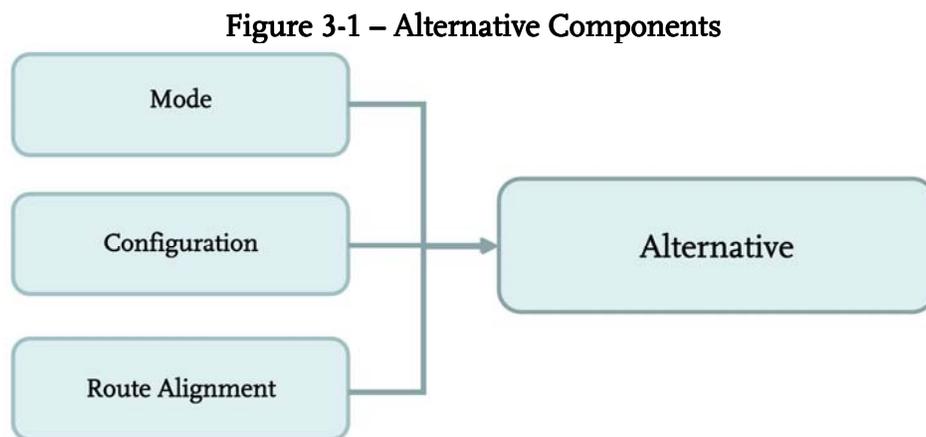


### 3.0 Preliminary Definition of Alternatives

#### *What preliminary alternatives are being evaluated?*

The alternatives for the East San Fernando Valley Transit Corridor project that were considered for screening include the No Build Alternative, Transportation System Management (TSM) Alternative, and build alternatives which comprise of a combination of mode, configuration, and route alignment. Potential modes considered include bus rapid transit (BRT), streetcar, and light rail transit (LRT). Configurations consist of curbside, median-running, and side-running. All reasonable (direct as possible, serving a minimum of key area activity centers) surface-running routes have been considered to provide a direct transit connection between Sherman Oaks at the southern end of the project corridor and either Pacoima or Sylmar and the City of San Fernando at the northern end.

Figure 3-1 illustrates how the separate options are combined to develop an alternative.



#### 3.1 PRELIMINARY ALTERNATIVES

##### 3.1.1. No Build Alternative

The No Build Alternative represents the predicted conditions for the year 2035, includes projects in the Long Range Transportation Plan (LRTP) and the Regional Transportation Plan (RTP), if no transit corridor is constructed. It establishes a baseline for comparison for the other alternatives in terms of benefits and costs, and in terms of environmental analysis.

##### 3.1.2. Transportation System Management Alternative

The TSM Alternative may include relatively low cost transit service improvements and represents the best that can be done to improve transit service such as increased bus frequencies or minor modifications to the roadway network or traffic control systems. For this analysis, the TSM Alternative will consist of the No Build bus network and enhanced bus frequencies for the existing Van Nuys Rapid Bus 761. The Rapid Bus 761 would operate

headways reduced from 10 minutes peak/17.5 minutes off-peak to six-minutes peak/12 minutes off-peak. Additional TSM options that may be considered include, but are not limited to, traffic signalization improvements, off-board fare collection, bus stop amenities/improvements and bus schedule restructuring.

### 3.1.3. Build Alternatives

Each alternative consists of the following components: mode, configuration, and route alignment. These components are summarized below.

#### 3.1.3.1. Mode

Below is a brief description of the main characteristics of the modal options considered for the East San Fernando Valley Transit Corridor.

##### Bus Rapid Transit (BRT)

For this project, BRT is defined as generally operating in exclusive lanes but can also operate in mixed-flow traffic. BRT typically serves longer trips with higher frequency, speed, and reliability than standard Rapid or Local bus service. BRT vehicles are high capacity articulated buses, with each bus having the capacity to serve up to 75 passengers as shown in Figure 3-2. Metro currently operates two dedicated BRT services: the Metro Orange Line (MOL) and the Metro Silver Line. BRT buses can use existing Metro maintenance facilities. The Metro bus fleet is powered by compressed natural gas (CNG). Additional design features may include transit system priority at signalized intersections, enhanced bus stations and shelters, streetscaping, and off vehicle fare collection.

**Figure 3-2 – Bus Rapid Transit Mode**



##### Streetcar



Streetcar refers to rail transit vehicles that are lighter and smaller than light rail vehicles currently operating on the Metro system, and are shown in Figure 3-3. Streetcars typically operate in mixed-flow lanes powered by overhead electrical power. Streetcar stations are generally more closely-spaced than BRT stops. The approximate passenger capacity is 140 passengers per car. This modal option would require a new maintenance facility since Metro does not operate streetcars as part of its transit fleet.

**Figure 3-3 – Streetcar Mode**

### Light Rail Transit (LRT)

LRT operates with passenger railcars on standard gauge rail, operating within exclusive right-of-way (ROW) with overhead electric power, as displayed in Figure 3-4. The approximate capacity is 300 passengers per two-car train set. Stations are typically located at one-mile spacing, with high platforms that eliminate the need for patrons to board vehicles via stairs. Metro currently operates LRT vehicles on the Metro Blue Line, Expo Line, Green Line, and Gold Line, however, the lack of a direct rail connection means that a new maintenance facility would be required.



**Figure 3-4 – Light Rail Transit Mode**

### Other Modes

Additional modes such as heavy rail were excluded from initial consideration because they are unlikely to serve the Corridor in an efficient and cost effective manner. Heavy rail lines are generally located along the very busiest transit corridors. The Metro Red and Purple Lines serve some of Los Angeles' densest areas including downtown Los Angeles, the Wilshire Corridor, and the Hollywood area. Although Van Nuys Boulevard has the seventh highest bus boardings in the Metro system, the land use density along the 11-mile study corridor is not sufficient to warrant a heavy rail investment. The Sepulveda Boulevard Corridor has appreciably less boardings than the Van Nuys Corridor and similar land use characteristics. Projected ridership for either corridor would not justify the extremely high cost to build heavy rail and was not carried forward for further analysis.

#### **3.1.3.2. Configuration**

Twelve configuration options that included varying combinations of transit lanes, vehicle travel lanes, bike lanes, curbside parking, station platforms, and sidewalks were developed for a 100-foot ROW, which is a typical minimum width along both Van Nuys Boulevard and Sepulveda Boulevard.

The configurations are organized in the following manner:

- *Curbside* – One curbside configuration was evaluated. The configuration consists of a transit lane located directly adjacent to the curb with curbside stops and two-travel lanes per direction. The transit lane would only operate during peak periods.
- *Median Running* – A total of seven median-running configurations were analyzed. The configuration consists of a transit lane located in the middle of the ROW as an exclusive guideway. Several variations were evaluated including, variations in the number of transit (one or two) and vehicle (one or two) travel lanes, station platforms (center or side), and amenities such as bike lanes and parking.

- *Side Running* – A total of four side-running configurations were analyzed. The configuration consists of an exclusive transit lane or mixed-flow lane with amenities that would include either bike lanes and/or parking between the transit lane and curb, curbside stops, and two-travel lanes per direction.

For more detail on the configurations, refer to the *Preliminary Definition of Alternatives* report.

### 3.1.3.3. Alignment

Several route alignments were considered within the public roadway ROW and within Metro-owned busway ROW (MOL). These route alignments consist of route segments which represent a linear subset of the overall alignment.

Initially, at the start of the project, only a single route had been considered for the project, running entirely within the publicly-owned ROW of Van Nuys Boulevard from Ventura Boulevard in Sherman Oaks to Foothill Boulevard in Lakeview Terrace. However, as a result of stakeholder input, the scope of the project was expanded to include alternatives within the Sepulveda Boulevard/Brand Boulevard corridor and a northern terminus at the Sylmar/San Fernando Metrolink Station.

Also desired was consideration of an alternative southern terminus in the vicinity of the intersection of Ventura Boulevard and Sepulveda Boulevard, near the northern end of a potential future Sepulveda Pass Corridor project. This southern terminus was considered in addition to the originally-considered Van Nuys Boulevard/Ventura Boulevard terminus. With two possible termini at both the northern and southern ends of the study area, a myriad of potential segments arose as candidates for the project route alternatives. For the purposes of this study, a terminus site represents the end of the East San Fernando Valley Transit Corridor, but might not necessarily represent the end of a transit line. Figure 3-5 illustrates the northern and southern terminus locations.

As the project moves forward, alternatives may be short lined as the evaluations and considerations toward connectivity and the project purposes are refined.

#### Potential Route Segments

Route segments were evaluated to determine feasible alignments in the study area. A segment was deemed infeasible if the ROW width is insufficient to accommodate the considered project modes, even with roadway widening or if a segment failed to contribute to a reasonable route alignment. Some segments that are considered crucial to maintain a viable alignment, like San Fernando Road between Sylmar/San Fernando Metrolink Station and Van Nuys Boulevard, were considered feasible even if buses must operate in mixed-flow operation. However, segments that currently lack Metro Rapid Bus service and are too narrow for BRT, LRT or streetcar, like Fox Street in the northern portion of the study area, were deemed infeasible.

Of the route segments that were evaluated, 14 route alignment options were determined to be feasible. These north-south alignments would be located within existing ROW on Van Nuys Boulevard, Sepulveda Boulevard or use a hybrid combination of both the Van Nuys Boulevard and Sepulveda Boulevard/Brand Boulevard corridors. Figure 3-5 illustrates the project alignments considered for the initial screening process, and those determined to be infeasible for further consideration due to physical limitations.

For more detail on the alignments, refer to the *Preliminary Definition of Alternatives* report.

### 3.2 POSSIBLE OPERATIONS

The possible operational characteristics are described in this section with respect to the various modes. These general characteristics include headways and system compatibility.

#### 3.2.1. BRT

Potential operations for buses within the BRT lanes assumed six-minute headways during peak hours, and 12-minute headways during off-peak hours. Depending on the route alignment chosen, there is the possibility that one of the two Metro Rapid Bus lines – Metro Rapid Bus 761 (Van Nuys Boulevard) and the Metro Rapid Bus 734 (Sepulveda Boulevard) – that run north-south through the study area may be discontinued.

#### 3.2.2. Streetcar

A streetcar alternative would operate on assumed six-minute headways during peak hours, and 12-minute headways during off-peak hours. Depending on the route alignment, existing bus service operating on Van Nuys Boulevard and Sepulveda Boulevard may be eliminated due to redundant service or may remain similar to the No Build Alternative.

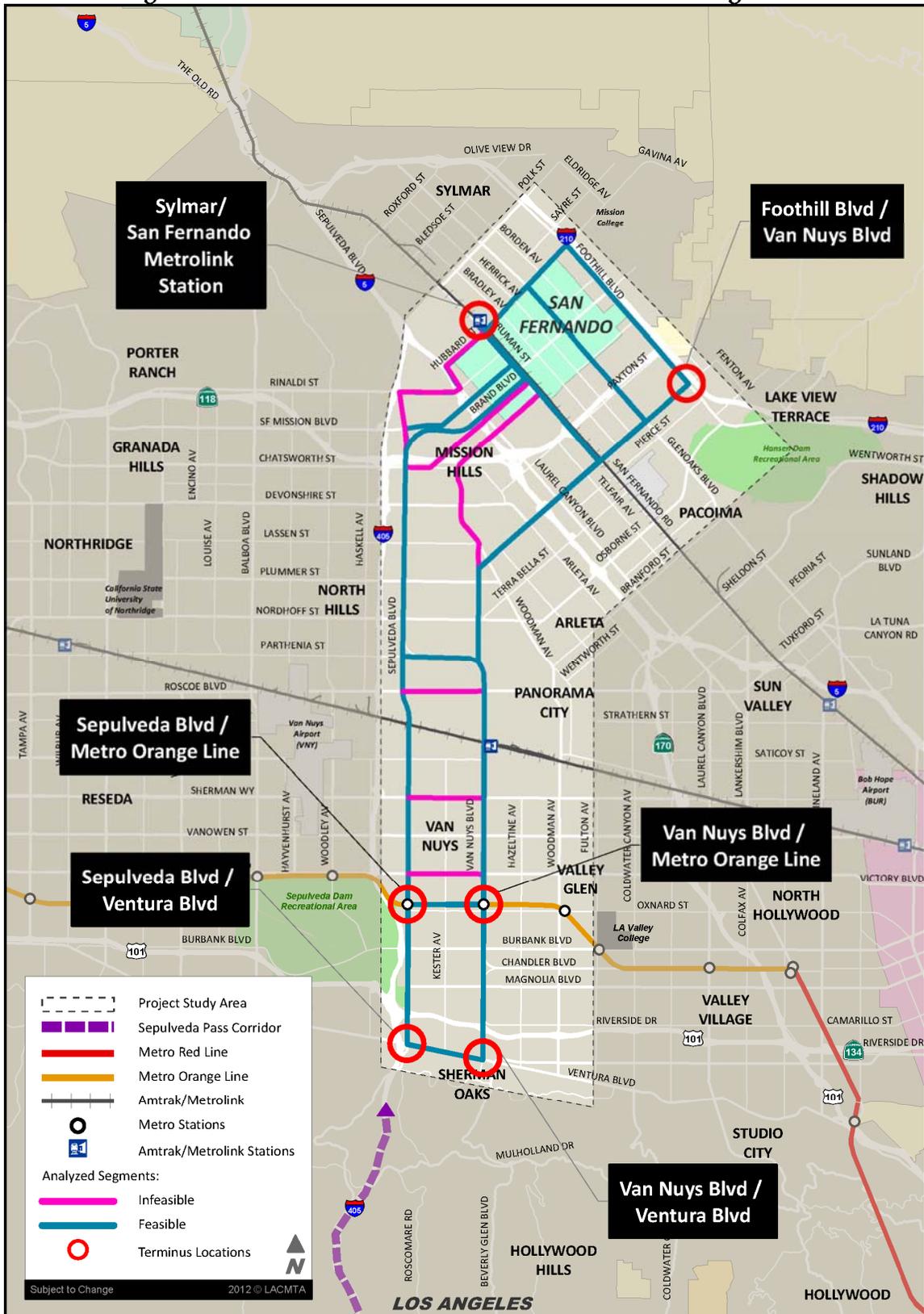
#### 3.2.3. LRT

Similar to the streetcar operation, an LRT alternative would operate on assumed six-minute headways during peak hours, and 12-minute headways during off-peak hours. The background bus network operations would be dependent on the route alignment

### 3.3 MAINTENANCE FACILITIES

Maintenance and Storage Facilities (MSFs) must be able to accommodate bus operations, maintenance, and administrative functions. Bus maintenance activities include vehicle cleaning, maintenance, repair, and storage. Thus, MSFs typically feature areas dedicated to interior and exterior vehicle cleaning and washing; preventative maintenance; tire, brake, battery and farebox electronics maintenance, repair, and replacement; fare collection; fueling; vehicle storage; and spare parts storage.

Figure 3-5 – Potential Terminus Locations and Route Segments



Source: Metro, 2012.

Because vehicles are most often dispatched from MSFs, drivers and operators consider the facilities their "home base". Space is needed for operations staff offices; dispatcher work stations; employee break rooms and/or lunchrooms; driver areas with lockers, showers, and restrooms; and employee and visitor parking.

Table 3-1 provides a summary of the general fleet sizes that would need to be accommodated within the project maintenance facility.

**Table 3-1 – Summary of Approximate MSF Space Needs**

<b>Alternative</b>	<b>Approximate MSF Space Needs</b>
<b>No Build</b>	No additional space needs
<b>TSM</b>	Space for 14 to 19 new buses
<b>BRT</b>	Space for 8 to 15 new buses
<b>LRT</b>	Ultimately 66 to 69 new LRVs (22 to 23 initially)
<b>Streetcar</b>	Ultimately 26 to 29 new streetcars

*Source: STV, 2012*

All of the project alternatives would require additional space to accommodate the maintenance and storage of transit vehicles. Metro has two existing bus MSFs located in the San Fernando Valley. These are Division 8 (West Valley) and Division 15 (East Valley). It is intended that one or more existing Metro bus MSFs in the San Fernando Valley would accommodate the additional buses needed for the bus alternatives. The rail alternatives (LRT and streetcar) would require new MSFs, as there are no existing facilities in the area to support the project.

The site size for a light rail MSF should accommodate the maximum number of vehicles required for service but also allow for the future expansion of transit service and the maintenance and storage of additional vehicles. The site size for a light rail MSF servicing vehicles operating along Van Nuys Boulevard, Sepulveda Boulevard, and/or San Fernando Road should be between approximately seven and 15 acres. Capacities of the various rail MSF options would be highly dependent on site acreage and geometry, and cannot be easily quantified until more-detailed designs have been completed for the preferred options.

A separate study will be completed for the identification of the best location for the maintenance facility. The related site screening process would include but not be limited to property availability determinations, the cost of land, environmental review, and consideration of community acceptability.