

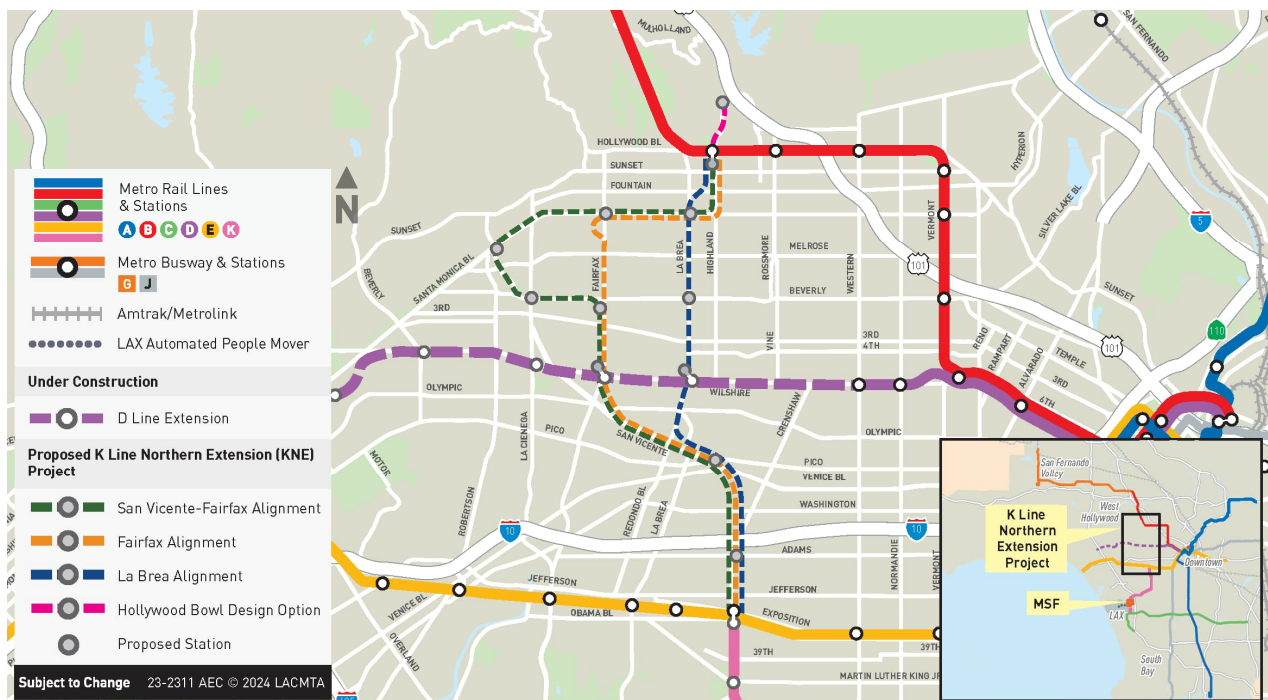
CHAPTER 2 PROJECT DESCRIPTION

The K Line Northern Extension Transit Corridor Project (KNE) (formerly referred to as the Crenshaw Northern Extension) would extend the Los Angeles County Metropolitan Transportation Authority's (Metro) light rail transit (LRT) K Line (formerly Crenshaw/LAX Line) north from its current terminus at the Metro E Line (Expo) Expo/Crenshaw Station to the Metro D Line (Purple) at Wilshire Boulevard and the proposed terminus at the Metro B Line (Red) Hollywood/Highland Station. An alternate terminus station farther north at the Hollywood Bowl is also under consideration. KNE would serve as a critical regional connection, linking the South Bay, Los Angeles International Airport (LAX) area, South Los Angeles, Inglewood, and Crenshaw corridor to Mid-City, Central Los Angeles, West Hollywood, and Hollywood, allowing for further connections to points north in the San Fernando Valley via the Metro B Line. KNE would also connect major activity centers and areas of high population and employment density.

This Draft Environmental Impact Report (EIR) includes evaluation of the following three KNE underground alignments as directed by the Metro Board of Directors (Metro Board) to advance for environmental review (Figure 2-1):

- San Vicente–Fairfax Alignment
- Fairfax Alignment
- La Brea Alignment

FIGURE 2-1. K LINE NORTHERN EXTENSION PROJECT



Source: Connect Los Angeles Partners 2024

This Draft EIR also analyzes the Hollywood Bowl Design Option, which would extend any of the three alignments farther north to an alternate terminus station at the Hollywood Bowl.

KNE would be constructed from south to north in two or three sections depending on the selected alignment. The KNE construction sections are described in Section 2.4.6 of this chapter.

To facilitate operations of the project, KNE includes an expansion of Metro’s Rail Division 16 Maintenance Yard (Division 16), which is located near the intersection of Aviation Boulevard and Arbor Vitae Street in the City of Los Angeles, along the southern segment of the existing K Line in the vicinity of Los Angeles International Airport (LAX) (Figure 2-2).

FIGURE 2-2. KNE PROPOSED MAINTENANCE AND STORAGE FACILITY SITE MAP

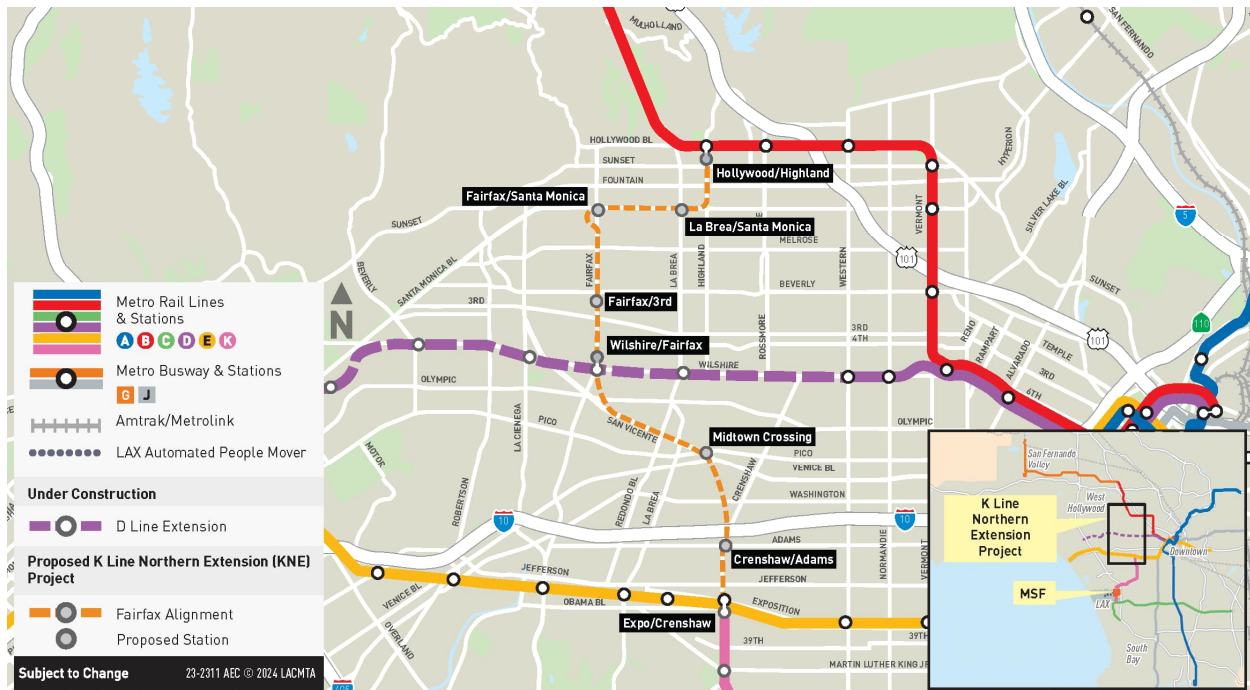


Source: Connect Los Angeles Partners 2024

For the purposes of this Draft EIR, the proposed project is the KNE Fairfax Alignment (Figure 2-3). This alignment is the proposed project in the Draft EIR because it is the alignment that has been historically studied and advanced over time, dating back to the 1983 Los Angeles Rail Rapid Transit Project. This term does not, however, convey any preference or recommendation as to the alignment or design option, and all alignment variants are evaluated equally. Following the completion of the public comment period on

the Draft EIR, Metro staff will prepare a recommendation for the Metro Board to consider in the selection of a Locally Preferred Alternative (LPA) based on findings from the Draft EIR, public comments made during the comment period, technical analysis, stakeholder input, and other factors such as project objectives, cost, and ridership. The Metro Board will vote at a public meeting to select an LPA.

FIGURE 2-3. PROPOSED PROJECT: KNE FAIRFAX ALIGNMENT



Source: Connect Los Angeles Partners 2024

2.1 PROJECT BACKGROUND AND HISTORY

Over the past decade, Metro has documented the clear need for a north-south rail line in the Central Los Angeles vicinity to address high travel demand and alleviate congestion throughout the area, which includes some of the busiest destinations and employment centers in Southern California. In 2009, Metro prepared the *Wilshire/La Brea LRT Extension Feasibility Study* (Metro 2009a), which considered light rail extensions of the Crenshaw/LAX Line farther north from the Metro E Line along La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, and San Vicente Boulevard. A portion of the San Vicente and La Cienega alignments, between Hollywood and Wilshire Boulevard, was studied further in the *Westside Subway Extension Alternatives Analysis* (Metro 2009b) as a potential heavy rail branch of the Purple Line Extension, now the Metro D Line Extension, but was ultimately dropped from further consideration due to funding constraints at the time.

In 2016, Metro initiated a feasibility study to further consider the possibility of extending the K Line to the north. In 2018, Metro published the *Crenshaw Northern Extension Feasibility/Alternatives Analysis Study* (Feasibility/AA Study) (Metro 2018), which presented the relative performance and cost of five alignment alternatives—Vermont, La Brea, Fairfax, La Cienega, and San Vicente. To further refine the alignments,

Metro prepared the *Crenshaw Northern Extension Advanced Alternatives Analysis Screening Study* (Metro 2020) (Advanced AA), resulting in the identification of three recommended alignments: the San Vicente–Fairfax Alignment, the Fairfax Alignment, and the La Brea Alignment. In 2020, the Metro Board provided direction to prepare the Draft EIR for the KNE for these three recommended alignments.

Public scoping for KNE occurred between April 15, 2021 and May 28, 2021. Following the scoping period, KNE was refined to reflect comments received and to optimize the project’s design, as documented in *Metro’s Post-Scoping Alignment Refinement Evaluation Report* (Metro 2021).

A more detailed summary of the rail alternatives and extensions previously evaluated in other Metro documents is available in Appendix 2-A, Alternatives Considered but Withdrawn from Further Evaluation.

2.2 PROJECT OBJECTIVES

The objectives of the project are as follows:

- Leverage the high-volume east-west rail network to provide new north-south connections and close a regional network gap between the Metro K, E, D, and B Lines.
- Increase the efficiency and convenience of transit trips by providing faster and more direct service, in turn creating more connections and mobility options.
- Reduce vehicle miles traveled and greenhouse gas emissions by providing an alternative to congested roadways by offering high-capacity, grade-separated transit to meet existing, growing demand.
- Maximize access to jobs, housing, and opportunity through the implementation of frequent and reliable rail service.
- Improve mobility for transit-dependent residents by providing alternatives to congestion with efficient transit service and a cohesive high-capacity and high-speed transit network.

2.3 PROJECT SETTING AND LOCATION

KNE is located within the Central Los Angeles region of Los Angeles County, shown in Figure 2-4. KNE, including the three alignments and Hollywood Bowl Design Option, would be located in the Cities of Los Angeles and West Hollywood. KNE would be located within the following neighborhoods in the City of Los Angeles:

- | | |
|-----------------------------|-----------------------------------|
| ■ West Adams | ■ Park La Brea |
| ■ Jefferson Park | ■ Carthay |
| ■ Arlington Heights | ■ Beverly Grove |
| ■ Mid-City | ■ Mid-City West/Fairfax District |
| ■ Miracle Mile/Mid-Wilshire | ■ Hollywood |
| ■ Hancock Park | ■ Hollywood Hills/Whitley Heights |
| ■ Olympic Park | |



FIGURE 2-4. NEIGHBORHOODS IN THE VICINITY OF THE K LINE NORTHERN EXTENSION



Source: Connect Los Angeles Partners 2024

The project vicinity encompasses a variety of land uses, including single-family and multifamily residential neighborhoods and dense commercial and retail corridors. The character of communities changes dramatically from the Metro E Line in the south to Hollywood in the north. The southern portion (south of Wilshire Boulevard) consists of low-rise but fairly dense housing with small-scale commercial uses, while the northern portion (north of Wilshire Boulevard) is characterized by regional activity centers, dense retail development, hotels, and significant employment centers and tourist attractions, as well as high-density, multifamily residential development. Some of the major regional activity and employment centers within the area include the Midtown Crossing Shopping Center, Los Angeles County Museum of Art (LACMA), the Original Farmers Market, the Grove, Cedars-Sinai Medical Center, the Beverly Center, West Hollywood's Rainbow District, the Pacific Design Center, the Sunset Strip, the Hollywood Walk of Fame, and the Hollywood Bowl. The area surrounding the proposed expanded maintenance and storage facility (MSF) is primarily industrial with some commercial uses.

2.4 KNE PROJECT DESCRIPTION

KNE would provide a northern extension of the Metro K Line from its current terminus at the Metro E Line Expo/Crenshaw Station to the northern terminus at either the Metro B Line Hollywood/Highland Station or the optional Hollywood Bowl Station. From the existing Expo/Crenshaw Station, KNE would travel north underground, with parallel twin-bore tunnels, connecting to the Metro D Line at Wilshire Boulevard and the Metro B Line at the Hollywood/Highland Station. KNE would operate entirely underground with the exception of the station entrances, which provide street-level access for riders. At the respective transfer stations, transfers between the K Line and the D and B Lines would be entirely underground and riders would be able to access both lines from any of the station entrances.

KNE includes three potential light rail alignments with stations, the expanded MSF at Division 16, and the Hollywood Bowl Design Option. The following alignments are described in detail in Section 2.4.1, and proposed stations are described in Section 2.4.1.4:

- KNE San Vicente–Fairfax Alignment
- KNE Fairfax Alignment
- KNE La Brea Alignment

KNE would be constructed from south to north in two or three sections depending on the selected alignment. For all three alignments, a design option to terminate at the Hollywood Bowl is under consideration. An expanded MSF at the existing Division 16 site near LAX would also be constructed to support operation. Refer to Table 2-1 for a summary of the characteristics of each KNE alignment and Hollywood Bowl Design Option.

TABLE 2-1. CHARACTERISTICS OF KNE

	SAN VICENTE– FAIRFAX ALIGNMENT	FAIRFAX ALIGNMENT	LA BREA ALIGNMENT	HOLLYWOOD BOWL DESIGN OPTION
Alignment length	9.7 miles underground	7.9 miles underground	6.2 miles underground	+ 0.8 mile underground
Stations	9 underground	7 underground	6 underground	+1 underground
Travel time between Expo/ Crenshaw and Hollywood/ Highland Stations	19 minutes	15 minutes	12 minutes	+2 minutes (from Hollywood/Highland)

Source: Connect Los Angeles Partners 2024

2.4.1 ALIGNMENTS

2.4.1.1 KNE SAN VICENTE–FAIRFAX ALIGNMENT

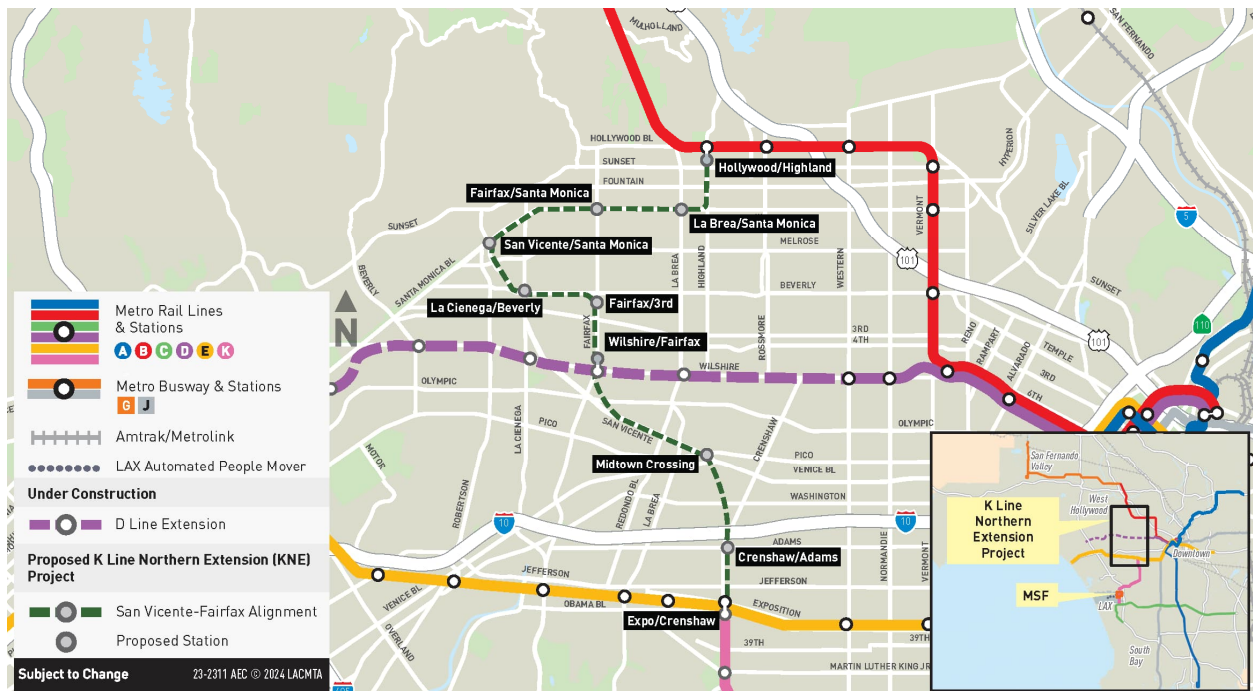
The KNE San Vicente–Fairfax Alignment would extend the K Line underground approximately 9.7 miles north from the Metro E Line Expo/Crenshaw Station to the Metro B Line Hollywood/Highland Station. This alignment would tunnel beneath Crenshaw Boulevard, San Vicente Boulevard, Fairfax Avenue, Beverly

Boulevard, Santa Monica Boulevard, and Highland Avenue, with nine new stations, as shown in Figure 2-5. The KNE San Vicente–Fairfax Alignment would serve destinations throughout the west and central portions of the area, including LACMA, the Original Farmers Market/the Grove, Cedars-Sinai Medical Center, the commercial districts along Santa Monica Boulevard in West Hollywood, and Hollywood. This alignment would be the longest of the three alignments and would have the highest number of new stations.

The KNE San Vicente–Fairfax Alignment includes nine stations, which are described in detail in Section 2.4.1.4:

- Crenshaw/Adams
- Midtown Crossing
- Wilshire/Fairfax
- Fairfax/3rd
- La Cienega/Beverly
- San Vicente/Santa Monica
- Fairfax/Santa Monica
- La Brea/Santa Monica
- Hollywood/Highland

FIGURE 2-5. KNE SAN VICENTE–FAIRFAX ALIGNMENT



Source: Connect Los Angeles Partners 2024

The KNE San Vicente–Fairfax Alignment would travel north beneath Crenshaw Boulevard from the existing Metro K Line Expo/Crenshaw Station to the proposed Crenshaw/Adams Station at Adams Boulevard. From the Crenshaw/Adams Station, the alignment would continue straight north, tunneling below private properties in the Mid-City and Lafayette Square neighborhoods to connect to the Midtown Crossing Station.

From the Midtown Crossing Station, the alignment would continue northwest below San Vicente Boulevard then curve northwest at Hauser Boulevard, crossing underneath private properties and Olympic Boulevard until it reaches Wilshire Boulevard and Fairfax Avenue. At this intersection, the alignment would cross Wilshire Boulevard and travel beneath the Metro D Line to the proposed Wilshire/Fairfax Station, which would connect to the future Metro D Line Station. From the Wilshire/Fairfax Station, the alignment would continue north underneath Fairfax Avenue to the Fairfax/3rd Station.

South of the intersection of Beverly Boulevard and Fairfax Avenue, the alignment would curve northwest before continuing west beneath Beverly Boulevard to connect to the La Cienega/Beverly Station. Following Beverly Boulevard west, the alignment would curve northwest and travel below Sherbourne Drive before continuing northwest beneath San Vicente Boulevard. North of the Pacific Design Center and the West Hollywood Library, the alignment would curve beneath West Hollywood Park to turn northeast underneath Santa Monica Boulevard to the San Vicente/Santa Monica Station. The alignment would follow Santa Monica Boulevard east to the Fairfax/Santa Monica Station.

Traveling east below Santa Monica Boulevard, the alignment would then connect to the La Brea/Santa Monica Station at La Brea Avenue. East of Orange Drive, the alignment would curve northeast beneath private properties to turn north underneath Highland Avenue before terminating at the Hollywood/Highland Station with a connection to the Metro B Line. At the D and B Line transfer locations, the alignment would include new station entrances. The design option that would continue north to the Hollywood Bowl is described in Section 2.4.2.

2.4.1.2 KNE FAIRFAX ALIGNMENT

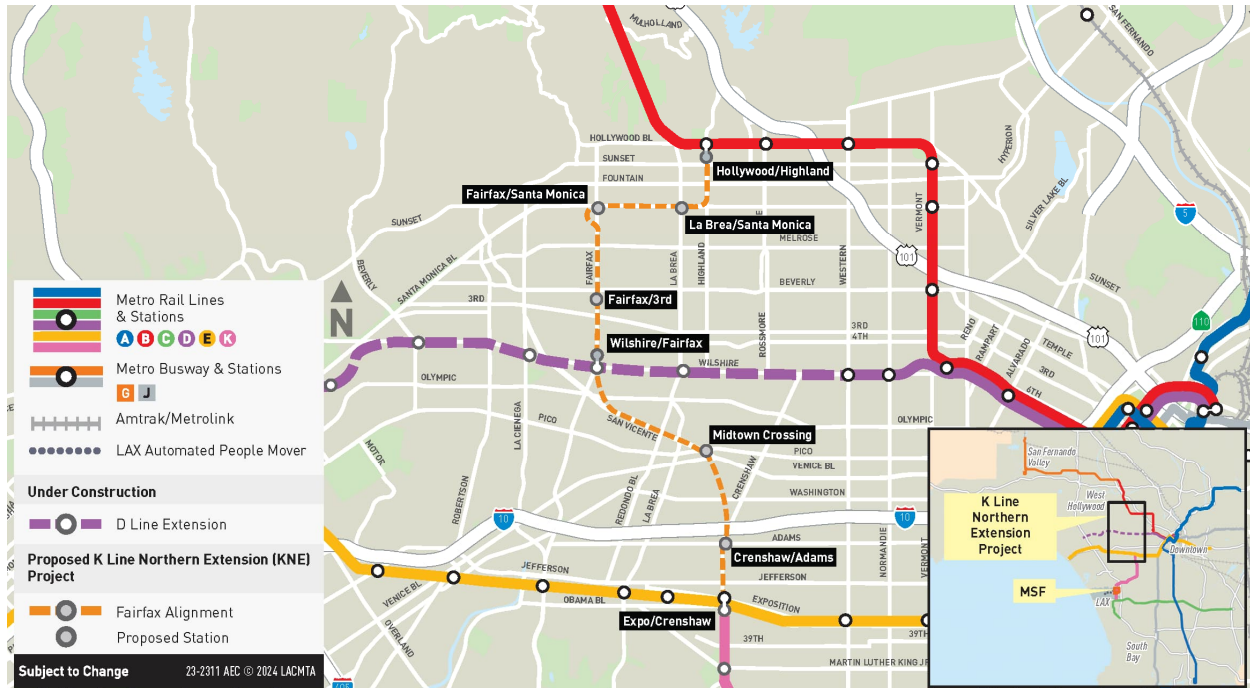
The KNE Fairfax Alignment would extend the K Line underground approximately 7.8 miles north from the Metro E Line Expo/Crenshaw Station to the Metro B Line Hollywood/Highland Station. Similar to the KNE San Vicente–Fairfax Alignment, the KNE Fairfax Alignment would tunnel beneath Crenshaw Boulevard, San Vicente Boulevard, Fairfax Avenue, Highland Avenue, and Santa Monica Boulevard, as shown in Figure 2-6. However, instead of turning west at Beverly Boulevard, the Fairfax Alignment would continue north beneath Fairfax Avenue and then turn east at Santa Monica Boulevard. The KNE Fairfax Alignment would serve some of the same destinations as the KNE San Vicente–Fairfax Alignment in the central portion of the area, including LACMA and the Original Farmers Market/the Grove.

The KNE Fairfax Alignment includes seven stations, which are described in detail in Section 2.4.1.4:

- Crenshaw/Adams
- Midtown Crossing
- Wilshire/Fairfax

- Fairfax/3rd
- Fairfax/Santa Monica
- La Brea/Santa Monica
- Hollywood/Highland

FIGURE 2-6. KNE FAIRFAX ALIGNMENT



Source: Connect Los Angeles Partners 2024

The KNE Fairfax Alignment would follow the same alignment as the KNE San Vicente–Fairfax Alignment between the existing Metro K Line Expo/Crenshaw Station to the proposed Fairfax/3rd Station. The alignment would travel north beneath Crenshaw Boulevard from the existing Metro K Line Expo/Crenshaw Station to the proposed Crenshaw/Adams Station south of Adams Boulevard. From the Crenshaw/Adams Station, the alignment would continue north, tunneling below private properties in the Mid-City and Lafayette Square neighborhoods to connect to the Midtown Crossing Station.

From the Midtown Crossing Station, the alignment would continue northwest below San Vicente Boulevard then curve northwest at Hauser Boulevard, crossing underneath private properties and Olympic Boulevard until it reaches Wilshire Boulevard and Fairfax Avenue. At this intersection, the alignment would cross Wilshire Boulevard and travel beneath the Metro D Line to the proposed Wilshire/Fairfax Station, which would connect to the future Metro D Line Station. From the proposed Wilshire/Fairfax Station, the alignment would continue north underneath Fairfax Avenue to the Fairfax/3rd Station.

From the Fairfax/3rd Station, the KNE Fairfax Alignment would continue north beneath Fairfax Avenue. South of Waring Avenue, the alignment would curve northwest, tunneling below private properties between Crescent Heights Boulevard to the west and Fairfax Avenue to the east. At Romaine Street, the alignment would begin to curve northeast to turn east along Santa Monica Boulevard, connecting to the Fairfax/Santa Monica Station.

The KNE Fairfax Alignment would follow the same alignment as the KNE San Vicente–Fairfax Alignment between the Fairfax/Santa Monica Station and the Hollywood/Highland Station. Traveling east below Santa Monica Boulevard, the alignment would then connect to the La Brea/Santa Monica Station at La Brea Avenue. East of Orange Drive, the alignment would curve northeast beneath private properties to turn north underneath Highland Avenue before terminating at the Hollywood/Highland Station with a connection to the Metro B Line. At the D and B Line transfer locations, the alignment would include new station entrances. The design option that would continue north to the Hollywood Bowl is described in Section 2.4.2.

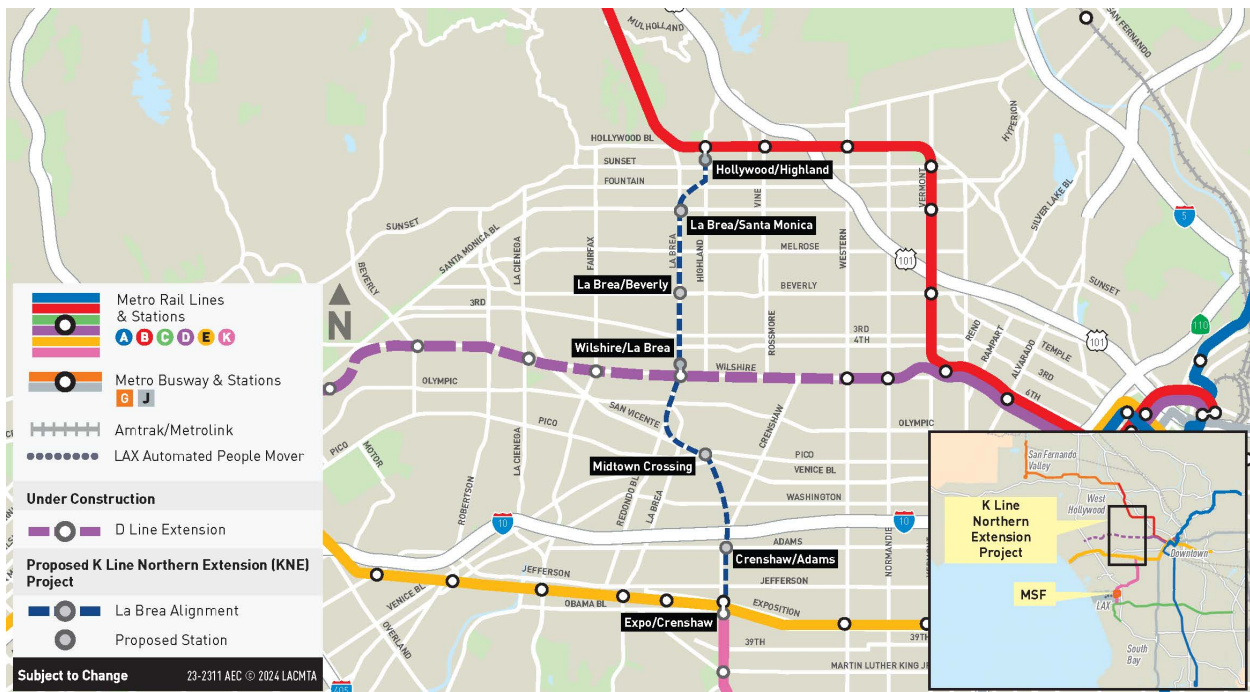
2.4.1.3 KNE LA BREA ALIGNMENT

The KNE La Brea Alignment would extend the K Line underground approximately 6.2 miles north from the Metro E Line Expo/Crenshaw Station to the Metro B Line Hollywood/Highland Station. The alignment would tunnel beneath Crenshaw Boulevard, San Vicente Boulevard, La Brea Avenue, and Highland Avenue with six new stations, as shown in Figure 2-7. The KNE La Brea Alignment is the shortest of the three alignments and would serve the Mid-City neighborhoods, the La Brea corridor, Hancock Park, and Hollywood.

The KNE La Brea Alignment includes six stations, which are described in detail in Section 2.4.1.4:

- Crenshaw/Adams
- Midtown Crossing
- Wilshire/La Brea
- La Brea/Beverly
- La Brea/Santa Monica
- Hollywood/Highland

The KNE La Brea Alignment would follow the same alignment as the KNE San Vicente–Fairfax and Fairfax Alignments between the existing Metro K Line Expo/Crenshaw Station to just northwest of the proposed Midtown Crossing Station at La Brea Avenue. The alignment would travel north beneath Crenshaw Boulevard from the existing Metro K Line Expo/Crenshaw Station to the proposed Crenshaw/Adams Station south of Adams Boulevard. From the Crenshaw/Adams Station, the alignment would continue north, tunneling below private properties in the Mid-City and Lafayette Square neighborhoods to connect to the Midtown Crossing Station.

FIGURE 2-7. KNE LA BREA ALIGNMENT


Source: Connect Los Angeles Partners 2024

From the Midtown Crossing Station, the alignment would follow the same alignment as the San Vicente–Fairfax and Fairfax Alignments to La Brea Avenue, continuing northwest beneath San Vicente Boulevard to La Brea Avenue. It would curve northwest below private properties between La Brea Avenue and Redondo Boulevard. At Olympic Boulevard, the alignment would then continue north beneath La Brea Avenue, crossing Wilshire Boulevard and traveling beneath the Metro D Line to the Wilshire/La Brea Station with a connection to the future Metro D Line Station. From the Wilshire/La Brea Station, the alignment would continue north to the La Brea/Beverly Station.

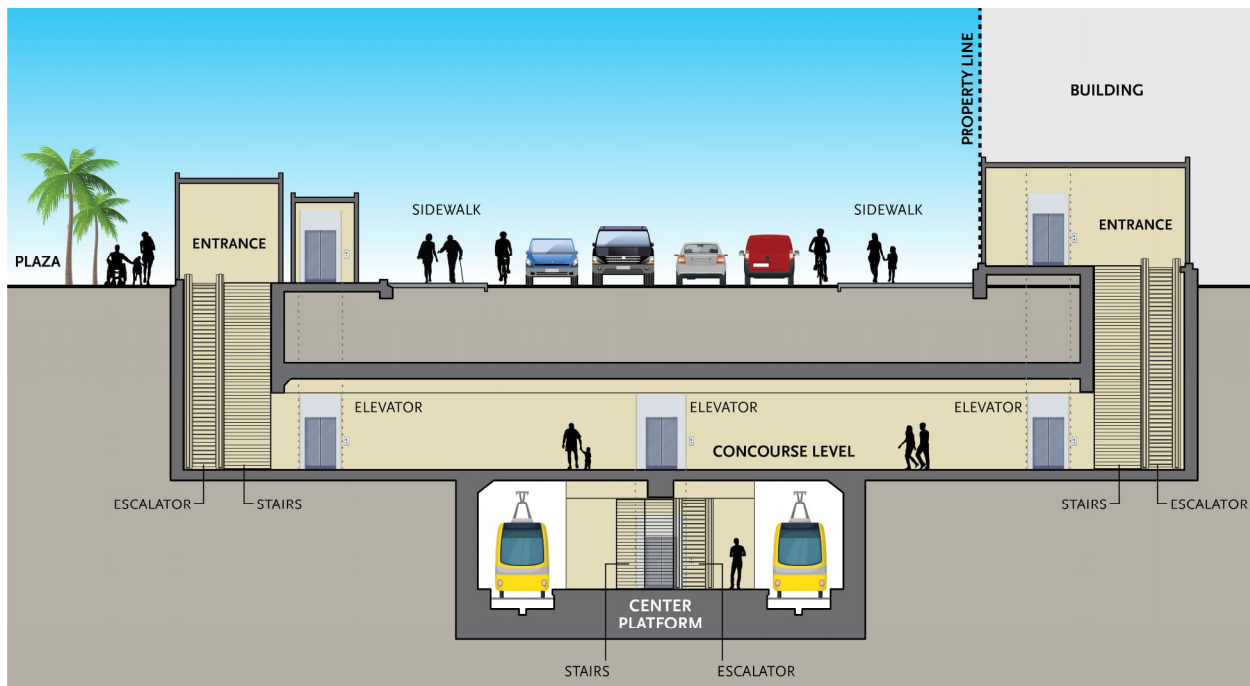
From the La Brea/Beverly Station, the alignment would continue north following La Brea Avenue to the La Brea/Santa Monica Station at Santa Monica Boulevard. From the La Brea/Santa Monica Station, the alignment would travel north until Lexington Avenue then curve northeast below private properties between La Brea Avenue and Highland Avenue. South of Sunset Boulevard, the alignment would continue north beneath Highland Avenue before terminating at the Hollywood/Highland Station with a connection to the Metro B Line. At the D and B Line transfer locations, the alignment would include new station entrances. The design option that would continue north to the Hollywood Bowl is described in Section 2.4.2.

2.4.1.4 STATIONS

This section describes each of the proposed stations for the alignments. Figure 2-8 illustrates a typical cross-section of an underground light rail station. All proposed stations would be fully underground and be comprised of two major components:

- **Station box:** Located underneath public streets, private property, or could be integrated into future developments. Consists of concourse area with ticketing, customer information, and fare gates, and a platform level for passenger waiting, boarding, and alighting trains. Platforms are typically 60 feet below ground but depth ranges depending on surrounding conditions. All boarding platforms would be approximately 270 feet long, approximately 39 inches high above the track, and could accommodate trains of up to three cars.
- **Station entrance:** Located off street on private property in a plaza with a shaded canopy with the potential to be integrated into a building structure in the future. Entrances would include stairs, escalators, and elevators for circulation, as well as passenger information, wayfinding, and other transit amenities. All stations would be constructed with a single entrance, with the option to construct additional entrances depending on demand and other considerations.

FIGURE 2-8. TYPICAL STATION CROSS-SECTION



Source: Connect Los Angeles Partners 2024

The only visible features of underground stations at street level would be entrances, signage, and possibly ventilation structures and other ancillary facilities at ground level. Figure 2-9 shows a typical Metro station entrance. All proposed stations would be designed to be consistent with Metro’s Systemwide Station Design Standards, or equivalent design standards, and Metro’s Public Art Policy. Knock-out panels—filler panels that can be removed for future installations/connections/entrances without significantly impacting the integrity of the structure—would be incorporated into station design where needed. Most stations would include an underground track crossover box before or after the station to allow trains to switch tracks for operational flexibility. The locations of the crossover boxes are depicted on each individual station site diagram, which are shown in Appendix 2-B, Advanced Conceptual Engineering Drawings.

FIGURE 2-9. TYPICAL STATION ENTRANCE



Source: Metro 2022

All stations would include two sets of emergency egress facilities, or emergency exits, that can access the surface via hatches inside or outside the public right-of-way (ROW). Each emergency exit route would include a set of stairs that leads to the surface in case of emergencies where elevators and escalators are not working or unsafe to use. Depending on the configuration of the station, some stations may have more than two sets of emergency exits. Each emergency egress shaft would be approximately 15 feet by 25 feet, and the hatch would either be flush with the ground or can be integrated into a building.

In addition to the emergency exits, station ventilation structures would be located in the public ROW and are often separated from the emergency exits. The ventilation structures would either be at ground or sidewalk level and could be incorporated into future development. These ventilation structures and emergency exits may be located on parcels identified and acquired for construction staging. Refer to Section 2.4.4 for a more detailed description of some of the other ancillary facilities.

Surface construction activities would be concentrated at the proposed station locations. Most stations, with the exception of the Hollywood Bowl Station, would be constructed via cut-and-cover construction, where the station box would be excavated from the surface. In order to construct a station, a minimum of one to two acres would be needed for the duration of the station construction period. A larger construction staging site of three to four acres would be required if the site is also used to launch the tunnel boring machines (TBMs) and support tunneling activities. Under each station description below, all construction staging surface areas are approximately measured to the nearest 0.1 acre. Portions of the sidewalk may also be potentially restricted or altered by station construction and are identified in the station drawings as the “sidewalk zone of influence.” In this area, the sidewalk and curbs may be temporarily closed to pedestrian access during construction or require reconstruction after project completion. The construction approach is detailed in Section 2.4.5.

Table 2-2 identifies which stations would be constructed under each alignment. In total, 11 station areas are identified for the alignments. The KNE San Vicente–Fairfax Alignment would include nine new stations; the KNE Fairfax Alignment would include seven new stations; and the KNE La Brea Alignment would include six new stations. Table 2-2 also identifies the entrance location options for each station. Only one new entrance would be constructed per station. For stations with multiple entrance options identified, only one option with its corresponding facilities and construction staging, would be built. Therefore, not all sites identified in the Draft EIR would be needed to construct and operate the project. The proposed layout and options under consideration for each station are described in detail below. The Hollywood Bowl Design Option is discussed in Section 2.4.2. Refer to Appendix 2-B, Advanced Conceptual Engineering Drawings, for the detailed station site plan drawings.

TABLE 2-2. STATIONS BY KNE ALIGNMENT

STATION	ALIGNMENT			STATION ENTRANCE OPTIONS (ONLY ONE ENTRANCE TO BE CONSTRUCTED PER STATION)
	SAN VICENTE– FAIRFAX	FAIRFAX	LA BREA	
Crenshaw/Adams (City of Los Angeles)	●	●	●	- Entrance Option 1 – SW - Entrance Option 2 – SE
Midtown Crossing (San Vicente/Pico/Venice) (City of Los Angeles)	●	●	●	Entrance
Wilshire/Fairfax (City of Los Angeles)	●	●		Entrance – NW In addition to existing D Line entrance that would provide access to K and D Lines
Fairfax/3 rd (City of Los Angeles)	●	●		One entrance to be constructed with optional second entrance: - Entrance 1 – South - Optional Entrance 2
La Cienega/Beverly (City of Los Angeles)	●			Entrance – NE
San Vicente/Santa Monica (City of West Hollywood)	●			- Entrance Option 1 – South - Entrance Option 2 – North
Fairfax/Santa Monica (City of West Hollywood)	●	●		- Entrance Option 1 – NE - Entrance Option 2 – SE
La Brea/Santa Monica (City of West Hollywood)	●	●	●	Entrance – NE
Hollywood/Highland (City of Los Angeles)	●	●	●	- Entrance Option 1 – SW - Entrance Option 2 – SE In addition to existing B Line entrance that would provide access to K and B Lines
Wilshire/La Brea (City of Los Angeles)			●	Entrance – 6th Street In addition to existing D Line entrance that would provide access to K and D Lines
La Brea/Beverly (City of Los Angeles)			●	- Entrance Option 1 – NW - Entrance Option 2 – NE

Source: Connect Los Angeles Partners 2024

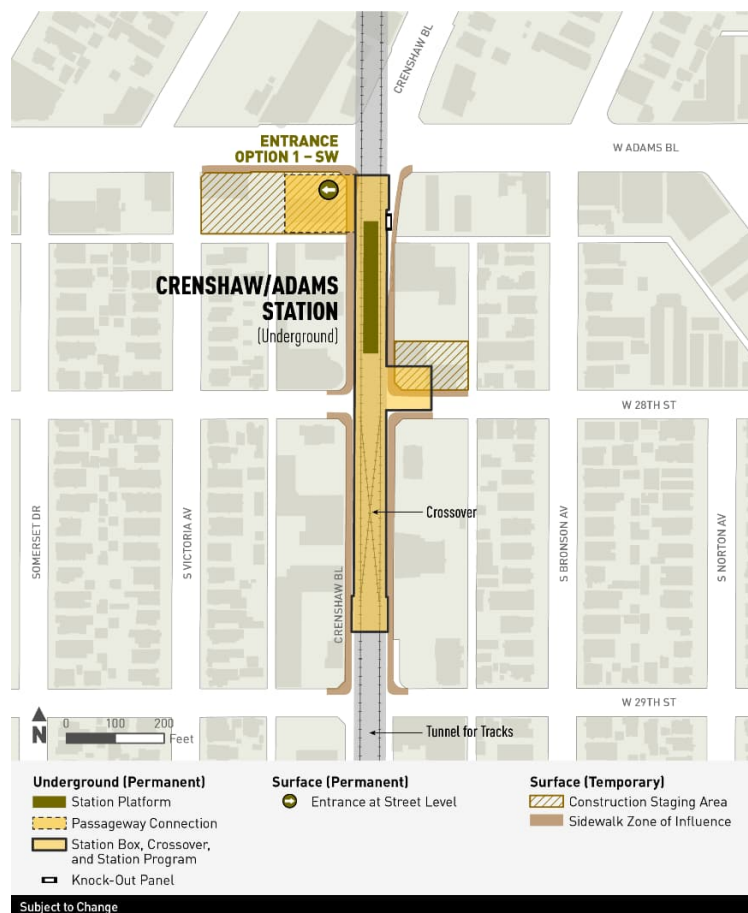
CRENSHAW/ADAMS STATION

The proposed Crenshaw/Adams Station would be the first station north of the Expo/Crenshaw Station and would be located in the City of Los Angeles. This station would be constructed for any of the three KNE alignments. The underground station box would be located directly south of the intersection of Crenshaw Boulevard and Adams Boulevard. There are two entrance options, although only one entrance would be constructed.

ENTRANCE OPTION 1 – SW

Under Entrance Option 1 – SW (Figure 2-10), the entrance would be located on the southwest corner of the Crenshaw Boulevard and Adams Boulevard intersection facing Crenshaw Boulevard. A knock-out panel would be located on the southeast corner of Crenshaw Boulevard and Adams Boulevard, opposite of the entrance option. There would be a double crossover—a track installation to allow traveling trains to move to the other track and continue traveling in the same direction without stopping—at the south end of the station box, south of 28th Street.

**FIGURE 2-10. CRENSHAW/ADAMS STATION
(ENTRANCE OPTION 1 – SW)**



Source: Connect Los Angeles Partners 2024

Two construction staging areas have been identified at this station: 1) on the southwest corner of Adams Boulevard and Crenshaw Boulevard extending to Victoria Avenue (0.9 acre) and 2) on the northeast corner of Crenshaw Boulevard and 28th Street extending to the alley (0.3 acre).

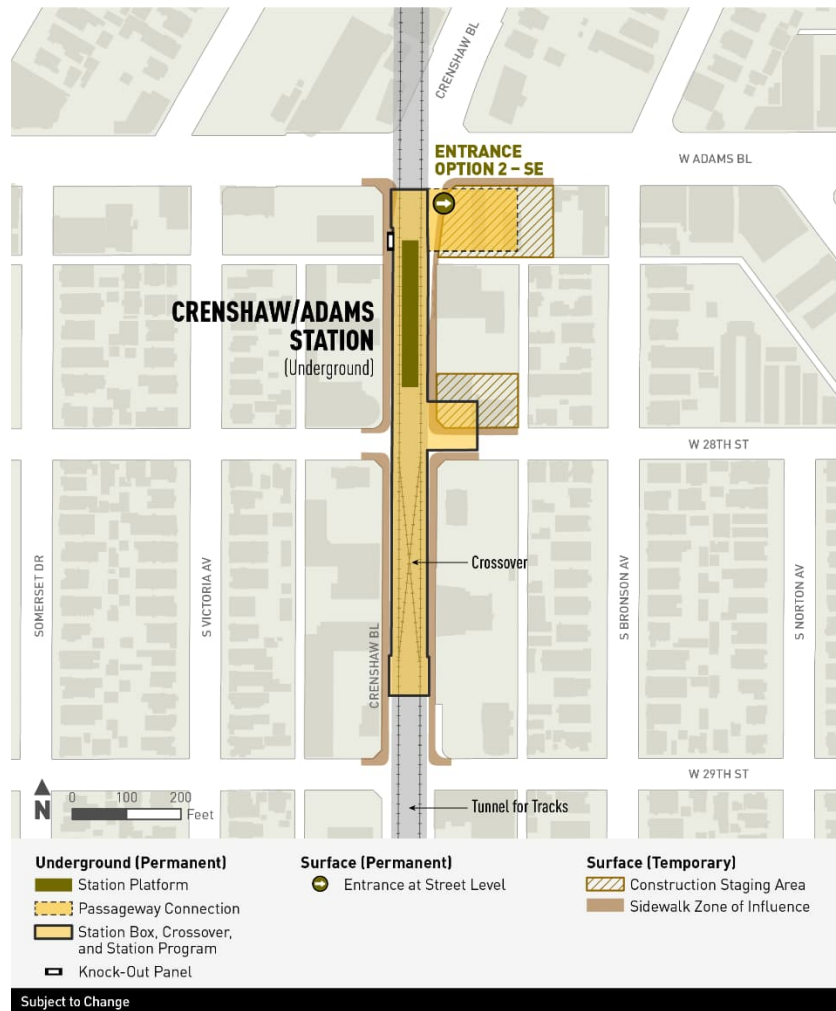
The sidewalk zone of influence would be along Crenshaw Boulevard between Adams Boulevard and 29th Street. At Adams Boulevard, 28th Street, and 29th Street, the sidewalk zone of influence would extend onto the corners of those intersections. At Adams Boulevard, the sidewalk zone of influence would also extend west approximately 325 feet to the intersection of Victoria Avenue and Adams Boulevard to cover the street-facing edge of the construction staging area.

ENTRANCE OPTION 2 – SE

Under Entrance Option 2 – SE (Figure 2-11), the entrance would be located on the southeast corner of Crenshaw Boulevard and Adams Boulevard. A knock-out panel would be located on the southwest corner of Crenshaw Boulevard and Adams Boulevard, opposite of the entrance option. There would be a double crossover at the south end of the station box, south of 28th Street.

Two construction staging areas have been identified at this station: 1) on the southeast corner of Adams Boulevard and Crenshaw Boulevard (0.6 acre) and 2) on the northeast corner of Crenshaw Boulevard and 28th Street (0.3 acre).

The sidewalk zone of influence would be along Crenshaw Boulevard between Adams Boulevard and 29th Street. At Adams Boulevard, 28th Street, and 29th Street, the sidewalk zone of influence would extend onto the corners of those intersections. At Adams Boulevard, the sidewalk zone of influence would also extend east approximately 180 feet past the intersection of Adams Boulevard and Crenshaw Boulevard to cover the street-facing edge of the construction staging area.

FIGURE 2-11. CRENSHAW/ADAMS STATION (ENTRANCE OPTION 2 – SE)


Source: Connect Los Angeles Partners 2024

MIDTOWN CROSSING STATION

The proposed Midtown Crossing Station, shown in Figure 2-12, would be north of the Crenshaw/Adams Station and would be constructed for any of the three KNE alignments. This station would be located in the City of Los Angeles beneath private property bounded by Venice Boulevard to the south, Pico Boulevard to the north, and San Vicente Boulevard to the northeast. The station platform would be located on the southeast corner of the private property with a double crossover at the northwest section of the station box. A station entrance would provide access at street level along the west side of San Vicente Boulevard above the double crossover structure. Two knock-out panels would be provided, one on the east side of the station box near the crossover structure and the other on the west side at the southern end of the station box, to accommodate future entrances. A double crossover would be located at the north side of the station box, partially beneath Pico Boulevard and parallel to San Vicente Boulevard.



FIGURE 2-12. MIDTOWN CROSSING STATION



Source: Connect Los Angeles Partners 2024

An approximately six-acre construction staging area for this station would utilize the parcels bounded by Venice Boulevard to the south, Pico Boulevard to the north, and San Vicente Boulevard to the northeast. This site would be used as a TBM launch site and would require a larger footprint to accommodate construction activities than would a typical station.

The sidewalk zone of influence would encompass the street-facing edges of the construction staging area along Pico Boulevard, San Vicente Boulevard, and Venice Boulevard.

WILSHIRE/FAIRFAX STATION

The proposed Wilshire/Fairfax Station would provide a connection to the currently under construction (as of 2024) Metro D Line Wilshire/Fairfax Station, which would be located below Wilshire Boulevard at the intersection of Wilshire Boulevard and Fairfax Avenue. The proposed station would also provide access to LACMA and the Academy Museum of Motion Pictures north of Wilshire Boulevard, and the Petersen Automotive Museum south of Wilshire Boulevard. This station would only be constructed for the KNE San Vicente–Fairfax and Fairfax Alignments.

The station box would be located north of Wilshire Boulevard beneath Fairfax Avenue with a crossover north of the station box extending to Lindenhurst Avenue (Figure 2-13). The proposed station entrance would be located on the north side of Wilshire Boulevard, west of Fairfax Avenue and Johnie’s Coffee Shop. The entrance would provide direct access to both the K Line and the D Line. Passengers would be able to transfer between the Metro D Line and the K Line through the concourse level of both stations, with a passageway constructed just west of the Wilshire Boulevard and Fairfax Avenue intersection. In order to facilitate the connection to the D Line, a concourse and escalators/elevators would be added to the west side of the existing D Line station box. A knock-out panel would be provided on the east side of the station box, at the southeast corner of Fairfax Avenue and 6th Street, to allow for a potential future entrance. Additional improvements to the existing D Line Station may be required to facilitate passenger transfers between the two transit lines.

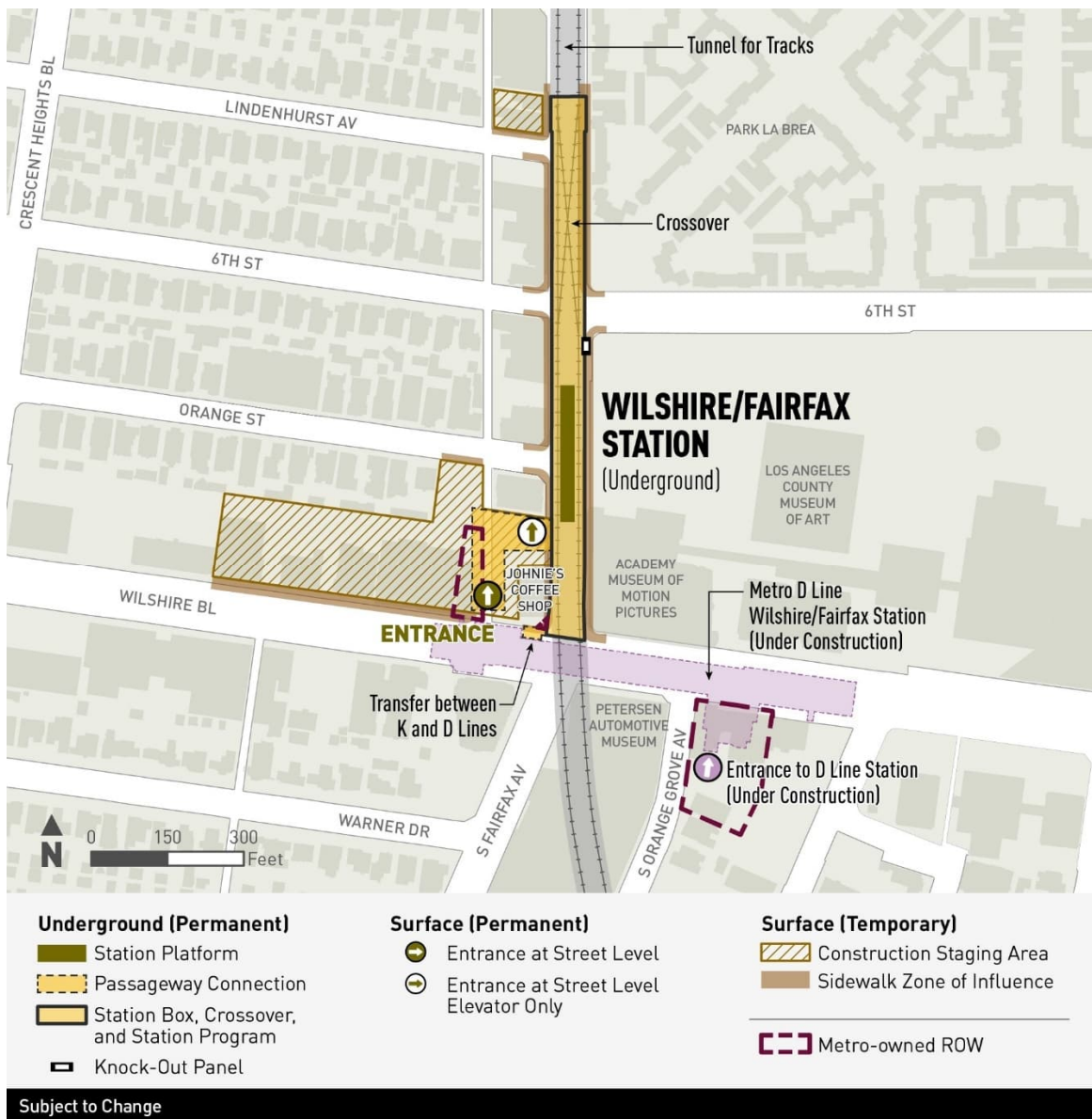
The station entrance with escalators and stairs would be located in the alleyway between Johnie’s Coffee Shop and the retail store on the north side of Wilshire Boulevard. The entrance’s elevators would be located along Fairfax Avenue in the alley immediately north of Johnie’s Coffee Shop.

Two construction staging areas have been identified for this station option: 1) along Wilshire Boulevard between the intersection of Wilshire Boulevard and San Diego Way and the parking lots west and north of Johnie’s Coffee Shop (2.8 acres) and 2) at the northwest corner of Fairfax Avenue and Lindenhurst Avenue (0.2 acre). The larger construction staging area is due to the depth and complexity of this station construction.

The sidewalk zone of influence would be located on the east and west sides of Fairfax Avenue, between Wilshire Boulevard and Lindenhurst Avenue. At Wilshire Boulevard, Orange Street, 6th Street, and Lindenhurst Avenue, the sidewalk zone of influence would extend past the corners of the respective intersections. It would also cover the southern edge of the construction staging area at 6th Street and Lindenhurst Avenue. At the intersection of Wilshire Boulevard and Fairfax Avenue, the sidewalk zone of influence is not present at the northwest corner where Johnie’s Coffee Shop is located, but would extend 700 feet west of the intersection to cover the street-facing edge of the construction staging area along Wilshire Boulevard.



FIGURE 2-13. WILSHIRE/FAIRFAX STATION



Source: Connect Los Angeles Partners 2024

FAIRFAX/3RD STATION

The proposed Fairfax/3rd Station would provide access to the Grove, the Original Farmers Market, and dense residential land uses to the east, including Park La Brea. The station would also serve retail along Fairfax Avenue and 3rd Street, and the largely residential land uses west of Fairfax Avenue in the Beverly Grove neighborhood. This station would only be constructed for the San Vicente–Fairfax and Fairfax Alignments. The station platform would be located beneath Fairfax Avenue at the intersection of Fairfax Avenue and 3rd Street, as shown in Figure 2-14.

FIGURE 2-14. FAIRFAX/3RD STATION



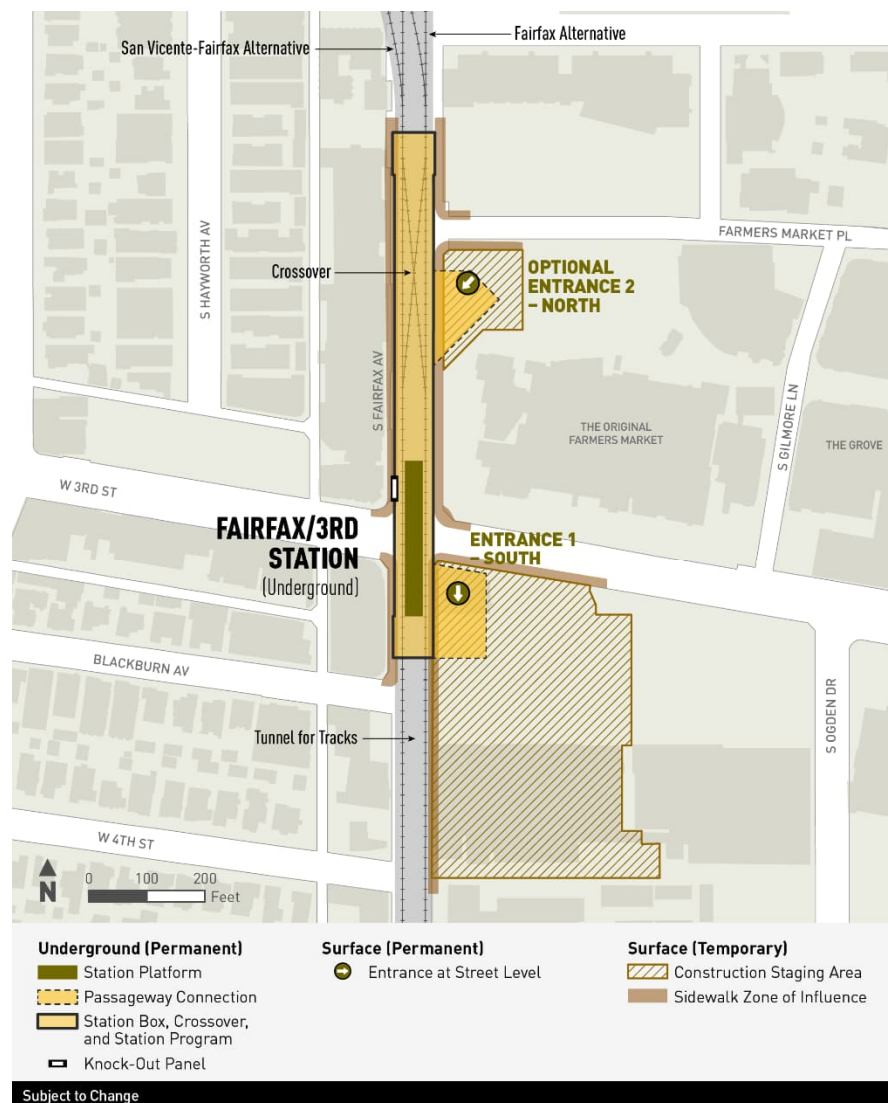
Source: Connect Los Angeles Partners 2024

The station would be constructed with an entrance on the southeast corner of 3rd Street and Fairfax Avenue (Entrance 1 – South) with the option to construct a secondary entrance at the existing Farmers Market parking lot approximately 300 feet north of the Fairfax Avenue and 3rd Street intersection

(Optional Entrance 2 – North). A double crossover would be located on the northern end of the station platform. One knock-out panel would be located on the northwest corner of Fairfax Avenue and 3rd Street to accommodate a potential future entrance. Another knock-out panel would be located 140 feet south of the intersection of Fairfax Avenue and Farmers Market Place to accommodate Optional Entrance 2 if it is not constructed as part of KNE.

Two construction staging areas have been identified at this station: 1) on the southeast corner of the Fairfax Avenue and 3rd Street intersection (3.8 acres) and 2) if Optional Entrance 2 is constructed, at the southeast corner of Fairfax Avenue and Farmers Market Place (0.7 acre). Figure 2-15 shows the Fairfax/3rd Station with Optional Entrance 2 – North and its supporting construction staging area.

FIGURE 2-15. FAIRFAX/3RD STATION (WITH OPTIONAL ENTRANCE 2)



Source: Connect Los Angeles Partners 2024

The sidewalk zone of influence would be located on the east and west sides of the street along Fairfax Avenue between Farmers Market Place and Blackburn Avenue. At Farmers Market Place, 3rd Street, and Blackburn Avenue, the sidewalk zone of influence would extend past the corners of the respective intersections. This would include the northern edge of the construction staging area at Fairfax Avenue and Farmers Market Place. At the large construction staging area at the southeast corner of Fairfax Avenue and 3rd Street, the sidewalk zone of influence would extend approximately 350 feet east along 3rd Street to cover the street-facing edges of the staging area. The zone of influence would also extend approximately 150 feet north of the intersection of Fairfax Avenue and Farmers Market Place.

LA CIENEGA/BEVERLY STATION

As illustrated in Figure 2-16, the proposed La Cienega/Beverly Station would be located beneath Beverly Boulevard, just east of the Beverly Boulevard and La Cienega Boulevard intersection. This station would provide access to the Beverly Center and Beverly Connection shopping malls and Cedars-Sinai Medical Center. This station would only be constructed for the San Vicente–Fairfax Alignment.

The station portal would be located in the City of Los Angeles but would also provide access to the City of West Hollywood to the northwest. The entrance to the station would be located on the northeast corner of the intersection, with access along La Cienega Boulevard and Beverly Boulevard. A double crossover would be located on the eastern end of the station box. A knock-out-panel would be provided on the south side of the station box near La Cienega Boulevard to accommodate a potential future entrance.

Two construction staging areas have been identified at this station: 1) on the north side of Beverly Boulevard between La Cienega Boulevard and Alfred Avenue (0.8 acre) and 2) on the southwest corner of Beverly Boulevard and Croft Avenue (0.4 acre).

The sidewalk zone of influence would be located on the north and south sides of the street along Beverly Boulevard, between La Cienega Boulevard and Orlando Avenue. At La Cienega Boulevard, Alfred Avenue, Croft Avenue, and Orlando Avenue, the sidewalk zone of influence would extend around the corners of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of the construction staging areas at La Cienega Boulevard, Alfred Avenue, and Croft Avenue.



FIGURE 2-16. LA CIENEGA/BEVERLY STATION



Source: Connect Los Angeles Partners 2024

SAN VICENTE/SANTA MONICA STATION

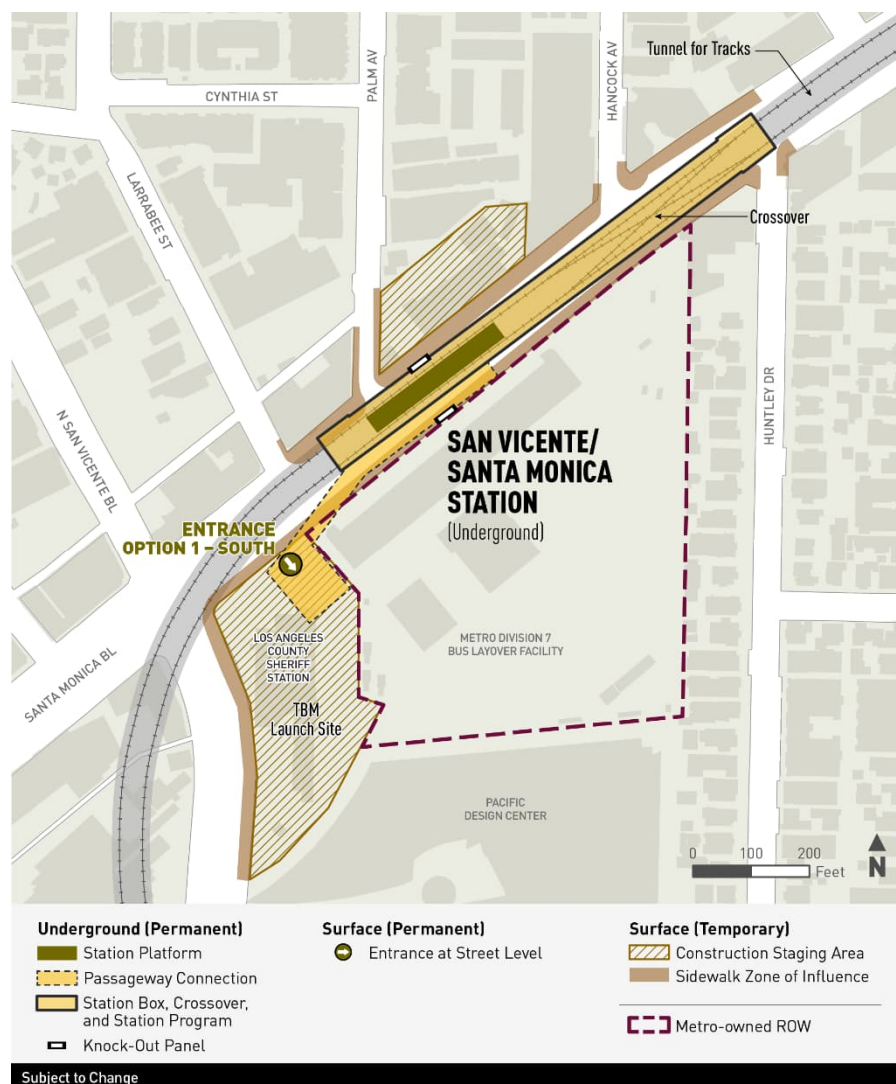
The San Vicente/Santa Monica Station would be located in the City of West Hollywood, less than 0.25 mile north of the Pacific Design Center, the West Hollywood Library, and West Hollywood Park. The station would provide direct access to the active commercial corridor along Santa Monica Boulevard and would also provide access to the Sunset Strip to the north. This station would only be constructed for the San Vicente–Fairfax Alignment. Under the construction approach described in Section 2.4.5, this station would be the northern terminus of Section 2 for the San Vicente–Fairfax Alignment.

The station box would be located beneath Santa Monica Boulevard and east of San Vicente Boulevard, adjacent to the Metro Division 7 bus yard facility, as shown in Figure 2-17. This site would be used as a TBM launch site and would require a larger footprint to accommodate construction activities than would a typical station. Two potential station entrances are under consideration, but only one would be constructed as part of KNE.

ENTRANCE OPTION 1 – SOUTH

Entrance Option 1 would be located on the southeast corner of the Santa Monica Boulevard and San Vicente Boulevard intersection at the existing Los Angeles County Sheriff's Station, as shown in Figure 2-17. One knock-out panel would be provided on the southern side of the station box along Santa Monica Boulevard to accommodate a potential future entrance. A second knock-out panel would be provided on the northwestern side of the station box, near the intersection of Palm Avenue and Santa Monica Boulevard, to accommodate a potential future entrance on the north side of Santa Monica Boulevard.

FIGURE 2-17. SAN VICENTE/SANTA MONICA STATION – ENTRANCE OPTION 1 – SOUTH



Source: Connect Los Angeles Partners 2024

Two construction staging areas have been identified for this station: 1) on the northeast corner of Santa Monica Boulevard and Palm Avenue (0.8 acre) and 2) the current Los Angeles County Sheriff's Department West Hollywood Station on the southeast corner of Santa Monica Boulevard and San Vicente Boulevard (2.1 acres). These staging areas would be used as a TBM launch site and require a larger footprint to accommodate construction activities than a typical station.

The sidewalk zone of influence would be located on the north and south sides of Santa Monica Boulevard, between San Vicente Boulevard and Huntley Drive. At Larrabee Street, Palm Avenue, Hancock Avenue, and Huntley Drive, the sidewalk zone of influence would extend around the corners of the respective intersections. It would also cover the western edge of the construction staging area at Santa Monica Boulevard and Palm Avenue. At the intersection of San Vicente Boulevard and Santa Monica Boulevard, the sidewalk zone of influence would extend 480 feet south to include the street-facing edge of the construction staging area.

ENTRANCE OPTION 2 – NORTH

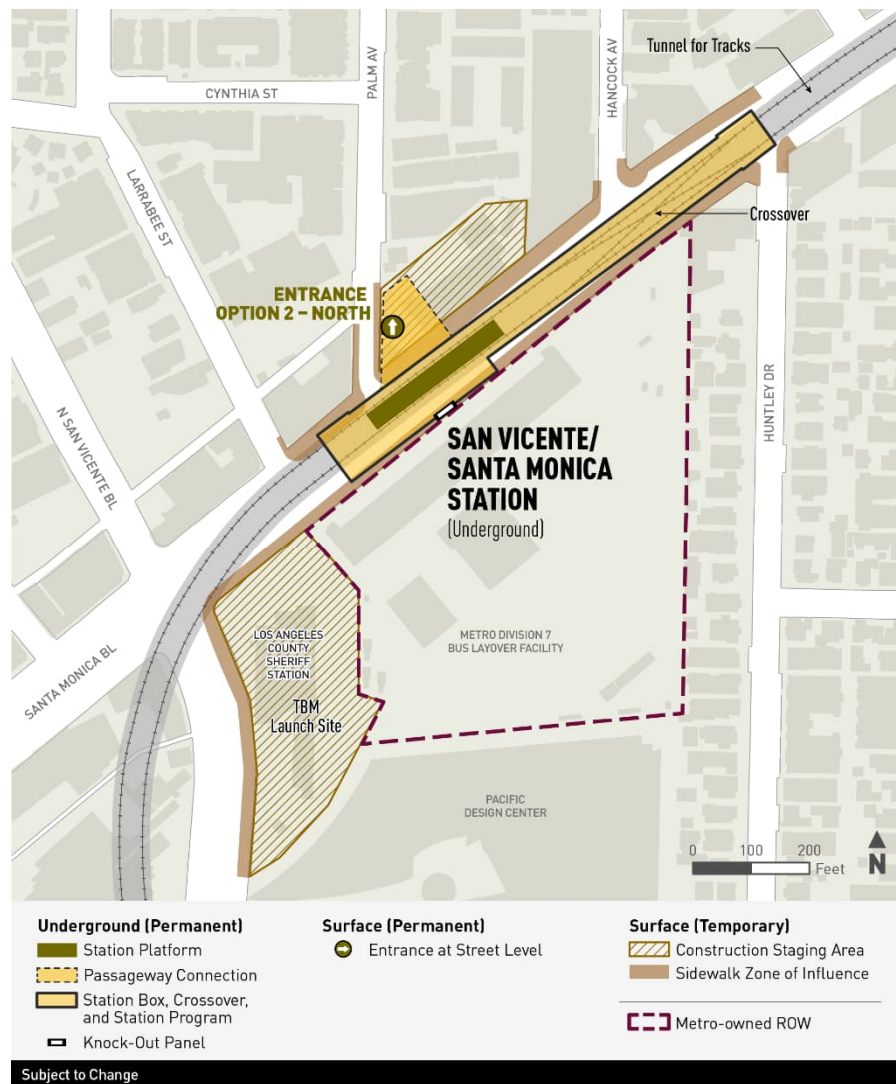
Entrance Option 2 – North would be located at the northeast corner of the intersection of Santa Monica Boulevard and Palm Avenue, as shown in Figure 2-18. A double crossover would be located on the eastern end of the station. One knock-out-panel would be provided on the southern side of the station box to accommodate a potential future entrance.

Two construction staging areas have been identified for this station: 1) on the northeast corner of Santa Monica Boulevard and Palm Avenue (0.8 acre) and 2) the current Los Angeles County Sheriff's Department West Hollywood Station on the southeast corner of Santa Monica Boulevard and San Vicente Boulevard (2.1 acres). These sites would be used as a TBM launch site and require a larger footprint to accommodate construction activities than a typical station.

The sidewalk zone of influence would be on the north and south sides of Santa Monica Boulevard, between San Vicente Boulevard and Huntley Drive. At Larrabee Street, Palm Avenue, Hancock Avenue, and Huntley Drive, the sidewalk zone of influence would extend around the corners of the respective intersections. It would also cover the construction staging area at Santa Monica Boulevard and Palm Avenue. At the intersection of San Vicente Boulevard and Santa Monica Boulevard, the sidewalk zone of influence would extend 450 feet south of the intersection to include the street-facing edge of the construction staging area.



FIGURE 2-18. SAN VICENTE/SANTA MONICA STATION – ENTRANCE OPTION 2 – NORTH



Source: Connect Los Angeles Partners 2024

FAIRFAX/SANTA MONICA STATION

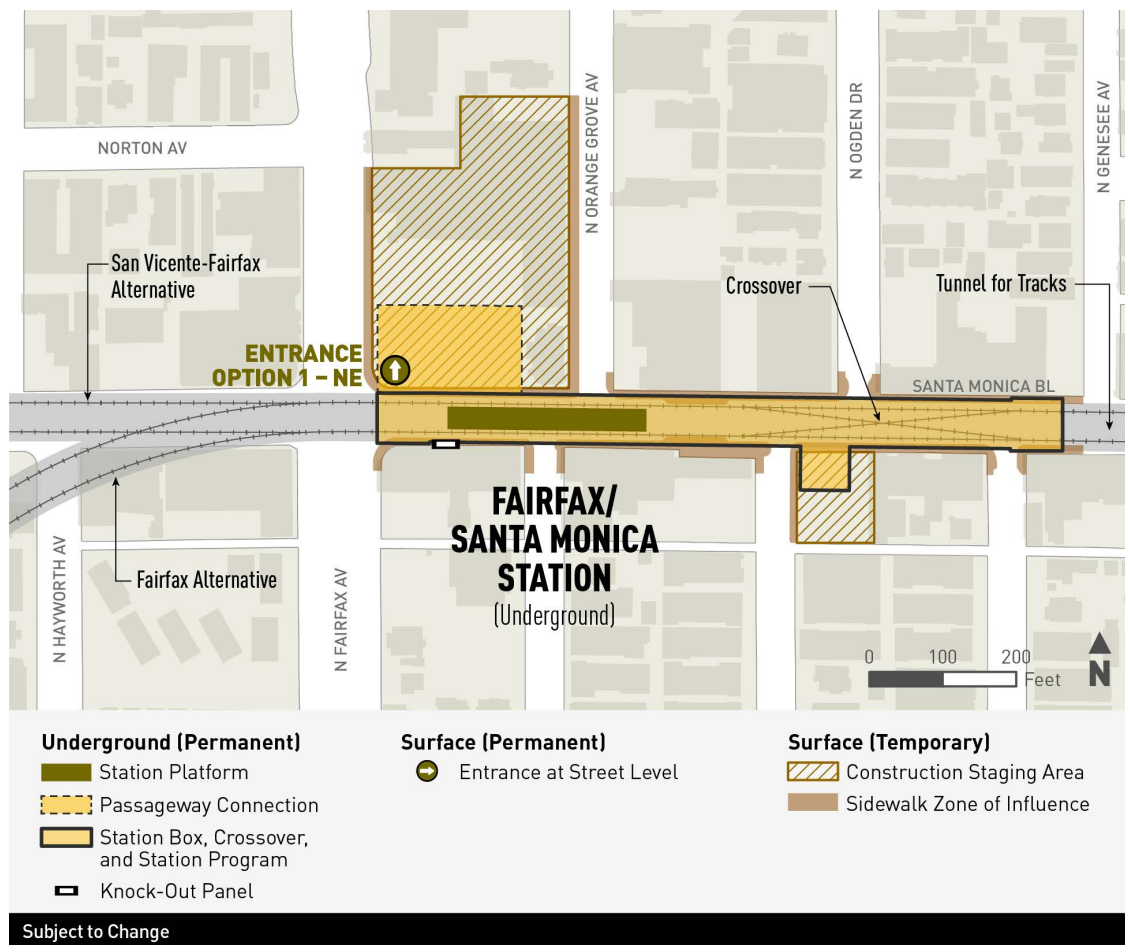
The proposed Fairfax/Santa Monica Station would be located in the City of West Hollywood, east of the intersection of Fairfax Avenue and Santa Monica Boulevard. This station would only be constructed for the San Vicente–Fairfax and Fairfax Alignments. The station box and entrance options would be in the same location for either of these alignments, but the approach from the west would vary between the two alignments.

The station box would be located below Santa Monica Boulevard. Two entrance options are proposed, although only one would be constructed.

ENTRANCE OPTION 1 – NE

Entrance Option 1 – NE, shown in Figure 2-19, would provide access at street level along Santa Monica Boulevard on the northeast corner of the Santa Monica Boulevard/Fairfax Avenue intersection. A double crossover would be located on the eastern end of the station. A knock-out panel would be provided at the south edge of the station box, southeast of the intersection of Fairfax Avenue and Santa Monica Boulevard, to accommodate a potential future entrance.

FIGURE 2-19. FAIRFAX/SANTA MONICA STATION – ENTRANCE OPTION 1 – NE



Source: Connect Los Angeles Partners 2024

Two construction staging areas have been identified for this station option: 1) on the northeast corner of Santa Monica Boulevard and Fairfax Avenue (2.3 acres) and 2) on the southeast corner of Santa Monica Boulevard and Ogden Drive (0.3 acre).

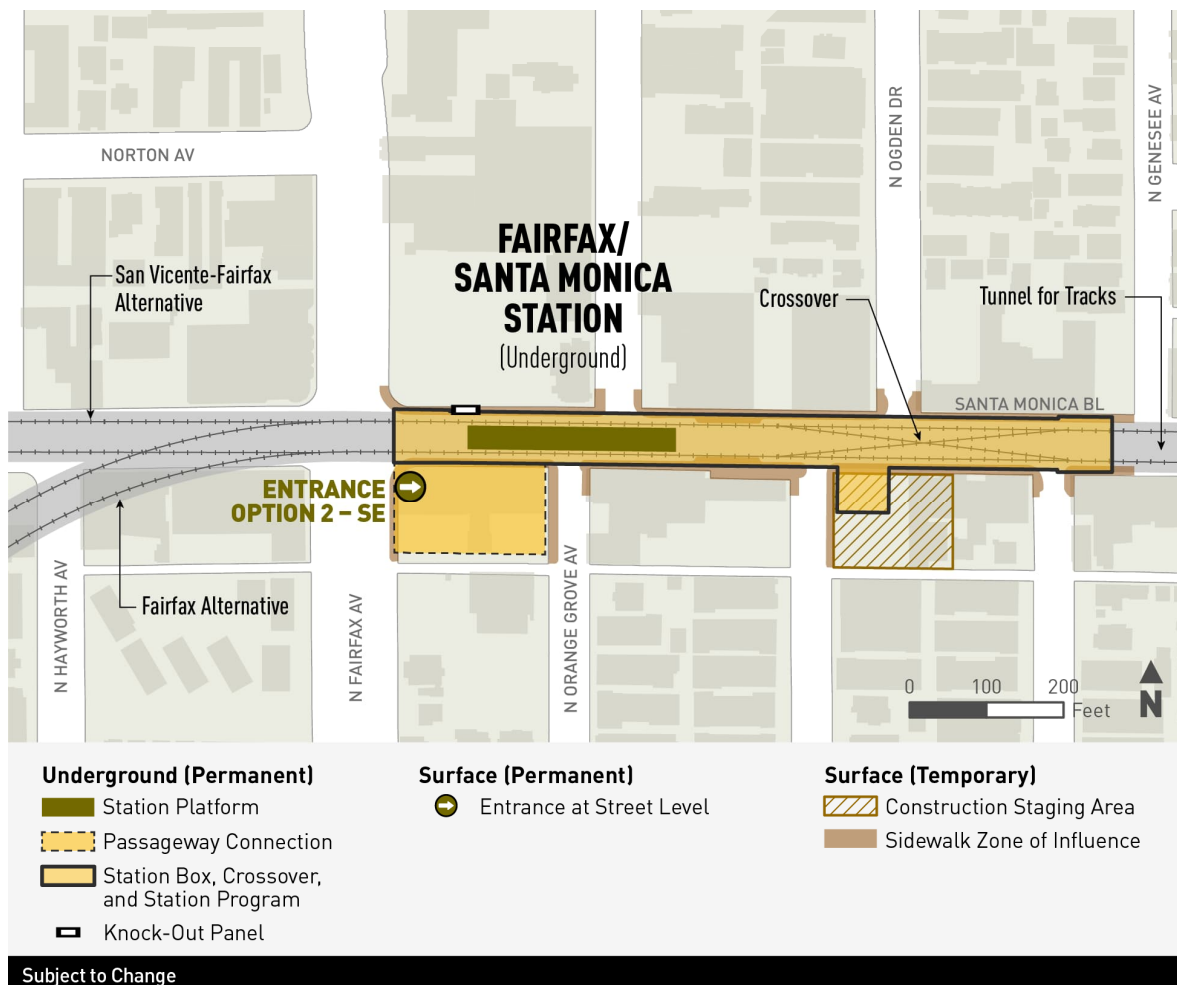
The sidewalk zone of influence would be located on the north and south sides of Santa Monica Boulevard, between Fairfax Avenue and Genesee Avenue. At Fairfax Avenue, Orange Grove Avenue, Ogden Drive, and Genesee Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections. It would also include the construction staging area at Santa Monica Boulevard and Ogden

Drive. At the larger construction staging area, the sidewalk zone of influence would extend 300 feet north along the eastern edge of Fairfax Avenue and 400 feet north along the western edge of Orange Grove Avenue.

ENTRANCE OPTION 2 – SE

Shown in Figure 2-20, Entrance Option 2 – SE would provide access at street level from Fairfax Avenue on the southeast corner of the Santa Monica/Fairfax intersection. A double crossover would be located on the eastern end of the station. A knock-out panel would be provided at the north edge of the station box, northeast of the intersection of Fairfax Avenue and Santa Monica Boulevard, to accommodate a potential future entrance.

FIGURE 2-20. FAIRFAX/SANTA MONICA STATION – ENTRANCE OPTION 2 – SE



Source: Connect Los Angeles Partners 2024

Two construction staging areas have been identified at this station option: 1) on the southeast corner of Santa Monica Boulevard and Fairfax Avenue (0.5 acre) and 2) on the southeast corner of Santa Monica Boulevard and Ogden Drive (0.3 acre).

The sidewalk zone of influence would be located on the north and south sides of the street along Santa Monica Boulevard, between Fairfax Avenue and Genesee Avenue. At Fairfax Avenue, Orange Grove Avenue, Ogden Drive, and Genesee Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections. The sidewalk zone of influence would also include the street-facing edges of the construction staging areas along Fairfax Avenue, Orange Grove Avenue, and Ogden Drive.

LA BREA/SANTA MONICA STATION

The proposed La Brea/Santa Monica Station would be located within the City of West Hollywood, adjacent to the border of the City of Los Angeles. This station would provide access to the commercial corridor along Santa Monica Boulevard. The location of the station box is dependent on the alignment. For the San Vicente–Fairfax and Fairfax Alignments, the station box would be underneath Santa Monica Boulevard. For the La Brea Alignment, the station box would be underneath La Brea Avenue.

This site would be used as a TBM launch site and would require a larger footprint to accommodate construction activities than would a typical station.

SAN VICENTE–FAIRFAX AND FAIRFAX ALIGNMENTS – LA BREA/SANTA MONICA STATION

As shown in Figure 2-21, for the San Vicente–Fairfax and Fairfax Alignments, the station platform would be located beneath Santa Monica Boulevard, east of the La Brea Avenue and Santa Monica Boulevard intersection. The station platform would be located within both the Cities of West Hollywood and Los Angeles. The station entrance would be located on the northeast corner of La Brea Avenue and Santa Monica Boulevard. A knock-out panel would be located on the southern edge of the station box, east of the intersection of Santa Monica Boulevard and La Brea Avenue, to accommodate a potential future entrance.

Two construction staging areas have been identified at this station: 1) approximately 270 feet north of Santa Monica Boulevard between Detroit Street and La Brea Avenue (1.0 acre), and 2) on the northeast corner of the Santa Monica Boulevard and La Brea Avenue intersection (2.6 acres). Both sites would be used as a TBM launch site and require a larger footprint to accommodate construction activities than would a typical station.

For the San Vicente–Fairfax and Fairfax Alignments, the sidewalk zone of influence would be located on the north and south sides of Santa Monica Boulevard between La Brea Avenue and Orange Drive. At La Brea Avenue, Sycamore Avenue, and Orange Drive, the sidewalk zone of influence would extend around the corners of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of both construction staging areas along Detroit Street, La Brea Avenue, and Sycamore Avenue.

FIGURE 2-21. LA BREA/SANTA MONICA STATION (SAN VICENTE–FAIRFAX AND FAIRFAX ALIGNMENTS)


Source: Connect Los Angeles Partners 2024

LA BREA ALIGNMENT– LA BREA/SANTA MONICA STATION

For the La Brea Alignment, the station platform would be beneath La Brea Avenue, north of the La Brea Avenue and Santa Monica Boulevard intersection (Figure 2-22). A station entrance would provide access at street level along Santa Monica Boulevard, on the northeast corner of the La Brea/Santa Monica intersection. A knock-out panel would be located along the northwest edge of the station box along La Brea Avenue, 360 feet south of the intersection of La Brea Avenue and Lexington Avenue, to accommodate a potential future entrance.

Two construction staging areas have been identified at this station: 1) approximately 270 feet north of Santa Monica Boulevard between Detroit Street and La Brea Avenue (1.0 acre) and 2) on the northeast corner of the Santa Monica Boulevard and La Brea Avenue intersection (2.6 acres). Both sites would be used as a TBM launch site and require a larger footprint to accommodate construction activities than would a typical station.

The sidewalk zone of influence would be located on the east and west sides of La Brea Avenue between Santa Monica Boulevard and Lexington Avenue. The zone of influence would extend around the corners of the respective intersections at Santa Monica Boulevard and Lexington Avenue. Along Santa Monica Boulevard, the sidewalk zone of influence would extend 320 feet east to the intersection of Santa Monica Boulevard and Sycamore Avenue. The sidewalk zone of influence would also include all street-facing edges of both construction staging areas along Detroit Street and Sycamore Avenue.



FIGURE 2-22. LA BREA/SANTA MONICA STATION (LA BREA ALIGNMENT)



Source: Connect Los Angeles Partners 2024

HOLLYWOOD/HIGHLAND STATION

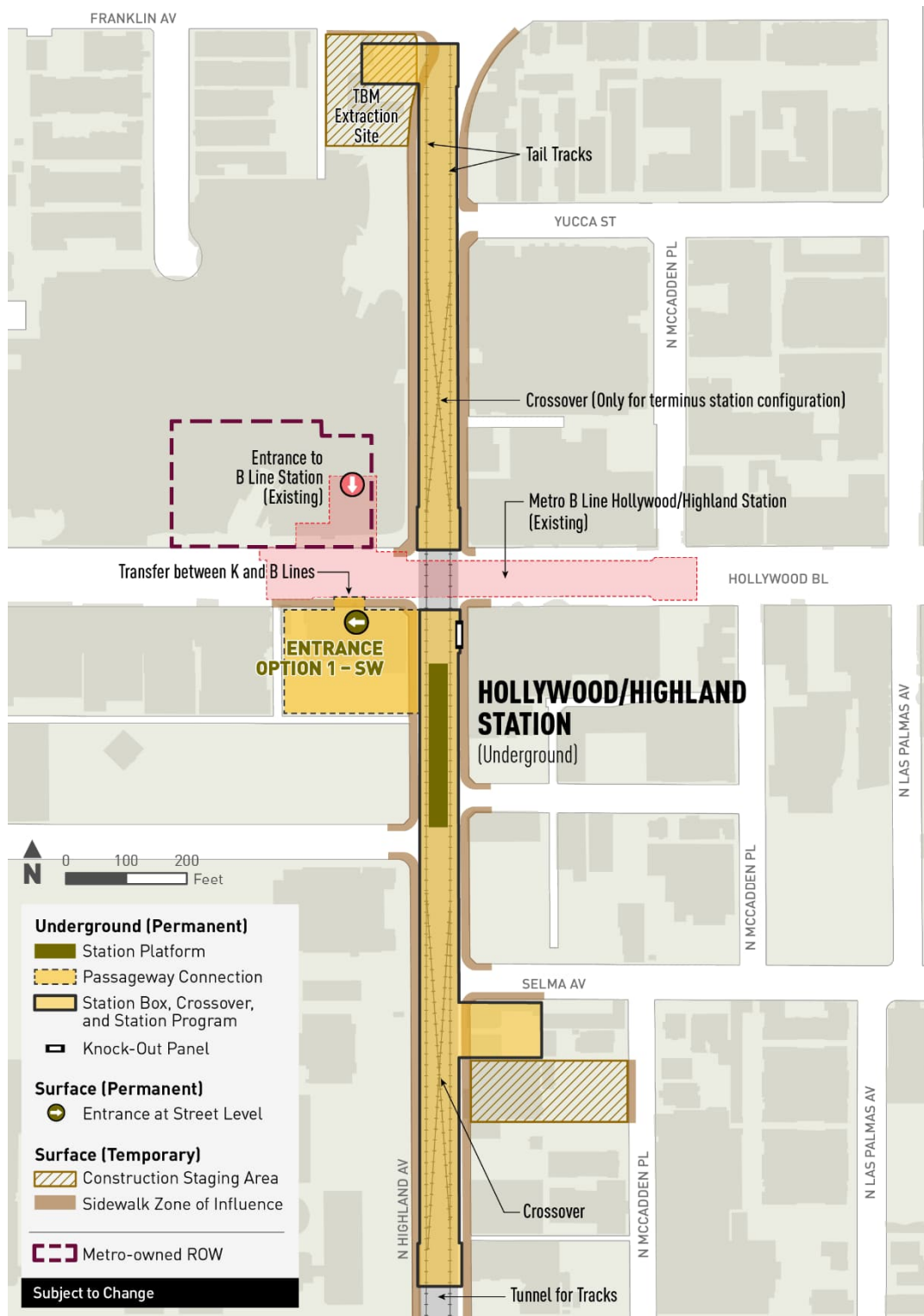
The proposed Hollywood/Highland Station (Figure 2-23 and Figure 2-24) would be located in the City of Los Angeles and would provide a connection to the existing Metro B Line Hollywood/Highland Station, which is located below Hollywood Boulevard at the intersection of Hollywood Boulevard and Highland Avenue with an entrance on the northwest corner of the intersection. The KNE station box would be located beneath Highland Avenue south of Hollywood Boulevard. This station would be constructed for all alignments.

Under the sequential construction approach described in Section 2.4.5, this station would be the northern terminus of Section 3 for the San Vicente–Fairfax Alignment and Section 2 for the Fairfax and La Brea Alignments, unless the Hollywood Bowl Design Option is constructed.

Two station entrance options are proposed, although only one entrance would be constructed. Entrance Option 1 – SW is located on the southwest corner of Hollywood Boulevard and Highland Avenue. Entrance Option 2 – SE is located on the southeast corner of Hollywood Boulevard and Highland Avenue. For each station entrance option, a connection to the existing Metro B Line station would be provided at the concourse level, allowing passengers to transfer between the K Line and B Line.



FIGURE 2-23. HOLLYWOOD/HIGHLAND STATION – TERMINUS STATION, ENTRANCE OPTION 1 – SW



Source: Connect Los Angeles Partners 2024

If constructed as a terminus station, a double crossover would be located south of the station platform and north of the B Line crossing under Highland Avenue. In addition to the crossover north of Hollywood Boulevard, tail tracks, which are stub-end tracks located beyond a terminal station to allow trains to exit the platform area or move to the other track, would extend north to Franklin Avenue and the TBM would be extracted at the northern end of the tail tracks. An end shaft would be required at the end of the tail tracks of the Hollywood/Highland terminus station to accommodate cross passages, stairways, ventilation plenum, and possibly emergency ventilation fans (Figure 2-23 and Figure 2-24). The end shaft, a circular or rectangular shaft with a minimum footprint area of 1,600 square feet, would be constructed by shaft sinking or support of excavation piles/walls.

If the alignment continues north to the Hollywood Bowl as proposed for the Hollywood Bowl Design Option, the Hollywood/Highland Station would be constructed as an inline station rather than a terminus station. This configuration with the Hollywood Bowl Design Option is described in Section 2.4.2.

ENTRANCE OPTION 1 – SW – TERMINUS STATION

Under Entrance Option 1 – SW (Figure 2-23), the entrance would be located on the southwest corner of Hollywood Boulevard and Highland Avenue. Passengers would transfer between the K Line and the B Line using the station concourse level via the existing knock-out-panel on the southwest corner of the existing Hollywood/Highland station box. A knock-out panel would be included on the eastern side of the KNE station box, at the southeast corner of Hollywood Boulevard and Highland Avenue, to accommodate a future entrance option.

Three construction staging areas have been identified at this station: 1) at the southeast corner of Highland Avenue and Selma Avenue (0.9 acre), 2) at the southwest corner of Hollywood Boulevard and Highland Avenue (0.9 acre), and 3) at the southwest corner of Franklin Avenue and Highland Avenue (0.7 acre).

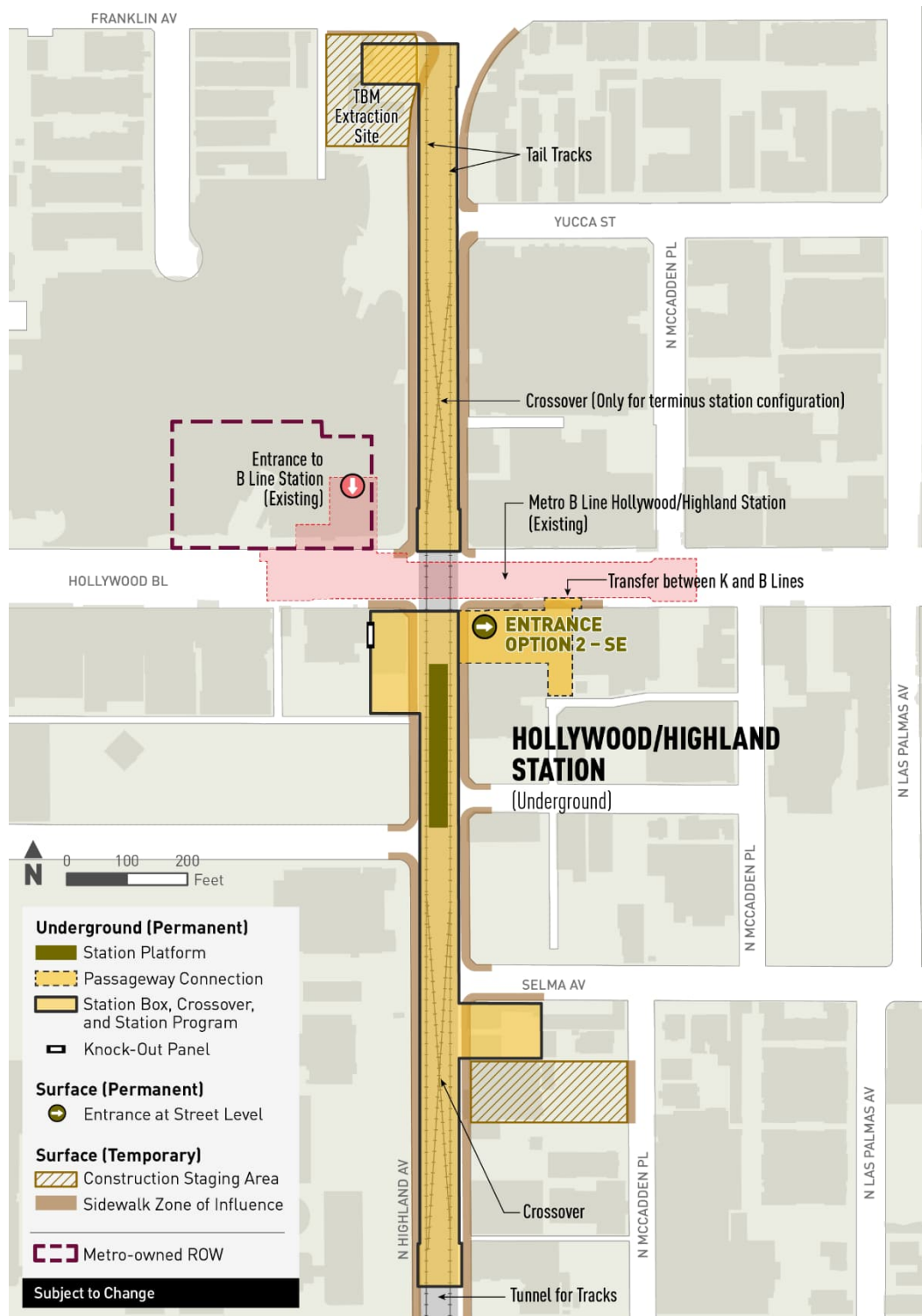
For Entrance Option 1, the sidewalk zone of influence would be located on the east and west sides of Highland Avenue, between Sunset Boulevard and Franklin Avenue. At Selma Avenue, Hawthorn Avenue, Hollywood Boulevard, Yucca Street, and Franklin Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of the construction staging areas along Hollywood Boulevard, Selma Avenue, McCadden Place, and Franklin Avenue.

ENTRANCE OPTION 2 – SE – TERMINUS STATION

Under Entrance Option 2 – SE (Figure 2-24), the entrance would be located on the southeast corner of Hollywood Boulevard and Highland Avenue. Passengers would transfer between the K Line and B Line at the concourse level via the existing knock-out-panel on the southeast corner of the existing Hollywood/Highland Station. A knock-out panel would be included on the western side of the K Line station box, near the southwest corner of Hollywood Boulevard and Highland Avenue, to accommodate a future entrance option.



FIGURE 2-24. HOLLYWOOD/HIGHLAND STATION – TERMINUS STATION, ENTRANCE OPTION 2 – SE



Source: Connect Los Angeles Partners 2024

Four potential construction staging areas have been identified at this station: 1) at the southeast corner of Highland Avenue and Selma Avenue (0.9 acre), 2) at the southeast corner of Hollywood Boulevard and Highland Avenue (0.4 acre), 3) at the southwest corner of Hollywood Boulevard and Highland Avenue (0.3 acre) and 4) at the southwest corner of Franklin Avenue and Highland Avenue (0.7 acre).

For Entrance Option 2, the sidewalk zone of influence would be located on the east and west sides of Highland Avenue between Sunset Boulevard and Franklin Street. At Selma Avenue, Hawthorn Avenue, Hollywood Boulevard, Yucca Street, and Franklin Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of the construction staging areas along Hollywood Boulevard, Selma Avenue, McCadden Place, and Franklin Avenue.

WILSHIRE/LA BREA STATION

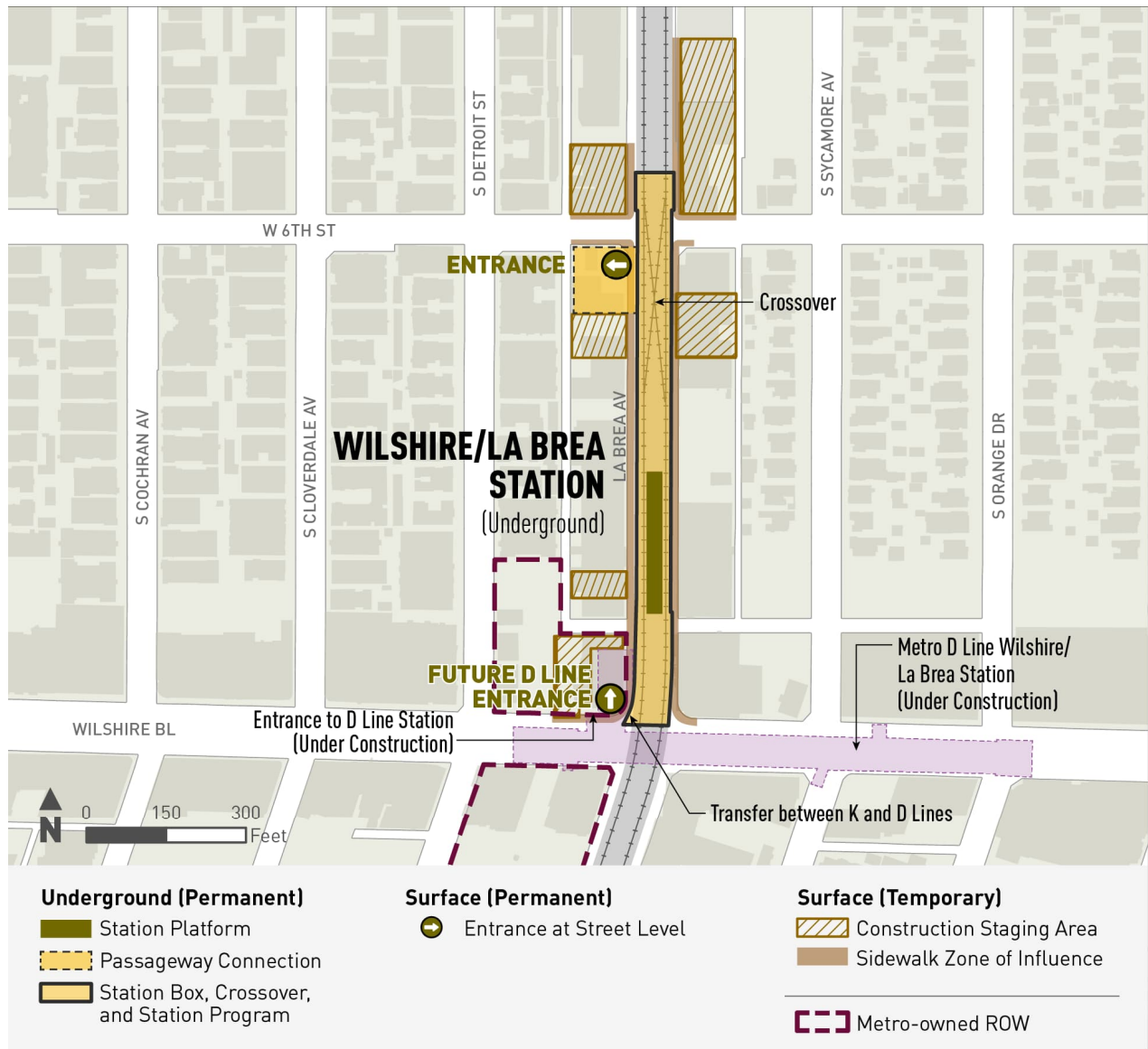
The proposed Wilshire/La Brea Station would provide a connection to the currently under construction Metro D Line Wilshire/La Brea Station, which is located below Wilshire Boulevard at the intersection of Wilshire Boulevard and La Brea Avenue. The KNE station would be connected to the future Metro D Line Station through the concourse level of both stations, allowing pedestrians to transfer between the K Line and D Line via the existing knock-out panel in the D Line station. This station would only be constructed for the KNE La Brea Alignment.

The proposed KNE station box would be located beneath La Brea Avenue, north of the Wilshire Boulevard and La Brea Avenue intersection, and south of 6th Street. A double crossover would be located north of the station box, extending to just north of 6th Street.

One new station entrance would be constructed on the southwest corner of the intersection of La Brea Avenue and 6th Street, as shown in Figure 2-25. The future D Line entrance on the northwest corner of Wilshire Boulevard and La Brea Avenue would also provide access to both the D Line and K Line through the concourse level.

Six construction staging areas have been identified for this station option: 1) the northwest corner of Wilshire Boulevard and La Brea Avenue (0.2 acre), 2) 300 feet north of the intersection of Wilshire Boulevard and La Brea Avenue (0.1 acre), 3) the southwest corner of 6th Street and La Brea Avenue (0.5 acre), 4) the northwest corner of 6th Street and La Brea Avenue (0.3 acre), 5) the northeast corner of 6th Street and La Brea Avenue (0.7 acre), and 6) 175 feet southeast of the intersection of 6th Street and La Brea Avenue (0.3 acre).

The sidewalk zone of influence would be located on the east and west sides of La Brea Avenue between 6th Street and Wilshire Boulevard. At 6th Street and Wilshire Boulevard, the sidewalk zone of influence would extend around the corners of the respective intersections. At the intersection of Wilshire Boulevard and La Brea Avenue, the sidewalk zone of influence would be present only on the northwest and northeast corners.

FIGURE 2-25. WILSHIRE/LA BREA STATION


Subject to Change

Source: Connect Los Angeles Partners 2024

LA BREA/BEVERLY STATION

The proposed La Brea/Beverly Station would be located beneath La Brea Avenue, north of the La Brea Avenue and Beverly Boulevard intersection. A double crossover would be located at the northern end of the station and extend just north of Oakwood Avenue. This station would only be constructed for the La Brea Alignment. Two entrance options have been identified for this station, although only one would be constructed.

ENTRANCE OPTION 1 – NW

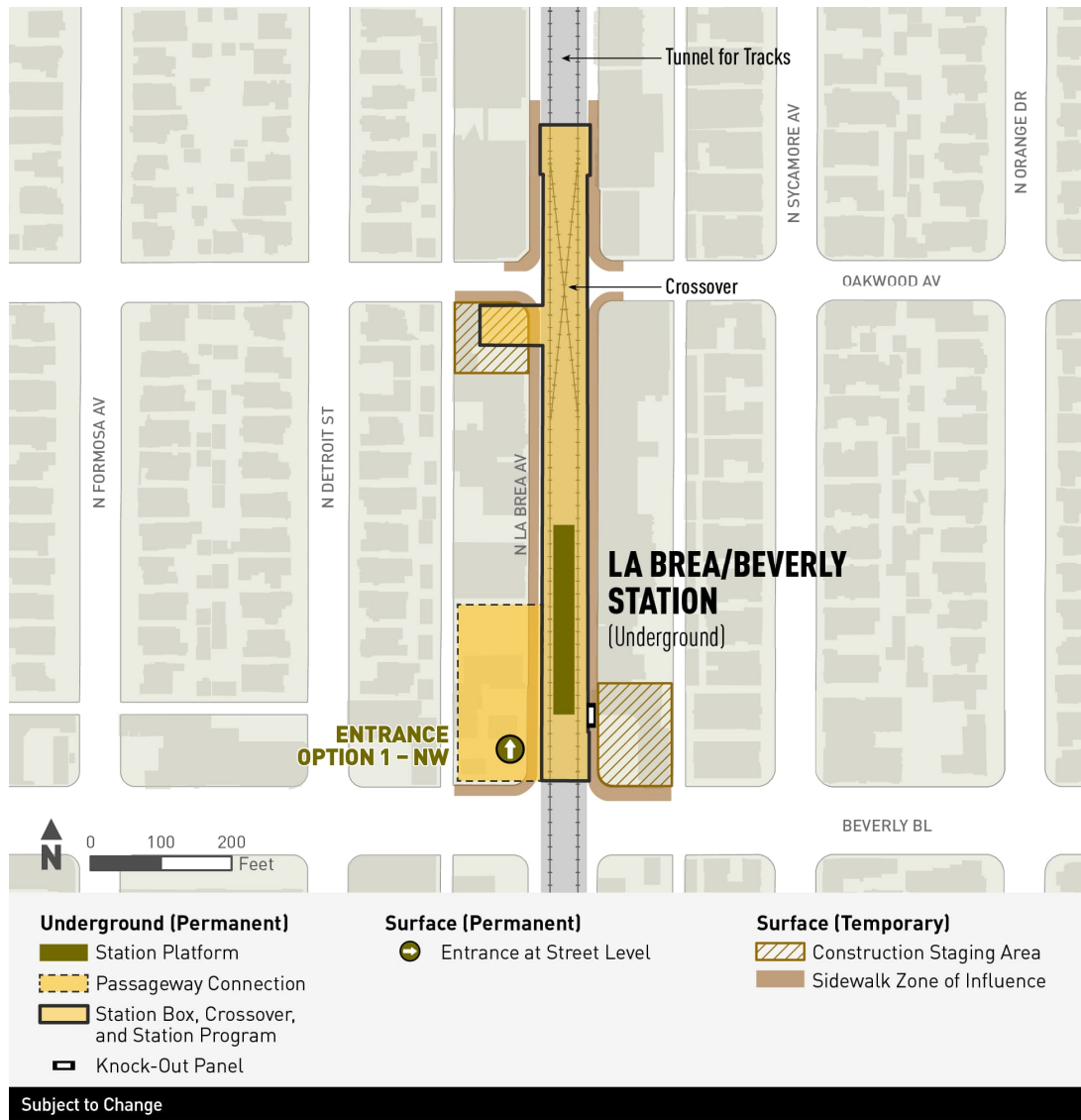
Entrance Option 1 – NW, shown in Figure 2-26, would provide access to the station at street level along Beverly Boulevard on the northwest corner of the La Brea Avenue and Beverly Boulevard intersection. A knock-out panel would be located at the southeastern end of the station box to accommodate a future entrance option.

Three construction staging areas have been identified: 1) at the southwest corner of Oakwood Avenue and La Brea Avenue (0.2 acre), 2) at the northwest corner of Beverly Boulevard and La Brea Avenue (0.6 acre), and 3) at the northeast corner of Beverly Boulevard and La Brea Avenue (0.3 acre).

The sidewalk zone of influence would be located on the east and west sides of La Brea Avenue between Beverly Boulevard and Oakwood Avenue. The northern extent of the sidewalk zone of influence would begin approximately 320 feet north of the La Brea Avenue and Oakwood Avenue intersection. At Beverly Boulevard and Oakwood Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections.



FIGURE 2-26. LA BREA/BEVERLY STATION – ENTRANCE OPTION 1 – NW



Source: Connect Los Angeles Partners 2024

ENTRANCE OPTION 2 – NE

As shown in Figure 2-27, Entrance Option 2 – NE would provide station access at street level along Beverly Boulevard on the northeast corner of the intersection. A knock-out panel would be located at the southwestern end of the station box to accommodate a future entrance option.

Three potential construction staging areas have been identified: 1) at the southwest corner of the Oakwood Avenue and La Brea Avenue intersection (0.2 acre), 2) at the northwest corner of Beverly Boulevard and La Brea Avenue (0.3 acre), and 3) at the northeast corner of Beverly Boulevard and La Brea Avenue (0.6 acre).

FIGURE 2-27. LA BREA/BEVERLY STATION – ENTRANCE OPTION 2 – SE



Source: Connect Los Angeles Partners 2024

The sidewalk zone of influence would be located on the east and west sides of La Brea Avenue between Beverly Boulevard and Oakwood Avenue and would extend approximately 320 feet north of Oakwood Avenue to the northern end of the station box. At Beverly Boulevard and Oakwood Avenue, the sidewalk zone of influence would extend around the corner of the respective intersections.

2.4.2 HOLLYWOOD BOWL DESIGN OPTION

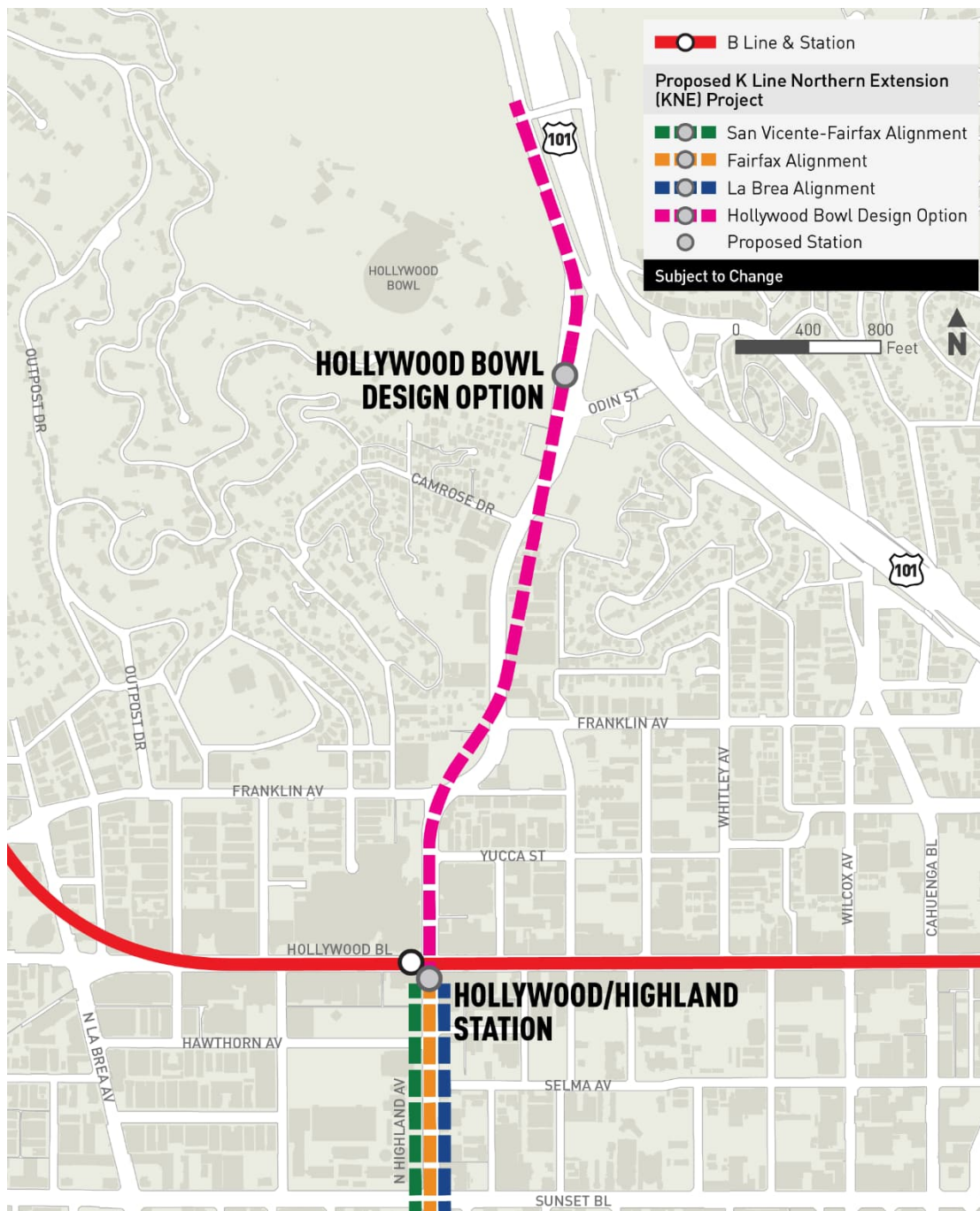
For all three alignments, an alternate terminus station at the Hollywood Bowl is under consideration. The design option would construct and operate one new station (the Hollywood Bowl Station) and the associated underground alignment. This station would primarily serve the Hollywood Bowl venue, although some dense multifamily housing is located near the proposed station, particularly along Cahuenga Boulevard and north of Franklin Avenue. The Hollywood Bowl Design Option is illustrated in Figure 2-28. This design option would extend an additional 0.8 mile underground from the Hollywood/Highland Station to the tail tracks north of the Hollywood Bowl Station.

From the Hollywood/Highland Station, the alignment would continue north beneath Highland Avenue. At the intersection of Highland Avenue and Franklin Avenue, the alignment would continue north before curving northeast to continue north beneath Highland Avenue. The alignment would connect to the Hollywood Bowl Station, terminating southwest of the US-101. The alignment for the Hollywood Bowl Station would require approximately 4,200 feet of additional tunnel from the Hollywood/Highland Station. The tunnel would cross the Hollywood fault zone for 1,200 feet, requiring a design consistent with Metro standards specific to crossing faults.

Under the Hollywood Bowl Design Option, the Hollywood/Highland Station would be an inline station instead of a terminus station, which means the crossover and tail tracks north of the Hollywood/Highland Station would not be required. These components would instead be required at the Hollywood Bowl Station. For all three alignments, the configuration and construction method of the Hollywood Bowl Design Option would be the same.

The Hollywood Bowl Design Option would be constructed at the same time as the Hollywood/Highland Station in the final construction section and would not be a separate future phase. The configuration of the inline Hollywood/Highland Station is described below, followed by a description of the Hollywood Bowl Station.

FIGURE 2-28. ALTERNATE TERMINUS STATION AT THE HOLLYWOOD BOWL



Source: Connect Los Angeles Partners 2024

HOLLYWOOD/HIGHLAND STATION – INLINE

If the proposed Hollywood/Highland Station were constructed as an inline station, the station box and crossover footprint would be located south of the intersection underneath Highland Avenue. A double crossover would only be located south of the station platform. Similar to the Hollywood/Highland terminus option, two station entrances are being considered, but only one would be constructed.

ENTRANCE OPTION 1 – SW

Under Entrance Option 1 – SW (Figure 2-29), the entrance would be located on the southwest corner of Hollywood Boulevard and Highland Avenue. A knock-out panel would be located at the northeast corner of the station box to accommodate a future entrance option.

Two construction staging areas have been identified at this station: 1) at the southeast corner of Highland Avenue and Selma Avenue (0.9 acre) and 2) at the southwest corner of Hollywood Boulevard and Highland Avenue (0.9 acre).

For Entrance Option 1 – SW, the sidewalk zone of influence would be located on the east and west sides of Highland Avenue between Sunset Boulevard and Hollywood Boulevard. At Selma Avenue, Hawthorn Avenue, and Hollywood Boulevard, the sidewalk zone of influence would extend around the corner of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of the construction staging areas along Hollywood Boulevard, Selma Avenue, and McCadden Place.



FIGURE 2-29. HOLLYWOOD/HIGHLAND STATION – INLINE STATION, ENTRANCE OPTION 1



Source: Connect Los Angeles Partners 2024

ENTRANCE OPTION 2 – SE

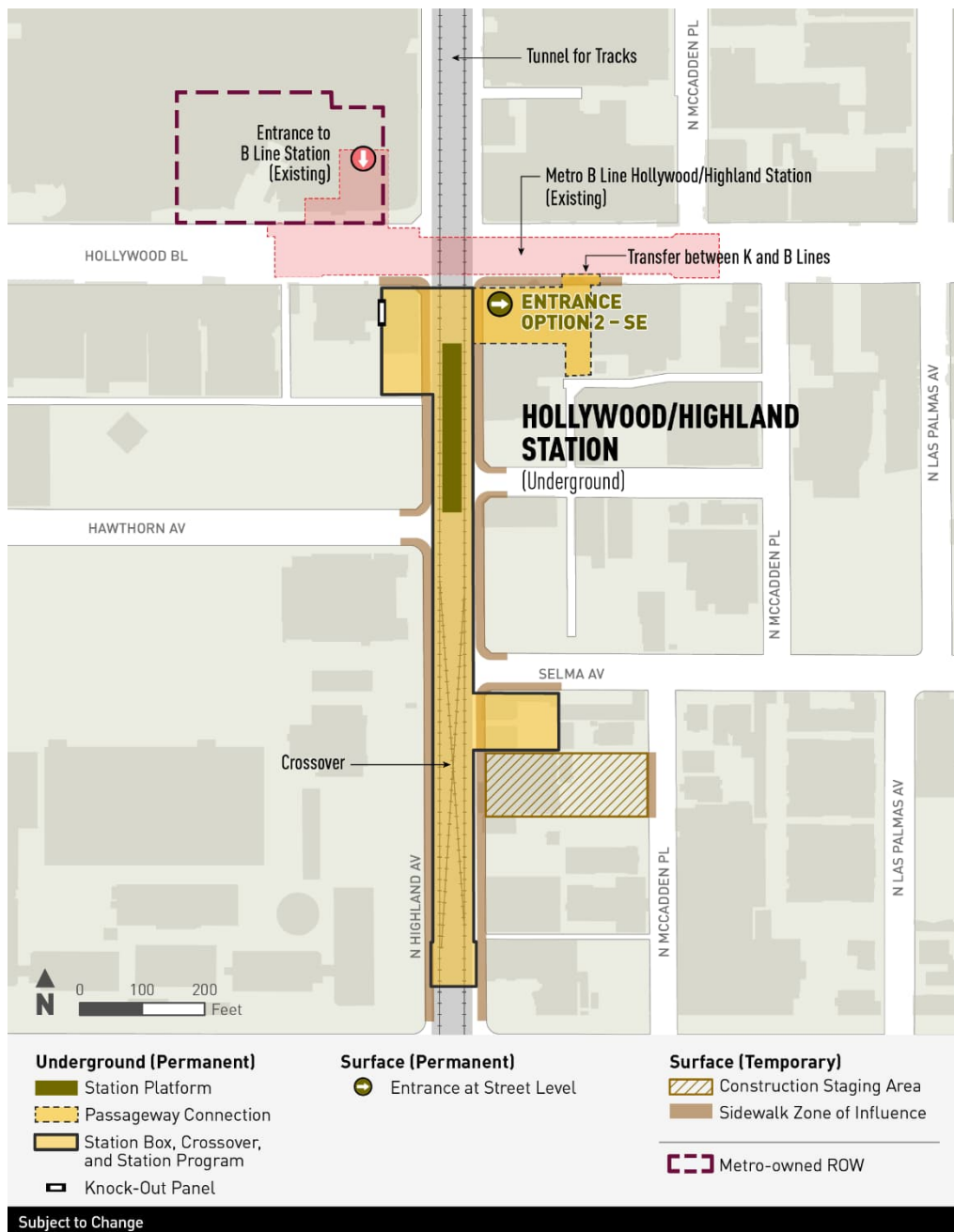
With Entrance Option 2 – SE (Figure 2-30), the entrance would be located on the southeast corner of Hollywood Boulevard and Highland Avenue. A knock-out panel would be located at the northwest corner of the station box to accommodate a future entrance option.

Three construction staging areas have been identified at this station: 1) at the southeast corner of Highland Avenue and Selma Avenue (0.9 acre), 2) at the southeast corner of Hollywood Boulevard and Highland Avenue (0.4 acre), and 3) at the southwest corner of Hollywood Boulevard and Highland Avenue (0.3 acre).

For Entrance Option 2, the sidewalk zone of influence would be located on the east and west sides of Highland Avenue between Sunset Boulevard and Hollywood Boulevard. At Selma Avenue, Hawthorn Avenue, and Hollywood Boulevard, the sidewalk zone of influence would extend around the corner of the respective intersections. The sidewalk zone of influence would also include all street-facing edges of the construction staging areas along Hollywood Boulevard, Selma Avenue, and McCadden Place.



FIGURE 2-30. HOLLYWOOD/HIGHLAND STATION – INLINE STATION, ENTRANCE OPTION 2



Source: Connect Los Angeles Partners 2024

HOLLYWOOD BOWL STATION

The proposed Hollywood Bowl Station would be located beneath Highland Avenue and Odin Street, north of Milner Road and south of the US-101 Freeway (Figure 2-31 and Figure 2-32). Two entrance options are under consideration, although only one entrance would be constructed.

ENTRANCE OPTION 1 – WEST

Entrance Option 1 would provide access at street level on the western end of Highland Avenue at the existing Hollywood Bowl Parking Lot B. An existing pedestrian tunnel between Parking Lot A, Parking Lot B, and Parking Lot C underneath Highland Avenue would remain in its current configuration.

Due to terminus station requirements, double crossovers would be located both on the southern end and northern end of the station. Tail tracks would also extend north of the northern crossover. An end shaft would also be required at the end of the tail tracks of the station to accommodate cross passages, stairways, ventilation plenum, and possibly emergency ventilation fans (Figure 2-31 and Figure 2-32).

Three construction staging areas have been identified: 1) at the Hollywood Bowl Parking Lot B on Highland Avenue (0.7 acre), 2) between Parking Lot D on Odin Street and the Hollywood Heritage Museum parking lot on Milner Road (3.5 acres), and 3) along the western edge of Cahuenga Boulevard, north of the Pilgrimage Bridge (0.1 acre). Due to high traffic volumes along Highland Avenue as well as the geological conditions in the area, this station would be constructed via the sequential excavation method (SEM) rather than the standard cut-and-cover construction. This approach would reduce surface impacts along Highland Avenue.

The sidewalk zone of influence would be located mainly along Highland Avenue between Milner Road and the US-101 entrance ramp adjacent to Parking Lot C. A portion of Odin Street between Lots C and D, as well as the existing bus terminal near Parking Lot B on Highland Avenue, would also be within the sidewalk zone of influence. At Odin Street and Highland Avenue, the sidewalk zone of influence would extend around the corner of the eastern intersections. In the north, the sidewalk on Cahuenga Boulevard adjacent to the construction staging area would also be part of the sidewalk zone of influence.

FIGURE 2-31. HOLLYWOOD BOWL STATION – ENTRANCE OPTION 1


Source: Connect Los Angeles Partners 2024

ENTRANCE OPTION 2 – EAST

Entrance Option 2 would provide access to the eastern end of Highland Avenue at the existing Hollywood Bowl Parking Lot C. An existing pedestrian tunnel between Parking Lot A, Parking Lot B, and Parking Lot C underneath Highland Avenue would remain in its current configuration.

Due to terminus station requirements, double crossovers would be located both on the southern end and northern end of the station. Tail tracks would also extend north of the northern crossover.

Three construction staging areas have been identified: 1) Parking Lot C on Odin Street (0.6 acre), 2) between Parking Lot D on Odin Street and the Hollywood Heritage Museum parking lot on Milner Road (3.5 acres), and 3) along the western edge of Cahuenga Boulevard, north of Pilgrimage Bridge (0.1 acre). Due to high traffic volumes along Highland Avenue as well as the geological conditions in the area, this station would be constructed via SEM rather than the standard cut-and-cover construction. This approach would reduce surface impacts along Highland Avenue.

The sidewalk zone of influence would be located mainly along the eastern side of Highland Avenue between Milner Road and the US-101 entrance ramp adjacent to Parking Lot C. A portion of Odin Street between Lots C and D, as well as the existing bus terminal near Parking Lot B on Highland Avenue, would also be within the sidewalk zone of influence. At Odin Street and Highland Avenue, the sidewalk zone of influence would extend around the corner of the eastern intersections. In the north, the sidewalk on Cahuenga Boulevard adjacent to the construction staging area would also be part of the sidewalk zone of influence.

FIGURE 2-32. HOLLYWOOD BOWL STATION – ENTRANCE OPTION 2



Source: Connect Los Angeles Partners 2024

2.4.3 MAINTENANCE AND STORAGE FACILITY

An MSF is necessary to provide daily servicing and cleaning, inspection and repairs, and storage of light rail vehicles (LRVs). As currently designed, the existing Metro Division 16 site that serves the existing K Line, has insufficient capacity to accommodate the additional vehicles that would be required to operate KNE.

Due to the dense urban environment along the project corridor, a suitable site with compatible land uses could not be identified in the immediate vicinity of the KNE alignments. Instead, the proposed MSF would be located adjacent to the existing Division 16 MSF yard near LAX, and would expand Division 16 to the southwest to provide the additional needed capacity (Figure 2-33). The proposed MSF expansion would allow Metro to maintain all its operations for the K Line within one site and would avoid duplication of facilities.

FIGURE 2-33. KNE PROPOSED MSF SITE MAP



Source: Connect Los Angeles Partners 2024

The proposed MSF site is a 16.1-acre expansion of the existing Division 16 yard to the southwest and would be located between Arbor Vitae Street and 96th Street in the City of Los Angeles. As shown in Figure 2-34, the MSF would accommodate storage of the additional vehicle requirements for KNE, as well as the required supporting facilities, including a new service and inspection shop, cleaning platform, maintenance-of-way (MOW) facility, storage tracks, parking spaces, and systems components. The existing Division 16 yard currently provides a train wash building, operations and maintenance facility, yard tower, and paint and body building that would be used to service the LRVs. The site would provide the required 36 vehicle storage capacity, along with space for up to four additional storage tracks that could accommodate up to 12 additional vehicles if needed in the future. The MSF expansion would include approximately 180 new parking spaces for employee vehicles and maintenance vehicles in addition to the existing 180 spaces—based on February 2024 Google Earth imagery—for a total of approximately 360 parking spaces. Similar to the existing Division 16 site, landscaping would be planted around the periphery of the site. The MSF would not require modifications to the existing mainline tracks since it would access the yard the same way LRVs currently access the existing Division 16 yard. The currently under construction LAX Automated People Mover will run on elevated tracks along the southern edge of the MSF site. Vehicle access to and from the MSF would be provided via Arbor Vitae Street and 96th Street.

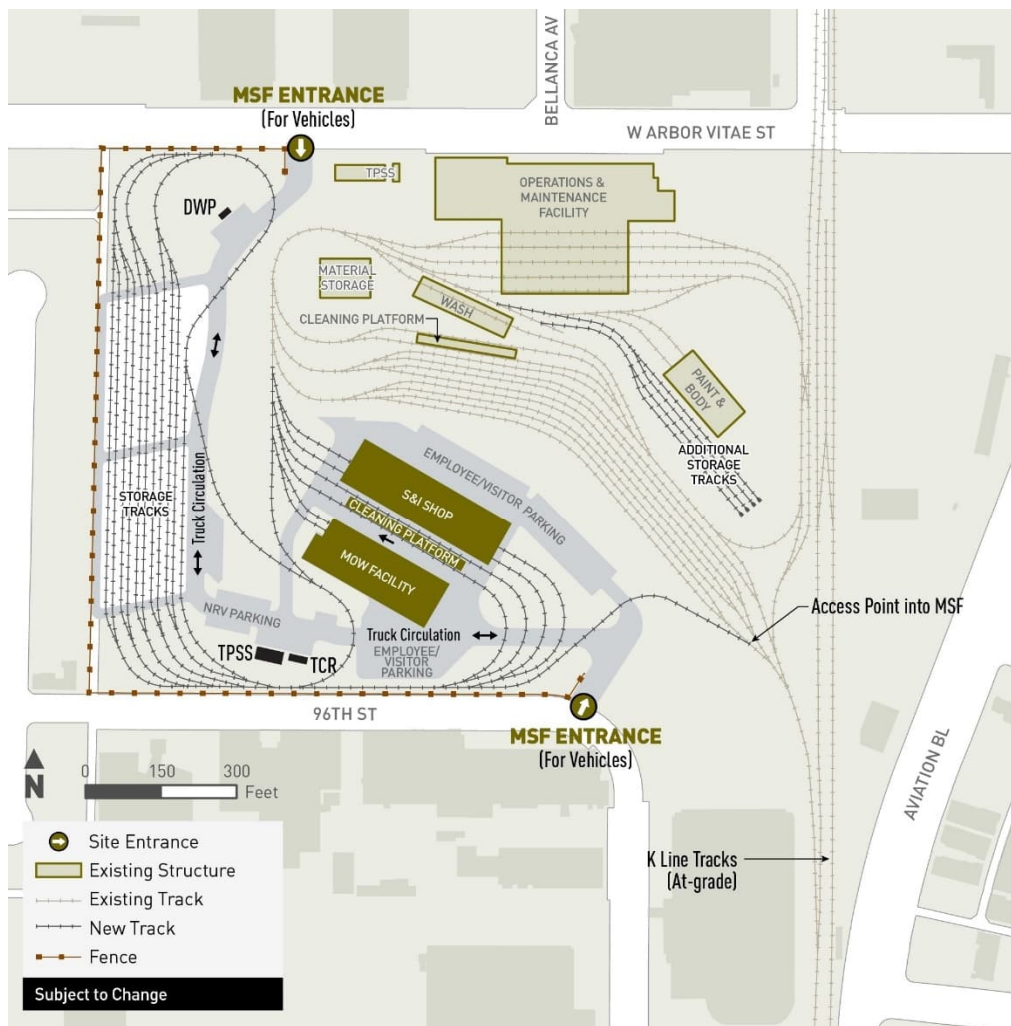
Activities may occur at the MSF throughout the day and night depending upon train schedules, workload, and maintenance requirements. Primary maintenance functions would include service/inspections, heavy repairs, component changeouts, unscheduled maintenance, wheel truing, and blowdowns. These maintenance activities are necessary for operation of KNE. Two inspection tracks would be included in the proposed expanded MSF, one heavy repair/component changeout track and one track featuring the wheel truing machine and blowdown area. Each track would be able to accommodate three LRVs and would be set up to complete maintenance activities on single vehicles as well as train sets. Adjacent to the maintenance tracks would be the support shops, parts storeroom, and a supervisor's office. A separate MOW vehicle storage facility would also be provided, featuring two-exterior storage tracks, with a covered canopy for storing rail-bound and hi-rail vehicles.

For yard electrification, a traction power substation (TPSS) would be provided with the necessary switch gear and control equipment. The TPSS would be accessible to road vehicles for installation, repair, maintenance, and emergency needs.

The MSF expansion would not be required as part of the first phase of project implementation based on anticipated LRV fleet demand. To accommodate the additional trains needed to provide service to either the Wilshire/Fairfax Station or Wilshire/La Brea Station, an additional four storage tracks, which could store up to 12 trains, would be added within the existing Division 16 site.



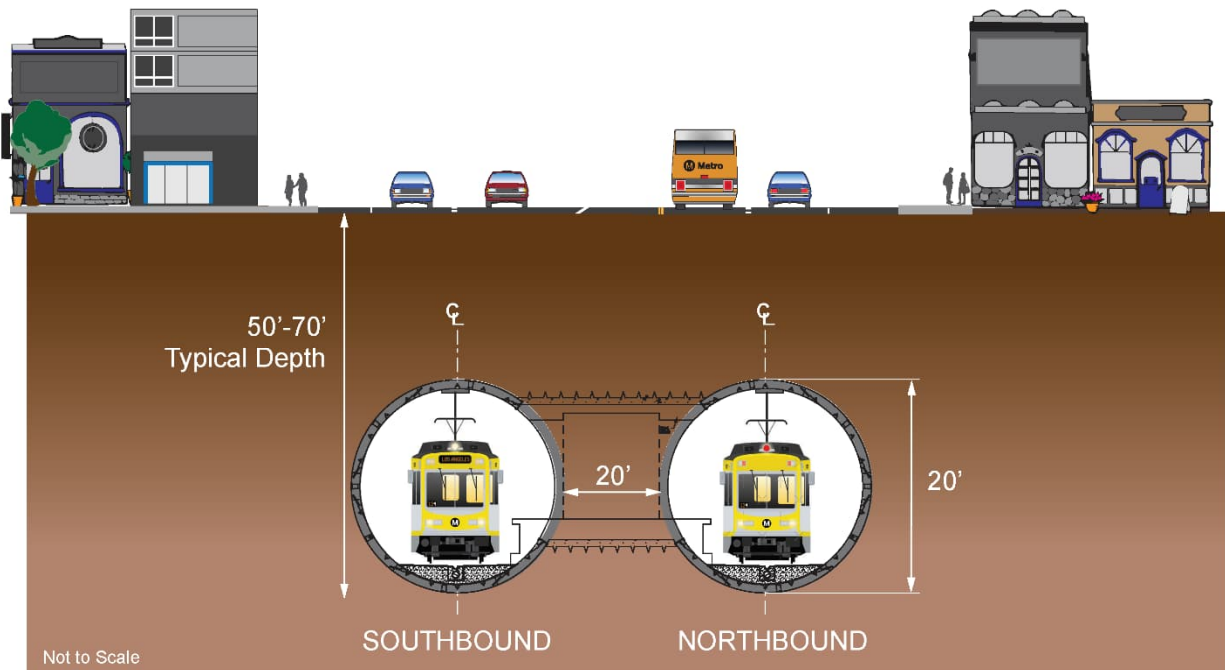
FIGURE 2-34. KNE MSF SITE CONCEPTUAL LAYOUT



Source: Connect Los Angeles Partners 2024

2.4.4 TUNNEL AND SYSTEM COMPONENTS

The alignment between stations would consist of two side-by-side bored tunnels. Each tunnel would be approximately 20 feet in diameter with 20 feet between the tunnels (Figure 2-35). Between stations, tunnels would generally be 50 to 70 feet below the surface, although they may be deeper or shallower in some locations. Train speed limits along underground LRT tracks are determined by curves in the alignment and the capabilities of the trains. Appendix 2-B, Advanced Conceptual Engineering Drawings, includes tunnel alignment drawings, including tunnel depths.

FIGURE 2-35. TYPICAL TUNNEL CROSS-SECTION


Source: Connect Los Angeles Partners 2022

In addition to the proposed MSF, the alignments would require a number of additional components to support LRV operations, including but not limited to overhead contact system (OCS), tail tracks, crossovers, cross passages, ventilation structures, TPSSs, radio communications, and emergency back-up power generators. Maintenance activities would be performed along the alignments and at stations to maintain these system components.

OVERHEAD CONTACT SYSTEM

The OCS is the overhead system that delivers power to LRT trains. Trains are fitted with pantographs that maintain continuous contact with the wires or rails as the train moves along the tracks. In tunnels, overhead contact rail would be used.

TAIL TRACKS

Tail tracks are stub-end tracks located beyond a terminal station, allowing trains to exit the platform area or move to the other track. They are used to store trains and provide safe braking distances for trains entering the station.

CROSSOVERS

Crossovers are mechanical track installations along a double-track alignment that allow trains traveling in either direction on either track to move to the other track and continue traveling in the same direction without stopping. Trains may also pass through a crossover without switching tracks. Crossovers allow a

portion of one track to be closed without completely suspending rail service. Crossovers can be used to allow trains to bypass a stalled train or turn back in the opposite direction. For this project, crossovers are located adjacent to station platforms.

CROSS PASSAGES

A cross passage is a passageway built to allow access between two parallel tunnels for maintenance and/or emergency purposes. Cross passages would be constructed along the alignment and would be built after the TBM has completed work on the train tunnels and would involve excavation between the twin tunnels.

VENTILATION STRUCTURES

Ventilation structures (fan plants) allow for climate control and emergency ventilation of tunnels and underground stations. These structures would be included at each of the proposed underground stations and adjacent track crossover structures. Station ventilation structures would be located in the public ROW and are often separated from the emergency exits. The ventilation structures would either be at the ground level or sidewalk level and can be incorporated into a future building. These ventilation structures and emergency exits may be located on portions of some of the construction sites identified.

TRACTION POWER SUBSTATIONS

TPSSs are facilities adjacent to the LRT alignment that supply power to the OCS. A TPSS can be up to approximately 5,000 square feet in size. The TPSSs would be located underground in ancillary rooms at the stations.

RADIO COMMUNICATIONS

Radio antenna systems are crucial components for the operations of rail systems, allowing voice transmission between rail yards, maintenance facilities, rail line stations, and passenger vehicles. Radio equipment configured as primary and standby sites aboveground and underground would provide location diversity, signal coverage, and resiliency to failure. The radio subsystem would provide two-way radio communications over channels in the 160 MHz band for Rail Operations and Maintenance, and channels in the 450/460 MHz band for transit police. Other bands may be required for different jurisdictions outside the City of Los Angeles. Every station would have adequate radio coverage and radio equipment compatible with the existing system, per Metro Rail Design Criteria. Radio towers located in station areas are anticipated to be approximately 50 feet tall.

EMERGENCY BACK-UP POWER GENERATORS

Emergency back-up power allows stations, rail yards, and passenger vehicles to continue operations during emergencies or power outages. All stations would be equipped with an external, self-starting, permanently mounted generator that can provide a minimum of four hours of back-up power to the station. Portable and standby generator output voltage should be 480V, three-phase, and connected to the entire station distribution system by a power receptacle or electrical outlet. All generators would also meet the requirements of the Southern California Air Quality Management District and the Environmental Protection Agency.

2.4.5 CONSTRUCTION APPROACH

This section provides an overview of the types of construction activities that would be required to construct each of the alignments and stations, design option, and MSF. Construction of KNE would use similar construction methods as recently built Metro projects, such as the D Line Extension. Stations would primarily be constructed by cut-and-cover method, and tunnels would be bored in between stations using TBMs. A detailed description of project construction activities is provided in Appendix 2-C, Construction Approach Report.

Construction activities for KNE would involve the following:

- Survey, preconstruction, and site preparation, including limited excavation and ROW acquisition
- Tunnel construction, including soft ground TBM excavation and segmental lining installation
- Underground utility support and relocation
- Station, crossover, and connection box construction for the alignments by cut-and-cover
- MSF construction
- Street/site restorations, including paving and sidewalks
- Ventilation and emergency egress construction with vertical shafts
- Systems and facilities installation, including installation of trackbed, rails, OCS (traction power); conduits for systems installations; electrical substations; and communications and signaling
- Systems testing and pre-revenue operations

In addition, the Hollywood Bowl Design Option would require the following:

- Hard rock tunnel and cavern excavations by conventional mining using roadheaders and occasional controlled blasting
- The station, crossover, and tunnel for the Hollywood Bowl Design Option would be constructed by SEM
- Shaft and cut-and-cover excavations in rocks

A generalized sequence of construction activities for the project is presented in Table 2-3. The time necessary for each activity would vary depending on such factors as the nature of the subsurface conditions encountered at station sites and during tunneling, work hours and traffic restrictions, and the contractor's means and methods. Other factors would include the number and type of utilities requiring relocation and the location and condition of nearby surface and subsurface structures.

It is anticipated that several construction activities identified would occur simultaneously along each construction section, accommodating activities requiring lengthy construction times such as utility relocation, tunnels, and station construction. Simultaneous construction may also reduce the overall construction duration. Working hours of construction would vary to meet the type of work being performed and to meet local ordinance restrictions. Nighttime and weekend construction may be required to offset potential effects on the commute period and traffic congestion, and to accommodate construction scheduling for specific work activities.

TABLE 2-3. GENERALIZED SEQUENCE OF CONSTRUCTION ACTIVITIES

ACTIVITY	DESCRIPTION	TYPICAL DURATION (MONTHS)
Survey and preconstruction	Locate utilities; establish ROW and project control points and centerlines; and establish/relocate survey monuments	24 to 36
Site preparation	Relocate utilities and clear ROW (demolition); widen streets at station sites to improve traffic flow during construction; establish detours and haul routes; erect safety devices and mobilize special construction equipment; prepare construction equipment yards and stockpile materials	12 to 24
Heavy construction	Construction of stations and entrances, tunnels, and associated structures; major systems facilities; disposal of excess material; backfilling of stations and portal; and refinishing roadways and sidewalks	72 to 84
Medium construction	Lay track, construct surface facilities (including aboveground structures), drainage, and backfill, and reinstate streets	42 to 54
Light construction	Install all system elements (electrical, mechanical, signals, and communication), traffic signals, street lighting, landscaping, signing, and striping; close detours; clean-up and test system	6 to 18
System integration, testing, and pre-revenue service	Test power, communications, signaling, and ventilation systems; train operators and maintenance personnel	24 to 30

Source: Connect Los Angeles Partners 2024

Note: Construction activities would overlap and the total construction duration would be shorter.

ROW = right-of-way

All work would conform to industry specifications and standards and Metro Rail Design Criteria. Project construction equipment could include the following:

- TBMs
- Haul trucks
- Concrete trucks
- Dozers
- Excavators
- Roadheaders
- Conveyor belts
- Locomotors and rail cars
- Cranes
- Drilling rigs and jumbos
- Flatbeds
- Rock crushers

2.4.5.1 CONSTRUCTION STAGING AREAS

Construction activities would typically be located within the public ROW or on private properties that would be acquired for project components. Construction staging and laydown areas would also be necessary for utility relocations, tunnel construction, and station and ancillary facility construction. Construction staging areas are needed for the following:

- Equipment storage
- Construction materials delivery
- Equipment assembly
- Materials production

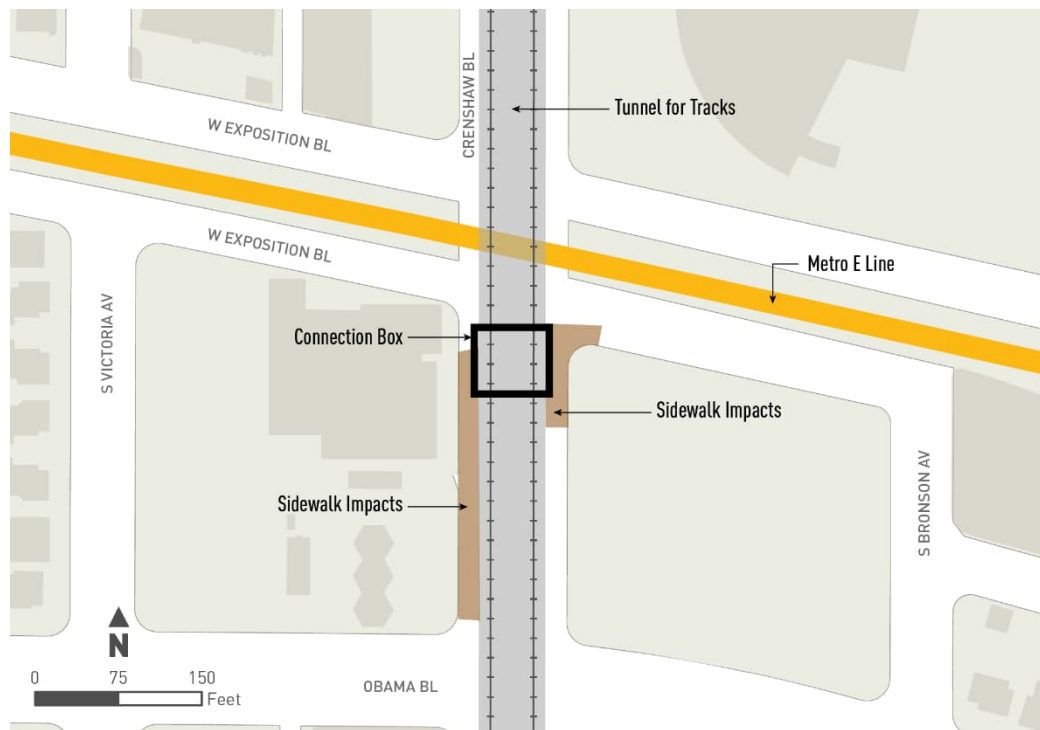
- Dewatering activities
- Access roads
- Temporary trailer offices
- Demolition staging
- Spoils removal
- Other related activities during the construction period

In order to construct a station, a minimum of one to two acres of construction staging area would be needed for the duration of the station construction period. A larger construction staging site of three to four acres would be required if the site is also used to launch the TBMs and support tunneling activities. Construction staging areas would be temporary and would be located within the public ROW and in off-street locations on private properties. Off-street space would be needed for setup, insertion, operation, and extraction of equipment and materials to the tunnel and station excavations. In some instances, land acquired for permanent project facilities, such as station entrances, would be suitable for construction staging. In other locations, temporary construction easements may be needed to allow construction equipment to use private properties during construction. Temporary street closures would be required to accommodate construction staging. Detours and closures would be coordinated with the City of Los Angeles Department of Transportation and the City of West Hollywood. All potential construction staging areas are identified in the station plans (Figure 2-10 through Figure 2-32).

In order to allow a connection between the existing Metro K Line and KNE as well as TBM extraction, a connection box would be constructed. The connection box, as seen in Figure 2-36, is a cut-and-cover box structure at the site identified for connecting the new guideway tunnels to the existing K Line Expo/Crenshaw Station. It would be located within the public ROW on Crenshaw Avenue, approximately 90 feet south of the intersection of Exposition Boulevard and Crenshaw Avenue. The at-grade tracks for the Metro E Line are also located at this intersection along Exposition Boulevard. The connection box excavation footprint would measure approximately 67.5 feet wide by 60 feet long, with a total area of 4,050 square feet. In addition to being used to connect the K Line to KNE, the connection box would also be used to extract TBMs once tunneling was completed.



FIGURE 2-36. CONNECTION BOX EXCAVATION FOOTPRINT AT EXPO/CRENSHAW STATION

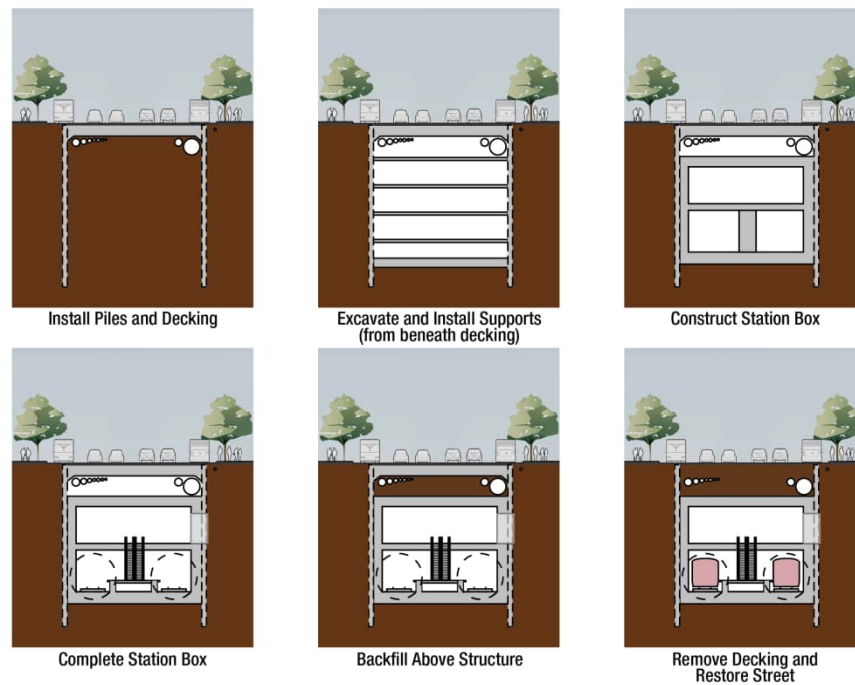


Source: Connect Los Angeles Partners 2024

2.4.5.2 STATION AND CROSSOVER CONSTRUCTION

Most stations and crossovers would be constructed using the cut-and-cover method. Cut-and-cover construction entails excavating down from the ground surface (Figure 2-37). A temporary excavation support is provided to stabilize the ground before excavation commences, and excavation is carried out inside the supported area. A temporary decking structure can be placed over the cut immediately following the first lift of excavation (at about eight to 10 feet below ground surface) to allow for cars to travel on the surface. Once the deck is in place, further excavation and internal bracing would continue to the required depth. Once the station or crossover construction is completed, the area is backfilled and the surface is restored. Support of the excavation system could include soldier piles with lagging, secant piles, cement deep soil mixing walls, and slurry walls.

The Hollywood Bowl Design Option could be constructed via SEM, which entails conventional mining techniques and equipment for hard rock excavation. Generally, roadheaders would be used for the excavations. Controlled blasting would be used for locally encountered, extremely strong rocks. In addition, the crossovers at the Hollywood Bowl Station could be constructed in SEM caverns as ground conditions allow. Application of SEM results in less surface interruption than the cut-and-cover method since the excavation is performed underground and accessed via a vertical shaft. The excavation and the initial ground support are incrementally performed in small areas and in appropriate cycles in order to control ground movements. In certain ground conditions, pre-support systems may be required in advance beyond the opening prior to the excavation. Cross passages would also be constructed via SEM.

FIGURE 2-37. TYPICAL CUT-AND-COVER CONSTRUCTION SEQUENCE


Source: Metro 2012

2.4.5.3 TUNNEL CONSTRUCTION

Guideway tunnels would be constructed using TBMs that continuously bore circular tunnels. Additional details about the tunneling approach are provided in Appendix 2-C, Construction Approach Report. The excavated materials would be removed through the tunnel using conveyor belts to transport them to the surface, then they would undergo partial treatment, separation, and/or drying processes before being loaded on trucks for off-site disposal. As the machine advances, both the tunnel face and the exposed ground are continually supported by the pressurized face and shield until the precast concrete segmental tunnel linings are grouted in to support the ground. This method creates a tunnel with little or no disruption at the surface, especially for tunneling at greater depths. Similar to other tunnel projects in the Los Angeles area, pressurized face TBMs would be used for KNE.

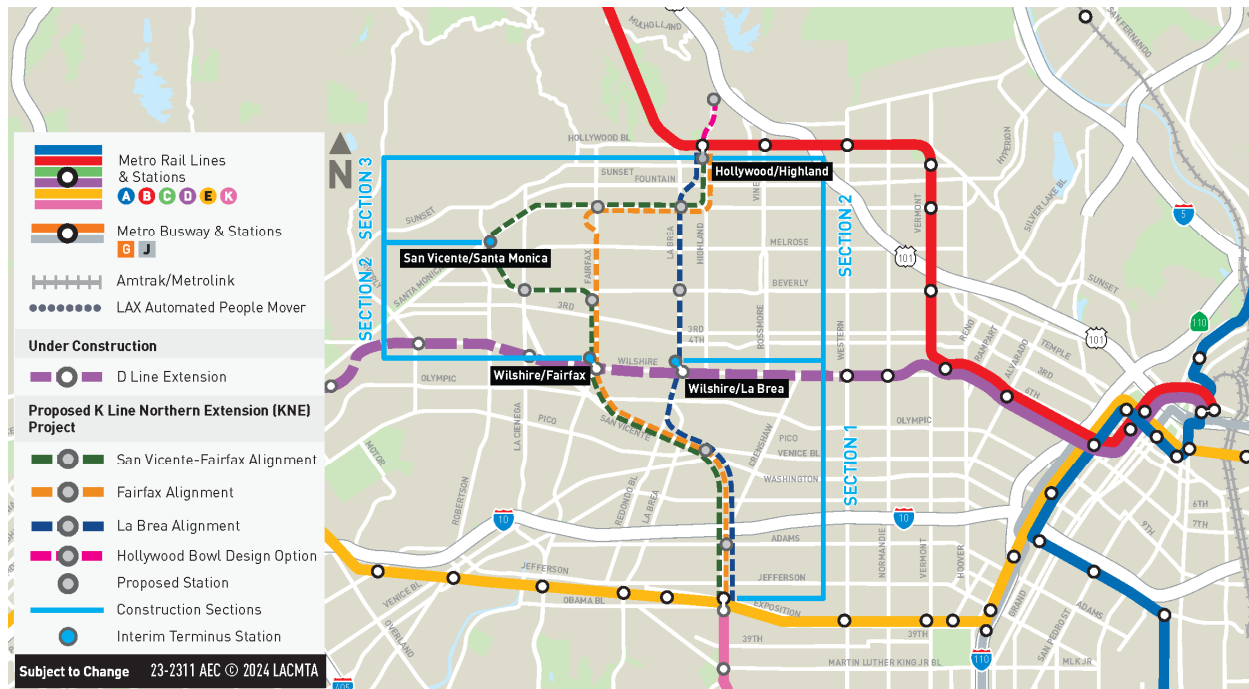
For the Hollywood Bowl Design Option, two distinct modes of TBMs would be required for hard rock and soft grounds. The soft ground TBM mode would be used for the majority of KNE south of the Hollywood fault (located near Franklin Avenue). In the area north of the Hollywood fault where hard rock conditions would be encountered, a conventional tunneling method would be used with roadheaders and localized controlled blast. As an alternative, a hard rock TBM mode would be used for the limited tunnel reach north of the Hollywood fault. The TBM that would excavate across the Hollywood fault would have to either be modified from one mode to the other mode or equipped to perform in both modes.

KNE would generally consist of twin tunnels with approximately 20 feet of inside diameter, bored side-by-side and separated by a pillar of ground about 20 feet wide in between. Bore tunnel excavation generally would range from four to six months for the typical one-mile length between stations, but would vary depending on the ground conditions encountered, site and work area constraints, length of tunnel, and the number of TBMs used. The two TBMs would be launched in the same direction with a staggered start whereby the second TBM would be launched approximately one month after the first TBM launches. The conventionally mined tunnel sections in the Hollywood Bowl segment would be of similar size except for an enlarged section to accommodate potential fault rupture offset¹ and the TBM walkthrough.

2.4.6 CONSTRUCTION SECTIONS

KNE would be constructed in either two or three sections depending on the selected alignment (Figure 2-38). For all alignments, the first section would connect the E Line to the D Line.

FIGURE 2-38. KNE CONSTRUCTION SECTIONS



Source: Connect Los Angeles Partners 2024

Note: The Hollywood Bowl Design Option would be included in Section 3 of the KNE San Vicente–Fairfax Alignment or Section 2 of the KNE Fairfax Alignment and La Brea Alignment.

¹Because the Hollywood Bowl tunnel segment would cross the Hollywood fault, a potential fault-rupture displacement could occur during construction and operation. Large-sized tunnel sections would be constructed for a certain distance over the fault crossing to withstand seismic loads so that the tracks could be inspected, realigned, and reinstated after a seismic event.

The KNE San Vicente–Fairfax Alignment would be constructed in three sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/Fairfax Station; Section 2 would extend from the Wilshire/Fairfax Station to the San Vicente/Santa Monica Station; and Section 3 would extend from the San Vicente/Santa Monica Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station.

The KNE Fairfax Alignment would be constructed in two sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/Fairfax Station; Section 2 would extend from the Wilshire/Fairfax Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station.

The KNE La Brea Alignment would be constructed in two sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/La Brea Station; Section 2 would extend from the Wilshire/La Brea Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station.

This Draft EIR assumes the sections would be built sequentially, with each construction section taking approximately eight to 12 years to construct depending on their length and complexity. Construction activities for one section, such as site preparation and tunnel and station construction, were assumed to not overlap between sections. Each section would be constructed before the next section begins construction. Table 2-4 provides a summary of each construction section, including the TBM launch and retrieval sites.

TABLE 2-4. CONSTRUCTION DURATIONS AND LOCATIONS BY SECTION

CONSTRUCTION SECTION	SECTION EXTENTS	MILES/ NUMBER OF STATIONS	APPROXIMATE TOTAL CONSTRUCTION DURATION	TBM LAUNCH SITE	TBM RETRIEVAL SITE
San Vicente–Fairfax Section 1	Expo/Crenshaw Station to Wilshire/Fairfax Station	3.9 miles/ 3 stations	10 to 12 years	Midtown Crossing Station	Northbound: Wilshire/Fairfax Station Southbound: Expo/Crenshaw Station
San Vicente–Fairfax Section 2	Wilshire/Fairfax Station to San Vicente/Santa Monica Station	2.6 miles/ 3 stations	10 to 12 years	San Vicente/Santa Monica Station	Southbound Only: Wilshire/Fairfax Station
San Vicente–Fairfax Section 3	San Vicente/Santa Monica Station to Hollywood/Highland Station	3.2 miles/ 3 stations	9 to 10 years	La Brea/Santa Monica Station	Northbound: Hollywood/Highland Station Southbound: San Vicente/Santa Monica Station
	San Vicente/Santa Monica Station to Hollywood Bowl Station	4.0 miles/ 4 stations	10 to 11 years	La Brea/Santa Monica Station	Northbound: Hollywood Bowl Station Southbound: San Vicente/Santa Monica Station
Fairfax Section 1	Expo/Crenshaw Station to Wilshire/Fairfax Station	3.9 miles/ 3 stations	10 to 12 years	Midtown Crossing Station	Northbound: Wilshire/Fairfax Station Southbound: Expo/Crenshaw Station
Fairfax Section 2	Wilshire/Fairfax Station to Hollywood/Highland Station	3.9 miles/ 4 stations	9 to 10 years	La Brea/Santa Monica Station	Northbound: Hollywood/Highland Station Southbound: Wilshire/Fairfax Station
	Wilshire/Fairfax Station to Hollywood Bowl Station	4.7 miles/ 4 stations	10 to 11 years	La Brea/Santa Monica Station	Northbound: Hollywood Bowl Station Southbound: Wilshire/Fairfax Station
La Brea Section 1	Expo/Crenshaw Station to Wilshire/La Brea Station	3.4 miles/ 3 stations	10 to 11 years	Midtown Crossing Station	Northbound: Wilshire/La Brea Station Southbound: Expo/Crenshaw Station
La Brea Section 2	Wilshire/La Brea Station to Hollywood/Highland Station	2.8 miles/ 3 stations	8 to 10 years	La Brea/Santa Monica Station	Northbound: Hollywood/Highland Station Southbound: Wilshire/La Brea Station
	Wilshire/La Brea Station to Hollywood Bowl Station	3.6 miles/ 4 stations	10 to 11 years	La Brea/Santa Monica Station	Northbound: Hollywood Bowl Station Southbound: Wilshire/La Brea Station
MSF	Expansion of Division 16	N/A	4 to 5 years*	N/A	N/A

Source: Connect Los Angeles Partners 2024

*MSF construction would overlap with Section 2 construction activities for all three alignments.

Note: Section 1 of the San Vicente–Fairfax Alignment and Fairfax Alignment would be identical in length, number of stations, and northern and southern extents. Due to the alignment length, the San Vicente–Fairfax Alignment would be constructed in three sections.

MSF = maintenance and storage facility; N/A = not applicable; TBM = tunnel boring machine

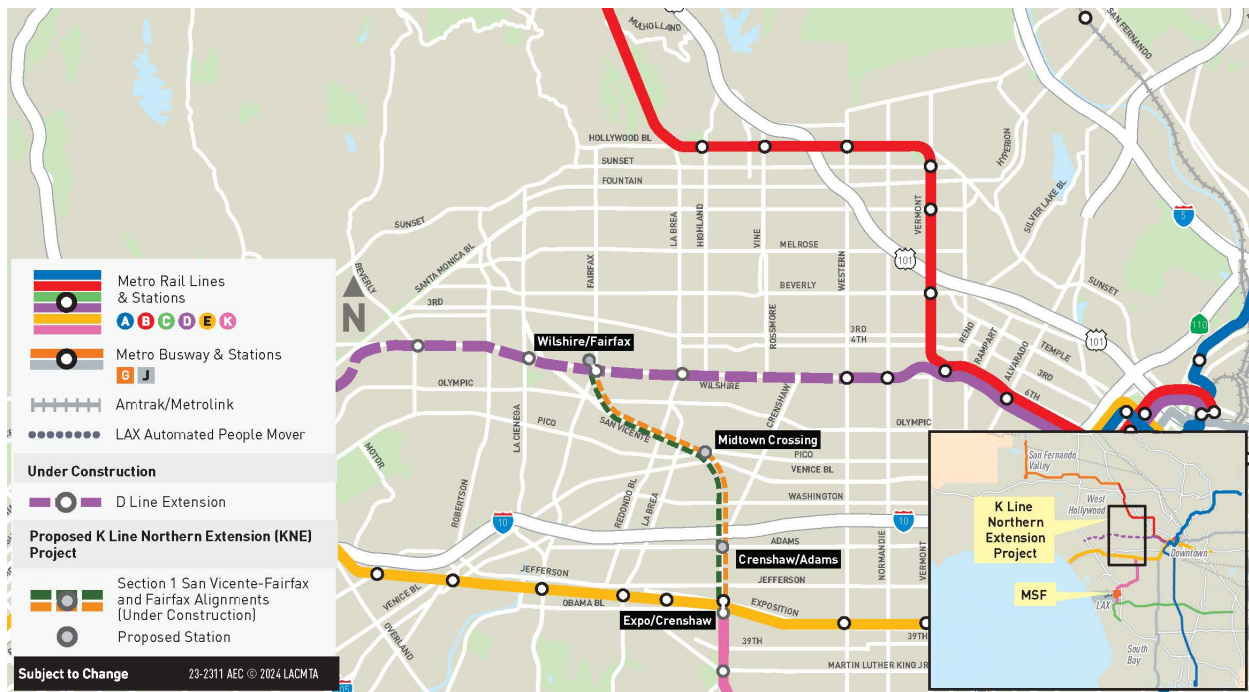
KNE SAN VICENTE–FAIRFAX ALIGNMENT

The KNE San Vicente–Fairfax Alignment would be constructed sequentially in three sections. Section 1 of the San Vicente–Fairfax Alignment would extend from the current Metro K Line terminus at the Expo/Crenshaw Station to the proposed Wilshire/Fairfax Station, providing a connection to the D Line (Figure 2-39). Two TBMs would be launched from the Midtown Crossing Station and would bore toward the south first, then would be extracted north of the Expo/Crenshaw Station. The TBMs would then be transferred to the Midtown Crossing Station via surface streets, re-launched to the north, and extracted at the Wilshire/Fairfax Station.

Section 2 would extend from the Section 1 terminus at Wilshire/Fairfax Station to the proposed San Vicente/Santa Monica Station in West Hollywood (Figure 2-40). Two TBMs would be launched from the San Vicente/Santa Monica Station and would bore toward the south, then would be extracted at the Wilshire/Fairfax Station.

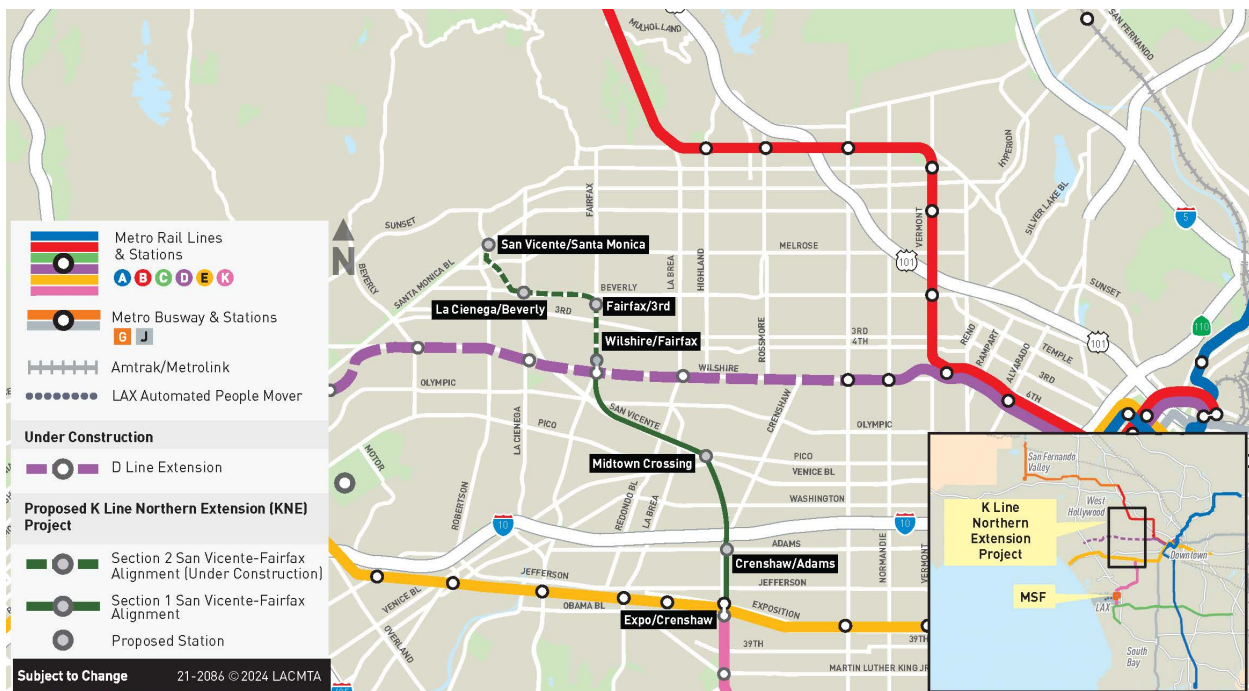
Section 3 would extend from the Section 2 terminus at San Vicente/Santa Monica Station to the northern terminus at Hollywood/Highland Station or the Hollywood Bowl Station (Figure 2-41). Two TBMs would be launched from the La Brea/Santa Monica Station and would bore toward the south first, then would be extracted at the San Vicente/Santa Monica Station. The TBMs would then be transferred to the La Brea/Santa Monica Station via surface streets, re-launched to the north, and extracted at either the Hollywood/Highland Station or at the optional Hollywood Bowl Station. If the Hollywood Bowl Station is constructed, the SEM technique would be used to excavate the tunnels north of the Hollywood fault due to different geologic conditions in this area. The TBM would then be walked through the new SEM tunnel and removed via the emergency ventilation/egress shaft at the Hollywood Bowl Station.

FIGURE 2-39. KNE SAN VICENTE–FAIRFAX AND FAIRFAX ALIGNMENTS – SECTION 1

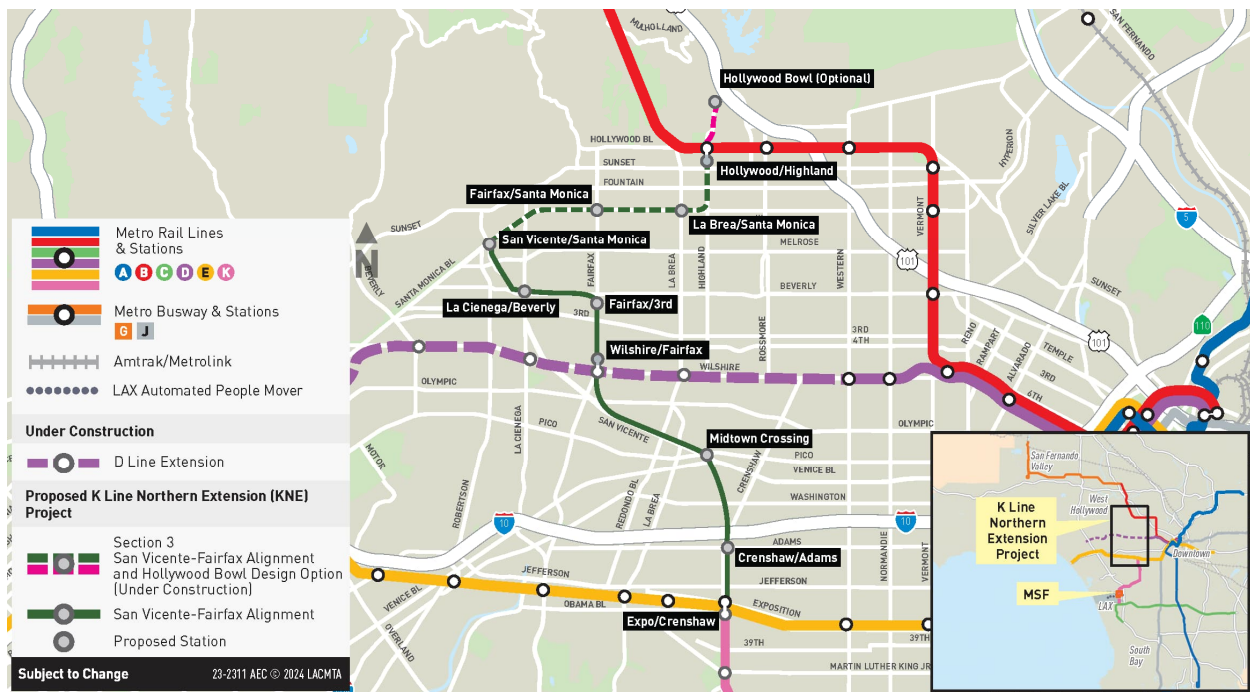


Source: Connect Los Angeles Partners 2024

FIGURE 2-40. KNE SAN VICENTE–FAIRFAX ALIGNMENT – SECTION 2



Source: Connect Los Angeles Partners 2024

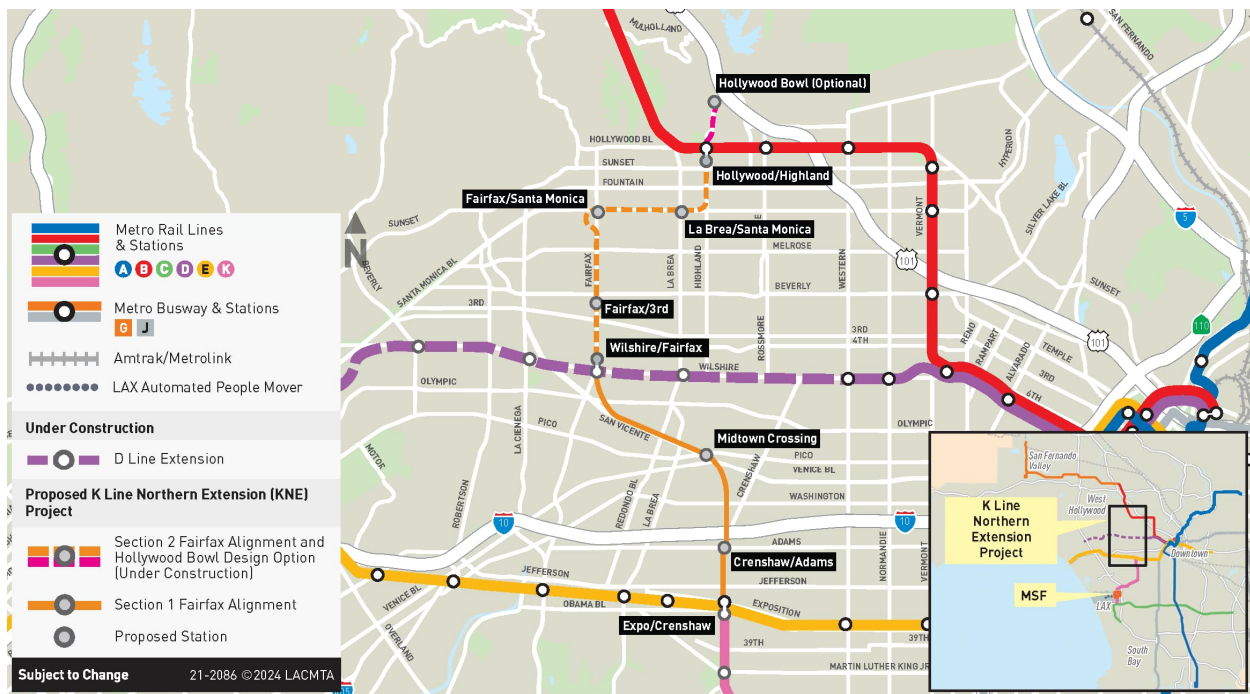
FIGURE 2-41. KNE SAN VICENTE–FAIRFAX ALIGNMENT – SECTION 3


Source: Connect Los Angeles Partners 2024

KNE FAIRFAX ALIGNMENT

The KNE Fairfax Alignment would be constructed sequentially in two sections. Identical to the KNE San Vicente–Fairfax Alignment, Section 1 of the Fairfax Alignment would extend from the current Metro K Line terminus at the Expo/Crenshaw Station to the proposed Wilshire/Fairfax Station, providing a connection to the D Line (Figure 2-39). Two TBMs would be launched from the Midtown Crossing Station and would bore toward the south first, then would be extracted north of the Expo/Crenshaw Station. The TBMs would then be transferred to the Midtown Crossing Station via surface streets, re-launched to the north, and extracted at the Wilshire/Fairfax Station.

Section 2 would extend from the Section 1 terminus at Wilshire/Fairfax Station to the northern terminus at Hollywood/Highland or the Hollywood Bowl (Figure 2-42). Two TBMs would be launched from the La Brea/Santa Monica Station and would bore toward the south first, then would be extracted at the Wilshire/Fairfax Station. The TBMs would then be transferred to the La Brea/Santa Monica Station via surface streets, re-launched to the north, and extracted at either the Hollywood/Highland Station or the optional Hollywood Bowl Station. If the Hollywood Bowl Station is constructed, the SEM technique would be used to excavate the tunnels north of the Hollywood fault due to different geologic conditions in this area. The TBM would then be walked through the new SEM tunnel and removed via the emergency ventilation/egress shaft at the Hollywood Bowl Station.

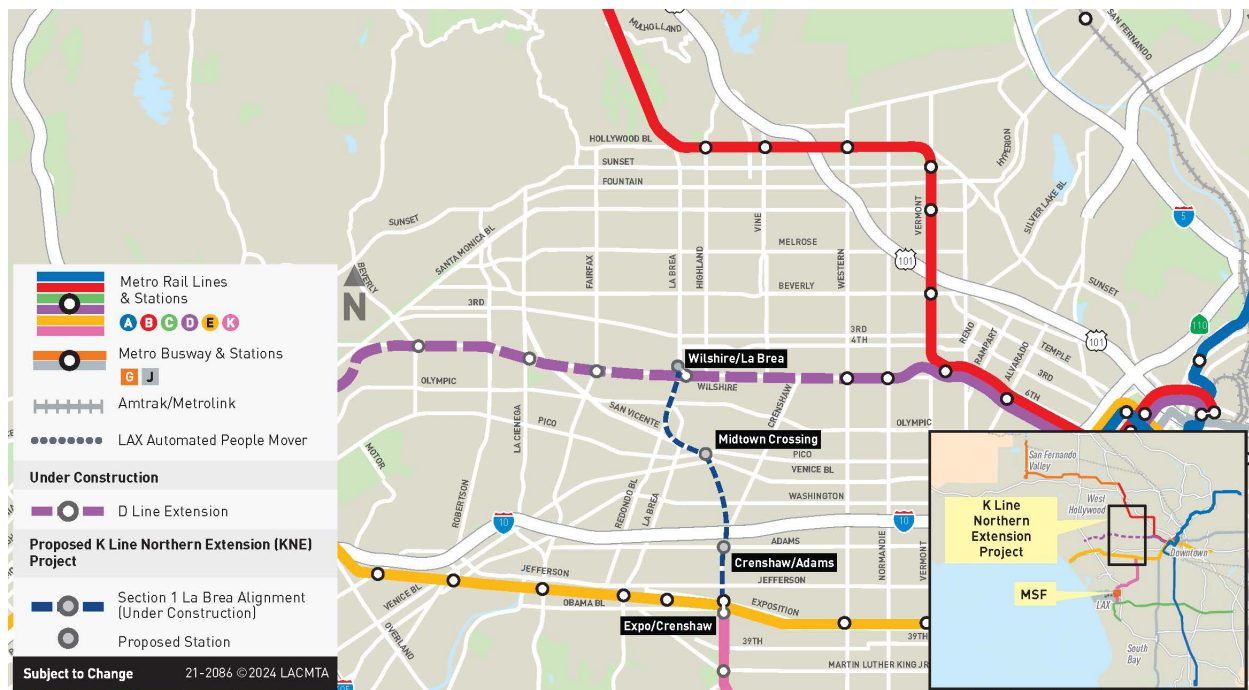
FIGURE 2-42. KNE FAIRFAX ALIGNMENT – SECTION 2


Source: Connect Los Angeles Partners 2024

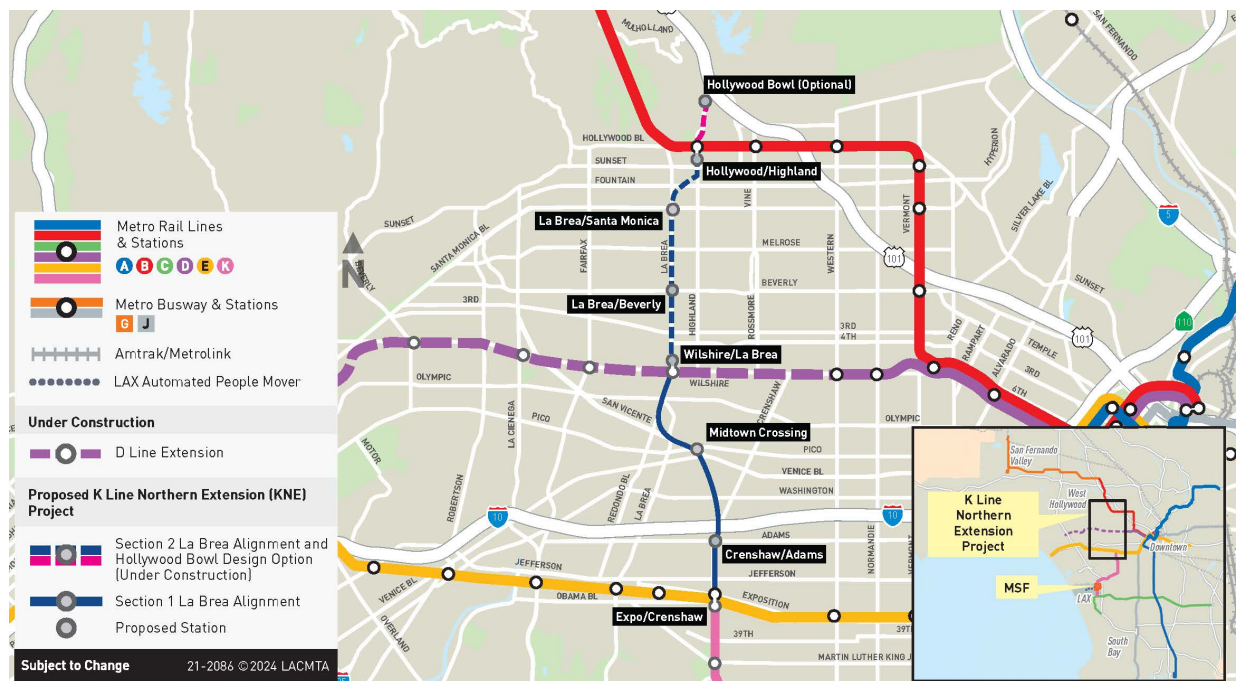
KNE LA BREA ALIGNMENT

The KNE La Brea Alignment would be constructed sequentially in two sections. Section 1 of the La Brea Alignment would extend from the current Metro K Line terminus at Expo/Crenshaw to the proposed Wilshire/La Brea Station, providing a connection to the D Line (Figure 2-43). Two TBMs would be launched from the Midtown Crossing Station and would bore toward the south first, then would be extracted north of the Expo/Crenshaw Station. The TBMs would then be transferred to the Midtown Crossing Station via surface streets, re-launched to the north, and extracted at the Wilshire/La Brea Station.

Section 2 would extend from the Section 1 terminus at the Wilshire/La Brea Station to the northern terminus at the Hollywood/Highland Station or the Hollywood Bowl Station (Figure 2-44). Two TBMs would be launched from the La Brea/Santa Monica Station and would bore toward the south first, then would be extracted at the Wilshire/La Brea Station. The TBMs would then be transferred to the La Brea/Santa Monica Station via surface streets, re-launched to the north, and extracted at either the Hollywood/Highland Station or the optional Hollywood Bowl Station. If the Hollywood Bowl Station is constructed, the SEM technique would be used to excavate the tunnels north of the Hollywood fault due to different geologic conditions in this area. The TBM would then be walked through the new SEM tunnel and removed via the emergency ventilation/egress shaft at the Hollywood Bowl Station.

FIGURE 2-43. KNE LA BREA ALIGNMENT – SECTION 1


Source: Connect Los Angeles Partners 2024

FIGURE 2-44. KNE LA BREA ALIGNMENT – SECTION 2


Source: Connect Los Angeles Partners 2024

2.4.7 OPERATING HOURS AND FREQUENCY

The operating hours and schedule assumptions for the project were developed based on typical Metro LRT operating characteristics. The alignments would operate approximately 21 hours a day, seven days per week, from about 4:00 a.m. to 1:00 a.m.; three-car trains would operate during all time periods.

The proposed frequency of service (headways) would range from five minutes during peak periods to up to 20 minutes during off-peak periods. The operating hours and schedule would be finalized closer to the opening of the project.

2.5 PERMITS AND APPROVALS

KNE would require various environmental permits and/or approvals, as summarized in Table 2-5.

TABLE 2-5. PERMITS AND APPROVALS FOR KNE

AGENCY	AGENCY/JURISDICTION	PERMIT/APPROVAL REQUIRED	ANTICIPATED PHASE
Federal Agencies	N/A	N/A	N/A
State Agencies	State Water Resources Control Board	National Pollutant Discharge Elimination System General Permit	Final Design; Construction Phase
		Industrial General Permit	Final Design; Construction Phase; Operations
		Construction General Permit	Construction Phase
		Municipal Separate Storm Sewer System (MS4)	Final Design; Operations
	California Department of Transportation	Permits and approvals for encroachment on Caltrans facilities	Final Design; Construction Phase
	California Division of Occupational Safety and Health	Essential Welding or Cutting Activities Permit	Prior to Construction Phase; Construction Phase
	California Department of Transportation	Approval of Traffic Management Plan	Environmental Phase; Prior to Construction Phase
	California Public Utilities Commission	Approval of emergency egress and walkways	Final Design; Construction Phase
Regional Jurisdictions	Los Angeles County Metropolitan Transportation Authority Board of Directors	Certification of the EIR, adoption of Findings and Statement of Overriding Considerations, adoption of the Mitigation Monitoring and Reporting Program as Lead Agency under CEQA	End of Environmental Phase
	Los Angeles Regional Water Quality Control Board	Dewatering Permit	Final Design; Construction Phase
		Municipal National Pollutant Discharge Elimination System Permit	Final Design; Construction Phase
		Waste Discharge Requirements (Section 403 and 408 permits not expected to be required)	Final Design; Construction Phase



AGENCY	AGENCY/JURISDICTION	PERMIT/APPROVAL REQUIRED	ANTICIPATED PHASE
Local Jurisdictions	City of Los Angeles	Permits and/or discretionary actions	Environmental Phase; prior to Construction Phase
	Los Angeles Department of Transportation	Permits and/or discretionary actions	Environmental Phase; prior to Construction Phase
	Los Angeles Department of Water and Power	Approval of utilities relocation or service interruption	Final Design; Construction Phase
	City of Los Angeles Board of Public Works	Permit for Alterations to Protected Trees (Trimming, Relocation, Removing)	Final Design; Construction Phase
	City of West Hollywood	Permit for Planting, Trimming or Removing Shade or Ornamental Tree, Hedge, Plant, Shrub, or Flower Growing, or Planted to Grow	Final Design; Construction Phase
	Los Angeles Department of Building and Safety	Permit for Earthwork and Grading Activities	Construction Phase
	City of West Hollywood	Grading Permit	Construction Phase
	City of West Hollywood	Section 9.08.0560 Noise Permit	Environmental Phase; Final Design; Prior to Construction Phase; Construction Phase
	City of Los Angeles	Noise Sensitive Use Permit	Prior to Construction Phase; Final Design; Construction Phase
	Los Angeles County Metropolitan Transit Authority	Approval of Noise and Vibration Monitoring and Control	Prior to Construction Phase
	City of Los Angeles	Demolition Notification Ordinance and Permit for Demolition of Historical and Cultural Buildings	Environmental Phase; prior to Construction Phase
	City of Los Angeles	General Construction Permit	Environmental Phase; prior to Construction Phase
	City of West Hollywood	General Construction Permit	Environmental Phase; prior to Construction Phase
	City of Los Angeles	Approval of Traffic Management Plan	Environmental Phase; prior to Construction Phase
	City of West Hollywood	Approval of Traffic Management Plan	Environmental Phase; prior to Construction Phase
	City of Inglewood	Approval of Traffic Management Plan	Environmental Phase; prior to Construction Phase

Source: Connect Los Angeles Partners 2024

CEQA = California Environmental Quality Act; EIR = environmental impact report; MS4 = municipal separate storm sewer system; N/A = not applicable