEPA. These potential impacts/effects, however, can be reduced to a less-than-significant impact and non-adverse effect by complying with the requirements and design features and implementation of the mitigation measures described below.

The Low-Floor LRT/Tram Alternative would also include MSF and TPSS facilities, unlike the BRT alternatives described above. The ESA indicated historical land usage as auto repair facilities, waste transfer facilities, manufacturing, and other industrial purposes at the potential properties to be acquired for the proposed MSF and TPSS sites. During demolition of the existing structures, LBP and ACM may be encountered in waste building materials. The construction work for the proposed MSF and TPSS sites would generally include excavations in the upper 5 to 10 feet of soil and may encounter subsurface hazardous waste residue from spills or releases from the former facilities, a potentially significant impact under CEQA and an adverse effect under NEPA. Construction of the MSF and TPSS facilities would include removal of existing hazardous materials within the construction footprint. The removal, handling, and disposal of hazardous materials would be conducted in accordance with all applicable federal, state, and local regulations, and would comply with the design features and mitigation measures, which would reduce the potential impacts to less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

See mitigation measures MM-HAZ-1 through MM-HAZ-5 above for Alternative 1.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Energy

Construction of Alternative 3 would provide of a dedicated fixed guideway in the Van Nuys Boulevard median and a mixed-flow lane along San Fernando Road for Low-Floor LRT/Tram service. An MSF, new at-grade stations, a pedestrian bridge to the Sylmar Metrolink station, modifications to sidewalks and roadways, and the installation of TPSS units would also be constructed. Diesel fuel for construction vehicles and equipment would be the primary source of energy used throughout the course of the construction period. In total, the four-year construction period would result in the consumption of approximately 55,000 MMBTU (see Appendix A).

Although an estimated 400,000 gallons of fuel would be consumed, the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013 (California Energy Commission 2014b). Given the extensive network of fueling stations throughout the project vicinity and the fact that construction would be short-term, no new or expanded sources of energy or infrastructure would be required to meet the energy demands due to Alternative 3 construction activities. Additionally, construction activities would comply with the Metro Green Construction Policy and all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised. Therefore, Alternative 3 would not result in the wasteful or inefficient use of energy. Impacts related to regional energy supply, demand, and conservation during the construction period would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No mitigation measures would be necessary.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Ecosystems and Biological Resources

Impacts expected under this alternative would be the same as construction impacts anticipated to occur under Alternatives 1 and 2. Construction would result in increased noise, movement, and vibration at the bridges over the Pacoima Wash, Pacoima Diversion Canal, and East Canyon Creek and the existing overpasses at I-5, State Route 118, and the Union Pacific Railroad (on Van Nuys Boulevard). An MSF would also be constructed under this alternative (at one of three alternate sites under consideration). Construction of the MSF could affect nesting birds and/or tree roosting bats if trees are to be removed to make way for the new MSF structures.

Similar to Alternatives 1 and 2, this alternative could result in potentially significant impacts under CEQA and adverse effects under NEPA to nesting birds or roosting bats if construction activities remove vegetation where nesting birds are present or affect structures or vegetation used by special-status bat species. However, Mitigation Measures BIO-1 and BIO-2 would reduce potential impacts to less than significant under CEQA and non-adverse under NEPA.

Jurisdictional Waters

Similar to Alternatives 1 and 2, only street level modifications would be made along the existing roads under Alternative 3. No work, including reinforcement of bridge structures, would occur within existing drainage channels. Therefore, implementation of this alternative would not directly affect a federal or state jurisdictional drainage under CEQA or NEPA. However, please see Mitigation Measure BIO-3 for best management practices that are proposed when working near jurisdictional drainages to avoid or minimize potential indirect effects.

Wildlife Corridors

This alternative, similar to Alternatives 1 and 2, would not substantially interfere with the movement of resident or migratory fish or wildlife species, or with established resident or migratory wildlife corridors, or impede use as a wildlife nursery site. Potential impacts would be less than significant under CEQA and non-adverse under NEPA.

Conflict with Local Policies

Similar to Alternatives 1 and 2, if protected trees are removed, implementation of Mitigation Measure BIO-4 would be required to ensure compliance with City ordinances. The biological consequence of removing or trimming urban trees would be less than significant under CEQA and a non-adverse effect under NEPA with implementation of Mitigation Measure BIO-4.

Construction Mitigation Measures

Mitigation Measures BIO-1 through BIO-4 are proposed (see discussion above under Alternative 1).

Impacts Remaining after Mitigation

NEPA Finding

Biological resources impacts would not be adverse following implementation of proposed mitigation measures.

CEQA Determination

Biological resources impacts would be less than significant following implementation of proposed mitigation measures.

Hydrology and Water Quality

Water Quality

Construction activities for Alternative 3 would include pavement removal; utilities relocation; excavation; construction of at-grade trackwork and stations, including station platforms and reconstruction of sidewalks; construction of pedestrian access ways; installation of specialty system work, such as overhead contact electrification systems and communications and signaling systems; construction of TPSS facilities; reconstruction of sidewalks paving and striping; and subgrade preparation and placement of rail ballast. Similar to Alternatives 1 and 2, construction of Alternative 3 could result in an increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes from construction activities. Because Alternative 3 also includes the construction of a new MSF and the relative area of soil disturbance would be greater to install the tracks and construct the stations, the potential for water quality degradation is greater than for the BRT alternatives. However, the General Construction Permit would still apply and a SWPPP would be developed. The SWPPP would specify BMPs to ensure that water quality standards or waste discharge requirements are not violated even for a larger area of disturbance.

As discussed above for Alternative 1, SWPPPs and the associated BMPs are routinely developed for construction sites and are proven to be effective in reducing pollutant discharges from construction activities. Implementation of the SWPPP during construction would ensure water quality objectives, standards, and wastewater discharge thresholds would not be violated. The SWPPP would be prepared by the project applicant (i.e., Metro) or its construction contractor and approved by the City of Los Angeles and City of San Fernando prior to commencement of construction activities. As

selection of the appropriate BMPs is a standard process of the engineering review and grading plan approval, impacts/effects from construction on water quality would be less than significant under CEQA and non-adverse under NEPA.

None of the alternatives, including Alternative 3, would require in-water work or work that would affect wetlands.

Groundwater Supplies and Recharge

Alternative 3 may require excavation to greater depths than what is required for the BRT alternatives in order to relocate utilities or construct LRT facilities including the MSF. Excavation may result in contact with groundwater depending on the season and location within the corridor. Should dewatering be necessary, a General Dewatering Permit would be obtained from the Los Angeles RWQCB. Residual contaminated groundwater could be encountered during dewater activities. Groundwater extracted during dewatering activities would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Local groundwater is one of several sources of water supplies to the City of Los Angeles. If groundwater is used during construction for dust control, concrete pouring, etc., the amount would be greater than required for the BRT alternatives but still relatively minimal and temporary, and therefore, would not result in substantial depletion of groundwater supplies.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would not be adverse under NEPA.

Stormwater and Drainage

As discussed above for Alternative 1, construction activities, such as grading and excavation, could result in increased erosion that could adversely affect the water quality of stormwater runoff from the construction sites. There would be relatively more grading and excavation for Alternative 3 than for the BRT alternatives. However, the proposed project would be in compliance with the Construction General Permit, and a SWPPP that contains temporary construction site BMPs would be prepared and implemented. These BMPs would be implemented during construction to prevent, or minimize the potential for erosion sedimentation onsite or offsite, impacts to the water quality of stormwater runoff, and the potential for flooding on- or off-site. Because the proposed project would be required to comply with the conditions of the Construction General Permit, impacts/effects would be less than significant under CEQA and non-adverse under NEPA.

Temporary drainage facilities could be required to redirect runoff from work areas during utility relocations. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. Storm drain relocation may require the need for groundwater dewatering at locations with a high water table. Residual contaminated groundwater may be encountered during dewatering activities. As described above for Alternative 1, if dewatering is necessary, the project contractor would be required to comply with Los Angeles RWQCB's General Dewatering Permit.

Flooding and Flood Hazards

Similar to the BRT Alternatives, the 100-year flood zone areas within the project study area are fully contained within County flood channels and drainage facilities. No construction is proposed in these 100-year flood zones; therefore, construction of Alternative 3 would not place structures that would impede or redirect flood flows as mapped on any flood hazard delineation map.

There are no levees located within the project study area, and therefore no flood impacts associated with levee failure would occur that could affect construction activities, workers, or equipment. Alternative 3, however, would be located in a dam failure inundation zone area. Portions of the Sepulveda and Hansen Flood Control Basins (and the associated dams) are located in the project study area. Therefore, Alternative 3 could be adversely affected if these dams fail. However, project construction activities would not increase the present risk of dam failure, which is considered low, and would not place construction workers, equipment, or temporary structures in an area where there is a significant risk and high probability of flooding.

As noted above for Alternative 1, temporary drainage facilities could be required to redirect runoff from work areas. The temporary drainage facilities would be sized according to City standards to avoid any exceedance to the capacity of existing or planned stormwater drainage systems. As a consequence, overall drainage patterns would remain the same and construction activities are not expected to have a substantial effect on flood capacities due to temporary changes in drainage patterns or facilities. Therefore, the construction impacts/effects during construction related to flooding and flood hazards would be less than significant under CEQA and non-adverse under NEPA.

Seiche, Tsunami, and Mud Flows

The project study area is outside of tsunami potential inundation areas and, due to the relatively flat terrain, is not prone to mudflows. The potential for a catastrophic seiche event at the Hanson Flood Control Basin reservoir is low. Therefore, construction activities are not expected to substantially affect or be affected by seiche, tsunami, or mudflow hazards. Construction impacts/effects due to Alternative 3 would be less than significant under CEQA and non-adverse under NEPA.

Surface Water Use and Flows

Construction of Alternative 3 could require use of more water than the BRT alternatives because of the more extensive facilities (e.g., the MSF); however, the amounts are not expected to be substantial and they would be temporary. As a consequence, construction activities are not expected to substantially reduce the amount of surface water in water bodies. Additionally, construction activities would not substantially change the overall impervious area, nor would construction substantially change stormwater flows that could affect either the volume or movement of water in surface water bodies. Impacts and effects would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 3 would not result in adverse effects to hydrology and water resources during construction.

CEQA Determination

Alternative 3 would result in less-than-significant impacts to hydrology and water resources during construction.

Safety and Security

Construction of Alternative 3 – Low-Floor LRT/Tram may have temporary adverse effects on public safety and security within the study area. During construction, motorists, pedestrians, and bicyclists would experience additional safety hazards. This would result from the number and proximity of vehicles and people adjacent to Low-Floor LRT/Tram vehicle construction. Construction could also result in lane closures, traffic detours, and designated truck routes, which could adversely affect emergency vehicle response time, an adverse effect under NEPA and potentially significant impact under CEQA. The potential for significant safety and security impacts would be minimized by compliance with Occupational Safety and Health Administration (OSHA), California Occupational Safety and Health Administration (Cal/OSHA), and Metro safety and security programs, which are designed to reduce potential adverse effects during construction.

Incidents of crime adjacent to the project alignment would most likely not increase during construction. Incidents of property crime could occur at construction sites (e.g., theft of construction machinery and materials), but they would be minimized through implementation of standard site security practices by contractors. With implementation of mitigation measures MM-SS-16 through MM-SS-18, effects or impacts would be non-adverse under NEPA and less than significant under CEQA.

Construction Mitigation Measures

Safety measures MM-SS-1 through MM-SS-3 would be implemented.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Parklands and Community Facilities

More extensive construction would be required to construct Alternative 3 facilities, which would include the OCS, TPSSs, and an MSF, than would be required for the BRT alternatives. Construction impacts would be more extensive than those described above for the BRT alternatives.

Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for mitigation measures to reduce or avoid potential construction impacts on parklands and community facilities: Chapter 2-Transportation, Transit, Circulation, and Parking; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction air quality impacts on parklands and community facilities would remain adverse after implementation of proposed mitigation measures. All other effects would be non-adverse.

CEQA Finding

The potential construction air quality impacts on parklands and community facilities would remain significant after implementation of proposed mitigation measures. All other impacts would be less than significant.

Environmental Justice

The Alternative 3 alignment with MSF Option A would require the full or partial acquisition of 90 parcels. The majority of the acquisitions would be from light manufacturing and commercial properties that are occupied by automobile repair, supply businesses, and other general commercial retail uses. Three residentially zoned parcels would be fully acquired under Alternative 3 with MSF Option A. While these parcels are zoned for residential use, they are currently developed with a single parking lot serving an adjacent warehouse. According to the Real Estate and Acquisition Report in Appendix I, one parcel (Assessor's Parcel Number (APN) 2241-025-014) zoned for industrial use is developed with approximately four housing units, which would be acquired and displaced under MSF Option A. The displaced businesses (and residential units) are located in low-income and/or minority neighborhoods and could be supported by owners, workers, or customers from low-income or minority block groups that could be affected by the economic changes or job losses associated with these displacements. Under Alternative 3, MSF Option A, the minority population in the affected area is approximately 70 percent and the low-income population is approximately 15 percent. Therefore, the displacement impacts of Alternative 3 with MSF Option A would be borne predominantly by an environmental justice population; as a consequence, Alternative 3 with MSF Option A could result in disproportionately high and adverse effects on environmental justice populations.

The Alternative 3 alignment with MSF Option B would require the full or partial acquisition of 65 parcels. The majority of the acquisitions would be from light manufacturing and commercial properties, which contain businesses oriented toward automobile repair and supplies or raw materials supply and manufacturing. No residential acquisitions would be required for MSF Option B. Similar to MSF Option A, these businesses are located in low-income and/or minority neighborhoods and could be supported by owners, workers, or customers from low-income or minority block groups that could be affected by the economic changes or job losses associated with these displacements. Under Alternative 3, MSF Option B, the minority population in the affected area is approximately 89 percent and the low-income population is approximately 27 percent. Therefore, the displacement impacts of Alternative 3 with MSF Option B would be predominantly borne by an environmental justice population; and as a consequence, Alternative 3 with MSF Option A could result in disproportionately high and adverse effects on environmental justice populations.

The Alternative 3 alignment with MSF Option C would require the full or partial acquisition of 68 parcels. As with Option B, a majority of acquisitions would be from light manufacturing and commercial properties oriented toward automobile repair and raw materials supply and manufacturing. No acquisitions from residential properties would be required for Alternative 3 with MSF Option C. Under Alternative 3 with MSF Option C, the minority population in the affected area is approximately 97 percent and the low-income population is approximately 22 percent. Therefore, similar to Options A and B, the displacement impacts of Alternative 3 with MSF Option C would be predominantly borne by an environmental justice population; and as a consequence, Alternative 3 with MSF Option C could result in disproportionately high and adverse effects on environmental justice populations.

Although displacement impacts would be predominantly borne by environmental justice populations, it should be noted that in the larger surrounding urban area, it is anticipated that there would be enough available properties to accommodate most, if not all, of the displaced businesses. As a consequence, construction of Alternative 3 would not be expected to result in substantial changes to

local economic conditions in the project study area. According to the Real Estate and Acquisitions Report in Appendix I, for businesses that must be relocated, it is anticipated that most of the jobs would be retained, and there would be no net loss in the overall number of jobs in the study area. Therefore, no substantial adverse effects from job loss are anticipated. Nonetheless, the viability of some local businesses may be affected by the relocations because customers would need to access new businesses or old businesses at their new locations. As a consequence, the removal of some businesses from their local customer base may lead to the disruption and termination of the businesses, resulting in localized job losses.

Business displacements required for construction of Alternative 3 could also result in substantial changes to local neighborhood character, and potentially the social fabric of the local community. Neighborhood residents or visitors may be accustomed to accessing businesses in their existing locations, and the displacement of those businesses could be psychologically or socially disruptive, which could affect professional and social interactions. However, if relocation sites are available within proximity to the existing business sites, disruptions to professional and social interactions may be temporary because residents would likely become accustomed to accessing the displaced businesses at their new locations.

To minimize potential impacts, coordination would be conducted with the appropriate jurisdictions regarding business relocations so that job losses are minimized to the extent feasible. In addition, joint-use agreements (allowing concurrent transportation and business uses) would be considered for land acquisitions required for stations and construction staging to avoid the displacement of businesses and potential job losses in these areas to the extent feasible. Metro would also conduct early and ongoing public outreach to discuss potential public concerns with affected property owners and community members.

Although the displacement impacts described above would be predominantly borne by environmental justice populations, all communities within the project study area would be affected and the impacts suffered by the environmental justice populations would not be appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-environmental justice populations. Additionally, relocation assistance and compensation in accordance with federal and state regulations would be provided for all displaced businesses. With implementation of compliance and mitigation measures and given that Alternative 3 would provide improved transit service and connectivity in an area with large transit-dependent and environmental justice populations, the impacts on the environmental justice populations would not be disproportionately high and adverse.

Construction Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for measures to reduce or avoid potential construction impacts on local communities, including environmental justice populations: Chapter 3-Transportation, Transit, Circulation, and Parking; Section 4.2-Real Estate and Acquisitions; Section 4.4-Communities and Neighborhoods; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining After Mitigation

NEPA Finding

Alternative 3 would result in disproportionately high and adverse effects on minority and low-income populations with respect to displacements. However, this alternative would also result in new transit opportunities that are anticipated to result in improved connectivity and transit equity. Mitigation measures would reduce or minimize the adverse effects, where feasible. After implementation of the proposed mitigation measures, adverse effects would not be substantial.

CEQA Determination

There are no thresholds of significance in CEQA for environmental justice impacts. Therefore, no CEQA determination can be made for environmental justice impacts resulting from this alternative.

Growth-Inducing Impacts

Construction impacts would be the same as impacts described for the BRT Alternatives above.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.

4.19.3.6 Build Alternative 4 – Light Rail Transit Alternative

Land Use

Division of an Established Community

Impacts would be greater in extent than the impacts described for Alternative 3, due to the potentially greater construction impacts along the subway portion of the alignment. Street, lane, and sidewalk closures could reduce pedestrian and vehicle mobility between communities throughout the study area during construction. However, these closures would be temporary and are not expected to substantially divide existing communities or neighborhoods. Additionally, implementation of a Traffic Management Plan and Construction Phasing and Staging Plan would further reduce the disruption caused by construction activities and access to businesses and residential areas would be maintained to the extent feasible. Therefore, impacts/ effects would be less than significant under CEQA and non-adverse under NEPA.

Conflicts with Local Land Use Plans

Impacts would be potentially greater in extent than the impacts described above for Alternatives 1, 2, and 3, due to the more extensive construction under this alternative. Substantial conflicts with local land use plans during the construction period are not expected to occur and impacts/effects would be less than significant under CEQA and non-adverse under NEPA.

Incompatibility with Adjacent and Surrounding Land Uses

Impacts would be the same as impacts described above for Alternative 3. Construction activities along the alignment would result in temporary nuisance impacts (e.g., noise, air quality impacts) on nearby land uses. Construction noise would result from the use of heavy equipment during construction activities, such as excavation, grading, ground clearing, and installing foundations and structures, as well as from trucks hauling materials to and from the construction areas. Air quality impacts would result from the generation of fugitive dust during ground disturbing activities, and from the operation

of heavy-duty, diesel-fueled equipment, such as bulldozers, trucks, and scrapers. Similar to Alternatives 1, 2, and 3, the construction impacts on nearby sensitive land uses would be potentially significant under CEQA and potentially adverse under NEPA.

Construction Mitigation Measures

Please see other sections (e.g., Section 4.8 – Noise and Vibration) for measures to mitigate potentially significant adverse construction impacts on sensitive land uses near proposed construction activities.

Impacts Remaining after Mitigation

NEPA Finding

The effects would not be adverse under NEPA.

CEQA Determination

Construction impacts would be less than significant.

Real Estate and Acquisitions

Alternative 4 would require the full or partial acquisition of approximately 55 parcels to construct the guideway and TPSS facilities. Of these 55 acquisitions, 44 would be full acquisitions and 11 would be partial acquisitions. TPSS facilities would be located along the project alignment and require 13 property acquisitions, of which 12 would be full acquisitions and one would require a partial acquisition of a grocery store parking lot. The remaining 42 property acquisitions would be required to accommodate the project guideway and station platforms. Twenty-one such acquisitions, including 10 acquisitions in the City of San Fernando, would be located near the Alternative 4 terminus and would be required due to the partial relocation of Metrolink tracks to accommodate the Alternative 4 guideway and station platform at the Sylmar/San Fernando Metrolink Station. Within the City of San Fernando, land uses abut the existing Metrolink ROW, which is relatively narrow between Jessie Street and the Sylmar/San Fernando Metrolink Station. Additional space would be required to fully accommodate both the Metrolink and tracks/guideway. As such, small partial acquisitions of seven properties and three full acquisitions would be required in this location. As would occur under Alternative 3, full acquisitions of 16 parcels containing commercial properties would be required to accommodate the LRT guideway at the southwest corner of San Fernando Road and Van Nuys Boulevard to provide the necessary curve to transition the alignment to San Fernando Road. Two station platforms, the Roscoe Station and the Sherman Way Station, would require the acquisition of several commercial properties.

MSF Sites

The property acquisitions that would be required to construct the MSF at one of three alternative sites are described above under Alternative 3 and summarized below.

MSF Option A

As described above under Alternative 3, MSF Option A would require the acquisition of 61 parcels between Calvert Street to the north, Oxnard Street to the south, and Kester Avenue to the west (see Table 4.2-3 for a list of the full and partial acquisitions). Two additional full acquisitions (see Table 4.2-9) would be required where Van Nuys crosses the Metro Orange Line Busway in order to provide the necessary curve to transition the Alternative 4 guideway onto the Metro Orange Line Busway ROW. Because the MSF Option A site would be located at the southern terminus of Alternative 4, as

opposed to the areas surrounding the Van Nuys Metrolink Station under MSF Options B and C, a key difference in MSF Option A that should be noted is the Van Nuys Metrolink station platform would only require partial acquisition of parcel 2215-001-912 at Keswick Street as opposed to the full acquisition under MSF Options B and C.

MSF Option B

MSF Option B would require 37 full acquisitions, as described above under Alternative 3 and listed in Table 4.2-5.

In order to connect Alternative 4 to the MSF Option B site, the Alternative 4 guideway would curve east off of Van Nuys Boulevard through a row of commercial buildings requiring 11 full acquisitions. This is required to provide a perpendicular crossing of Van Nuys Boulevard to access the MSF Option B site. In addition, partial acquisition and permanent underground easements below 6 private properties would be required where tunnel portions of the alignment would not be within public road ROW. No displacements would be required as a result of these underground easements.

MSF Option C

MSF Option C, as described above under Alternative 3, would require the acquisition of 42 properties, 41 of which would be full acquisitions (see Table 4.2-6 for a list of the required properties).

The MSF Option C connection for Alternative 4 would be similar to that of the MSF Option B connection requiring the full acquisition of the same 11 commercial properties. The primary difference would be additional underground easements would be required below two additional properties as the tunnel portion of the alignment would be extended below these two private properties.

Alternative 4 could require between 110 and 120 acquisitions of properties, most of which would be full acquisitions. Most of the acquisitions that would be required are commercial or industrial properties (in comparison to MSF Option A, which requires full acquisition of four residential units).

As described above under Alternative 3, it is anticipated that there is an adequate supply of commercial and industrial properties along the corridor and in surrounding areas to accommodate displaced businesses; though larger industrial facilities may have difficulty finding comparable properties near their existing locations. As with Alternative 3, where acquisition and relocation are unavoidable, Metro would follow the provisions of the Uniform Act.

Construction Mitigation Measures

No mitigation measures are required (see discussion above requiring measures required by law).

Impacts Remaining after Mitigation

NEPA Finding

Alternative 4 would not result in adverse effects under NEPA.

CEQA Determination

Alternative 4 would result in less-than-significant impacts under CEQA.

Economic and Fiscal Impacts

Similar to the BRT alternatives, this alternative could also result in potential minor economic impacts on local businesses due to reduced visibility (e.g., sign blockage) and diminished access resulting from sidewalk or lane closures, loss of on-street parking during construction, and permanent removal of on-street parking spaces to accommodate the Alternative 4 alignment.

Parcel Acquisitions

Guideway, Stations, and TPSS

As discussed in the Real Estate and Acquisitions section above, Alternative 4 would require full or partial acquisition of numerous parcels to construct the guideway, stations, and TPSS, as well as an MSF site.

Economic and Fiscal Impacts of Parcel Acquisitions

The Total Assessed Value for Alternative 4 Option A, Option B, and Option C range from a low of about $65.8 million (MSF Option A) to a high of $94.0 million (MSF Option B), requiring potentially 60.5 acres (MSF Option A) to 72.2 acres (MSF Option B).

The number of parcels that would be affected ranges from 102 (MSF Option B) to 118 (MSF Option A) and total square footage of the properties to be acquired, which ranges from 1.8 million square feet (MSF Option A) to 2.2 million square feet (MSF Option B). Table 4.19-15 identifies the affected number of firms, employment, output, value-added, and labor compensation and identifies the potential property and sales tax losses due to parcel acquisitions. For an expanded explanation of these impacts by category and MSF Option, please see Section 4.3 of this DEIS/DEIR.

Table 4.19-15 Alternative 4 - Summary of Estimated Employment and Fiscal Impacts

ALT 4	Firms	Jobs	Output	Value-Added	Labor Income	Property Tax	Sales Tax
Option A	106	974	$215,034,217	$91,240,338	$57,126,873	$658,000	$66,632
Option B	126	1,285	$248,514,020	$115,093,588	$70,330,356	$940,000	$236,438
Option C	147	1,280	$325,433,391	$131,861,261	$79,294,826	$873,000	$113,774
Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.							

Similar to Alternative 3, construction of Alternative 4 would have temporary impacts on commercial and industrial businesses, particularly those near or adjacent to construction sites. Sidewalks or adjacent roadway lanes may be temporarily closed, thereby reducing business access. Business impacts could also include reduced visibility of commercial signs and businesses. These construction impacts could in turn produce minor economic impacts to commercial establishments. There are a number of short-term measures that could be undertaken to temper these impacts (please see Mitigation Measure TRA-7 in Chapter 3 of this Draft EIS/EIR).

Construction Mitigation Measures

Construction would have temporary impacts on commercial and industrial businesses, particularly those near or adjacent to construction sites. Sidewalks or adjacent roadway lanes may be temporarily closed, thereby reducing business access. Business impacts could also include reduced visibility of

commercial signs and businesses. These construction impacts could, in turn, have minor economic impacts on commercial establishments. A number of short-term measures could be undertaken to temper these impacts (please see Mitigation Measure TRA-7 in Chapter 3 of this Draft EIS/EIR).

Impacts Remaining after Mitigation

NEPA Finding

The potential effects would not be adverse under NEPA.

CEQA Determination

Alternative 4, Options A, B, and C would result in less than significant economic and fiscal impacts under CEQA. The rail alternatives (both Low-Floor LRT/Tram and LRT) would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The rail alternatives offer much greater mobility benefits than the TSM and No-Build Alternatives and modestly improved mobility benefits compared to the BRT alternatives. While the rail alternatives would result in minor losses in the tax base and associated revenue, these impacts would not be significant. Moreover, the loss of tax revenue could potentially be offset by increased development near stations and along the LRT alignment, particularly if jurisdictions work to establish and apply TOD zoning and supportive policies. This would create economic opportunity for the communities in the project area. Therefore, the rail alternatives would not result in any significant direct, indirect, or cumulative economic and fiscal impacts and would provide travel time and mobility improvements, along with a potential to increase development activity near the proposed LRT stations.

Communities and Neighborhoods

Alternative 4, the LRT Alternative, would require the most extensive construction of the four build alternatives because of the subway portion of the alignment. Similar to Alternative 3, Alternative 4 would include construction of OCS, TPSSs, and MSF structures. Those structures or facilities would not be required for the BRT alternatives. As a consequence, Alternative 4 would result in the greatest construction impacts, compared to the other alternatives, but the types and level of significance of the impacts would be the same as those described above for Alternative 3.

Construction Mitigation Measures

The mitigation measures mentioned and discussed for Alternative 3 also apply to Alternative 4.

Impacts Remaining after Mitigation

NEPA Finding

The potential operational effects on bicycle access and safety, construction and operational effects on social and community interactions from business displacements, and operational visual impacts on sensitive viewers in communities and neighborhoods would be adverse after mitigation. All other effects would not be adverse.

CEQA Determination

The potential operational impacts on bicycle access and safety, construction and operational impacts on social and community interactions from business displacements, and operational visual impacts on sensitive viewers would be significant after implementation of proposed mitigation measures. All other impacts would be less than significant. Visual Qualities and Aesthetics

Alternative 4 would require the most extensive construction of the four build alternatives because of the subway portion of the alignment. The LRT Alternative would include construction of the OCS, TPSSs, construction of a pedestrian bridge at the Sylmar/San Fernando Metrolink station, an MSF, and larger station platforms than the BRT alternatives. Therefore, Alternative 4 would result in the greatest construction impacts, compared to the other alternatives; however, the types and level of significance of the impacts would be to the same as those described above for Alternative 3. Consequently, the construction impacts under Alternative 4 could be potentially adverse under NEPA and significant under CEQA.

Construction Mitigation Measures

Please see mitigation measure MM-VIS-1 above under Alternative 1.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction effects on visual and aesthetic resources would not be adverse after implementation of proposed mitigation measures.

CEQA Determination

The potential construction impacts on visual and aesthetic resources would be less than significant after implementation of proposed mitigation measures.

Air Quality

Construction of Alternative 4 would result in the short-term generation of criteria pollutant emissions, as described for Alternative 1. During construction, the proposed project would be subject to SCAQMD Rule 403 (Fugitive Dust), which does not require a permit for construction activities, per se, but rather sets forth requirements for all construction sites (as well as other fugitive dust sources) in the Basin.

For the purpose of this impact analysis, Alternative 4 construction assumes a 30-month construction-period duration, for air quality emissions estimating purposes.

Criteria Pollutant Emissions

The estimate of construction-period regional mass emissions is shown in Table 4.6-23. As shown in the table, regional emissions for ROG and NOx are expected to exceed the SCAQMD regional emissions thresholds under the cut-and-cover and tunnel boring options. Impacts would be significant under CEQA and adverse under NEPA prior to implementation of mitigation measures.

With respect to local impacts, SCAQMD has developed a set of local mass emission thresholds to evaluate localized impacts. According to SCAQMD, only those emissions that occur on site are to be considered in the LST analysis. Consistent with SCAQMD LST evaluation guidelines, emissions related to haul truck and employee commuting activity during construction are not considered in the evaluation of localized impacts. As shown in Table 4.6-24, localized NOx, PM_{10} and $PM_{2.5}$ emissions during construction would exceed local thresholds. As such, short-term local mass emissions would be significant under CEQA and adverse under NEPA without implementation of mitigation measures.

Toxic Air Contaminant Emissions

With respect to construction-period impacts, the greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during project construction. Construction activities associated with the project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period; however, Alternative 4 construction is anticipated to have duration of approximately 30 months. Because exposure to diesel exhaust would be well below the 70-year exposure period, project construction is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

Mitigation measures MM-AQ-1 through MM-AQ-7 described for Alternative 1 would also be implemented to mitigate impacts under Alternative 4.

Impacts Remaining after Mitigation

Without the implementation of mitigation measures, construction-period emissions for ROG and NO_x were forecasted to exceed the SCAQMD regional emissions thresholds under Alternative 4. As shown in Table 4.6-27, with the implementation of proposed mitigation measures MM-AQ-1 through MM-AQ-7, ROG and NO_x emissions would continue to exceed regional emissions thresholds. Although emissions would be reduced with mitigation, regional effects under NEPA would be adverse due to the exceedances of the ROG and NO_x regional thresholds. Impacts would remain significant under CEQA after the implementation of mitigation measures.

With the implementation of proposed mitigation measures, construction emissions under Alternative 4 would be reduced, but would exceed the LSTs for ROG, PM_{10} and $PM_{2.5}$, as shown in Table 4.6-28. Based on the reduction of emissions, localized effects under NEPA would not be adverse. However, based on the emissions of PM_{10} and $PM_{2.5}$ exceeding the LSTs, localized impacts would remain significant under CEQA after the implementation of proposed mitigation measures.

NEPA Finding

Construction effects would be considered adverse after the implementation of mitigation measures.

CEQA Determination

Construction of Alternative 4 would result in the emission of ROGs and NO_x in excess of regional thresholds, neither of which would be reduced below the thresholds following the implementation of mitigation measures. In addition, construction of Alternative 4 would exceed the LSTs for ROG, PM_{10}, and $PM_{2.5}$ after the implementation of mitigation measures. Construction impacts under Alternative 4 would be significant under CEQA after the implementation of mitigation measures, and thus would require Metro to adopt a Statement of Overriding Considerations for approval of this alternative.

Climate Change

Alternative 4 would involve construction activities and changes to roadways and sidewalks to accommodate LRT service. This would include the construction of a tunnel and three subterranean stations. In addition, Alternative 4 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, the LRT and heavy rail bridges over the Pacoima Wash, and

the installation of TPSS units. MSF Option B and the cut-and-cover method of tunnel construction were assumed because these would result in the greatest impacts with respect to GHG emissions. In total, these activities would result in the emission of approximately 19,900 metric tons of CO_2e. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 663 metric tons of CO_2e.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would be beneficial under NEPA.

CEQA Determination

Impacts would be beneficial under CEQA.

Noise and Vibration

Impacts resulting from the construction of Alternative 4 would be the same as those that would occur under Alternative 3, and the proposed mitigation measures for Alternative 3 above would also apply to construction of Alternative 4. One exception is that Alternative 4 includes tunneling, which is not included in Alternative 3. Noise impacts from tunnel boring machines are expected to be less-than-significant, because operations take place under ground.

Recently, a tunnel boring machine was used for the Metro Gold Line Eastside Extension. No noise complaints associated with ground-borne noise from the TBM or mine trains used for the Gold Line were received. Ground-borne noise and vibration impacts associated with tunneling are likely to be less than significant because tunneling will only take place within the Van Nuys Boulevard street ROW. However, an assessment of tunneling operations should be including in the Construction Vibration Control Plan required by mitigation measure MM-VIB-1 because ground-borne noise and vibration levels from tunneling are highly dependent on the means and methods selected by the contractor. If the Metro ground-borne noise limits or ground-borne vibration limits are exceeded during tunneling, the contractor will be required to take actions to reduce vibrations to acceptable levels. Such actions could include reducing the muck train speed, additional rail and tie isolation, and more frequent rail and wheel maintenance.

Construction Mitigation Measures

Mitigation Measure NOI-1 and VIB-1 are proposed (see discussion above for Alternative 1). Tunneling impacts would be addressed in the Construction Noise Control Plan (NOI-1) and in the Construction Vibration Control Plan (VIB-1).

Impacts Remaining after Mitigation

NEPA Finding

The noise and vibration from construction of the LRT Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the LRT Alternative would result in adverse effects, even with implementation of proposed mitigation measures.

CEQA Determination

The noise and vibration from construction of the LRT Alternative would be temporary; however, due to the increase in noise levels above ambient levels, the LRT Alternative would still result in significant and unavoidable impacts, even with implementation of proposed mitigation measures.

Geology and Soils

The LRT Alternative would result in the same construction impacts as the Low-Floor LRT/Tram Alternative. However, under this alternative, the tunneling and deep excavations during construction could cause vertical and lateral movement of the existing soils adjacent to the improvements. Therefore, tunneling required to construct the LRT Alternative could result in the potentially significant adverse impacts/effects due to ground settlement and differential settlement immediately above the alignment and on adjacent buildings and structures.

The LRT Alternative could also be affected by groundwater hazards during construction. Groundwater levels are shallow at the southern end of the LRT Alternative alignment near the Los Angeles River and become deeper at the northern end of the project area. The southern end of the proposed tunnel structure would potentially be located below historical high groundwater levels, and consequently groundwater may be encountered during construction of the tunnel, a potentially significant hazard.

The LRT Alternative would be designed and constructed in compliance with current building codes and regulatory requirements, as previously discussed, which would reduce the potential risks posed by the hazards above. Additionally, the potential for settlement during construction of the LRT tunnel, which could be a significant hazard, would be further reduced as a result of implementation of the design measures.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Hazardous Waste and Materials

The LRT Alternative would result in the same construction impacts as the Low-Floor LRT/Tram Alternative for the at-grade portions of the project. The cut and cover/tunneling portion of this alternative could consist of excavations as deep as 80 feet with piles extending deeper. The ESA indicated that adjacent to the project ROW, there are instances of LUSTs from former auto stations, and some of these facilities may extend into the project ROW because Van Nuys Boulevard may have been widened over time. Additionally, the proposed tunnel would cross beneath a portion of the former General Motors Plant and other manufacturing and industrial sites, which may contain soils containing hydrocarbons, VOCs, and other hazardous waste constituents. The possibility of encountering hazardous materials is a potentially significant impact under CEQA and an adverse effect under NEPA. However, these impacts would be reduced to less than significant with compliance with the requirements and design features and implementation of mitigation measures.

In addition, on the southern end of the proposed tunnel, the structure would potentially be located below historically high groundwater levels, which may be contaminated with hazardous materials, a potentially significant impact under CEQA and adverse effect under NEPA. If groundwater is encountered during construction, any wastewater generated would require laboratory testing to determine appropriate disposal. Compliance with regulatory requirements and mitigation measures would reduce potential effects to less than significant and non-adverse.

Construction Mitigation Measures

Please see mitigation measures MM-HAZ-1 through MM-HAZ-5 above. The following mitigation measure is also proposed.

MM-HAZ-6: In addition to the environmental studies identified above in MM-HAZ-1, the environmental investigation for the LRT Alternative shall include the following:

- If reconstruction of the Pacoima Wash bridge on San Fernando Road is proposed, the construction spoils (e.g., excavated soils, cuttings generated during installation of CIDH piles), including those in contact with the groundwater, shall be contained and tested for total chromium, 1,4-dioxane, trichloroethylene (TCE), and PCE to determine appropriate disposal.
- Phase II subsurface investigation shall be performed along the below-grade segment of the corridor to evaluate the need for environmental remediation measures during construction. The Phase II site investigation shall include the installation of groundwater monitoring wells for the tunneling portion of the alternative.
- An existing underground injection control well is located adjacent to the proposed tunnel along Van Nuys Boulevard for the LRT corridor alternative. The design team shall consult with California Department of Conservation to evaluate the potential impact of the well on the proposed improvements that could encounter groundwater and are located within ⅛ mile of the well.
- To evaluate for the presence of deeper soil contamination and VOCs in groundwater at cut and cover/tunnel excavation locations, soil borings shall be performed and groundwater monitoring wells shall be installed. Soil sampling shall include environmental screening for contamination by visual observations and field screening for VOCs with a photoionization detector (PID). Based on field screening, soil samples shall be analyzed for the suspected chemicals by a certified laboratory. Groundwater samples shall be analyzed for VOCs.

A Contaminated Soil/Groundwater Management Plan shall be prepared during final design that describes appropriate methods and measures to manage contamination encountered during construction.

Impacts Remaining after Mitigation

NEPA Finding

Effects under NEPA would not be adverse.

CEQA Determination

Impacts under CEQA would be less than significant.

Energy

Alternative 4 would involve the construction of a LRT system within a 9.2 mile corridor along Van Nuys Boulevard and San Fernando Road/Metrolink railroad right-of-way. The LRT alignment along Van Nuys Boulevard would include an underground segment. Alternative 4 would also involve construction of an MSF, new stations, a pedestrian bridge to the Sylmar Metrolink station, modifications to sidewalks and roadways, and the installation of TPSS units. For the purposes of estimating construction-related energy consumption, the plan for MSF Option A was assumed, as it would have the largest square footage and greatest demolition requirements. Also, the cut-and-cover construction method for the tunnel was assumed, as this would be the most energy-intensive construction method. If less energy-intensive options are carried forward, construction-related energy consumption for Alternative 4 would be less that what is identified below.

Diesel fuel for construction vehicles and equipment would be the primary source of energy used throughout the course of the construction period. In total, the five-year construction period would result in the consumption of approximately 274,000 MMBTU (see Table 4.11-9 and the Energy Technical Report in Appendix R). Although fuel would be consumed by construction vehicles and equipment, the estimated consumption would be limited to the construction period. An estimated 1.975 million gallons of fuel would be consumed, but the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013 (California Energy Commission 2014b). Given the extensive network of fueling stations throughout the project vicinity and the fact that construction would be short-term, no new or expanded sources of energy or infrastructure would be required to meet the energy demands due to Alternative 4 construction activities. Additionally, construction activities would comply with the Metro Green Construction Policy and all construction equipment would be maintained in accordance with manufacturers' specifications so equipment performance would not be compromised. Therefore, Alternative 4 would not result in the wasteful or inefficient use of energy. Impacts related to regional energy supply, demand, and conservation during the construction period would be less than significant under CEQA and non-adverse under NEPA.

Construction Mitigation Measures

No significant impacts would occur and mitigation measures would not be necessary.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Ecosystems and Biological Resources

Special-status Species

Impacts from this alternative would be the same as those expected to occur under Alternatives 2 and 3. This alternative would require removal of existing median islands, road widening in other areas, construction of new bus stop canopies, some of which have trees potentially used by nesting birds and/or bat species.

Two bridge upgrades are proposed for this alternative: One bridge at Van Nuys Boulevard where it crosses over the Pacoima Diversion Canal, and one adjacent to San Fernando Road as it crosses over the Pacoima Wash. The existing bridges could be used by nesting birds and/or bat species. Construction would also result in increases in noise, movement, and vibration at the bridges over the Pacoima Wash, the Pacoima Diversion Canal, and East Canyon Creek and the existing overpasses at I-5, State Route 118, and the Union Pacific Railroad (on Van Nuys Boulevard).

A MSF would also be constructed under this alternative (at one of three alternate sites under consideration). Construction of the MSF could affect nesting birds and/or tree roosting bats if trees are to be removed to make way for the new MSF structures. In addition, three underground stations would be constructed at Sherman Way, Van Nuys Boulevard, and Roscoe Boulevard, respectively. No impacts on biological resources are anticipated for the underground segment of this alternative.

Similar to Alternatives 1 through 3, this alternative could result in potentially significant impacts under CEQA and adverse effects under NEPA to nesting birds or roosting bats if construction activities remove vegetation where nesting birds are present or affect structures or vegetation used by special-status bat species. However, Mitigation Measures BIO-1 and BIO-2 would reduce potential impacts to less than significant under CEQA and non-adverse under NEPA.

Jurisdictional Waters

Two bridge upgrades are proposed under this alternative; crossing over the Pacoima Diversion Canal and Pacoima Wash, and are located at Van Nuys Boulevard and along San Fernando Road, within the Metro ROW. As a consequence, this alternative could affect WoUS, waters of the state (WoS), and CDFW jurisdictional streambeds. Project-related impacts on WoUS would require permitting under Section 404 of the Clean Water Act (CWA), most likely in the form of a Nationwide Permit 14 if project-related impacts on WoUS are less than 0.5 acre. Impacts on WoUS/WoS would also trigger the need for a Section 401 Certification, issued by the RWQCB. Acquisition of these permits would ensure compliance with CWA (Section 401and 404). A streambed Alteration Agreement, as regulated by Section 1602 of the California Fish and Game Code, would be required for project-related impacts on a CDFW jurisdictional streambed.

If permanent impacts on WoUS/WoS and CDFW unvegetated streambeds are unavoidable, compensatory mitigation may be required under section 401 and 404 of the CWA and Section 1602 of the California Fish and Game Code. This is expected to be required at a minimum 1:1 ratio. Final compensatory mitigation will be determined during the aquatic permitting process. In addition, temporary impacts would be required to be restored to pre-project conditions at the location of these impacts. Impacts on WoUS/WoS and CDFW streambeds would be less than significant under CEQA and non-adverse under NEPA after compliance with regulatory permit requirements.

Wildlife Corridors

This alternative would not substantially interfere with the movement of resident or migratory fish or wildlife species, or with established resident or migratory wildlife corridors, or impede use as a wildlife nursery site. Potential impacts would be less than significant under CEQA and non-adverse under NEPA.

Conflict with Local Policies

This alternative, similar to Alternatives 2 and 3, would require the removal of trees. Removal of any protected trees would conflict with City ordinances, which would be a potentially significant impact under CEQA and an adverse effect under NEPA. If protected trees are removed, implementation of Mitigation Measure BIO-4 would be required to ensure compliance with City ordinances. The biological consequence of removing or trimming urban trees would be less than significant under CEQA and a non-adverse effect under NEPA with implementation of Mitigation Measure BIO-4.

Construction Mitigation Measures

Mitigation Measures BIO-1 through BIO-4 are proposed (see discussion above under Alternative 1).

Impacts Remaining after Mitigation

NEPA Finding

Biological resources impacts would not be adverse following implementation of proposed mitigation measures.

CEQA Determination

Biological resources impacts would be less than significant following implementation of proposed mitigation measures.

Hydrology and Water Quality

Construction of the LRT Alternative would result in the same impacts as those described above for Alternative 3, with the exceptions pertaining to groundwater supplies and recharge, as described below.

Alternative 4, includes underground stations, which would require excavation, and a tunnel under the Pacoima Wash. High groundwater elevations at this location range from approximately 120 feet below ground surface at the northern portal of the tunnel to approximately 60 feet below ground surface near Sherman Way at the southern portal of the tunnel.

The reinforced concrete box (RCB) found under Van Nuys Boulevard would be realigned so there would be no conflict during trenching associated for the proposed underground tunnel. The RCB would continue to be routed to the same storm drain network and would not be increased in size/capacity. Therefore, its realignment would not result in a substantial change in terms of existing water hydrology. The drainage patterns could be temporarily altered during construction if the drainage is routed to a different location (i.e., nearby storm drain) during the realignment. However, the drainage would still be going to the same overall storm drain network, and BMPs would be implemented to ensure that no impacts of drainage (i.e. erosion, etc.) would occur during the temporary change in drainage inlet. The proposed work would be done during the dry season to keep drainage volumes at a minimum.

Dewatering would likely be required for the underground stations and could potentially be required for utility relocation or replacement depending on local groundwater levels. As discussed previously, residual contaminated groundwater could be encountered during dewater activities. The project contractor would be required to comply with Los Angeles RWQCB General Dewatering General Permit. Groundwater extracted during dewatering activity would either be treated prior to discharge or disposed of at a wastewater treatment facility.

Adherence to dewatering requirements of the Los Angeles RWQCB, and minimal water use during construction would ensure that impacts on groundwater would be less than significant under CEQA and the effects would not be adverse under NEPA.

Construction Mitigation Measures

No construction mitigation measures would be required.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 4 would not result in adverse effects to hydrology and water resources during construction.

CEQA Determination

Alternative 4 would result in less-than-significant impacts to hydrology and water resources during construction.

Safety and Security

Construction of Alternative 4 may have temporary adverse effects on public safety and security in the study area. During construction motorists, pedestrians, and bicyclists would experience additional safety hazards. This would result from the number and proximity of vehicles and people adjacent to LRT construction. Construction activities, which would include an approximate 2.5-mile-long trench (cut-and-cover construction) and/or tunnel, could also result in lane closures, traffic detours, and designated truck routes, which could adversely affect emergency vehicle response time.

The potential for significant safety and security impacts would be minimized by compliance with OSHA, Cal/OSHA, and Metro safety and security programs, which are designed to reduce potential adverse effects during construction.

Construction Mitigation Measures

Safety measures MM-SS-1 through MM-SS-3 would be implemented.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse under NEPA.

CEQA Determination

Impacts would be less than significant under CEQA.

Parklands and Community Facilities

Alternative 4 would require the most extensive construction of the four build alternatives because of the subway portion of the alignment. Similar to Alternative 3, the LRT Alternative would include construction of OCS, TPSSs, and MSF structures. Those structures or facilities would not be required for the BRT alternatives. As a consequence, Alternative 4 would result in the greatest construction impacts, compared to the other alternatives, but the types and level of significance of the impacts would be the same as those described above for Alternative 3.

Mitigation Measures

The reader is referred to the following sections in this Draft EIS/EIR for mitigation measures to reduce or avoid potential construction impacts on parklands and community facilities: Chapter 2-Transportation, Transit, Circulation, and Parking; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

The potential construction air quality effects on parklands and community facilities on sensitive receptors at parklands or community facilities would be adverse after proposed mitigation. All other effects would be non-adverse.

CEQA Finding

The potential construction air quality impacts on parklands and community facilities on sensitive receptors would be significant after implementation of proposed mitigation measures, and thus would require Metro to adopt a Statement of Overriding Considerations for approval of this alternative. All other impacts would be less than significant.

Environmental Justice

Alternative 4 would require the most extensive construction of the four build alternatives because of the subway portion of the alignment. Similar to Alternative 3, the LRT Alternative (Alternative 4) would include construction of OCS, TPSS, and MSF structures, which would not be required for the BRT alternatives. As a consequence, Alternative 4 would have the greatest construction impacts compared to the other alternatives, but the types and level of significance of the impacts would be the same as those described in the previous section for Alternative 3. As discussed below, the displacement impacts, under Alternative 4, would be slightly greater than the impact that would occur under Alternative 3.

Alternative 4 would require full or partial right-of-way acquisitions ranging between 110 to 120 light industrial, manufacturing, and commercial properties for the construction of the MSF and connections to the MSF from the LRT alignment, depending on the MSF option selected. The displacement impacts would be predominantly borne by environmental justice populations; therefore, similar to Alternative 3, Alternative 4 would result in disproportionately high and adverse effects on environmental justice populations. However, as noted above for Alternative 3, relocation assistance and compensation would be provided for all displaced businesses and residences. Additionally, within the larger surrounding urban area, it is anticipated that there would be enough available properties to accommodate most, if not all, of the displaced businesses. It is not anticipated that construction of a substantial amount of new development would be required to accommodate the relocations. As a consequence of the implementation of compliance and mitigation measures and given Alternative 4 would provide improved transit service and connectivity in an area with large transit-dependent and environmental justice populations, the displacement impacts on the environmental justice populations would not be disproportionately high and adverse.

Construction Mitigation Measures

The reader is referred to the following sections in this EIS/EIR for measures to reduce or avoid potential construction impacts on local communities, including environmental justice populations: Chapter 3-Transportation, Transit, Circulation, and Parking; Section 4.2-Real Estate and Acquisitions; Section 4.4-Communities and Neighborhoods; Section 4.5-Visual Quality and Aesthetics; Section 4.6-Air Quality; Section 4.8-Noise and Vibration; and Section 4.14-Safety and Security.

Impacts Remaining after Mitigation

NEPA Finding

Alternative 4 would result in disproportionately high and adverse effects on minority and low-income populations with respect to displacements. However, this alternative would also result in new transit opportunities that are anticipated to result in improved connectivity and transit equity. Mitigation measures would reduce or minimize the adverse effects, where feasible. After implementation of the proposed mitigation measures, disproportionately adverse effects would not be substantial.

CEQA Finding

There are no thresholds of significance in CEQA for environmental justice impacts. Therefore, no CEQA determination can be made for environmental justice impacts resulting from this alternative.

Growth-Inducing Impacts

Construction impacts would be the same as the impacts described for the BRT Alternatives. Although the LRT Alternative would be the most costly and take the longest to construct, and consequently it would generate the greatest number of construction jobs, similar to the other build alternatives, it is not expected to result in a substantial increase in the project study area population.

Construction Mitigation Measures

No construction mitigation measures are required.

Impacts Remaining after Mitigation

NEPA Finding

Effects would not be adverse.

CEQA Determination

Impacts would be less than significant.