ATTACHMENT A

Executive Summary

ES.1 Introduction

The East San Fernando Valley Transit Corridor (ESFVTC) Project is a vital public transit infrastructure investment that would provide improved transit service along the busy Van Nuys Boulevard and San Fernando Road corridors serving the eastern San Fernando Valley. The proposed project would extend from the Metro Orange Line in the south to the Sylmar/San Fernando Metrolink Station in the north and provide area residents, businesses, and transit-dependent populations with improved mobility and access to the regional transit system. Figure ES-1 shows the regional Los Angeles County Metropolitan Transportation Authority (Metro) transit lines expected to be operational by the year 2040 and illustrates how the ESFVTC Project would improve access to the regional system.

In addition to mobility benefits, the ESFVTC Project would provide the project area with transportation, economic, land use, and environmental benefits. The analyses presented in this Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) document the impacts on the environment that could occur due to the project, as required by National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) regulations. It also illustrates how improved mobility to and from the project area has the potential to boost economic development and improve social justice by providing better access to employment, educational and health facilities, and activity centers. Improved transit connectivity and service would also increase transit ridership, which in turn could result in environmental benefits due to reduced vehicle trips, reductions in vehicle miles traveled, less roadway congestion, and improved air quality.

The ESFVTC Project is included in the Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted in April 2016. The RTP/SCS also outlines several projects in and around the project area aimed at maximizing the effectiveness, safety, and reliability of Southern California's transportation system.

ES.2 Purpose and Need

ES.2.1 Project Purpose/Project Objectives

The ESFVTC Project would provide new service and/or infrastructure that would improve passenger mobility and connectivity to regional activity centers, increase transit service efficiency (speeds and passenger throughput), and make transit service more environmentally beneficial through reductions in greenhouse gas emissions.

Figure ES-1: Existing and Proposed Metro Regional Transportation Projects

Source: Metro, 2019.

The purposes and objectives of the proposed project are summarized below. The project objectives reflect Metro's mission to meet public transportation and mobility needs for transit infrastructure while also being a responsible steward of the environment and considerate of affected agencies and community members when planning a fiscally sound project.

- Improve mobility in the eastern San Fernando Valley by introducing an improved north–south transit connection between key transit hubs/routes;
- Provide new service and/or infrastructure that improves passenger mobility and enhances transit accessibility/connectivity for residents within the project study area to local and regional destinations and activity centers;
- Provide more reliable transit service within the eastern San Fernando Valley;
- Increase transit service efficiency (speeds and passenger throughput) in the project study area;
- Provide additional transit options in an area with a large transit-dependent population, including the disabled, high-transit ridership;
- Encourage modal shift to transit in the eastern San Fernando Valley, thereby improving air quality; and
- Make transit service more environmentally beneficial through reductions in greenhouse gas emissions in the project study area.

ES.2.2 Need

The following mobility challenges within the project study area will continue to grow if no action is taken, due, in large part, to continued population growth, which increases the demand for transit service along the Van Nuys Boulevard corridor, a corridor that already has high population density and transit-dependent persons who rely on transit for daily transportation, including commuting:

- **Mobility challenges resulting from increased roadway congestion, affecting project study area bus service** – Based on the Metro travel forecast model, the number of congested roadway segments (a portion of the roadway located between two intersections) in the project study area is expected to increase from 126 to 162, a 29 percent increase in the AM peak hour and from 103 to 159, a 54 percent increase in the PM peak hour. Average speeds on these segments are expected to decrease by up to 12 miles per hour (mph) during the AM and PM peak hours. The increase in congested segments will result in lower vehicle speeds and increased travel delay in the project study area, reducing mobility. Based on travel projections from the Metro model, the number of study intersections currently operating at level of service (LOS) E (unstable flow with intolerable delay) or F (forced flow and congested; queues fail to clear) along the Van Nuys Boulevard corridor will more than double by 2040. Photo ES-1 shows typical existing congested conditions along the corridor.

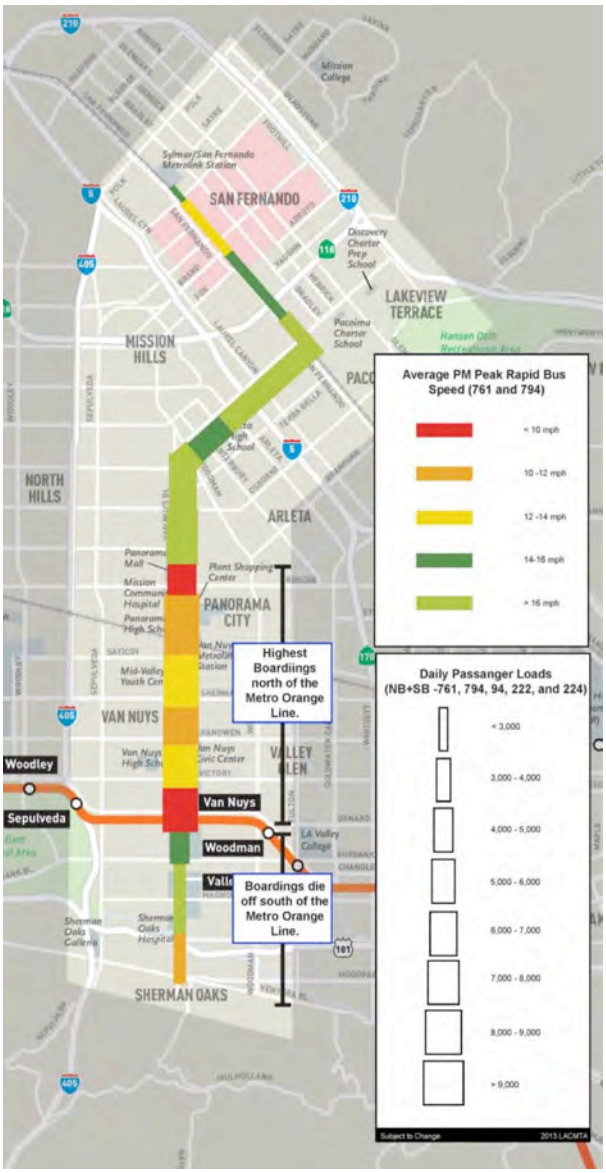
Photo ES-1: Existing Congestion on Van Nuys Boulevard Corridor

Source: Metro, 2016.

- **Increasing travel demand** – According to the Metro model, the person-trip distribution for the project study area indicates that a high number of travel trips tend to be localized to the communities within the area. Approximately 50 percent of the trips stay within the project study area, with a large portion of trips occurring between the northern communities of the City of San Fernando and Pacoima and the southern communities of Mission Hills and Panorama City. These southern communities have a higher number of activity centers that include Kaiser Permanente Hospital, several high schools, and the Panorama Mall. A significant proportion of the overall project study area trip distribution is to and from the Van Nuys Civic Center area, as seen in Figure ES-2, constituting approximately 52 percent of all project study area trips.

  These general trip trends are expected to remain similar in 2040 and show a high attraction of trips between the central project study area and the Civic Center area. Because of the centralized trip patterns, transit accessibility and connectivity are integral to project study area resident travel needs, especially to those who are transit dependent (35 percent). Ten percent of households do not own a car and the average adult poverty ratio is 2.26 persons per acre compared to 1.08 per acre for Los Angeles County. These residents rely on Metro and City of Los Angeles Department of Transportation bus services for work and non-work trips within the study project area and the greater Los Angeles County area. By 2040, the trip pattern is expected to remain similar, with a high number of trips (approximately 50 percent) staying within the project study area. Local trips will remain a significant contributor to traffic and transit trends. Therefore, providing enhanced transit connections and accessibility to surrounding destinations is critical for residents that rely on public transit.

Figure ES-2: Existing Bus Boarding Distribution for Van Nuys Boulevard Corridor



- **Transit service performance and reliability is decreasing due to increased congestion** – The existing bus service along the project study area corridors do not meet the Metro on-time performance goal of 80 percent. This is directly correlated to levels of roadway congestion and related vehicular speeds, which together reduce the mobility of area bus riders. As congestion continues to increase, the reliability of bus service for riders will also worsen, because further congestion will further decrease bus speeds.

- **Large transit-dependent population and expected growth in ridership** – The Van Nuys Boulevard corridor has the seventh highest total transit boardings on the Metro Bus system. This corridor is served by Metro Rapid Line 761 and Local Line 233, which have combined passenger boardings that are the second highest in the San Fernando Valley, with the Metro Orange Line boardings at a slightly higher number. Sepulveda Boulevard and San Fernando Road also have some of the highest total boardings of all transit corridors in the San Fernando Valley. Both transit dependent and discretionary riders constitute the demand in passenger boardings. The overall population density and the transit dependent population density are both more than twice as high in the project study area as in the urbanized area of the County as a whole. The project study area average of 0.53 zero-vehicle households per acre is 77 percent higher than the 0.30 County average. The project study area average transit dependent population of 7.04 persons per acre is more than 100 percent higher than the 3.21 County average. The project study area average of 2.26 adult persons below the poverty line per acre is over two times the 1.08 County average. Although population density and transit dependent population characteristics are expected to stay the same or improve slightly, project study area population is expected to increase by almost 12 percent by the year 2040, and area employment will increase by approximately 15 percent. With the increase in population and employment growth, it is likely that there will be an increase in bus crowding (Photo ES-2).

Photo ES-2: Existing Bus Crowding

Source: Metro, 2016.

- **Exceeding air quality criteria pollutant standards within the project study area** – Standards for many of the criteria pollutants monitored within the east San Fernando Valley have been exceeded multiple times during each of the previous three years of collected data (2011–2013). The traffic analysis indicates that travel speeds, vehicular delay, and congestion will worsen by 2040. This will result in increased gas consumption, and vehicle emissions in the project study area. The increase in delay at the study intersections is expected to increase vehicle emissions and fuel consumption.

ES.3 Identification of the Locally Preferred Alternative

In September and October of 2017, the Draft Environmental Impact Study/Draft Environmental Impact Report (DEIS/DEIR) was circulated for public review and comment for 60 days. The following six alternatives were evaluated in the DEIS/DEIR:

- No-Build Alternative;
- TSM Alternative;

- BRT Alternatives:
  - Alternative 1 – Curb-Running BRT Alternative;
  - Alternative 2 – Median-Running BRT Alternative;
- Rail Alternatives:
  - Alternative 3 – Low-Floor Light Rail Transit (LRT)/Tram Alternative; and
  - Alternative 4 – LRT Alternative.

All build alternatives considered within the DEIS/DEIR (Alternatives 1 through 4) would operate at grade over 9.2 miles, either in a dedicated busway or dedicated guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station on the north to the Van Nuys Metro Orange Line station on the south, with the exception of Alternative 4, which included a 2.5-mile segment within Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of the City of Los Angeles communities of Panorama City and Van Nuys.

Metro applied the objectives below in evaluating potential alternatives for the ESFVTC Project.

- Provide new service and/or infrastructure that improves passenger mobility and connectivity to regional activity centers;
- Increase transit service efficiency (speeds and passenger throughput) in the project study area; and
- Make transit service more environmentally beneficial by providing alternatives to auto-centric travel modes and other environmental benefits, such as reduced air pollutants, including reductions in greenhouse gas emissions in the project study area.

These goals draw upon those presented in the Alternatives Analysis Report completed in 2012. For the purposes of the DEIS/DEIR, these goals were updated and refined to reflect public involvement and further analysis of the proposed project, the project area, and the background transportation system.

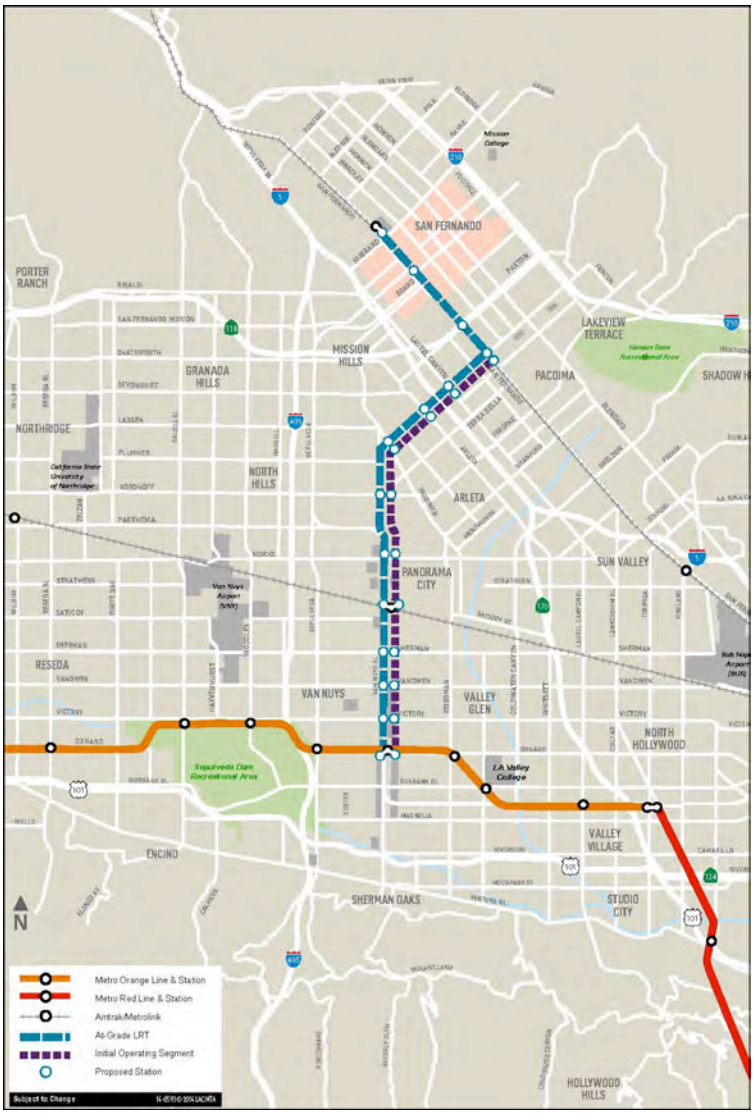
Based on the project objectives and the public comments received during the 60-day comment period for the DEIS/DEIR, a modified version of Alternative 4 (Alternative 4 Modified: At-Grade LRT) was developed on June 28, 2018, and the Metro Board of Directors formally identified Alternative 4 Modified: At-Grade LRT as the Locally Preferred Alternative (LPA). The primary difference between DEIS/DEIR Alternative 4 and the LPA is the elimination of the 2.5-mile subway portion of DEIS/DEIR Alternative 4. Under the LPA, the entire 9.2-mile alignment (Figure ES-3) would be constructed at grade. The subway portion was eliminated because it would be very expensive, have significant construction impacts, and result in little time savings compared with a fully at-grade alignment. In addition, Metro determined that the LPA best fulfilled the project's purpose and need to:

- Improve north–south mobility,
- Provide more reliable operations and connections between key transit hubs/routes,
- Enhance transit accessibility/connectivity to local and regional destinations,
- Provide additional transit options in a largely transit-dependent area, and
- Encourage mode shift to transit.

The LPA also includes the following positive attributes compared to the LRT Alternatives (Alternatives 3 and 4) in the DEIS/DEIR:

- Like Alternative 4, the LPA has fewer stations and would result in superior travel speeds and a greater number of overall boardings compared with the Low-Floor LRT/Tram Alternative (Alternative 3).
- The approximately 2.5-mile subway portion of Alternative 4 would be very expensive, result in additional significant construction impacts, and result in little time savings compared with the LPA.
- By operating trains on a dedicated rail right-of-way adjacent to San Fernando Road, the LPA and Alternative 4 would result in fewer train/automobile conflicts compared with operating trains in mixed-flow traffic (Alternative 3).
- The Low-Floor LRT/Tram Alternative (Alternative 3) would replace local bus service with more frequent rail service; however, this would result in fewer overall boardings and require trains to stop more often, which would result in slower travel speeds, than the LPA and Alternative 4.

Figure ES-3: Project Alignment



Source: KOA, 2019.

Subsequent to identification of the LPA by the Metro Board, additional refinements were made to the project plans to improve pedestrian connectivity and safety, minimize right-of-way impacts and displacements, and improve operational efficiencies. These improvements included refinements to the station locations and footprints, track alignment, intersection configurations, and traction power substation (TPSS) locations. The reader is referred to Appendix GG of this FEIS/FEIR, which contains the revised Advanced Conceptual Plans for the LPA.

ES.3.1 Project Phasing and Identification of an Initial Operating Segment

To ensure the objectives of the project are met in a timely manner and avoid delays due to the timing of funding availability, Metro is considering constructing the LPA in two phases, an Initial Operating Segment (IOS) or phase 1, which would consist of the portion of the LPA alignment along Van Nuys Boulevard, and phase 2, which would include the northern 2.5-mile segment of the LPA along the Metro owned railroad right-of-way. Accordingly, an IOS has been included in this FEIS/FEIR to enable Metro to realize potential cost savings, which would not otherwise occur under the LPA, from phasing the project. It should be noted that Metro is proceeding with IOSs on other projects for that reason and to specifically provide the decision-making body of Metro (the Metro Board) with flexibility in determining the most efficient and cost-effective manner to implement those projects. Proceeding with an IOS for the proposed project will also allow further coordination to occur with the Public Utilities Commission (PUC) and Metrolink, which will be necessary to accommodate double tracking of the Antelope Valley Line, and with the City of San Fernando regarding traffic impacts at intersections in the City prior to development of the remaining northern segment (phase 2) of the LPA.

Similar to the LPA, the IOS and phasing of the project would be responsive to the community's desire, as expressed in the public comments on the DEIS/DEIR, for an at-grade LRT line serving the eastern San Fernando Valley. The IOS would also fulfill the project's purpose and need to:

- Improve north–south mobility,
- Provide more reliable operations and connections between key transit hubs/routes,
- Enhance transit accessibility/connectivity to local and regional destinations,
- Provide additional transit options in a largely transit-dependent area, and
- Encourage mode shift to transit.

ES.3.2 Description of the Locally Preferred Alternative

The LPA consists of a 9.2-mile, at- grade LRT with 14 stations. Under the LPA, the LRT would be powered by electrified overhead lines and would travel 2.5 miles along the Metro-owned right-of-way used by the Antelope Valley Metrolink line and Union Pacific Railroad from the Sylmar/San Fernando Metrolink Station south to Van Nuys Boulevard. As the LPA approaches Van Nuys Boulevard it would transition to and operate in a median dedicated guideway along Van Nuys Boulevard for approximately 6.7 miles south to the Van Nuys Metro Orange Line Station. The 9.2-mile route of the LPA is illustrated in Figure ES-3. Similar to Alternative 4 described in the DEIS/DEIR, the LPA would include 14 stations. Additional details regarding the LPA characteristics, components, and facilities are discussed below.

ES.3.2.1 Vehicles

LRT vehicles for the LPA and IOS would be similar to those currently used throughout the existing Metro LRT system, as shown in Photo ES-3. Metro's LRT system is designed to accommodate trains with up to three, 90-foot rail cars, for a total train length of 270 feet. Although LRT vehicles can operate at speeds of up to 65 mph in an exclusive at-grade guideway along Van Nuys Boulevard, they would operate no faster than the posted speed limit, which is 35 mph. The LPA

assumes a maximum speed of 65 mph when traveling within the Metro right-of-way adjacent to San Fernando Road. Three-car contests (i.e., trains) can carry approximately 230 seated passengers and up to 400 passengers when standing passengers are included. The LRT train sets would be configured with a driver's cab at either end, similar to other Metro light rail trains, allowing them to run in either direction without the need to turn around at the termini.

Photo ES-3: Examples of Metro LRT Vehicle

Source: Metro Transportation Library and Archives, 2015.

ES.3.2.2 Alignment

The LPA and IOS would have two tracks. Along and just east of San Fernando Road, from the Sylmar/San Fernando Metrolink Station south to Van Nuys Boulevard, the LPA alignment would be located within the existing Metro-owned right-of-way currently used by Metrolink and Union Pacific Railroad. Metrolink and Union Pacific Railroad would continue to use a separate dedicated track.

From the intersection of San Fernando Road and Van Nuys Boulevard to the Metro Orange Line, the LPA and IOS would operate in a semi-exclusive right-of-way in what is currently the median of Van Nuys Boulevard. The LPA and IOS would be separated from automobile traffic along Van Nuys Boulevard by a barrier, except at signalized intersections and controlled at-grade crossings The train would operate no faster than the adjacent prevailing traffic speeds and would be controlled by train signals that would coordinate with the traffic signals.

ES.3.2.3 Stations

Stations would be constructed at approximately 3/4-mile intervals along the entire route to integrate with existing Metro bus services. There would be 14 stations under the LPA, which are listed below, and 11 stations under the IOS (stations 4 through 11 below).

1. Sylmar/San Fernando Metrolink Station;
2. Maclay Station;
3. Paxton Station;
4. Van Nuys/San Fernando Station;
5. Laurel Canyon Station;
6. Arleta Station;
7. Woodman Station;
8. Nordhoff Station;
9. Roscoe Station;
10. Van Nuys Metrolink Station;
11. Sherman Way Station;
12. Vanowen Station;
13. Victory Station; and
14. Van Nuys Metro Orange Line Station.

The proposed stations would have designs consistent with the Metro Rail Design Criteria (MRDC), including directive and standard drawings. Stations, an example of which is shown in Photo ES-4, would be ADA compliant, including compliance with the requirements pertaining to rail platforms, rail station signs, public address systems, clocks, escalators, and track crossings.

Common elements would include signage, maps, fixtures, furnishings, lighting, and communications equipment. All stations are proposed to have center or side platforms, allowing passengers to access trains traveling in either direction. Typically, at-grade station platforms are 270 feet long (to accommodate three-car trains), 39 inches high (to allow level boarding and full accessibility, in compliance with the ADA), and minimum 12.2 feet wide for side platforms to 16 feet wide for center platform stations.

Canopies at the LRT stations would be approximately 13 feet high and would incorporate directional station lighting to enhance safety. The stations would include seating elements and contain ticket vending machines, variable message signs, route maps, and fare gates, as well as the name and location of the LRT station. In addition, Metro is moving to a fare gate system and such a system would be integrated into station design as appropriate (Photo ES-4).

When feasible, stations would also include bicycle parking and bike lockers at or near stations, as required by MRDC. 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 part of the amenities. No parking would be provided at the proposed new stations.

Photo ES-4: Example of Typical At-Grade LRT Station

Source: Metro, 2019. Note: These figures do not represent all components of a Metro system, such as pedestrian gates.

ES.3.2.4 Supporting Facilities

The LPA and IOS would require a number of additional elements to support vehicle operations, including an overhead contact system (OCS), TPSS, communications and signaling buildings, and a maintenance storage facility (MSF).

Maintenance and Storage Facility

The LPA and IOS would include construction of a new MSF, which would provide secure storage of the LRT vehicles when they are not in operation, and regular light maintenance to keep them clean and in good operating condition as well as heavy maintenance.

MSF Option B, has been identified as the locally preferred site by the Metro Board. The MSF site would be approximately 25 acres in size. MSF B would be located on the west side of Van Nuys Boulevard and would be bounded by Keswick Street on the south, Raymer Street on the east and north, and the Pacoima Wash on the west. Access to the facility would be via two turnout tracks on the west side of the alignment. A northbound turnout would be located in the vicinity of Saticoy Street. A southbound turnout would be located in the vicinity of Keswick Street.

Photo ES-5: Typical LRT MSF Facility and Inside the Main Building

Source: Metro, 20150.

The MSF would accommodate both operational and administrative functions. The MSF would accommodate all levels of vehicle service and maintenance (i.e., progressive maintenance, scheduled maintenance, unscheduled repairs, warrantee service, and limited heavy maintenance) in addition to storage space for vehicles. The typical MSF would provide: interior and exterior vehicle cleaning, sanding, and inspection areas; maintenance and repair shops; storage yards for vehicles; and storage areas for materials, tools, and spare vehicle parts. The storage yard would be the point of origin and termination for daily service. Photo ES-5 is a photograph of a typical MSF facility (Metro Green Line LRT MSF is shown).

The MSF would serve as the "home base" for the operators. Space would be provided for staff offices, dispatcher workstations, employee break rooms and/or lunchrooms, operator areas with lockers, showers and restrooms, and employee and visitor parking.

The MSF would include collision/body repair areas, enclosed paint booths, and wheel truing (the profiling of wheels to ensure the proper wheel to rail interface) machines. The MSF would also include maintenance-of-way, signals and communications, and traction power functions that would be housed in separate and smaller buildings.

Overhead Contact System

The overhead contact system (OCS) is a network of overhead wires that distributes electricity to light rail vehicles (see Photo ES-6). An OCS would include steel poles placed within the entire alignment to support the overhead wires above the light rail vehicles. A telescoping pantograph or "arm" on the roof of LRT vehicles 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 approximately every 90 to 170 feet between or outside of the two tracks.

Photo ES-6: Typical OCS for LRT

Source: KOA, 2019.

Traction Power Substations

TPSSs are electrical substations that would be typically placed at approximately ¾-mile intervals. The LPA LRT vehicles would be powered by approximately 14 TPSS units, which would be spaced relatively evenly along the alignment to provide direct current to the LRT vehicles. TPSSs would be located at points along the alignment where maximum power draw is expected (such as at stations and on inclines). In the event that one TPSS needs to be taken offline, the LRT vehicles would continue to operate. The MSF would also have its own designated TPSS. A representative TPSS is shown in Photo ES-7.

Photo ES-7: Typical TPSS for LRT

Source: Metro, 2019.

Communications and Signaling Buildings

Communications and signaling buildings that contain train control and communications equipment would be located at each station, crossover, and at-grade crossing.

ES.3.2.5 Operations

The proposed LRT is anticipated to operate with a 6-minute peak and 12-minute off-peak headways when it opens and is designed to operate at 5-minute peak and 10-minute off-peak once ridership begins to increase. Adjacent and connecting bus lines would be evaluated and headways would be revised depending upon train schedule and demand.

ES.3.2.6 Parking Loss and Travel Lane Loss

Parking Loss

With implementation of the LPA, all curbside parking would be prohibited along Van Nuys Boulevard.

Travel Lane Loss

The number of travel lanes on Van Nuys Boulevard would be reduced from three to two in each direction for the segment between the Metro Orange Line and Parthenia Street under the LPA and IOS. North of that point, the LPA and IOS would maintain the two existing travel lanes in each direction to Laurel Canyon Boulevard and the existing one northbound lane and two southbound lanes along Van Nuys Boulevard from Laurel Canyon Boulevard to San Fernando Road.

ES.3.2.7 Turning Restrictions

Left turns from Van Nuys Boulevard onto cross streets would be maintained at most of the currently signalized intersections where the LRT would be running in the median. All crossings of the alignment would be controlled by a traffic signal. Motorists who desire to make a left turn where it is no longer allowed would have to make a U-turn at a signalized left-turn location or choose a route that would allow them to use a signalized cross street.

Under the LPA and IOS, the intersections with turning restrictions is refined as follows:

- Pinney Street and San Fernando Road (closed via a cul de sac);
- Van Nuys Boulevard and El Dorado Avenue (southbound left only);
- Van Nuys Boulevard and Tamarack Avenue;
- Van Nuys Boulevard and Telfair Avenue;
- Van Nuys Boulevard and Cayuga Avenue;
- Van Nuys Boulevard and Oneida Avenue;
- Van Nuys Boulevard and Haddon Avenue;
- Van Nuys Boulevard and Omelveny Avenue;
- Van Nuys Boulevard and Amboy Avenue;
- Van Nuys Boulevard and Rincon Avenue;
- Van Nuys Boulevard and Remick Avenue;
- Van Nuys Boulevard and Vena Avenue;
- Van Nuys Boulevard and Bartee Avenue (northbound left only);
- Van Nuys Boulevard and Lev Avenue;
- Van Nuys Boulevard and Arleta Avenue (southbound left only);
- Van Nuys Boulevard and Beachy Avenue (southbound left only and pedestrian crossings);
- Van Nuys Boulevard and Canterbury Avenue;
- Van Nuys Boulevard and Woodman Avenue (southbound left only);
- Van Nuys Boulevard and Vesper Avenue (northbound left only);
- Van Nuys Boulevard and Novice Street;
- Van Nuys Boulevard and Gledhill Street;
- Van Nuys Boulevard and Vincennes Street;
- Van Nuys Boulevard and Osborne Street;
- Van Nuys Boulevard and Rayen Street;
- Van Nuys Boulevard and Parthenia Street (southbound left only);
- Van Nuys Boulevard and Lorne Street;
- Van Nuys Boulevard and Blythe Street;
- Van Nuys Boulevard and Michaels Street;
- Van Nuys Boulevard and Keswick Street (southbound left only);
- Van Nuys Boulevard and Covello Street;
- Van Nuys Boulevard and Wyandotte Street;
- Van Nuys Boulevard and Gault Street (pedestrian crossing only); Van Nuys Boulevard and Hart Street;

- Van Nuys Boulevard and Hartland Street (pedestrian crossing only);
- Van Nuys Boulevard and Archwood Street;
- Van Nuys Boulevard and Haynes Street;
- Van Nuys Boulevard and Hamlin Street;
- Van Nuys Boulevard and Gilmore Street;
- Van Nuys Boulevard and Friar Street;
- Van Nuys Boulevard and Erwin Street;
- Van Nuys Boulevard and Delano Street;
- Van Nuys Boulevard and Calvert Street;
- Van Nuys Boulevard and Bessemer Street.

ES.3.2.8 Bicycle Facilities

When feasible, bicycle parking would be provided at or near Metro stations, as required by MRDC.

Bicycle parking would be provided at or near Metro stations, as feasible. The existing bike lanes, which extend approximately two miles north along Nuys Boulevard from Parthenia Street to Beachy Avenue and from Laurel Canyon Boulevard to San Fernando Road, would be removed under the LPA and IOS due to right-of-way constraints.

The City of Los Angeles constructed a bicycle path within Metro's railroad right-of-way parallel to San Fernando Road. At the point where the LPA crosses the bicycle path, near the intersection of Pinney Street and San Fernando Road, a signalized grade crossing would be provided. This existing bike path would remain in place except in the City of San Fernando where the bike path would be relocated east in order to accommodate the relocated single Metrolink/UPRR track. The Metro right-of-way is generally wide enough to allow the bicycle path to remain alongside a pair of LRT tracks and a relocated track for Metrolink and the Union Pacific Railroad, though some partial takes of adjacent properties would be required in the City of San Fernando.

ES.3.2.9 Accessibility

Pedestrian Access

There would be a pedestrian overcrossing or undercrossing at the Sylmar/San Fernando Metrolink Station from the LRT platform to the Metrolink platform. For other pedestrian crossings along Metro right-of-way, the crossings would be controlled by pedestrian gates.

All current signal-controlled crosswalks along Van Nuys Boulevard would be maintained under the LPA and IOS. Between the signalized intersections, a barrier would be installed to prevent uncontrolled pedestrian crossings, as is Metro's current practice on its median-running LRT lines. Pedestrians would be required to walk to a signalized location to cross Van Nuys Boulevard. LRT passengers would reach the median station platforms from crosswalks at signalized intersections.

Vehicular Access

Vehicular access along Van Nuys Boulevard that would cross the LRT alignment would be limited to signalized crossings. All other streets or driveways would become right turns into and out of Van Nuys Boulevard.

ES.3.2.10 Right-of-Way

Right-of-way would be required to construct the MSF site from the LPA and IOS alignment. MSF Option B has been identified by Metro as the locally preferred site. Acquisitions would be needed on the west side of Van Nuys Boulevard so that the LRT vehicles can travel to the west of the Van Nuys Boulevard alignment, to the MSF site located within the industrial areas north of Keswick Street and south of Raymer Street.

Metro is the owner of a mostly 100-foot-wide railroad right-of-way through the Pacoima community, the City of San Fernando, and the Sylmar community that currently has a single track down the center of the corridor, with some sidings, and a bike path. The track is operated by the Southern California Regional Rail Authority for Metrolink commuter rail service and is also utilized by the Union Pacific Railroad. Within the Pacoima community of the City of Los Angeles, the 100-foot width could accommodate two LRT tracks, one commuter and freight rail track, and the existing bike path. To provide sufficient room for the LRT tracks under the LPA, the existing single rail track would be removed from the center of the corridor and replaced with a single track along the corridor's northeastern edge to serve commuter and freight rail operations. The right-of-way could accommodate center platform LRT stations near Paxton Street and Maclay Avenue.

At the Pacoima Wash, north of SR-118, a pair of new bridges would be needed, one for the LRT tracks, and the other for the commuter/freight rail track. These bridges would lie alongside the existing San Fernando Road Bridge and the existing bike path bridge. The available right-of-way within the City of San Fernando is relatively narrow. From Jesse/Wolfskill Street to a point approximately 1,000 feet north of Maclay Avenue, the right-of-way widths generally range from 60 feet to 80 feet. As a consequence, property acquisitions would most likely be required to construct the PLPA within this stretch of the project alignment because of the relatively constrained existing right-of-way. Acquisition of properties would also be required for the placement of TPSS units at approximately ¾ -mile intervals along the alignment, as well as at the San Fernando Road and Van Nuys Boulevard intersection.

ES.3.2.11 Gated LRT Grade Crossings

For the portion of the LPA alignment within the Metro-owned railroad right-of-way, the grade crossings at Paxton Street, Wolfskill Street, Brand Boulevard, Maclay Avenue, and Hubbard Avenue would be controlled by traditional vehicular crossing gates. The current single-track crossings would become three.

There would be pedestrian gates for at-grade street crossings, in addition to the traditional vehicular crossing gates that exist at Paxton Street, Wolfskill Street, Brand Boulevard, Maclay Avenue, and Hubbard Avenue.

There would also be left-turn lane gates, where feasible, at signalized intersections along Van Nuys Boulevard, under the LPA and IOS, where left turns are permitted across the LRT dedicated guideway. The gates would be activated whenever a train approaches the intersection to enhance safety at these locations.

ES.3.2.12 Description of the Initial Operating Segment

The IOS would run along the same alignment and have the same LRT design features, MSF, and operating and service characteristics as those described for the LPA below; however, the IOS would extend as far north as San Fernando Road and the proposed Van Nuys/San Fernando station, rather than continuing 2.5 miles within the existing railroad right-of-way to the Sylmar/San Fernando Metrolink station, as would occur under the LPA. Therefore, it would have a smaller project footprint than the LPA and would include 11 stations and 11 TPSS units instead of the 14 stations and 14 TPSS units proposed under the LPA. It remains Metro's intent, however, to build the remaining northern 2.5 miles of the LPA within the existing railroad right-of-way from the Van Nuys/San Fernando station to the Sylmar/San Fernando Metrolink station. The 6.7-mile route of the IOS is illustrated in Figure ES-3-2. Impacts associated with both the LPA and the IOS are discussed for each environmental impact section in Chapters 3 and 4 of this FEIS/FEIR.

Construction of the LPA and IOS is expected to begin in 2022 and would take approximately 4.5 to 5 years to completed.[1] A schedule for completing the second phase (i.e., the northern 2.5 miles) would be contingent upon securing the necessary funding and further coordination with the PUC, Metrolink, and the City of San Fernando prior to development of the remaining northern segment of the LPA. However, it is Metro's expectation that funding will be secured and construction of phase 2 would likely begin within 3 to 5 years of completion of the IOS and would occur over a 3- to 4-year period.

ES.4 Areas of Controversy and Issues to Be Resolved

ES.4.1 Areas of Controversy

Comments submitted during the circulation of the DEIS/DEIR expressed concerns regarding the issues listed below. Please note that these comments are meant to provide a synopsis of the trending themes. Comments received during the public circulation period are provided in Appendix A1 of the FEIS/FEIR. Responses to those comments are provided in Appendix A2 to this FEIS/FEIR.

- A strong preference by the public for LRT, despite the high cost, which is viewed as the best mode of transit, with higher carrying capacity and better mobility benefits;
- A feeling among some community members that the San Fernando Valley is not receiving its fair share of investment in rail, compared to other parts of the county;

[1] Based on the current impacts of the recent social response to the COVID-19 virus and the resulting decline in travel demand, at this time it is impossible to predict future changes to the project purpose and need, schedule, and traffic operation impacts that may result from a COVID-19 response of an unpredictable nature and length. Should significant changes in the planning assumptions, project schedule, project scope, or surrounding project environment result because of a prolonged COVID-19 response, Metro will consider additional project evaluation and public input consistent with NEPA and CEQA.

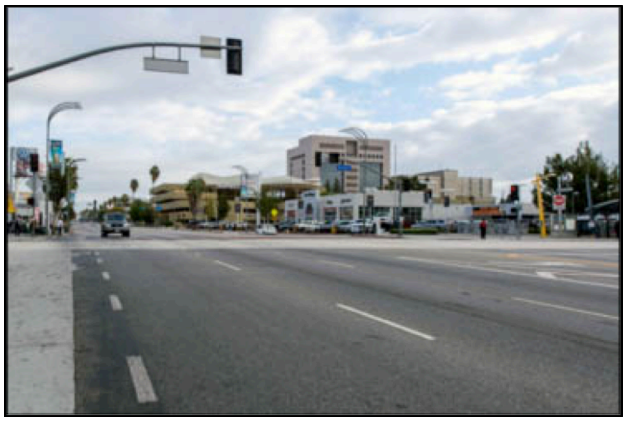
- Concerns expressed about the effects on local businesses of removing on-street parking along Van Nuys Boulevard;
- Concerns about economic impacts on adjacent businesses during project construction;
- Concerns over the loss of traffic lanes to accommodate the project and the resulting increased congestion in the motor vehicle lanes;
- Concerns about the location of the maintenance facility and potential impacts on the surrounding community;
- Concerns that BRT would be slower, carry fewer people, and have limited benefits compared with LRT;
- Concerns that LRT is too expensive, and BRT can provide almost the same level of benefits at a much lower cost;
- Concerns about any potential elimination of existing Metro Local and Metro Rapid bus routes and stops;
- Support for inclusion of bicycle lanes as part of this project, and opposition to their removal; and
- Concerns about fare increases to pay for this project.

ES.4.2 Issues to Be Resolved

Connection with Metro Orange Line

The Metro Orange Line intersects the southern terminus of the alignment (shown in Photo ES-8). Currently, the Metro Orange Line is a BRT that operates in a dedicated right-of-way with an average of 30,000 boardings per day. The Metro Orange Line Van Nuys Station is also a major transfer point. In planning this project, special consideration was given to how this project intersects with the Metro Orange Line and how to best facilitate transfer to/from both services.

Photo ES-8: Existing Metro Orange Line Connection with Van Nuys Boulevard

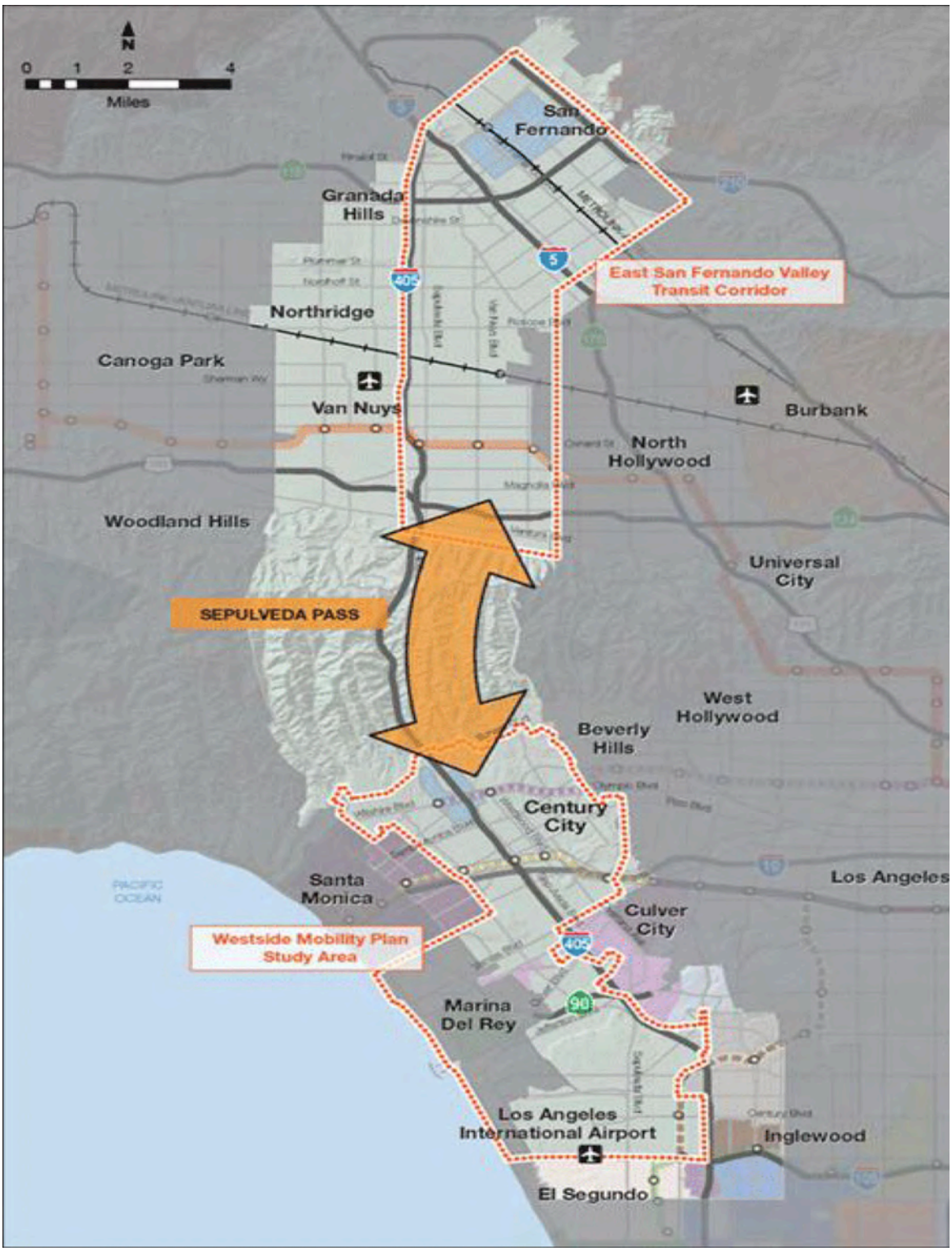


Source: KOA, 2015.

Uncertainties and Opportunities with Sepulveda Pass Transit Project

Along with planning for this proposed project, Metro is also studying how best to provide improved transit service through the Sepulveda Pass connecting the San Fernando Valley and the Westside (e.g. Westwood, Brentwood, West LA, Culver City). The LPA would recognize the Sepulveda Transit Corridor Project and consider any potentially feasible and advantageous points for connecting the two corridors (Figure ES-4).

Figure ES-4: Sepulveda Transit Connection



Source: Metro, 2016

Specific Effects on Landmark Palm Trees in the Civic Center

One of the most noticeable visual elements along the Van Nuys Boulevard corridor is the dual row of palm trees in the Van Nuys Civic Center portion of the corridor (Photo ES-9). The impact assessment for the LPA indicated that the guideway requirements would require the removal of some portion of these trees. It is Metro's intent to hold focused community urban design and station area meetings during final design of the project to obtain input on the re-planting of the trees. The community will be informed during the meetings about drought-tolerant California native plants and trees that could be considered for sun protection/shade as part of the landscaping plan that would be developed during final design.

Photo ES-9: Landmark Palm Trees along Van Nuys Boulevard in the Van Nuys Civic Center

Source: Metro, 2016.

Pedestrian Safety Improvements at Nearby Schools

A number of private and public schools are either adjacent to or near Van Nuys Boulevard and the San Fernando Road corridors (Photos ES-10 through ES-12). The proposed pedestrian measures are being implemented to ensure pedestrian safety is met along the corridor. The Metro Board will need to consider whether additional pedestrian safety measures are warranted, beyond Metro's current pedestrian safety program, as well as those proposed by the project.

Specific Effects of Project on Left Turns into Businesses

The LPA would eliminate some mid-block or outside-of-intersection left turns into properties on Van Nuys Boulevard. There are businesses throughout the corridor where delivery trucks access the business via a left turn (Photo ES-13). A formal outreach effort will be established to work with the businesses on a new access plan that would continue to provide access while being compatible with the operation of the LPA.

Photo ES-10: San Fernando Middle School

Source: Google Maps, 2016.

Photo ES-11: Arleta High School

Source: Google Maps, 2016.

Photo ES-12: Panorama High School

Source: Google Maps, 2016.

Photo ES-13: Truck Making a Left Turn along Van Nuys Corridor

Source: Metro, 2016.

Project Funding

Capital Funding Sources

Metro's approved 2009 Long-Range Transportation Plan (LRTP) reserved $170.1 million for the project, which is the present worth in 2014 dollars, escalated to 2018 dollars. The following combination of federal, state, and local revenue sources are eligible sources of funding for the ESFVTC Project

- Federal Sources:
  - Congestion Management and Air Quality (CMAQ);
  - Regional Surface Transportation Program (RSTP); and
  - Other future FTA funding;
- State Sources:
  - Regional Improvement Program (RIP);
  - Traffic Congestion Relief Program (TCRP);
  - Cap and Trade Program;
- Local Sources:
  - Measure R Sales Tax;
  - Local Agency Funds;
  - Proposition A Sales Tax;
  - Proposition C Sales Tax; and
  - Measure M Sales Tax.

Measure M Sales Tax

In 2016 Los Angeles voters passed the Measure M Sales Tax. This measure included projects that were identified by Metro staff as necessary to improve and enhance system connectivity; promote bicycling and walking; support Americans with Disabilities Act (ADA)/paratransit services for the disabled; provide discounts for students and seniors; invest in bus and rail operations; implement ongoing system maintenance and repair, including repair of bridges and tunnels; and fund repairs and enhancements for local streets and roads. To fund these projects and programs, the Metro Board of Directors agreed, at its June 2016 meeting, to place a measure on the ballot in November 2016 that would augment Measure R with a new half-cent sales tax.

In March 2016, the Metro Board of Directors released the draft Potential Ballot Measure Expenditure Plan for public review. The draft plan anticipates expenditures of more than $120 billion (YOE) over a period of 40 or more years. It relies on the following funding assumptions: a half-cent sales tax augmentation to begin in fiscal year 2018 and an extension of an existing half-cent sales tax rate beyond the current expiration of Measure R in 2039, with a combined one-cent sales tax and a partial extension for ongoing repairs, operations, and debt service. The draft plan currently identifies the ESFVTC Project for a total of $1.33 billion in funding, including $810 million from potential ballot measure revenues and $520 million from other LRTP revenues. The project, as defined in the draft plan, would be a high-capacity transit project, with mode to be determined, that would connect the Metro Orange Line Van Nuys station to the Sylmar/San Fernando Metrolink station and would consist of 14 stations over 9.2 miles.

Project Cost

Capital cost estimates for the alternatives are based on conceptual engineering drawings. The capital costs for the LPA and IOS are presented in 2014 base-year dollars and 2018 dollars for comparative purposes. Capital costs of the LPA range from $1.3 to $1.5 billion in 2014 dollars and $1.9 to $2.2 billion in 2018 dollars. Capital costs for the IOS range from $1.2 to $1.3 billion in 2014 dollars and $1.7 to $1.9 billion in 2018 dollars. Capital costs for the LPA and IOS include construction of the MSF, which is described in the DEIS/DEIR and this FEIS/FEIR as MSF Option B.

Project costs are fully detailed in Chapter 6 of this FEIS/FEIR; a summary is provided below in Table ES-1 for both the LPA and IOS. The capital costs for the LPA and IOS were developed with use of FTA's Standard Cost Categories (SCC)s. These costs represent gross capital expenditures relative to the No-Build Alternative. Total capital costs are divided into five major categories:

- General Construction: Guideway elements, stations, maintenance yards, site work, systems, and contingencies;
- Vehicles: Vehicle manufacturing and assembly;
- Right-of-Way: All rights-of-way, land, maintenance yards, and existing improvements;
- Soft Costs: Professional engineering and related services. Generally, soft costs are capital expenditures that are required to complete an operational transit project; the funds are not spent directly on activities related to brick-and-mortar construction, vehicle and equipment procurement, or land acquisition. Instead, these expenses are for the professional services that are necessary to complete the project; and,
- Unallocated Contingency: Additional costs included in the estimate that may be used to cover unforeseen costs, inflation, and/or mitigation measures.

Table ES-1: Project Costs (2014 YOE Dollars)

Cost Category	LPA with MSF	IOS with MSF
Construction	$683,285,763 – $788,386,872	$618,553,937 – $713,669,016
Right-of-Way, Land, Maintenance Yards, and Existing Improvements	$130,928,800 – $151,013,228	$130,928,800 – $151,139,573
Vehicles	$264,480,000 – $305,235,251	$214,320,000 – $247,244,627
Professional Services	$245,982,875 – $283,837,616	$222,679,417 – $256,964,654
Total Ranges	$1.3 to $1.5 billion	$1.2 to $1.3 billion

Source: Metro, KOA; 2019.

The LPA is projected to cost between $64.7 million annually to operate and maintain. The IOS would cost approximately $50.2 million annually to operate and maintain. The cost may have future variations related to the operational headway.

ES.5 Next Steps

The next steps in the project approval process are:

- Federal Transit Administration (FTA) approves publication and circulation of the FEIS/FEIR for 30 days.
- The Metro Board of Directors considers certification of the FEIS/FEIR in accordance with CEQA regulations, approval of the project, and adoption of the CEQA-required Mitigation Monitoring and Reporting Program and Findings of Fact and Statement of Overriding Consideration.
- A Notice of Determination (NOD) is filed in compliance with CEQA regulations, upon approval of the project by Metro, which will commence a 30-day statute of limitations period for legal challenges under CEQA.
- FTA issues and publishes a Record of Decision (ROD) in the Federal Register.
- FTA publishes a Limitation on Claims (LOC) notice in the Federal Register.
- Following filing of the NOD and publication of the Federal ROD, the proposed project can proceed to final design, construction, and operation. The schedule of these milestones will be refined as the project nears the end of the state and Federal mandated environmental review process.

ES.6 Summary of Environmental Impacts

In compliance with NEPA regulations and the State CEQA Guidelines, this FEIS/FEIR studied potential environmental consequences associated with construction and operation of the LPA and the IOS.

Due to the highly urbanized nature of the project area, potential environmental impacts pertain primarily to the built environment. Over 20 categories of environmental impacts were evaluated. Environmental impact categories where the LPA and IOS would have a significant impact after mitigation under CEQA and adverse effect under NEPA are discussed below.

ES.6.1 Unavoidable Significant Adverse Impacts and Effects under CEQA and NEPA

The LPA and IOS would result in unavoidable significant adverse impacts under CEQA after implementation of proposed mitigation measures in the following environmental resources:

- **Traffic, Parking, and Bicycle Facilities:** The LPA and IOS would result in reductions in roadway capacity due to the conversion of existing motor vehicle lanes to accommodate the LRT. As a consequence, under the LPA, significant traffic impacts under CEQA could occur at 20 of 73 study intersections along the corridor under future (2040) with-project conditions. Under the IOS, significant impacts would occur at 16 of the study intersections. Metro will work with the Cities of Los Angeles and San Fernando to synchronize and coordinate signal timing and optimize changes in roadway striping to minimize potential operational impacts to the extent feasible. However, other mitigation measures, such as lane configuration changes, which would increase the capacity of the roadways or restrict turning movements, were considered infeasible because of right-of-way constraints or secondary effects on upstream and downstream locations. As a consequence, traffic impacts would remain significant under CEQA after implementation of proposed mitigation measures. Construction traffic impacts would also remain significant and unavoidable under CEQA after implementation of proposed mitigation measures. In addition, existing bicycle lanes on Van Nuys Boulevard would be removed, and future bicycle lanes designated for implementation along Van Nuys Boulevard would not be feasible under the LPA and IOS, which would conflict with the City of Los Angeles Bicycle Plan. Therefore, impacts on bicyclists and bicycle facilities would remain significant under CEQA.
- **Land Use:** The LPA and IOS would result in land use incompatibility impacts or conflicts with environmental goals and policies in local land use plans due to traffic, noise, or other impacts that would remain significant under CEQA after implementation of proposed mitigation measures.
- **Community and Neighborhood:** Under the LPA and IOS, the potential operational effects 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 under CEQA after implementation of proposed mitigation measures.
- **Visual and Aesthetics:** The LPA and IOS would result in significant impacts under CEQA on the visual environment within the project corridor. The visual changes in communities along the project corridor due to the introduction of new vertical structures (overhead contact system columns and wires), affecting scenic views of the surrounding mountains and foothills, would remain significant under CEQA after mitigation.
- **Air Quality:** Construction of the LPA and IOS would result in localized PM10 and PM2.5 emissions during construction that would exceed local thresholds. Even with implementation of mitigation measures, emissions thresholds would be exceeded, and impacts would remain significant under CEQA.
- **Noise and Vibration:** Construction of the LPA and IOS would require the use of heavy earth-moving equipment, pneumatic tools, generators, concrete pumps, and similar equipment. Actual construction noise levels would depend on means and methods decided upon by the contractor. The significance thresholds for construction noise levels are those that exceed existing ambient noise levels by 10 dBA or more at a sensitive land use. The construction of the LPA and IOS would have a predicted noise level of 87 dBA (8-hour L_{eq}) at 50 feet, which is about 15 to 20 decibels higher than the current ambient noise level. Therefore, noise from construction of the LPA and IOS would result in a significant impact under CEQA. Although mitigation

measures are proposed to reduce construction noise levels and impacts would be temporary, construction noise levels could still exceed established thresholds resulting in unavoidable significant impacts under CEQA.

- **Safety and Security:** The LPA and IOS would result in significant effects under CEQA after mitigation on pedestrian sidewalk safety due to the narrowing of sidewalks and bicycle safety due to the removal of existing bike lanes as well as potential impacts on emergency vehicle response time due to turn restrictions and the increased congestion resulting from the removal of mixed-flow travel lanes.
- **Parklands and Community Facilities:** The LPA's and IOS's potential construction air quality effects on parklands and community facilities would remain significant under CEQA after implementation of proposed mitigation measures. The operational effects of the LPA and IOS on emergency vehicle access and visual impacts on sensitive viewers would be significant under CEQA after implementation of proposed mitigation measures.

The LPA and IOS would result in unavoidable adverse effects under NEPA after implementation of proposed mitigation measures in the following environmental resources:

- **Traffic, Parking, and Bicycle Facilities:** Traffic impacts would remain adverse under NEPA after implementation of proposed mitigation measures. Construction traffic impacts would also remain adverse under NEPA after implementation of proposed mitigation measures. In addition, existing bicycle lanes on Van Nuys Boulevard would be removed, and future bicycle lanes designated for implementation along Van Nuys Boulevard would not be feasible under the LPA and IOS, which would conflict with the City of Los Angeles Bicycle Plan. Therefore, impacts on bicyclists and bicycle facilities would remain adverse under NEPA after mitigation.
- **Land Use:** The LPA and IOS would result in land use incompatibility impacts or conflicts with environmental goals and policies in local land use plans due to traffic, noise, or other impacts that would remain adverse under NEPA after implementation of proposed mitigation measures.
- **Community and Neighborhood:** Under the LPA and IOS, the potential operational effects on bicycle access and safety, construction and operational effects on social and community interactions from business displacements, and operational visual effects on sensitive viewers would be adverse under NEPA after implementation of proposed mitigation measures.
- **Visual and Aesthetics:** The LPA and IOS would result in potentially adverse effects under NEPA on the visual environment within the project corridor. The visual changes in communities along the project corridor due to the introduction of new vertical structures (overhead contact system columns and wires), affecting scenic views of the surrounding mountains and foothills, would remain adverse under NEPA after mitigation.
- **Noise and Vibration:** Noise from construction of the LPA and IOS would result in adverse effects under NEPA. Although mitigation measures are proposed to reduce construction noise levels and effects would be temporary, construction noise levels could still exceed established thresholds, resulting in unavoidable adverse effects under NEPA.
- **Safety and Security:** The LPA and IOS would result in adverse effects under NEPA after mitigation on pedestrian sidewalk safety due to the narrowing of sidewalks and bicycle safety due to the removal of existing bike lanes as well as potential impacts on emergency vehicle response time due to turn restrictions and the increased congestion resulting from the removal of mixed-flow travel lanes.
- **Parklands and Community Facilities:** The LPA's and IOS's operational effects of the LPA and IOS on emergency vehicle access and visual impacts on sensitive viewers would be adverse under NEPA after implementation of proposed mitigation measures.

More information regarding the proposed project's environmental effects and impacts is provided in Chapter 3, Transportation, Transit, Circulation, and Parking, and Chapter 4, Environmental Analysis, Consequences, and Mitigation.

ES.7 Summary of Environmental Consequences and Mitigation Measures

Table ES-2, below, provides a summary of all environmental impacts of the LPA, IOS, and for comparison purposes, Alternatives 3 and 4 from the DEIS/DEIR. For further and more detailed information on Alternatives 3 and 4, please refer to the DEIS/DEIR, which is available at Metro headquarters and online at https://www.metro.net/projects/east-sfv/draft-eiseir/. For more details about each of the impacts as they pertain to the LPA and IOS, the reader is referred to Chapters 3, 4, and 5 of this FEIS/FEIR.

As indicated in Table ES-2, the LPA would not result in new significant impacts or substantially more severe significant impacts than those identified in the DEIS/DEIR. For that reason, recirculation of the DEIS/DEIR is not required.[2]

Table ES-3 includes a list of proposed mitigation measures. For mitigation measures proposed for Alternative 3 and 4, please refer to the DEIS/DEIR. Metro is committed to satisfying all applicable federal, state, and local environmental regulations and to applying reasonable mitigation measures to reduce adverse effects and significant impacts. Should the Metro Board of Directors approve the project, in accordance with CEQA regulations, it will adopt a Mitigation Monitoring and Reporting Program, which lists all of the committed mitigation measures. Upon approval of the proposed project, these mitigation measures will become part of the project, and will be considered binding under CEQA.

[2] Pursuant to Section 15088.5(a) of the State CEQA Guidelines: A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that: (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented. (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance. (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it. (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Table ES-2: Summary of Environmental Impacts and Effects

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Transportation, Transit, Circulation, and Parking (Chapter 3 of the FEIS/FEIR)					
Construction	**Transit and Traffic:** The LPA would be constructed over a period of approximately 4.5 to 5 years[3] and would result in temporary lane or street closures. **Parking:** From 7 a.m. to 7 p.m., on-street parking would be removed within each construction work zone. On-street parking would be permanently removed to accommodate operation of the LPA. **Pedestrian and Bicycle Facilities:** Existing bicycle lanes along Van Nuys Boulevard would be removed during construction. Pedestrian routes would be lengthened where minor intersections would be temporarily closed during construction.	**Transit and Traffic:** The IOS would be constructed over a period of approximately 4.5 to 5 years and would result in temporary lane or street closures. **Parking and Pedestrian and Bicycle Facilities:** Impacts would be the same as those that would occur under the LPA along Van Nuys Boulevard. The bike path within the Metro-owned railroad right-of-way would not have to be relocated as would occur under the LPA and DEIS/DEIR Alternative 4 because the IOS would not include the railroad right-of-way segment.	**Transit and Traffic:** Alternative 3 would be constructed over a period of approximately 4 years and would result in temporary lane or street closures. **Parking:** From 7 a.m. to 7 p.m., on-street parking would be removed within each construction work zone. On-street parking would be permanently removed to accommodate operation of Alternative 3. **Pedestrian and Bicycle Facilities:** Existing bicycle lanes along Van Nuys Boulevard would be removed during construction. Pedestrian routes would be lengthened where minor intersections would be temporarily closed during construction.	**Transit and Traffic:** Construction of Alternative 4 could take up to 5 years. The impacts would be greater than those that would occur under Alternative 3. **Parking and Pedestrian and Bicycle Facilities:** Impacts would be the same as those that would occur under Alternative 3.	**All Alternatives:** **CEQA:** Significant (transit, traffic, bicycle facilities) **NEPA:** Adverse (transit, traffic, bicycle facilities)

[3] This is the 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.

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	**Transit Impacts:** The LPA would result in improved headways and travel times, and an increase of 9,549 daily transit trips. **Traffic Impacts**: the LPA would result in significant impacts at 20 of the 73 study intersections in the corridor in the AM or PM peak hours under the Future (Year 2040)-with-Project scenario. **Parking:** A total of 1,111 on-street parking spaces and 528 off-street parking spaces would be removed. **Pedestrian and Bicycle Facilities:** Project implementation would conflict with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard would not be feasible under the LPA. Existing bicycle lanes on Van Nuys Boulevard would be removed. However, it should be noted that the City of Los Angeles General Plan Framework Element designates the corridor as a Transit Priority Segment, which conflicts with the City of Los Angeles Bicycle Plan. Pedestrian routes would be lengthened where minor intersections would be closed. Remaining pedestrian crossings would be improved with enhanced design and safety features.	**Transit Impacts:** The IOS would result in improved headways and travel times, and an increase of 7,476 daily transit trips. **Traffic Impacts**: the IOS would result in significant impacts at 16 of the study intersections within the IOS extents. **Parking:** Impacts would be the same as those described for the LPA. **Pedestrian and Bicycle Facilities:** Impacts would be the same as those described for the LPA.	**Transit Impacts:** Alternative 3 would result in improved headways and travel times, and an increase of 8,452 daily transit trips. **Traffic Impacts**: Alternative 3 would result in significant LOS impacts at 32 of the 73 study intersections in the AM or PM peak hours under the Future-with-Project scenario. **Parking:** All 1,140 on-street parking spaces and 15 adjacent cross-street spaces would be removed. **Pedestrian and Bicycle Facilities:** Existing bicycle lanes on Van Nuys Boulevard would be removed.	**Transit Impacts:** Alternative 4 would result in improved headways and travel times, and an increase of 9,786 daily transit trips. **Traffic Impacts**: Alternative 4 would result in significant impacts at 20 of the 73 study intersections in the AM or PM peak hours under the Future-with-Project scenario. **Parking:** A total of 902 on-street parking spaces and 528 off-street parking spaces would be removed. **Pedestrian and Bicycle Facilities:** Impacts would be similar to those described for the LPA.	**All Alternatives:** **CEQA:** Significant (traffic, bicycle facilities). Parking is not considered a significant environmental impact under CEQA. **NEPA:** Adverse (traffic and bicycle facilities)

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Land Use (Section 4.1 of the FEIS/FEIR)					
Construction	**Division of an Established Community:** Construction of the LRT and associated stations would require temporary sidewalk, lane, street closures, and traffic detours and designated truck routes. Street, lane, and sidewalk closures could reduce pedestrian and vehicle mobility between and within communities throughout the project study area during construction. Temporary lane and street closures are not expected to substantially divide or diminish access to existing communities or neighborhoods. **Conflict with Local Land Use Plans:** Construction activities would not conflict with applicable land use plans' or habitat conservation plans' environmental policies. **Incompatibility with Adjacent or Surrounding Land Uses:** Construction activities along the alignment could result in temporary nuisance impacts (e.g., noise, air quality impacts) on nearby land uses. Additionally, construction staging areas would be established near the project alignment and used for equipment and material storage.	**Division of an Established Community:** Impacts would be similar to those described for the LPA. **Conflict with Local Land Use Plans:** Construction activities would not conflict with applicable land use plans' or habitat conservation plans' environmental policies. **Incompatibility with Adjacent or Surrounding Land Uses:** Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA.	Impacts would be similar to or potentially greater than those that would occur under the LPA and Alternative 3 due to the more extensive construction activities that would be required to construct the subway portion of the Alternative 4 alignment.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	**Division of an Established Community:** This alternative would operate entirely within existing transportation corridors. Given that the alignment would be located along existing roadways and the fact that pedestrians and vehicles could still cross the alignment at specified locations throughout the corridor, this alternative would not divide an established community. **Conflict with Local Land Use Plans:** The LPA would be consistent with SCAG regional goals of encouraging land use and growth patterns that facilitate transit and non-motorized transportation and focusing growth along major transportation corridors in the region. However, the LPA would result in significant adverse traffic impacts at 20 of 73 study intersections in the corridor (Future-with-Project scenario) due to a reduction in the number of mixed-flow travel lanes to accommodate the LRT. The localized traffic impacts under the LPA would conflict with the congestion reduction goals and policies of local plans. Additionally, while bicycle lanes along Van Nuys Boulevard would not be possible under this alternative, the ability for bicyclists to access areas in the project corridor would be retained, and the project would achieve other	**Division of an Established Community:** Impacts would be similar to the impacts described for LPA. **Conflict with Local Land Use Plans:** Impacts would be the same as the impacts described for LPA. **Incompatibility with Adjacent or Surrounding Land Uses:** Impacts would be similar to the impacts described for LPA.	Operational impacts would be similar to those that would occur under the LPA. However, Alternative 3 could result in significant adverse traffic impacts at 32 of 73 study intersections along the corridor due to a reduction in the number of mixed-flow travel lanes to accommodate a dedicated LRT/tram.	Operational impacts would be slightly less than the LPA or Alternative 3 due to the subway segment. Similar to the LPA, Alternative 4 would result in localized traffic impacts at 20 of 73 study intersections, which would conflict with congestion reduction goals in local plans. Other land use plan conflict impacts would be similar to those described for the LPA and Alternative 3. **Incompatibility with Adjacent or Surrounding Land Uses:** Impacts would be similar to those described for the LPA and Alternative 3, with the exception that incompatibility impacts would be minimized or avoided along the subway portion of the alignment.	**All Alternatives:** **CEQA:** Significant (conflict with local land use plans due to increased traffic congestion) **NEPA:** Adverse (conflict with local land use plans due to increased traffic congestion)

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	local planning goals of reducing reliance on the automobile and increasing transit ridership. **Incompatibility with Adjacent or Surrounding Land Uses:** While there would be some modifications to the project corridor (e.g., removal of traffic and bicycle lanes and changes in turning movements), the project corridor is an existing transportation route with ongoing bus transit service, and therefore, the LPA operations would generally be compatible with existing land uses. This alternative would require an overhead contact system to power the LRT vehicles, which would not conflict with adjacent and surrounding uses. Under this alternative, 14 stations would be in areas that are primarily commercial and residential. Stations would include aesthetic enhancements, such as landscaping, canopies, and artwork, which would be compatible with adjacent and surrounding land uses. The proposed MSF (MSF Option B) site is in a mainly industrial and commercial area. No residential properties are immediately adjacent to the site; therefore, the LPA would not be incompatible with local land uses. This alternative would also require TPSSs, which would be typically placed approximately every ¾ miles. To minimize or avoid land use incompatibility impacts to the				

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	extent feasible, the majority of potential TPSS locations would be located near potential stations or the MSF.				
Real Estate and Acquisitions (Section 4.2 of the FEIS/FEIR)					
Construction	Construction of the LPA would require 68 full acquisitions, 30 partial acquisitions, one Metro-owned acquisition, and one acquisition of a vacant alley.	The IOS could require 83 acquisitions of properties, including 64 full acquisitions, 17 partial acquisitions, one Metro-owned property, and one acquisition of a vacant alley.	Construction of Alternative 3 would require 4 partial acquisitions and 62 full acquisitions of properties.	Construction of Alternative 4 would require 11 partial acquisitions and 93 full acquisitions of properties.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Operation	No operational impacts would occur.	No operational impacts would occur.	No operational impacts would occur.	No operational impacts would occur.	**All Alternatives:** **CEQA:** No impact **NEPA:** No effect
Economic and Fiscal Impacts (Section 4.3 of the FEIS/FEIR)					
Construction	The LPA could result in potential minor economic impacts on local businesses due to reduced visibility and diminished access resulting from sidewalk or lane closures, loss of on-street parking during construction, and permanent removal of on-street parking spaces. The LPA would require the acquisition of properties (34 full acquisitions, 30 partial acquisitions, one Metro-owned acquisition, and one acquisition of a vacant alley), which would result in the loss of an estimated $2.98 million in property taxes and would affect 2,723 jobs. However, construction work would result in direct, indirect, and induced impacts that would generate an estimated 20,525 jobs.	Impacts would be the same as those described for the LPA.	Alternative 3 impacts would be similar to those described for the LPA. The acquisition of properties under Alternative 3 would result in the loss of $460,000 in property taxes and 580 jobs. However, construction work would result in direct, indirect, and induced impacts that would generate new jobs.	Alternative 4 impacts would be similar to those described for the LPA. The acquisition of properties under Alternative 4 would result in the loss of $940,000 in property taxes and 1,285 jobs. However, construction work result in direct, indirect, and induced impacts that would generate new jobs.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	Operational economic and fiscal impacts would be limited to the potential indirect impacts on local businesses that could occur where on-street parking would be removed to accommodate the LPA.	Impacts would be the same as those described for the LPA.	Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Communities and Neighborhoods (Section 4.4 of the FEIS/FEIR)					
Construction	**Mobility and Access Impacts:** Construction of the LRT tracks and stations would require temporary sidewalk, lane, and possibly road closures, and removal of parking on Van Nuys Boulevard, which could reduce pedestrian, bicycle, vehicle mobility between communities and neighborhoods along the project corridor. **Social and Economic Impacts:** Construction activities that result in lane and/or road closures and the loss of on-street or off-street parking would decrease accessibility to businesses and could adversely affect business activity. Construction would require additional permanent right-of-way acquisitions and the displacement of businesses, which could result in changes to the local neighborhood character and social fabric of the community. The viability of businesses that choose to relocate may be adversely affected while customers become accustomed to accessing new locations. Additionally, these locations may be psychologically or socially disruptive to neighborhood residents or	**Social and Economic Impacts:** Impacts would be similar to those described for the LPA. **Physical Impacts:** Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA.	Alternative 4 would result in similar types of construction impacts to those described for the LPA; however, the impacts could be extensive and occur over a longer period of time because of the more extensive construction activities associated with the subway portion of the alignment.	**All Alternatives:** **CEQA:** Significant (removal of bike lanes) **NEPA:** Adverse (removal of bike lanes; community effects due to business displacements)

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	visitors. The LPA, however, would not physically divide an established community. **Physical Impacts:** Construction activities would result in a number of 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. Visual impacts could occur due to temporary removal of vegetation from some areas and the presence of construction equipment and materials. During construction, motorists, pedestrians, and bicyclists would be exposed to additional safety hazards because of proximity to construction activities.				
Operation	**Mobility and Access Impacts:** Restrictions on motor vehicle movement (left turns) at unsignalized intersections and parking prohibition along Van Nuys Boulevard would present an inconvenience for vehicles traveling along the project corridor. The LPA would maintain pedestrian access to the project corridor, though existing 13-foot sidewalks would be narrowed to 10 feet in some locations and some pedestrian routes may be re-routed and would require additional walking distance because minor intersections would be permanently closed as part of project implementation.	**Mobility and Access Impacts:** Impacts would be similar to those described for the LPA. **Social and Economic Impacts:** Impacts would be similar to those described for the LPA but would result in reduced economic impacts because of fewer property acquisitions. **Physical Impacts:** Impacts would be similar to those described for the LPA but the IOS would not include the LPA segment along the railroad right-of-way and	Impacts would be similar to or slightly less than those described for the LPA because Alternative 3 would result in fewer property acquisitions.	Impacts would be similar or slightly greater than those described for the LPA due to greater number of property acquisitions, except for the subway segment of Alternative 4, which could avoid pedestrian access impacts and motor vehicle turn restrictions that could occur along this segment under the LPA and Alternative 3.	**All Alternatives:** **CEQA:** Significant (removal of bike lanes and visual impacts) **NEPA:** Adverse (removal of bike lanes, business displacements, and visual effects)

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	Under the LPA, the existing Class II bike lanes on Van Nuys Boulevard would be removed to make room for the LRT tracks and stations, which would conflict with the City's Bicycle Plan and Mobility Plan. **Social and Economic Impacts:** Some areas would require property acquisitions to accommodate the LRT facilities. Displacements could result in substantial changes to local neighborhood character and potentially the social fabric of the local community, because neighborhood residents and visitors may be accustomed to accessing businesses in their existing locations and the displacement of those businesses could be psychologically or socially disruptive, and could affect professional and social interactions. If relocation sites are available within proximity to the existing business sites, the disruptions to professional and social interactions may be temporary as residents become accustomed to accessing the displaced businesses at their new locations. **Physical Impacts:** The median fences, overhead contact system, and pedestrian bridge, in particular, would introduce additional vertical elements that could substantially change the existing visual character and quality in the immediate vicinity of these elements. The potential exists for conflicts or	pedestrian bridge (or tunnel) at the Sylmar/San Fernando station and resulting potential visual impacts.			

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	collisions between LRT vehicles and motor vehicles or pedestrians. The removal of the Class II bike lanes along Van Nuys Boulevard and use of alternate routes by bicyclists could increase the potential for conflicts between motor vehicles and bicyclists.				
Visual Quality and Aesthetics (Section 4.5 of the FEIS/FEIR)					
Construction	Construction of the LPA could result in temporary visual impacts; 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, would need to be temporarily or permanently removed from some areas.	Impacts would be the same as those that would occur along Van Nuys Boulevard due to the LPA, but the IOS would not result in the impacts that could occur under the LPA along the railroad right-of-way segment.	Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA; however, construction of the subway segment has the potential to result in greater visual impacts due to the more extensive construction activities.	**All Alternatives:** **CEQA:** Significant **NEPA:** Adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	**Scenic Vistas:** Adverse effects may occur due to new vertical features in the landscape, particularly the overhead contact system. **Scenic Resources:** Existing scenic resources could be affected due to removal of some existing landscaping and street trees, including rows of palm trees along Van Nuys Boulevard. **Visual Character and Quality:** Visual character and quality would be affected by the presence of the LRT cars and new stations; however, views in the corridor as a whole would not be substantially affected. The MSF would have a similar industrial appearance to replaced buildings and thus would not have a substantial adverse effect on visual character and quality, though the TPSSs may slightly disrupt visual unity along the corridor. **Lighting, Glare, and Shading:** Lighting, glare, and shading would not change substantially except in residential areas where elements of the LPA could increase nighttime lighting.	**Scenic Vistas:** Impacts would be similar to those described for the LPA. **Scenic Resources:** Impacts would be similar to those described for the LPA. **Visual Character and Quality:** Impacts would be similar to those described for the LPA. **Lighting, Glare, and Shading:** Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA.	Impacts would be similar to those described for the LPA; however, the subway segment of Alternative 4 would not include the visual elements of the LPA, i.e., OCS, that could result in adverse visual effects.	**All Alternatives:** **CEQA:** Significant **NEPA:** Adverse
Air Quality					
Construction	Construction of the LPA would result in the short-term generation of criteria pollutant emissions. Regional emissions for ROG and oxides of nitrogen (NOx) are expected to exceed the South Coast	Impacts would be the similar to those described for the LPA, but the IOS would not include the railroad right-of-way segment of the LPA; therefore, construction air	Construction of Alternative 3 would result in the short-term generation of criteria pollutant emissions. Regional emissions for ROG and oxides of nitrogen	Construction of Alternative 4 would result in the short-term generation of criteria pollutant emissions. Regional emissions for	**All Alternatives:** **CEQA:** Significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	Air Quality Management District (SCAQMD) regional emissions thresholds. Localized NOx, PM_{10}, and $PM_{2.5}$ emissions during construction would exceed local thresholds. The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate matter (DPM) emissions associated with operation of heavy construction equipment.	quality impacts would affect a smaller area than the LPA.	(NOx) are expected to exceed the South Coast Air Quality Management District (SCAQMD) regional emissions thresholds. Localized NOx, PM_{10}, and $PM_{2.5}$ emissions during construction would exceed local thresholds. The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate matter (DPM) emissions associated with operation of heavy construction equipment.	ROG and oxides of nitrogen (NOx) are expected to exceed the South Coast Air Quality Management District (SCAQMD) regional emissions thresholds. Localized NOx, PM_{10}, and $PM_{2.5}$ emissions during construction would exceed local thresholds. The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate matter (DPM) emissions associated with operation of heavy construction equipment.	
Operation	Operation of the LPA would result in reductions in regional criteria pollutant emissions relative to the No- Build Alternative, and emissions would not exceed SCAQMD thresholds. Based on the LPA's lower intersection approach volumes, idle emissions, and grams/mile emissions relative to the 2003 AQMP attainment demonstration, there would be no potential for the LPA carbon monoxide (CO) emissions at any intersection to result in an exceedance of either the	Operational impacts under the IOS would be similar to those identified under the LPA, with the exception that the IOS would have lower ridership due to the shorter alignment. The reduced ridership would mean that some individuals would take other modes of transportation, and a portion of these individuals would use passenger vehicles. As such, VMT and associated emissions would be higher under the IOS than under the LPA. However,	Under Alternative 3, both ROG and NOx emissions are anticipated to exceed SCAQMD significance criteria under the Future (year 2040)-with-Project scenario. All remaining criteria pollutant emissions under Alternative 3 would not exceed SCAQMD significance thresholds. No emissions thresholds would be exceeded in the 2012 (Existing with Project) scenario.	Regional criteria pollutant emissions under Alternative 4 would not exceed SCAQMD significance thresholds.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for CO. Operation of the LPA would not generate new air quality violations, worsen existing violations, or delay attainment of national Ambient Air Quality Standards (AAQS) for $PM_{2.5}$ and PM_{10}. The LPA would also not result in a material change in regional MSAT pollutant emissions, when compared to the No-Build Alternative.	given that the IOS would introduce a new LRT service where none exists at present, project-related air pollutant emissions are anticipated to be lower than under the No-Build Alternative. For reasons similar to those identified for the LPA, the IOS is not expected to result in exceedances of SCAQMD thresholds, generation of CO or PM hot-spots, or generation of substantial MSAT/TAC emissions.	Although the SCAQMD regional operational emissions thresholds would be exceeded under the Future (Year 2040)-with-Project scenario, SCAQMD's operational emissions significance thresholds are based on emissions from stationary sources. Because the primary source of operational emissions would be mobile sources (due to changes in auto circulation patterns), the SCAQMD thresholds are provided for informational purposes only. The proposed project's requirement to demonstrate transportation conformity ensures that project emissions are accounted for in the SIP, which demonstrated attainment of the federal ozone standard. As such, ozone precursor emissions of ROG and NOx would be less than significant. Overall operational emissions under Alternative 3 would be less than significant under CEQA and would not be adverse under NEPA.		

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Greenhouse Gas Emissions (Section 4.7 of the FEIS/FEIR)					
Construction	LPA construction activities would result in the emission of approximately 5,877 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 196 metric tons of CO_2e.	IOS construction activities would result in an estimated 3,740 metric tons of CO_2e emissions.	Alternative 3 construction activities would result in the emission of approximately 4,025 metric tons of CO_2e over the course of the construction period, or approximately 134 metric tons per year amortized over a 30-year period.	Alternative 4 construction activities would result in the emission of approximately 19,900 metric tons of CO_2e over the course of the construction period, or approximately 633 metric tons per year amortized over a 30-year period.	Since impact determinations consider the combined effect of construction and operational GHG emissions, please see the impact determinations below for Operation.
Operation	Traffic operations under the LPA would result in an annual emissions reduction of approximately 25,380 metric tons of CO_2e compared with the future (2040) baseline condition vehicle emissions, a decrease of 0.05% in regional GHG emissions from vehicles. Operation of the MSF would be responsible for an additional 1,416 metric tons of CO_2e emitted annually. LRT vehicle propulsion and station operation would result in the emission of 12,904 metric tons of CO_2e per year. Construction and operation of the LPA combined would result in a reduction of 10,878 metric tons of CO_2e, which is equivalent to a 0.02% reduction compared to the 2040 No-Build baseline.	Traffic operations under the IOS would result in an annual emissions reduction of approximately 20,751 metric tons of CO_2e, a decrease of 0.04%. Including the amortized construction emissions and operation of facilities and vehicles, implementation of the IOS would result in an approximately 9,800-MT decrease (0.02%) in study area GHG emissions compared to the 2040 No-Build baseline.	Traffic operations under Alternative 3 would result in the annual emission of approximately 44,019 metric tons of CO_{2e} above future (2040) baseline vehicle emissions, an increase of 0.072%. Construction and operation of the LPA combined would result in an increase of 58,473 metric tons of CO_2e, a 0.096% increase compared to the 2040 No-Build baseline.	Traffic operations under Alternative 4 would result in the annual emission of approximately 28,998 MT of CO_2e above future (2040) baseline vehicle emissions, a decrease of 0.05%. Construction and operation of the LPA combined would result in a reduction of 14,015 metric tons of CO_2e, a 0.023% decrease compared to the 2040 No-Build baseline.	**LPA, IOS, and Alternative 4:** **CEQA:** Less than significant/ Beneficial **NEPA:** Not adverse/ Beneficial **Alternative 3 (DEIS/DEIR):** **CEQA:** Significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Noise and Vibration (Section 4.8 of the FEIS/FEIR)					
Construction	**Noise and Vibration:** Construction of the LPA would result in a predicted noise level from a typical 8-hour work-shift of 87 dBA (8-hour L_{eq}) at 50 feet, which is about 15 to 20 decibels higher than the ambient noise level. 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.	**Noise and Vibration:** Construction of the IOS would result in noise and vibration levels similar to those for the LPA along the Van Nuys Boulevard segment. The IOS would not include the northern 2.5-mile segment of the LPA and consequently would not result in any noise or vibration impacts along that segment.	**Noise and Vibration:** Construction of Alternative 3 would result in noise and vibration impacts that are similar to those that would occur under the LPA.	**Noise:** Impacts resulting from the construction of Alternative 4 would be similar to those that would occur under the LPA and Alternative 3, with the exception being that Alternative 4 includes tunneling, Noise impacts from tunnel boring machines are expected to be less-than-significant, because operations take place underground. **Vibration:** Ground-borne noise and vibration impacts associated with tunneling are likely to be less than significant because tunneling would only take place within the right-of-way. However, an assessment of tunneling operations should be including in the Construction Vibration Control Plan because ground-borne noise and vibration levels from tunneling are highly dependent on the means and methods selected by the contractor.	**All Alternatives:** **CEQA:** Significant (noise only) **NEPA:** Adverse (noise only)

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	**Noise and Vibration:** The predicted noise levels due to operation of LRT vehicles would exceed the NEPA and CEQA significance thresholds at eight clusters of residences. Moderate noise impacts are predicted at an additional 67 clusters of sensitive receivers. The predicted vibration levels would exceed the NEPA and CEQA significance threshold at 24 clusters of residential receivers and two institutional land use areas. Traditional crossovers can increase vibration levels by up to 10 dB at nearby receivers. Due to the close proximity of receivers to the alignment, predicted vibration levels assume the use of low-impact devices such as spring or conformal frogs, which increase vibration levels less dramatically, by around 5 dB. Without the low-impact frogs, impacts are predicted at 6 additional residential and 2 additional institutional locations.	**Noise:** Impacts would be the same as those described for the LPA along Van Nuys Boulevard. **Vibration:** Impacts would be the same as those described for the LPA along Van Nuys Boulevard.	**Noise and Vibration:** The predicted noise levels due to operation of LRT vehicles would exceed the NEPA and CEQA significance thresholds at three clusters of residences. Moderate noise impacts are predicted at an additional 30 clusters of sensitive receivers. The predicted vibration levels would exceed the NEPA and CEQA significance threshold at 17 clusters of sensitive residential receivers and one institutional land use.	**Noise and Vibration:** The predicted noise levels due to operation of LRT vehicles would exceed the NEPA and CEQA significance thresholds at two clusters of residences. Moderate noise impacts are predicted at an additional 59 clusters of sensitive receivers. The predicted vibration levels would exceed the NEPA and CEQA significance threshold at 21 clusters of sensitive residential receivers and one institutional land use. Impacts from ground-borne noise could occur at four clusters of residential uses six institutional uses near the tunnel section of Alternative 4.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Geology, Soils and Seismicity (Section 4.9 of the FEIS/FEIR)					
Construction	Potential impacts due to construction of the LRT would be the same as those that would occur as result of a typical construction project and could include damage to existing utilities and undermining of existing structures and potential geologic/soils hazards to construction workers. Compliance	Impacts would be the same as those described for the LPA along Van Nuys Boulevard.	Alternative 3 construction impacts would be similar to those that would occur under the LPA.	Alternative 4 impacts would be similar to those that would occur under the LPA and Alternative 3, except that under this alternative, the tunneling and deep excavations during	**All Alternatives** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	with best construction practices and adherence to regulatory requirements would reduce potential risks to existing structures, the public, and construction workers.			construction could cause vertical and lateral movement of the existing soils adjacent to the improvements. Alternative 4 could also be affected by groundwater hazards during construction due to the depth of excavation.	
Operation	On the north end of the alignment, the proposed pedestrian bridge or underpass for the Sylmar/San Fernando Metrolink station is within an Alquist-Priolo Geologic Hazards Zone. In addition, the Pacoima Wash Bridge on San Fernando Road is in a City of Los Angeles Fault Rupture Study Area. If further studies indicate that there is a potential for fault rupture at the proposed Sylmar/San Fernando Metrolink station pedestrian crossing and/or the Pacoima Wash Bridge on San Fernando Road, the fault rupture hazards to these project facilities could be significant. Other project structures along the alignment including the Pacoima Channel Bridge, traffic and pedestrian signs, and train stop canopies would be subject to strong seismic ground shaking and could pose a hazard to riders and passers-by. In addition, the proposed catenary wires, traffic and pedestrian signs, and train stop	IOS impacts would be similar to those described those for the LPA, but the IOS would not include the northern 2.5-mile segment of the LPA and thus would not be exposed to the hazards that could affect the pedestrian bridge or tunnel at the Sylmar/San Fernando Metrolink station and the Pacoima Wash Bridge. Similar to the LPA, the IOS would be constructed in accordance with codes and regulatory requirements.	Alternative 3 operational impacts would be similar to those that would occur under the LPA.	The operational impacts of Alternative 4 would be similar those that would occur under the LPA and Alternative 3, with the exception of the tunnel segment. Because of the presence of alluvial soils, the tunnel segment of the alignment could be susceptible to seismic-induced settlement and ground loss, a potentially significant hazard.	**All Alternatives** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	canopies south of Vanowen Street would be subject to potential liquefaction hazards. The catenary wires would move during a seismic event and the system, like other light rail systems currently operated by Metro, would need to be inspected prior to continuing service. Since the project would be designed in compliance with current building codes and regulatory requirements, the impacts/effects during operation of the LPA would be less than significant under CEQA and not adverse under NEPA.				
Hazardous Waste and Materials (Section 4.10 of the FEIS/FEIR)					
Construction	Hazardous materials could be encountered during grading and excavation, though work would generally be limited to within the upper 5 feet of soil. It is likely that lead and arsenic may have been deposited within the soil along the project alignment and could occur at hazardous levels. Yellow thermoplastic paint markings on roadway pavement to be removed may contain lead and other heavy metals such as chromium. Dust created from construction activities may contain hazardous contaminants. Construction equipment contains fuel, hydraulic oil, lubricants, and other hazardous materials, which could be released accidentally. Deeper construction excavations for	Impacts from the IOS would be the same as those that would occur due to the LPA along the Van Nuys Boulevard segment. However, the IOS would not include the northern 2.5-mile segment of the LPA, and as a consequence, the IOS would result in no impacts along that segment.	Alternative 3 construction impacts would be similar to those that could occur under the LPA.	Construction for at-grade portions of the project would result in similar impacts to Alternative 3 or LPA, with the exception of the subway/tunnel segment of Alternative 4. The cut and cover/tunneling portion of this alternative would consist of excavations as deep as 80 feet, with piles extending deeper. The tunnel would cross beneath former and current manufacturing and industrial sites that may contain soils containing hydrocarbons, VOCs,	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	the retrofit or replacement of structures crossing the Pacoima Wash or the foundations for the new pedestrian crossing at the San Fernando Metrolink Station could result in the potential for encountering groundwater contaminated by volatile organic compounds (VOCs). Lead-based paint (LBP) and asbestos containing material (ACM) may be encountered in waste building materials during demolition of existing structures for the MSF and TPSSs facilities.			and other hazardous waste constituents. The southern end of the proposed tunnel would potentially be located below historically high groundwater levels, which may be contaminated with hazardous materials.	
Operation	The MSF will use and store hazardous materials including fuels, lubricants, and paints, for maintenance of the rail vehicles. The LRT vehicles would be electrically powered and would not contain fuels that could be released to the environment in the event of an accident or mechanical failure.	Impacts would be similar to those described for the LPA.	The operational impacts of Alternative 3 would be similar to those of the LPA.	Alternative 4 would result in operational impacts similar to those of the LPA and Alternative 3. However, the tunnel and below grade stations proposed under this alternative have the potential for vapor intrusion from soil and groundwater contamination.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Energy (Section 4.11 of the FEIS/FEIR)					
Construction	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 4.5- to 5-year construction period would result in the consumption of approximately 61,809 MMBTU of energy. Although an estimated 445,000 gallons of fuel would be consumed by construction vehicles	Construction of the IOS would result in the consumption of approximately 48,387 MMBTU of energy.	Construction of Alternative 3 would result in impacts similar to those for the LPA and would result in the consumption of 55,000 MMBTU and 400,000 gallons of fuel.	Alternative 4 would result in the consumption of 273,600 MMBTU and 1.975 million gallons of fuel.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	and equipment, the estimated consumption would be limited to the construction period, 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 LPA 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.				
Operation	Operation of the LPA would result in the consumption of both fuels and electricity. Overall operational energy consumption under the LPA would decrease by 48,657 MMBTU or 0.005% relative to the existing (2012) baseline. Under the Future (2040)-with-Project scenario, energy consumption would decrease by 281,621 MMBTU or 0.039% relative to the future (Year 2040) baseline condition. Operation of the LPA	Overall operational energy consumption under the IOS would decrease by 51,686 MMBTU or 0.006% relative to the existing (2012) baseline. Under the Future (2040)-with-Project scenario, energy consumption would decrease by 234,831 MMBTU or 0.032% relative to the future (Year 2040) baseline condition. Operation of the	Overall operational energy consumption under Alternative 3 would increase relative to existing (2012) baseline conditions by 49,674 MMBTU or 0.005%. Under the Future-with-Project scenario, operational energy consumption would increase by 626,734 MMBTU compared to year	Overall operational energy consumption under Alternative 4 would decrease relative to future (Year 2040) baseline conditions by 291,752 MMBTU or 0.037%. Similar to the LPA and Alternative 3, Alternative 4 would not result in the wasteful, inefficient, or	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	would not result in the wasteful, inefficient, or unnecessary consumption of energy.	IOS would not result in the wasteful, inefficient, or unnecessary consumption of energy.	2040 baseline conditions. However, similar to the LPA, Alternative 3 would not result in the wasteful, inefficient, or unnecessary consumption of energy.	unnecessary consumption of energy.	
Ecosystems/Biological Resources (Section 4.12 of the FEIS/FEIR)					
Construction	**Special-Status Plants and Animals:** There is a potential for pallid bat, western yellow bat, and big free-tailed bat to occur in the study area. Construction activities could affect 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. **Conflict with Local Polices:** Construction could require the removal of trees protected by the City of LA and/or San Fernando tree ordinances. Removal of protected trees would conflict with the city ordinances.	Impacts would be similar to those discussed for the LPA, with the exception that no impacts would occur along the northern 2.5-mile segment of the LPA.	Construction impacts under Alternative 3 would be similar to those that would occur under the LPA.	Construction impacts under Alternative 4 would be similar to those that would occur under the LPA and Alternative 3.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Operation	Installation of the overhead contact system lines for the LRT would potentially have an impact on avian species by increasing line collisions and electrocution risks. However, the project is planned within an existing urban area, and wildlife species in the area are urban-tolerant.	Impacts would be the same as those discussed for the LPA.	The operational impacts of Alternative 3 would be similar to those that would occur under the LPA.	The operational impacts of Alternative 3 would be similar to or slightly less (due to the subway segment) than those that would occur under the LPA and Alternative 3.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Water Resources/Hydrology and Water Quality (Section 4.13 of the FEIS/FEIR)					
Construction	**Water Quality:** Construction of the LPA could result in an increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes. Because construction activities would disturb more than 1 acre, preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) would be required, in accordance with the statewide National Pollutant Discharge Elimination System 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. **Stormwater and Drainage:** Use of groundwater would be minimal and temporary. Construction activities could result in increased erosion. Temporary drainage facilities could be required to redirect runoff from work areas. Construction of the LPA would not require the use of substantial volumes of surface water. In addition, 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.	Construction of the IOS would result in similar or slightly reduced impacts (because of shorter length and smaller project footprint) than those described for the LPA.	Alternative 3 construction impacts would be similar to those that would occur under the LPA.	Alternative 4 would result in similar impacts to those that would occur under the LPA and Alternative 3, with the exception of impacts on groundwater supplies and recharge, as described below. **Groundwater:** Dewatering would likely be required for the underground stations and could potentially be required for utility relocation or replacement depending on local groundwater levels. 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.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	The LPA would result in very minor increases in impervious surfaces, which would have a minimal effect on groundwater supplies and recharge. Activities associated with operation of the MSF—including fueling, cleaning, and repairing—have the potential to degrade water quality. Water consumption due to the MSF is not expected to result in an appreciable reduction in local water supplies. Drainage patterns would not be substantially altered with implementation of the LPA, and the flood zones, which are confined to existing drainage channels, would not be adversely affected by LPA operations. Most of the project alignment is within a dam failure inundation zone associated with the Sepulveda and Hansen Flood Control Basins (and associated dams). LPA facilities could be affected in the event of dam failure. However, the LPA would not increase the risk of dam failure.	Impact for the IOS would be similar to those described for the LPA.	Operational impacts due to Alternative 3 would be similar to those that could occur under the LPA.	Operational impacts of Alternative 4 would be similar to those that could occur under the LPA and Alternative 3. However, there is a potential for flooding at the underground stations proposed under Alternative 4.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Safety and Security (Section 4.14 of the FEIS/FEIR)					
Construction	Construction of the LPA may have temporary adverse effects on public safety and security within the project study area. During construction, motorists, pedestrians, and bicyclists in close proximity to construction activities would	Impacts for the IOS would be similar to or less than those described for the LPA due to the IOS's shorter length and smaller project footprint.	Alternative 3 construction impacts would be similar to those that could occur under the LPA.	Alternative 4 construction impacts would be similar to those that could occur under the LPA and Alternative 3, though increased safety hazards	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	experience circulation impacts and could be exposed to hazards posed by construction activities and equipment. Construction activities 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 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 substantially 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.			could occur along the subway segment of Alternative 4, particularly if cut-and-cover construction methods are used and due to the longer construction duration.	
Operation	**Pedestrian, Vehicle, and Bicycle Safety:** The removal of bike lanes would increase the potential for conflicts between bicyclists and motor vehicles, reducing safety, which would be a potentially adverse effect and significant impact. Sidewalks along Van Nuys Boulevard, which are	Impacts would be similar those described for the LPA.	Impacts would be similar to those that would occur under the LPA.	Impacts would be similar to those that would occur under the LPA and Alternative 3.	**All Alternatives: CEQA:** Significant (removal of bike lanes resulting in increased potential for conflicts between bicyclists and motor vehicles; increased delay for

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	approximately 13 feet wide, would be narrowed to 10 feet, potentially increasing crowding, particularly in the vicinity of stations or stops. **Security:** The LPA is not expected to result in a substantial increase in crime. The removal of mixed-flow lanes would result in additional roadway congestion due to the decreased roadway capacity, which could adversely affect emergency vehicle response times and access or evacuation plans in the event of an emergency. The proposed motor vehicle turn restrictions could also result, in some instances, in emergency vehicles taking a slightly more circuitous route and therefore requiring more time to respond to emergencies.				emergency responders due to increased congestion) **NEPA:** Adverse
Parklands and Community Facilities (Section 3.15 of the FEIS/FEIR)					
Construction	The LPA would not require the physical acquisition, displacement, or relocation of parklands and community facilities. However, construction activities could result in a range of impacts on nearby parklands and community facilities including air quality, noise, visual, and traffic impacts.	Impacts would be similar to those impacts that could occur to parks along Van Nuys Boulevard under the LPA; however, the IOS would not result in impacts on parks and community facilities along the Metro-owned railroad right-of-way because it does not include that segment of the LPA.	Alternative 3 construction impacts would be similar to those that would occur under the LPA.	Alternative 4 would result in similar or potentially greater construction impacts than the LPA or Alternative 3, particularly in the vicinity of the subway segment if cut-and-cover construction methods are used or in the vicinity of the tunnel portals.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Operation	No right-of-way acquisitions would be required, and this alternative would not result in the physical acquisition, displacement, or relocation of parklands and community facilities. Operation of the LRT could result in increased noise at parklands and community facilities. Implementation of the LPA would introduce new vertical elements (e.g., OCS) that could result in substantial changes to the aesthetic character in areas along the corridor containing recreational areas or parklands. The LPA would result in increased congestion and significant impacts at a number of study intersections along the corridor due to the reduction in mixed-flow lanes, which could have an adverse effect on emergency access.	Impacts due to the IOS would be similar to those described for the LPA. However, the IOS would not result in any operational impacts on parks and community facilities along the railroad right-of-way because it would not include the northern 2.5-mile segment of the LPA.	Alternative 3 operational impacts would be similar to those that could occur under the LPA.	The operational impacts of Alternative 4 would be similar to those that could occur under the LPA or Alternative 3, except the operational noise and traffic impacts would be less because the subway portion (south of Sherman Way to Parthenia Street) of the Alternative 4 alignment would avoid the at-grade impacts of the LPA and Alternative 3 for that section of the alignment.	**All Alternatives:** **CEQA:** Significant (emergency vehicle access; visual impacts) **NEPA:** Adverse (emergency vehicle access; visual impacts)
Historic, Archaeological, and Paleontological Resources (Section 4.16 of the FEIS/FEIR)					
Historic Resources - Construction	Under the LPA, there are four historic properties that have a potential to be affected by the construction of the proposed LRT structures or stations. None of the buildings within the APE appear to be Building Category IV, such as an adobe building, so the lowest possible threshold of vibration damage would be 0.2 in/sec PPV. The highest predicted level of vibration for a station is the use of a vibratory roller at 0.21 in/sec PPV from a distance of 25 feet.	Impacts from the IOS would be similar to those described for the LPA.	Impacts would be similar to those that would occur under the LPA.	Impacts would be similar to those that would occur under the LPA and Alternative 3. Pile drivers could be used in the construction of underground stations, which could produce vibration levels that could affect one historic property. However, the property is located far enough away that equipment	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	• 130 N. Brand Boulevard– Approximately 600 feet from proposed Maclay Station • 6353 Van Nuys Boulevard – Approximately 75 feet from proposed Victory Station • 8324 Van Nuys Boulevard – Approximately 40 feet from proposed Roscoe Station • 9110 Van Nuys Boulevard – Approximately 40 feet from proposed Nordhoff Station Because the four properties above are more than 25 feet away from the proposed construction areas, equipment used for the construction of a station would not exceed the predicted FTA damage risk vibration limits. There are no historic properties that have the potential to be affected by construction of the MSF. In addition, construction of the LPA would not result in alterations to or demolition of any historic properties. Therefore, the LPA would not result in adverse effects on any historic properties during construction.			used would not exceed the FTA damage risk vibration limits.	
Historic Resources – Operation	The operational effects that could occur to historic properties under the LPA would include potential visual effects due to OCS, TPSS, and MSF facilities. There are 10 historic properties within the APE. There is the potential for operational effects due to the	The impacts associated with the IOS would be similar to those described for the LPA.	Impacts would be similar to those that could occur under the LPA.	Impacts would be similar to those that could occur under the LPA and Alternative 3.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	introduction of new visual elements on seven of the 10 properties. However, no significant or adverse visual impacts would occur.				
Archaeological Resources – Construction	The LPA would generally involve shallow excavation, with some exceptions, to construct LRT tracks, OCS, stations, narrow sidewalks, and other project facilities. Archaeological sites 19-001124 and 19-002681 are within and adjacent to the footprint of the LPA. Even though neither resource is considered eligible for the National Register of Historic Places, California Register of Historical Resources, or a historical resource under CEQA, the immediate resource areas are still considered sensitive for containing previously undiscovered archaeological resources. The LPA has a low potential to adversely affect other archaeological resources that may be present but have not been previously identified within the project footprint. However, since construction would involve earth-disturbing activities, it is still possible that archaeological resources or human remains may be discovered and damaged or destroyed during construction.	Due to the fact that the IOS project limits do not include the archaeological sites described for the LPA, it would not have impacts on known archeological resources. Similar to the LPA, the IOS has low potential to adversely affect other archaeological resources that may be present but have not been previously identified within the project footprint.	The two identified archaeological sites are not located within the footprint of Alternative 3 and therefore would not be affected by construction activities. Other impacts would be similar to those that would occur under the LPA.	Alternative 4 would result in similar or potentially greater impacts to the LPA due to the more extensive excavations required to construct the subway segment, which has a moderate potential for ground-disturbing activities to expose and affect previously unknown significant archaeological resources.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Archaeological Resources – Operation	The LPA would result in no operational impacts or effects on archaeological resources.	The IOS would result in no operational impacts or effects on archaeological resources.	Operation of Alternative 3 would result in no impacts or effects on archaeological resources.	Alternative 4 would result in no operational impacts or effects on archaeological resources.	**All Alternatives:** **CEQA:** No impact **NEPA:** No effect

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
Paleontological Resources – Construction	The LPA would involve construction within the Quaternary alluvium. Shallow excavations would not affect paleontological resources, since the affected resources are too young to contain fossils. However, deeper excavations have the potential to affect paleontologically sensitive Quaternary older alluvium, which is known to contain Pleistocene fossils between depths of 14 and 100 feet in the San Fernando Valley.	Impacts as a result of the IOS would be similar to or slightly less than those described for the LPA due to the IOS having a smaller project footprint.	Impacts would be similar to those that could occur under the LPA.	Impacts would be similar or potentially greater than those that would occur under the LPA or Alternative 3 due to the greater excavation and depth of excavation that would be required to construct the subway tunnel.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse
Paleontological Resources – Operation	Operation of the LPA would result in no impacts or effects on paleontological resources.	Operation of the IOS would result in no impacts or effects on paleontological resources.	Operation of Alternative 3 would result in no impacts or effects on paleontological resources.	Alternative 4 would result in no operational impacts or effects on paleontological resources.	**All Alternatives:** **CEQA:** No impact **NEPA:** No effect
Environmental Justice (Section 4.18 of the FEIS/FEIR)					
Construction	**Mobility and Access Impacts:** Construction of LRT stations and the transit alignment would require temporary sidewalk, lane, and road closures, and the removal of parking. These closures could reduce pedestrian, bicycle, and vehicle access to areas along the project corridor. These temporary effects are anticipated to affect all communities within the project study area and communities adjacent to the project study area comparably. **Social and Economic Impacts:** Construction activities would likely result in a decrease in accessibility to many businesses and could	Impacts to environmental justice populations would be similar to those identified for the LPA. However, the IOS would require fewer property acquisitions.	Impacts would be similar to those that could occur under the LPA.	Impacts would be similar to or potentially greater than those that could occur under the LPA and Alternative 3, because of the more extensive construction required to construct the subway segment of Alternative 4. However, similar to the other alternatives, Alternative 4 impacts would affect all environmental justice populations comparably.	**All Alternatives:** **NEPA:** No disproportionately high and adverse effects on environmental justice populations would occur

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	reduce on-street and off-street parking, which may negatively affect business activity levels because the number of customers may temporarily decline. Construction activities would take place throughout the project corridor, and the temporary decrease in accessibility would affect all businesses comparably. **Physical Impacts:** Construction activities could result in noise, dust, odors, and traffic delays. Local neighborhoods, businesses, and community facilities may be inconvenienced temporarily, and community activities could be disrupted by construction. Construction of the LPA may also result in several visual impacts and temporary effects on public safety and security within the project study area. Because 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, the LPA would not result in disproportionately high and adverse effects on minority or low-income populations with respect to construction.				

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	Displacement of Businesses, Housing, and People: The LPA would require 68 full acquisitions, 30 partial acquisitions, one Metro-owned acquisition, and one acquisition of a vacant alley. The majority of the acquisitions would be from light manufacturing and commercial properties. These businesses are located in low-income and/or minority neighborhoods, and therefore, the displacement impacts of the LPA would be predominantly borne by an environmental justice population. However, 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.				
Operation	**Mobility and Access Impacts:** The LPA would enhance connections to public transportation within the project study area and across the region. The LRT would be available to all communities throughout the project study area as well as communities adjacent to the project study area, regardless of socioeconomic or demographic characteristics. Under the LPA, curbside parking along Van Nuys Boulevard would be	Impacts as a result of the IOS would be the same as those identified under the LPA. However, only 18 of the study intersections have adverse effects.	Impacts would be similar to those that would occur under the LPA.	Impacts would be similar to those that would occur under the LPA and Alternative 3.	**All Alternatives:** **NEPA:** No disproportionately high and adverse effects on environmental justice populations would occur

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	prohibited, which could affect vehicle access to businesses and community resources. However, available adjacent on-street parking and/or off-street parking areas can meet the weekday and weekend on-street parking demand for the area. Under the LPA, the existing bike lanes along Van Nuys Boulevard north of Parthenia Street would be removed, which would be expected to affect all bicyclists regardless of socioeconomic or demographic characteristics. Conversion of existing mixed-flow lanes to dedicated LRT facilities would decrease roadway capacity for mixed-flow traffic. As a consequence, this alternative would result in adverse effects on 20 of the 73 study intersections within the corridor, which could reduce access for emergency vehicle response or interfere with emergency evacuation plans. Traffic impacts are anticipated to affect all emergency calls or travelers within the project study area comparably, regardless of socioeconomic or demographic characteristics. **Social and Economic Impacts:** The LPA would not result in disproportionate effects on or fewer benefits for minority or low-income populations with respect to improved economic conditions. Transit connectivity would be improved throughout the entire				

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	project corridor. Therefore, the LPA would not result in disproportionate effects on or fewer benefits for minority or low-income populations with respect to community cohesion. **Physical Impacts:** The LPA would be designed in compliance with Metro design guidelines to ensure pedestrian, motorist, and bicyclist safety; however, the removal of existing Class II bike lanes would increase the potential for conflicts between bicyclists and motor vehicles. Because the changes to the bike lanes along Van Nuys Boulevard would be expected to affect all bicyclists within an approximate 4-mile radius comparably, regardless of socioeconomic or demographic characteristics, disproportionately high and adverse effects on environmental justice populations are not anticipated.				
Growth-Inducing Impacts (Section 4.19 of the FEIS/FEIR)					
Induce substantial population growth in an area either directly or indirectly	The anticipated increase in long-term employment would be relatively minor and would not result in a significant increase in the project study area population. Therefore, the LPA would not directly induce substantial residential or employment population growth. This alternative may indirectly result in growth along the corridor and within the project study area. However, it	IOS impacts would be similar to or slightly less than the LPA's because of the shorter length of the IOS.	Impacts would be similar to those that would occur under the LPA.	Impacts would be similar to those that would occur under the LPA and Alternative 3.	**All Alternatives:** **CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	would not extend transit service to undeveloped areas and would be located in a developed urban area. Therefore, it would not indirectly induce growth that would substantially change existing land use and development patterns at the corridor level.				
Irreversible and Irretrievable Commitments of Resources (Section 4.20 of this FEIS/FEIR)					
Construction and Operation	Construction would entail the one-time irreversible and irretrievable commitment of nonrenewable resources, such as energy (fossil fuels used for construction equipment) and construction materials (such as lumber, sand, gravel, metals, and water). Land used to construct the proposed facilities is considered an irreversible commitment during the period the land is used. The project would commit land at stations and the maintenance facility to transit use. This commitment of long-term land resources is consistent with the policies of the County of Los Angeles and the Cities of Los Angeles and San Fernando to promote transit-oriented uses. Accidents could occur during construction as a result of safety hazards posed by construction activities and equipment including construction site accidents that could affect construction workers or the environment and potential conflicts with or accidents	Impacts would be similar to or slightly less than those that could occur under the LPA because of the shorter length of the IOS.	Impacts would be similar to those that would occur under the LPA.	Impacts would be similar to or greater than those that would occur under the LPA and Alternative 3 due to the more extensive construction required to construct the subway segment of Alternative 4.	**CEQA:** Less than significant **NEPA:** Not adverse

Affected Resource	Alternative				
	Locally Preferred Alternative (LPA)	Initial Operating Segment (IOS)	Alt. 3 – Low-Floor LRT/Tram (DEIS/DEIR)	Alt. 4 – LRT (DEIS/DEIR)	Level of Impacts (CEQA) and Effects (NEPA) after Mitigation
	involving pedestrians, bicyclists, and motorists in close proximity to construction activities. The consumption of nonrenewable resources includes water, petroleum products, and electricity. In addition, fossil fuels would be used for transporting workers and materials during construction, and electricity and fuel would be used for trains, stations, and worker vehicles for maintenance and operation during the life of the project. The consumption amount and rate of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of such resources, because they would increase transit use (which increases energy efficiency) and decrease automobile dependence (which uses fossil fuels).				

Table ES-3: Proposed Mitigation Measures

Affected Resource	Mitigation Measures
Transportation, Transit, Circulation, and Parking (Chapter 3 of this FEIS/FEIR)	
Construction	**MM-TRA-1:** The Traffic Management Plan shall require Metro to communicate closures and information on any changes to bus service to local transit agencies in advance and develop detours as appropriate. Bus stops within work areas shall be relocated, with warning signs posted in advance of the closure, and warnings and alternate stop notifications posted during the extent of the closure. **MM-TRA-2:** The Traffic Management Plan shall include the following typical measures, and others as appropriate: • Schedule a majority of construction-related travel (i.e., deliveries, hauling, and worker trips) during the off-peak hours. • Develop detour routes to facilitate traffic movement through construction zones without significantly increasing cut-through traffic in adjacent residential areas. • Where feasible, temporarily restripe roadways including turning lanes, through lanes, and parking lanes at the affected intersections to maximize the vehicular capacity at those locations affected by construction closures. • Where feasible, temporarily remove on-street parking to maximize the vehicular capacity at those locations affected by construction closures. In these areas where street parking is temporarily removed in front of businesses, the contractor shall provide wayfinding to other nearby parking lots or temporary lots, with any temporary parking secured well in advance of parking being removed in the affected area. • Place station traffic control officers at major intersections during peak hours to minimize delays related to construction activities. • Assign a Construction Relations team inclusive of a manager, senior officers, and social media strategist to develop and implement the Metro Board's adopted Construction Relations model. The team will conduct the outreach program to inform the general public about the construction process, planned roadway closures, and anticipated mitigations through community briefings in public meeting spaces and use of signage (banners, etc.). • Develop and implement a program with business owners to minimize effects to businesses during construction activities, including but not limited to signage, Eat, Shop, Play, and promotional programs. • Consult and seek input on the designation and identification of haul routes and hours of operation for trucks with the local jurisdictions, school districts, and Caltrans. The selected routes should minimize noise, vibration, and other effects. • To the extent practical, maintain traffic lanes in both directions, particularly during the morning and afternoon peak hours. • Maintain access to adjacent businesses and schools (including passenger loading areas for parents dropping off students) via existing or temporary driveways or loading areas throughout the construction period. • Coordinate potential road closures and detour routes and other construction activities that could adversely affect vehicle routes in the immediate vicinity of local schools with local school districts. • Install and maintain appropriate traffic controls (signs and signals) to ensure vehicular safety. **MM-TRA-3:** To ensure potential impacts on pedestrian and bicycle facilities are minimized to the extent feasible, the Traffic Management Plan and Traffic Control Plan shall include the following: • Bicycle detour signs shall be provided, as appropriate, to route bicyclists away from detour areas with minimal-width travel lanes and onto parallel roadways. • Sidewalk closure and pedestrian route detour signs shall be provided, as appropriate, that safely route pedestrians around work areas where sidewalks are closed for safety reasons or for specific construction work within the sidewalk area. In addition, the project contractor shall ensure appropriate "Open during Construction," wayfinding, and promotional signage for businesses affected by sidewalk closures is provided and access to these businesses is maintained.

Affected Resource	Mitigation Measures
Operation	**MM-TRA-4:** During the Preliminary Engineering phase of the project, Metro will work with the Cities of Los Angeles and San Fernando to synchronize and coordinate signal timing and to optimize changes in roadway striping to minimize potential operational traffic impacts and hazards to the extent feasible. **MM-TRA-5:** Additional visual enhancements, such as high-visibility crosswalks that meet current LADOT design standards, to the existing crosswalks at each proposed station location shall be implemented to further improve pedestrian circulation. **MM-TRA-6:** To further reduce potential adverse and less-than-significant pedestrian impacts, Metro shall prepare a First/Last Mile study that documents preferred pedestrian access to each station, general pedestrian circulation in the immediate vicinity of the station, and potential sites for connections to nearby bus services. The purpose of this study shall include ensuring sufficient circulation, access, and information important to users of the transit system. The results of the study shall be implemented through coordination between Metro and the local jurisdictions of the City of Los Angeles and the City of San Fernando. **MM-TRA-7:** To reduce the potential impacts due to remove of the existing bike lanes extending approximately 2 miles north on Van Nuys Boulevard from Parthenia Street to Beachy Avenue and from Laurel Canyon Boulevard to San Fernando Road, two parallel corridors have been identified for consideration and approval by the Los Angeles Department of Transportation (LADOT) as bike friendly corridors. These include Filmore Street to the west and Pierce Street to the east, which can be developed as Class III Bike Friendly streets by striping sharrows and providing signage. Metro shall also continue to work with LADOT to identify, to the extent feasible, replacement locations for Class II bike lanes that meet the goals and policies in the City of Los Angeles Bicycle Plan.
Land Use (Section 4.1 of this FEIS/FEIR)	
Construction	**MM-NOI-1a–1d, MM-VIB-1,** and **MM-AQ-1–9.**
Operation	**MM-NOI-2a, MM-NOI2b, MM-NOI-3a, MM-NOI-3b,** and **MM-NOI-3c.**
Real Estate and Acquisitions (Section 4.2 of this FEIS/FEIR)	
Construction	None required.
Operation	None required.
Economic and Fiscal Impacts (Section 4.3 of this FEIS/FEIR)	
Construction	**MM-TRA-1, MM-TRA-2, MM-TRA-3,** and **MM-CN-1**.
Operation	None required.
Communities and Neighborhoods (Section 4.4 of this FEIS/FEIR)	
Construction	**MM-TRA-1–3, MM-VIS-1–5, MM-AQ-1–9, MM-NOI-1a–1d, MM-NOI-2a–2b, MM-NOI-3a–3c,** and **MM-SS-1–23.** 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.
Operation	See mitigation measures listed in Chapter 3, Transportation, Transit, Circulation, and Parking; Section 4.5, Visual Quality and Aesthetics; Section 4.8, Noise and Vibration; and Section 4.14, Safety and Security sections of this table that would be implemented to minimize operational impacts on communities and neighborhoods.

Affected Resource	Mitigation Measures
Visual Quality and Aesthetics (Section 4.5 of this FEIS/FEIR)	
Construction	**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. The screening shall be a height and type of material that is appropriate for the context of the surrounding land uses. There shall be Metro-branded community-relevant messaging on the perimeter of the construction staging walls. Lighting within construction areas shall face downward and shall be designed to minimize spillover lighting into adjacent properties.
Operation	**MM-VIS-2:** Vegetation removal shall be minimized and shall be replaced following construction either in-kind or following the landscaping design palette for the project, which would be prepared in consultation with the City of Los Angeles and San Fernando, including the City Tree Removal Policy and replacement ratio. **MM-VIS-3:** Scenic resources, including landscape elements such as rows of palm trees (along Van Nuys Boulevard) or mature trees (along San Fernando Road) and uniform lighting, shall be preserved, where feasible. **MM-VIS-4:** Lighting associated with the project shall be designed to face downward and minimize spillover lighting into adjacent properties, in particular residential and recreational properties. **MM-VIS-5:** Infrastructure elements shall be designed with materials that minimize glare.
Air Quality (Section 4.6 of this FEIS/FEIR)	
Construction	**MM-AQ-1:** 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:** Solar powered, instead of diesel powered, changeable message signs shall be used. **MM-AQ-3:** Electricity from power poles, rather than from generators, shall be used where feasible. **MM-AQ-4:** 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:** Any tampering with engines shall be prohibited and continuing adherence to manufacturer's recommendations shall be required. **MM-AQ-6:** 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:** 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. **MM-AQ-8:** Consistent with South Coast Air Quality Management District Rule 1113, all architectural coatings for building envelope associated with the project shall use coatings with a Volatile Organic Compound content of 50 grams per liter or less. **MM-AQ-9:** The Design-Builder shall implement feasible means and methods that would minimize cumulative air quality impacts during the construction period, including, but not limited to, the following: 1. Timing project-related construction activities associated with the maintenance facility, stations, and track installation such that overlapping schedules are minimized. 2. Timing project-related construction activities so that overlapping schedules with other projects in the area are avoided. 3. Reducing the number of pieces of diesel-fueled equipment used at a given time when construction activities occur in the vicinity of sensitive receptors, including, but not limited to residences, schools, parks, hospitals, and nursing homes.
Operation	None required.

Affected Resource	Mitigation Measures
Greenhouse Gas Emissions (Section 4.7 of this FEIS/FEIR)	
Construction and Operation	**MM-AQ-1**, **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-6.**
Noise and Vibration (Section 4.8 of this FEIS/FEIR)	
Construction	**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. • The contractor shall use lined or covered storage bins, conveyors, and chutes with noise-deadening material for truck loading and operations. • The contractor shall use strobe lights or other OSHA-accepted methods rather than back-up alarms during nighttime construction. **MM-NOI-1e:** If the proposed mitigation measures identified in this section do not reduce the identified significant noise impacts on Los Angeles Unified School District schools to a less-than-significant level, Metro shall develop new and appropriate measures, to the extent feasible, to effectively reduce construction-related or operational noise. Provisions shall be made to allow the affected school or designated representative(s) to notify Metro when such measures are warranted. **MM-VIB-1:** Where equipment, such as a vibratory roller, that produces high levels of vibration is used near buildings, the Construction 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.

Affected Resource	Mitigation Measures
Operation	**MM-NOI-2a:** A sound wall shall be constructed at the northern edge of the alignment where the LRT curves to transition between Van Nuys Boulevard and San Fernando Road, in the area bounded by Pinney Street, El Dorado Avenue, Van Nuys Boulevard, and San Fernando Road. The sound wall shall be constructed to mitigate the increase in traffic noise levels that would result from removing the row of buildings in this area. Sound walls should be constructed in such a fashion as to not impair the train operator vision triangle sightlines. **MM-NOI-2b:** Friction control shall be incorporated into the design for the curves at Van Nuys Boulevard/San Fernando Road, Van Nuys Boulevard/El Dorado Boulevard, and Van Nuys Boulevard/Vesper Avenue. Friction control may consist of installing lubricators on the rail or using an onboard lubrication system that applies lubrication directly to the wheel. **MM-NOI-3a:** The following noise limit shall be included in the purchase specifications for the TPSS units: TPSS noise shall not exceed 50 dBA at a distance of 50 feet from any part of a TPSS unit. **MM-NOI-3b:** The TPSS units shall be located within the parcel as far from sensitive receivers as feasible. If possible, the cooling fans shall be oriented away from sensitive receivers. **MM-NOI-3c:** If necessary, a sound enclosure shall be built around the TPSS unit to further reduce noise levels at sensitive receivers to below the applicable impact threshold. Predicted vibration levels could be reduced to below the CEQA significance thresholds at all sensitive receivers with traditional floating-slab track and use of low-impact frogs. A floating slab consists of a concrete slab supported by rubber or steel springs. Floating slab is the most expensive vibration mitigation measure; however, it provides the most reduction in vibration levels. Further investigation may show that vibration levels could be reduced to below the applicable thresholds with a less expensive option, such as a continuous-mat floating slab. Low-impact frogs such as conformal frogs and spring frogs result in a smoother transition over the gaps, reducing noise and vibration levels. Conformal frogs smooth the transition through wing slopes, which match the wheel profile, and spring frogs use a spring-loaded mechanism. A moveable point frog includes a signal mechanism that allows trains running on the mainline to avoid any gaps in the rail, eliminating the noise and vibration impact of the special trackwork. Moveable point frogs are required mitigation measures in areas where other low-impact frogs do not provide enough vibration reduction. **MM-VIB-2a:** Metro shall complete additional vibration analysis to confirm the locations where vibration levels would exceed CEQA significance thresholds. Where exceedances would occur, the contractor shall employ methods to reduce vibration to levels below applicable thresholds. A floating-slab track, a continuous-mat floating slab, or a vibration-isolated embedded track system, such as QTrack, could be considered. **MM-VIB-2b:** The contractor shall install moveable point frogs at the crossovers on Van Nuys Boulevard/Osborne Street and at Van Nuys Boulevard/Canterbury Avenue. If further investigation confirms that an alternative low-impact frog would reduce vibration levels below the applicable thresholds, the alternative may be installed. **MM-VIB-2c:** Low-impact frogs such as conformal frogs or spring frogs shall be used at all crossovers and turnouts not covered under MM-VIB-2b. Traditional crossovers may be used in locations where analysis shows vibration levels will not exceed the applicable thresholds at nearby sensitive receivers.
Geology, Soils and Seismicity (Section 4.9 of this FEIS/FEIR)	
Construction	None required
Operation	**MM-GEO-1:** Metro design criteria require probabilistic seismic hazard analyses (PSHA) to estimate earthquake loads on structures. These analyses take into account the combined effects of all nearby faults to estimate ground shaking. During Final Design, site-specific PSHAs shall be used as the basis for evaluating the ground motion levels along the project corridor. The structural elements of the proposed project shall be designed and constructed to resist or accommodate appropriate site-specific estimates of ground loads and distortions imposed by the design earthquakes and conform to Metro's Design Standards for the Operating and Maximum Design Earthquakes. The concrete structures will be designed according to the Building Code Requirements for Structural Concrete (ACI 318) by the American Concrete Institute.

Affected Resource	Mitigation Measures
	MM-GEO-2: At liquefaction or seismic settlement prone areas, evaluations by geotechnical engineers shall be performed during Final Design to provide estimates of the magnitude of the anticipated liquefaction or settlement. Based on the magnitude of evaluated liquefaction, either structural design, or ground improvement (such as deep soil mixing) or deep foundations to non-liquefiable soil (such as drilled piles) measures shall be selected. Site-specific design shall be selected based on State of California guidelines and design criteria set forth in the Metro Seismic Design Criteria
Hazardous Waste and Materials (Section 4.10 of this FEIS/FEIR)	
Construction	**MM-HAZ-1:** An environmental investigation shall be performed during design for transit structures, TPSS locations, stations, and the MSF. 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 (e.g., soil contaminated from organic wastes, sediments, minerals, nutrients, thermal pollutants, toxic chemicals, and/or other hazardous substances) 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 UST sites and nearby LUST sites. • A Phase II subsurface investigation to evaluate potential presence of 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 right-of-way, the project team shall consult with 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 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 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 proposed project 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 where soil may be disturbed during construction shall be tested for 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 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 rights-of-way that crossed or were adjacent to the project right-of-way 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 rights-of-way. If encountered during construction, railroad ties designated for reuse or disposal (including previously salvaged railroad ties in the project right-of-way) shall be managed or disposed of as TWW in accordance with Alternative Management Standards provided in CCR Title 22 Section 67386.

Affected Resource	Mitigation Measures
	MM-HAZ-2: The contractor shall implement a Worker Health and Safety Plan prior to the start of construction activities. All workers shall be required to review the plan, receive training if necessary, and sign the plan prior to starting work. The plan shall identify properties of concern, the nature and extent of contaminants that could be encountered during excavation activities, appropriate health and environmental protection procedures and equipment, emergency response procedures including the most direct route to a hospital, and contact information for the Site Safety Officer. **MM-HAZ-3:** The contractor shall implement a Contaminated Soil/Groundwater Management Plan during construction to establish procedures to follow if contamination is encountered in order to minimize associated risks. The plan shall be prepared during the final design phase of the project, and the construction contractor shall be held to the level of performance specified in the plan. The plan shall include procedures for the implementation of the following measures: • Contacting appropriate regulatory agencies if contaminated soil or groundwater (e.g., groundwater contaminated from organic wastes, sediments, minerals, nutrients, thermal pollutants, toxic chemicals, and/or other hazardous substances) is encountered • Sampling and analysis of soil and/or groundwater known or suspected to be impacted by hazardous materials • The legal and proper handling, storage, treatment, transport, and disposal of contaminated soil and/or groundwater shall be delineated and conducted in consultation with regulatory agencies and in accordance with established statutory and regulatory requirements in Section 4.10.1.1 of this FEIS/FEIR • Implementation of dust control measures such as soil wetting, wind screens, etc., for contaminated soil • Groundwater collection, treatment, and discharge shall be performed according to applicable standards and procedures listed in Section 4.10.1.1 of this FEIS/FEIR **MM-HAZ-4:** 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. **MM-HAZ-5:** For reconstruction of the Pacoima Wash bridge that crosses Metro right-of-way, 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. **MM-HAZ-6:** A Contaminated Soil/Groundwater Management Plan shall be prepared during final design that describes appropriate methods and measures to manage contamination encountered during construction.
Operation	None required
Energy (Section 4.11 of this FEIS/FEIR)	
Construction	None required.
Operation	None required.
Ecosystems/Biological Resources (Section 4.12 of this FEIS/FEIR)	
Construction	**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:

Affected Resource	Mitigation Measures
	Bridges and Overpasses • Should potential bat roosts be identified that will require removal, humane exclusionary devices shall be used. Installation 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 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.

Affected Resource	Mitigation Measures
	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 measure 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 and shall include, but not be limited to, the following BMPs as appropriate: • Containment around the site shall include use of temporary measures such as fiber rolls to surround the construction areas to prevent any spills of slurry discharge or spoils recovered during the separation process; • Downstream drainage inlets shall be temporarily covered to prevent discharge from entering the storm drain system; • Construction entrances/exits shall be properly set up so as to reduce or eliminate the tracking of sediment and debris offsite by including grading to prevent runoff from leaving the site, and establishing "rumble racks" or wheel water points at the exit to remove sediment from construction vehicles; • Onsite rinsing or cleaning of any equipment shall be performed in contained areas and rinse water shall be collected for appropriate disposal; • Use of a tank on work sites to collect the water for periodic offsite disposal; • Soil and other building materials (e.g., gravel) stored onsite shall be contained and covered to prevent contact with stormwater and offsite discharge; and • Water quality of runoff shall be periodically monitored before discharge from the site and into the storm drainage system. **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 with the specifications outlined in the city ordinances.
Operation	None required.
Water Resources/Hydrology and Water Quality (Section 4.13 of this FEIS/FEIR)	
Construction	None Required.
Operation	None Required.
Safety and Security (Section 4.14 of this FEIS/FEIR)	
Construction	**MM-SS-1**: Alternate walkways for pedestrians shall be provided around construction staging sites in accordance with ADA requirements.

Affected Resource	Mitigation Measures
	MM-SS-2: Safe and convenient pedestrian routes to local schools shall be maintained during construction. **MM-SS-3**: Ongoing communication with school administrators shall be maintained to ensure sufficient notice of construction activities that could affect pedestrian routes to schools is provided. **MM-SS-4**: All pedestrian and bicyclist 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-5**: Appropriate traffic controls (signs and signals) shall be installed and maintained to ensure pedestrian and vehicular safety. **MM-SS-6**: To the extent feasible, construction haul trucks shall not use haul routes that pass any school, except when the school is not in session. **MM-SS-7**: Staging or parking of construction-related vehicles, including worker-transport vehicles, shall not occur on or adjacent to a school property when school is in session. **MM-SS-8:** Crossing guards or flaggers shall be provided at affected school crossings when the safety of children may be compromised by construction-related activities. **MM-SS-9:** Barriers or fencing shall be installed to secure construction equipment and to minimize trespassing, vandalism, short-cut attractions, and attractive nuisances. **MM-SS-10:** Security patrols shall be provided to minimize trespassing, vandalism, and short-cut attractions where construction activities occur in the vicinity of local schools. **MM-SS-11**: Project plans, work plans, and traffic control measures shall be coordinated with emergency responders during preliminary engineering, final design, and construction to limit effects to emergency response times.
Operation	**MM-SS-12**: All stations shall be illuminated to avoid shadows and all pedestrian pathways leading to/from sidewalks and parking facilities shall be well illuminated. In addition, lighting would provide excellent visibility for train operators to be able to react to possible conflicts, especially to pedestrians crossing the track. **MM-SS-13:** Proposed station designs shall not include design elements that obstruct visibility or observation nor provide discrete locations favorable to crime; pedestrian access to at-grade stations shall be at ground-level with clear sight lines. **MM-SS-14:** The following measures shall be implemented to reduce pedestrian circulation impacts and hazards: • Sidewalk widths shall be designed with the widest dimensions feasible in conformance with the Los Angeles/Metro's adopted "Land Use/Transportation Policy." • Minimum widths shall not be less than those allowed by the State of California Title 24 access requirements, or the ADA design recommendations. Section 1113A of Title 24 states that walks and sidewalks shall be a minimum of 48 inches (1,219 mm) in width, except that walks serving dwelling units in covered multi-family dwelling buildings may be reduced to 36 inches (914 mm) in clear width except at doors. • Accommodating pedestrian movements and flows shall take priority over other transportation improvements, including automobile access. • Physical improvements shall ensure that all stations are fully accessible as defined in the ADA. **MM-SS-15**: Wide crosswalks shall be provided in areas immediately around proposed stations to facilitate pedestrian mobility. **MM-SS-16**: Metro shall coordinate and consult with the LAFD, LAPD, LASD, and the City San Fernando Police Department to develop safety and security plans for the proposed alignment, parking facilities, and station areas. **MM-SS-17**: Fire separations shall be provided and maintained in public occupancy areas. Station public occupancy shall be separated from station ancillary occupancy by a minimum 2-hour fire-rated wall. The only exception is that a maximum of two station agents, supervisors, or information booths may be located within station public occupancy areas.

Affected Resource	Mitigation Measures
	MM-SS-18: For portions of the alignment where pedestrians and/or motor vehicles must cross the tracks, Metro shall prepare grade crossing applications in coordination with the CPUC and local public agencies, such as LADOT, City of Los Angeles Bureau of Engineering, and the City and County of Los Angeles Fire Departments. Crossings shall require approval from the CPUC and shall meet applicable CPUC standards for grade crossings. **MM-SS-19**: All proposed LRT stations and related parking facilities shall be equipped with monitoring equipment, which would primarily consist of video surveillance equipment to monitor strategic areas of the LRT stations and walkways, and/or be monitored by Metro security personnel on a regular basis. **MM-SS-20**: Metro shall implement a security plan for LRT operations. The plan shall include both in-car and station surveillance by Metro security or other local jurisdiction security personnel. **MM-SS-21**: Metro is continuing to investigate light rail vehicle modifications to increase light rail vehicle safety and minimize or prevent train and pedestrian conflicts. Metro's design criteria also identify multiple efforts to increase light rail vehicle safety and minimize or prevent the potential for pedestrians and vehicle conflicts. Measures identified shall be included during the final design of the LPA. **MM-SS-22**: To reduce potential risk of collisions between LRTs and automobiles on the street portion of the LPA, Metro shall coordinate with the CPUC, City and County of Los Angeles traffic control departments, City of Los Angeles Bureau of Engineering, and the City and County of Los Angeles Fire Departments, and also comply with the Federal Highway Administration's Manual on Uniform Traffic Control Devices for signing and pavement marking treatments. **MM-SS-23**: The diverse needs of different types of traveling public including senior citizens, disabled citizens, low-income citizens, shall be addressed through a formal educational and outreach campaign. The campaign shall target these diverse community members to educate them on proper system use and benefits of LRT ridership. Also see mitigation measure **MM-TRA-7** for measures to reduce the impact due to removal of the existing bike lanes on Van Nuys Boulevard.
Parklands and Community Facilities (Section 4.15 of this FEIS/FEIR)	
Construction	**MM-TRA-1**, **MM-TRA-2**, **MM-VIS-1**, **MM-AQ-1** through **MM-AQ-8**, **MM-NOI-2a and 2b, MM-NOI-3a** through **3c**, **MM-SS-2, MM-SS-4, and MM-SS-5**
Operation	None required.
Historic, Archaeological, and Paleontological Resources	
Historic Resources - Construction	None required.
Historic Resources – Operation	None required.
Archaeological Resources – Construction	**MM-AR-1:** Ground disturbing activities within site areas 19-001124 and 19-002681 and within a 50-foot buffer area around the sites shall be monitored by an Archaeological and Native American monitor. Construction related ground disturbance includes grading, excavation, trenching, and drilling. An Archaeological monitor and a Native American monitor shall examine all sediments disturbed during earth moving activities, including geotechnical drilling and environmental borings, if being conducted, prior to construction. Archaeological monitoring for site CA-LAN-2681 shall be conducted as discussed in the project's Cultural Resources Monitoring Plan (CRMP). All archeological monitoring and any necessary identification, testing, and evaluation of resources identified during monitoring shall be conducted per the methods and procedures described in the CRMP for the project. Standard methods of excavation such as grading and trenching shall be monitored by observation of the excavations as they occur.

Affected Resource	Mitigation Measures
	Drilling of project features such as the overhead contact system (OCS) results in earthen materials being delivered to the ground surface as loosened spoils. Materials to be examined by the Archaeological and Native American monitors are spoils removed from the drill holes while the drilling occurs. The monitors must be provided a safe location and opportunity to view spoils as they are being stored prior to being hauled away from the work area. Access of the monitors to the spoils material may be limited by safety concerns or by hazardous materials contamination. If requested by an Archaeological or Native American monitor, opportunities shall be provided for the monitor, as part of their daily shift activities, to screen or rake spoils to determine if the spoils contain cultural materials. Archaeological monitors are empowered to briefly halt construction if a discovery is made during standard excavation, such as grading and trenching, in the area of that discovery and a 50-foot buffer zone. If a Native American monitor wishes to halt construction, the monitor shall consult with the Archaeological monitor, who may then briefly halt construction. A request to halt activities by the Archaeological monitor should have no effect on ground disturbing activities outside the 50-foot buffer zone; however, spoil piles may not be removed until the monitor can examine them. If an Archaeological or Native American monitor observes an isolated find, the Archaeological monitor shall temporarily halt construction in order to document the find. Documentation shall be completed by collecting a GPS point, photography, and recording information onto the daily monitoring log. All isolated prehistoric artifacts shall be collected. Diagnostic historic-era items shall be collected. Once an isolated item is documented, construction may resume. **MM-AR-2:** If buried cultural materials are encountered in areas not actively being monitored during construction, the Contractor Project Foreman shall halt construction in a 50-foot radius around the discovery and shall immediately contact the Metro Project Manager, Metro Environmental Specialist, and Project Archaeologist. Per the CRMP prepared for the proposed project, for any discovery of an archaeological feature, regardless of eligibility, the Metro Environmental Specialist shall notify all consulting parties identified for the project within 48 hours of any discovery. Notifications shall not be made for ubiquitous infrastructure elements such as modern utilities (cistern, electric, gas, sewer, and water supply lines), transportation infrastructure (bridge piers, buried roadways, and rail segments), sidewalks, and concrete rubble, fill, or waste. **MM-AR-3:** In the event that human remains are encountered during construction, potentially destructive activities in the vicinity of the discovery shall be stopped and the provisions of California PRC § 5097.98 and HSC § 7050.5 shall be followed. The Archaeological monitor shall halt construction, establish a 50-foot buffer around the discovery, and shall contact the Metro Project Manager, Metro Environmental Specialist, and Project Archaeologist. The Metro Environmental Specialist shall notify the County Coroner and FTA on the same day as the discovery. FTA shall notify SHPO, Advisory Council on Historic Preservation (ACHP), and other consulting parties within 48 hours of discovery. Treatment of the remains and all subsequent actions shall be completed per the PA and Cultural Resources Treatment and Monitoring Plan (CRTMP).
Archaeological Resources – Operation	None required.
Paleontological Resources – Construction	**MM-PR-1:** Metro shall retain the services of a qualified paleontologist (minimum of graduate degree, 10 years of experience as a principal investigator, and specialty in vertebrate paleontology) to oversee execution of this mitigation measure. Metro's qualified principal paleontologist shall then develop a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) acceptable to the collections manager of the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County. Metro will implement the PRMMP during construction. The PRMMP will clearly demarcate the areas to be monitored and specify criteria. At the completion of paleontological monitoring for the proposed project, a paleontological resources monitoring report will be prepared and submitted to the Natural History Museum of Los Angeles County to document the results of the monitoring activities and summarize the results of any paleontological resources encountered.

Affected Resource	Mitigation Measures
	The PRMMP shall include specifications for processing, stabilizing, identifying, and cataloging any fossils recovered as part of the proposed project. Metro's qualified principal paleontologist shall prepare a report detailing the paleontological resources recovered, their significance, and arrangements made for their curation at the conclusion of the monitoring effort. **MM-PR-2:** Prior to the start of construction a qualified Principal Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) that includes the following requirements: • All project personnel involved in ground-disturbing activities shall receive paleontological resources awareness training before beginning work. • Excavations, excluding drilling, deeper than 8 feet below the current surface in the Quaternary alluvium shall be periodically spot checked to determine when older sediments conducive to fossil preservation are encountered. Once the paleontologically sensitive older alluvium is reached, a qualified paleontologist shall perform full-time monitoring of construction. Should sediments in a particular area be determined by the paleontologist to be unsuitable for fossil preservation, monitoring shall be suspended in those areas. A paleontologist shall be available to be on call to respond to any unanticipated discoveries and may adjust monitoring based on the construction plans and field visits. • Sediment samples from the Quaternary older alluvium shall be collected and screened for microfossils. • Recovered specimens shall be stabilized and prepared to the point of identification. Specimens shall be identified to the lowest taxonomic level possible and transferred to an accredited repository for curation along with all associated field and lab data. • Upon completion of project excavation, a Paleontological Mitigation Report (PMR) documenting compliance shall be prepared and submitted to the Lead Agency under CEQA.
Paleontological Resources – Operation	None required.
Environmental Justice (Section 4.17 of this FEIS/FEIR)	
Construction	**MM-TRA-1, MM-TRA-2, MM-TRA-3, MM-VIS-1–5, MM-AQ-1–9, MM-NOI-1A–1D, MM-NOI-2A–2B, MM-NOI-3A through 3C,** and **MM-SS 1–23.**
Operation	**MM-CN-1**
Growth Inducing Impacts (Section 4.18 of this FEIS/FEIR)	
Induce substantial population growth in an area either directly or indirectly	None required.
Irreversible and Irretrievable Commitments of Resources	
Construction and Operation	No mitigation measures are required