

II. Project Description



II. Project Description

1. Project Summary

The Los Angeles County Metropolitan Transportation Authority (Metro) proposes to implement the Transportation Communication Network (TCN) Program (Project or TCN Program), which would provide a network of structures with digital displays (TCN Structures) that would incorporate intelligent technology components to promote roadway efficiency, improve public safety, augment Metro's communication capacity, provide for outdoor advertising where revenues would fund new and expanded transportation programs consistent with the goals of the Metro 2028 Vision Plan, and result in an overall reduction in static signage displays throughout the City of Los Angeles (City). Implementation of the Project would include the installation of up to 34 Freeway-Facing TCN Structures and 22 Non-Freeway Facing TCN Structures all on Metro-owned property. The total maximum amount of digital signage associated with the TCN Structures would be up to approximately 55,000 square feet. As part of TCN Program, a take-down component would be implemented including the removal of at least 110,000 square feet (2 to 1 square footage take-down ratio) of existing off-premise static displays. Signage to be removed would include, at a minimum approximately 200 off-premise static displays located within the City of Los Angeles.

As part of the Project, the City must amend the City's sign regulations in Chapter I of the Los Angeles Municipal Code (the Zoning Code) to create a mechanism to review and approve the TCN Structures (Zoning Ordinance) and associated static display take-down program. The Zoning Ordinance regulations would generally affect the location, design, operations, take-down program and community benefits of the TCN Structures. General digital display and illumination standards would be adopted to support the implementation of the TCN Structures, including but not limited to, an 8-second refresh rate for the digital displays as well as a limit of 6,000 candelas during daytime and 300 candelas during nighttime for the digital displays. The Zoning Ordinance, and other potential associated Zoning Code and General and/or Specific Plan amendments, would create a new class of signage for the TCN Structures given their unique attributes and intelligent technology. However, due to its inclusion of off-premise advertising, an exception to the City's general ban on new off-premise signs outside of Sign Districts, Specific Plans, and Supplemental Use Districts would be needed. Importantly, the Zoning Ordinance would not authorize any signage beyond the potential 56 TCN Structures on Metro-owned property identified in this Project Description.

2. Environmental Setting

a. Project Location and Existing Conditions

The site locations for the TCN Structures (Site Locations) are located within property owned and operated by Metro along freeways and major streets, within the City. A portion of the Site Locations contain existing static displays. The majority of the Site Locations are located on vacant land with limited vegetation and are generally inaccessible to the public. Further, the proposed Site Locations are used primarily for Metro operations which include rail corridors, stations, parking, bus depots, and equipment lots. The site locations are located within the Central City, Central City North, Silver Lake–Echo Park–Elysian Valley, Sherman Oaks–Studio City–Toluca Lake–Cahuenga Pass, North East Los Angeles, Boyle Heights, North Hollywood–Village Valley, Sun Valley–La Tuna Canyon, Arleta–Pacoima, Granada Hills–Knollwood, Sylmar, Encino–Tarzana West Los Angeles Community Plan, South Los Angeles, Southeast Los Angeles, Palms-Mar Vista-Del Rey, Westchester-Playa-Del-Rey, Van Nuys-North Sherman Oaks, West Adams-Baldwin Hills-Leimert, and Wilshire areas and are generally designated and zoned as commercial, public facilities, and manufacturing uses. No Site Locations are zoned for residential use.

The Zoning Ordinance enabling the implementation of the TCN Program would apply solely to the 56 proposed Site Locations for the TCN Structures and any locations for associated sign takedowns. The Site Locations are dispersed throughout the City along freeways and major streets, and identified in Table II-1 and Table II-2 on pages II-8 and II-10 below. The City has an approximate land area of 478 square miles (297,600 acres) with a population of nearly four million residents in 2020. The City lies within Los Angeles County which encompasses 4,000 square miles, 88 incorporated cities, and more than 10 million residents.¹ The City is divided into 15 City Council Districts and 35 Community Plan Areas. More than 87 percent of the City is developed with urban uses.

Commercial zoning within the City is typically concentrated along major thoroughfares due to economic and mobility access, as well as to provide a buffer between residential uses and major commercial and industrial areas. Residential zoning is the predominant zoning classification throughout the City. Industrial zoning is concentrated in strategic nodes throughout the City, and is generally buffered by commercial uses to provide separation from residential uses.

¹ *United States Census Bureau Quick Facts, City and County of Los Angeles, 2020, Census.gov/quickfacts/US, accessed April 4, 2022.*

The City has roughly 8,000 off-premise signs within its boundaries, the vast majority of which are static signs, with a large majority located along surface streets. These off-premise signs are predominantly along commercial and industrial thoroughfares, with roughly 500 signs located on residentially zoned properties. The vast majority of these off-premise signs pre-date the City's ban on new off-premise signs which was enacted in 2002. The ban on new off-premise signs also prohibits conversion of existing signs to digital displays, and any new off-premise sign must be within an adopted Sign District, Specific Plan, or Supplemental Use District which preclude the ability to put signage on residentially zoned properties. The City currently has approximately 15 adopted Sign Districts, though not all allow for off-premise signs. Adopted Sign Districts are scattered throughout the City.

b. Surrounding Land Uses

As discussed above, the TCN Structures would be located adjacent to freeways and major roadways on Metro-owned properties. The majority of the TCN Structures would be located within commercial/industrial areas where there is a mix of surrounding uses such as manufacturing, warehouse, retail, studios, storage, and surface parking, although some may be near or adjacent to residential uses.

3. Project Objectives

California Environmental Quality Act (CEQA) Guidelines Section 15124(b) states that the project description shall contain "a statement of the objectives sought by the proposed project." CEQA Guidelines Section 15124(b) further states that "the statement of objectives should include the underlying purpose of the project." The underlying purpose of the Project is to provide a network of TCN Structures that would incorporate intelligent technology components to promote roadway efficiency, improve public safety, augment Metro's communication capacity, provide for outdoor advertising where revenues would fund new and expanded transportation programs consistent with the goals of the Metro 2028 Vision Plan, and result in an overall reduction in static signage displays throughout the City of Los Angeles. The Project's specific objectives are as follows:

- Incorporate features for real-time data collection to aid in traffic signal timing, micro-transit data, and Metro vanpool on-demand services.
- Geographically space the multifunctional TCN Structures to expand Metro's transportation public messaging network and ability to broadcast information to commuters in a variety of ways to further increase Metro's visibility and accessibility for all commuters.

- Improve public safety by notifying the public of roadway improvements, road hazards, Earthquake Early Warning System notifications, Amber Alerts, and emergency situations.
- Maximize efficiency of the congested road network by promoting public awareness of travel alternatives based on geography and time constraints such as alternative routes, carpooling alternatives, and public transportation opportunities.
- Maximize advertising revenue that would be utilized by both Metro and the City to fund new and expanded transportation programs that would further Goal 2 of the Metro Vision 2028 Strategic Plan, by creating a funding source for programs to enhance experiences for all Metro users such as improving security and increasing customer satisfaction.
- Implement Goal 4 of the Metro Vision 2028 Strategic Plan by creating an avenue for regional collaboration and comprehensive, timely, and real-time information sharing across government agencies to regionally improve traffic and transportation systems.
- Reduce overall square footage of existing static off-premise displays within the City of Los Angeles.
- Locate the TCN Structures at sites, elevations, and angles that would not increase distraction to motorists while still efficiently relaying information to commuters.

4. Description of Project

a. Project Overview

As summarized above, Metro proposes to implement the TCN Program, which would provide a network of TCN Structures that would incorporate intelligent technology components to promote roadway efficiency, improve public safety, increase communication, and provide for outdoor advertising that would be used to fund new and expanded transportation programs consistent with the goals of the Metro Vision 2028 Plan. Implementation of the Project would include the installation of up to 34 Freeway-Facing (FF) TCN Structures and 22 Non-Freeway Facing (NFF) TCN Structures, all on Metro-owned property. The total maximum amount of digital signage associated with the TCN Structures would be up to approximately 55,000 square feet. As part of TCN Program, a take-down component would be implemented including the removal of at least 110,000 square feet (2 to 1 square footage take-down ratio) of existing static displays. Signage to be removed would include, at a minimum, approximately 200 static displays located within the City. The City would establish a Zoning Ordinance that would provide a mechanism to review and approve the TCN Structures citywide. The Zoning Ordinance would regulate

the location, operation, design, take-down program and community benefits of the TCN Structures. The Zoning Ordinance would also impose digital display and illumination standards to support the TCN Structures, including but not limited to, a maximum of a eight second refresh rate for digital displays and a maximum of up to 6,000 candelas during daytime operation and 300 candelas during nighttime operation of the digital displays. A more detailed description of the TCN Program components is provided in Section 4.b(1).

b. Project Components

(1) TCN Components

(a) Intelligent Technology

The TCN Structures would be equipped with Metro's Regional Integration of Intelligent Transportation Systems (RIITS), which provides comprehensive, timely, and real-time information among freeway, traffic, transit, and emergency systems, and across various agencies, including Caltrans District 7, the City of Los Angeles Department of Transportation (LADOT), California Highway Patrol (CHP), Foothill Transit, Los Angeles County Department of Public Works, and other local and regional transit agencies, to improve traffic and transportation systems, and to disseminate information regarding roadway improvements, and during emergency events. The additional intelligent technology components of the TCN Program would assist Metro in increasing the quantity and speed of data collection of real time travel/traffic data, processing, and transmission to transportation agencies. Further, the TCN Structures may include live video and security feeds to supplement Caltrans' limited number of existing cameras on the freeway and street corridors for public safety. All information received from these additional cameras would only be used for mass traffic data, and no personal or private information would be collected or used. Additionally, the TCN Program would be designed to support future innovations such as autonomous vehicles, smart energy grids, and high-speed wireless cameras.

(b) Roadway Efficiency

The TCN Structures would incorporate real time data collection to aid in traffic signal timing, micro-transit data, and Metro vanpool on-demand services. The TCN Program would also improve bus passengers experience by helping to facilitate transit signal priority, bus wi-fi, and efficiently relay bus arrival time information to riders. In addition, the TCN Program would support the collection of event congestion data for LAX, Dodger Stadium, the Hollywood Bowl and other large venues, including travel demand management services for the 2028 Olympic and Paralympic Games, and would also provide information regarding available parking spaces in park-and-ride lots.

(c) Public Safety and Communication

The TCN Program would also assist Metro's transportation public messaging and ability to broadcast information to commuters in a variety of ways to increase public safety, maximize efficiency of the congested road network, and promote public awareness of travel alternatives based on geography and time constraints. Further, the TCN Program would be incorporated into the alert information for the freeway messaging system and major arterial network for the region, including Earthquake Early Warning System information as well as Amber Alerts.

(d) Advertising Revenue for Transportation Projects

The TCN Program would create advertising revenue that would be utilized by both Metro and the City to fund new and expanded transportation programs. The TCN Structures would follow Metro's Advertising Content Guidelines. Off-site advertising would include information related to a business, commodity, industry or other activity which is sold, offered or conducted elsewhere than on the premises upon which the TCN Structure is located.

(2) Zoning Ordinance

The TCN Program is contingent on the adoption of a Zoning Ordinance by the City. The proposed Zoning Ordinance would amend the City's sign regulations in Chapter I of the Los Angeles Municipal Code (LAMC) to authorize the TCN Structures. The adoption of a Zoning Ordinance includes the drafting of said ordinance, a public hearing, review and recommendation by the City's City Planning Commission, and consideration and adoption by the City Council. The Zoning Ordinance would create a mechanism for the review and approval of the TCN Structures. The Zoning Ordinance would not authorize new signage other than the TCN Structures. The Zoning Ordinance would address the time, manner, and place aspects of the TCN Program, including the allowable locations, size and height limitations, urban design requirements, and applicable community benefits including take-down requirements for the removal of existing static off-premise signs. The Zoning Ordinance would not otherwise change the existing regulations for signs, including off-site and digital signage, in the City. Based on the above, the anticipated development from the Zoning Ordinance would be limited to the 56 TCN Structures as described above and in this Chapter 3, as well as the take-down of approximately 200 static displays located within the City.

c. Design and Location of TCN Structures

Freeway Facing TCN Structures would include signage that can be viewed from the highway, while Non-Freeway Facing TCN Structures would be viewed from major arterial streets. Each TCN Structure would have one or two faces depending on the location and

line of sight visibility. The digital display faces would be designed to provide efficient and effective illumination while minimizing light spill-over, reducing sky-glow, and improving nighttime visibility through glare reduction. The digital display faces of the TCN Structures would use light emitting diodes (LED) lighting with a daytime maximum up to 6,000 maximum candelas and 300 maximum candelas at nighttime, depending on the Site Location. Louvers would be installed to shade the LED lights from creating unintentional light spillage, assist in reducing reflection, and in turn would create a sharper image. Further, the digital display faces would be set to refresh every eight seconds and would transition instantly with no motion, moving parts, flashing, or scrolling messages. Illumination of the digital displays would conform to applicable Federal and State regulations for signs oriented towards roadways and freeways. The digital displays would be in compliance with Metro's System Advertising Content Restrictions which prohibits advertisement of alcohol, smoking, and cannabis, and any content containing violence, obscenities, and other related subject matters. In addition, each TCN Structure would include security features, including elevated ladders at surface grade. Additionally, the TCN Structures would be constructed to incorporate environmentally sustainable features and construction protocols required by the Metro's Green Construction Policy, Los Angeles Green Building Code, CALGreen, and Title 24 standards. Refer to Table II-1 and Table II-2 on pages II-8 and II-10 and Figure II-1 through Figure II-3 on pages II-12 through II-14, respectively, for a listing of the proposed locations, digital display square footage, number of digital displays per TCN Structure, and dimensions of the digital displays.

(1) Freeway Facing TCN Structures

As shown in Table II-1, the Project would include up to 34 Freeway Facing TCN Structures with digital display faces that would range in size from 672 square feet to 1,200 square feet per sign with the majority being approximately 672 square feet. Additionally, as several of the Freeway Facing Structures are located adjacent to elevated freeways or freeway on/off ramps, the Freeway Facing Structures would be located up to 50 feet in height above finished grade of the adjacent highway as shown on Figure II-4 on page II-15.

(2) Non-Freeway Facing TCN Structures

As shown in Table II-2, the Project would include up to 22 Non-Freeway Facing TCN Structures with digital display faces that would range in size from 300 square feet to 672 square feet per sign, with the majority being approximately 300 square feet. Additionally, the Non-Freeway Facing Structures would be located up to 30 feet in height above finished grade as shown on Figure II-5 on page II-16.

**Table II-1
Freeway Facing TCN Structure Locations**

Sign ID	Map No.	Location	Assessor's Parcel Number	sf per Digital Display (No. of Digital Display Faces per TCN Structure)	Digital Display Height (ft)	Digital Display Width (ft)	Sign Height (from grade)
FF-1	3	US-101 North Lanes at Union Station	5409023941	1,200 (1)	30	40	40
FF-2	3	US-101 South Lanes at Center Street	5173019901	672 (2)	14	48	72
FF-3	3	US-101 North Lanes at Keller Street	5409021902	672 (2)	14	48	72
FF-4	3	US-101 South Lanes at Beaudry Street	5160024904	672 (2)	14	48	75
FF-5	1	US-101 North Lanes, Northwest of Lankershim Boulevard	2423038970	672 (2)	14	48	65
FF-6	3	I-5 South Lanes at North Avenue 19	5415002903	672 (2)	14	48	85
FF-7	3	I-5 North Lanes at San Fernando Road	5445007903	672 (2)	14	48	85
FF-8	3	I-5 South Lanes and Exit Ramp to I-10	5410009901	672 (2)	14	48	85
FF-9	3	I-10 West Lanes (Bus Yard)	5410009901	672 (2)	14	48	50
FF-10	3	I-10 West Lanes and Entrance Ramp from I-5	5170010901	672 (2)	14	48	95
FF-11	3	I-10 East Lanes and Exit Ramp to SR-60 and I-5	5170010901	672 (2)	14	48	95
FF-12	3	I-10 West Lanes at Griffin Avenue and East 16th Street	5132029905	672 (2)	14	48	80
FF-13	1	SR-2 South Lanes Northeast of Casitas Avenue	5436033906	672 (2)	14	48	85
FF-14	1	SR-2 North Lanes Northeast of Casitas Avenue	5442001900	672 (2)	14	48	85
FF-15	1	SR-170 South Lanes at Raymer Street	2324002901	672 (1)	14	48	40
FF-16	1	SR-170 North Lanes North of Sherman Way	2307021901	672 (1)	14	48	40
FF-17	1	I-5 North Lanes South of Tuxford Street	2408038900	672 (2)	14	48	85
FF-18	1	I-5 South Lanes South of Tuxford Street	2632001901	672 (2)	14	48	85
FF-19	1	SR-118 East of San Fernando Road	2523001900	672 (2)	14	48	80
FF-20	1	SR-118 East of San Fernando Road	2523001900	672 (2)	14	48	80
FF-21	2	I-110 South Lanes at Exposition Boulevard	5037030902	672 (2)	14	48	80

Table II-1 (Continued)
Freeway Facing TCN Structure Locations

Sign ID	Map No.	Location	Assessor's Parcel Number	sf per Digital Display (No. of Digital Display Faces per TCN Structure)	Digital Display Height (ft)	Digital Display Width (ft)	Sign Height (from grade)
FF-22	1	I-5 North Lanes at San Fernando Road	2603001901	672 (2)	14	48	65
FF-23	2	I-110 North Lanes at Exposition Boulevard	5122024909	672 (2)	14	48	80
FF-24	1	I-5 South Lanes at San Fernando Road and Sepulveda Boulevard	2605001915	672 (2)	14	48	95
FF-25	1	I-405 South Lanes at Victory Boulevard	2251002905	672 (2)	14	48	80
FF-26	2	I-405 North Lanes at Exposition Boulevard	4256010902	672 (2)	14	48	95
FF-27	2	I-405 South Lanes at Exposition Boulevard	4260039906	672 (1)	14	48	95
FF-28	2	I-10 West at Robertson Boulevard	4313024906	672 (1)	14	48	80
FF-29	2	SR-90 East at Culver Boulevard	4211007907	672 (2)	14	48	80
FF-30	2	SR-90 West at Culver Boulevard	4223009906	672 (2)	14	48	80
FF-31	2	I-105 West Lanes at Aviation Boulevard	4129028901	672 (2)	14	48	95
FF-32	2	I-105 East Lanes at Aviation Boulevard	4138001902	672 (2)	14	48	95
FF-33	2	I-110 South Lanes at Slauson Avenue	5001037907	672 (1)	14	48	80
FF-34	2	I-110 North Lanes at Slauson Avenue	5101040900	672 (2)	14	48	80

sf = square feet
ft = feet
Source: *Eyestone Environmental, 2022.*

**Table II-2
Non-Freeway Facing TCN Structure Locations**

Sign ID	Map No.	Location	Assessor Parcel Number	sf per Digital Display (No. of Digital Display Faces per TCN Structure)	Digital Display Height (ft)	Digital Display Width (ft)	Sign Height (from grade)
NFF-1	1	Northeast corner of Vermont Avenue and Sunset Boulevard	5542015900	300 (2)	10	30	30
NFF-2	3	Spring Street Bridge, 326 feet North of Aurora Street	5409002900	300 (2)	10	30	65
NFF-3	1	Northwest corner of Lankershim Boulevard and Chandler Boulevard	2350016906	300 (1)	10	30	30
NFF-4	1	Northwest corner of Lankershim Boulevard and Universal Hollywood Drive	2423036919	300 (1)	10	30	30
NFF-5	1	Southwest corner of Lankershim Boulevard and Universal Hollywood Drive	2423036919	300 (1)	10	30	30
NFF-6	3	Southwest corner of 4th Street and Hill Street	5149015902	300 (1)	10	30	30
NFF-7	2	Venice Boulevard, 240 feet West of Robertson Boulevard	4313024909	300 (1)	10	30	30
NFF-8	3	Southeast corner of Alameda Street and Commercial Street	5173001901	672 (2)	14	48	60
NFF-9	1	Northeast corner of Van Nuys Boulevard and Orange Line Busline	2240008905	300 (2)	10	30	30
NFF-10	1	Southeast corner of Sepulveda Boulevard and Erwin Street	2242001904	300 (1)	10	30	30
NFF-11	2	Southwest of Crenshaw Boulevard, 175 feet South of 67th Street	4006025900	300 (1)	10	30	30
NFF-12	2	Southeast corner of Crenshaw Boulevard and Exposition Boulevard	5044002900	300 (2)	10	30	30
NFF-13	3	Southeast corner of East Cesar Chavez Avenue and North Vignes Street	5409023941	300 (2)	10	30	30
NFF-14	2	Pico Boulevard and Exposition Boulevard, South of rail	4260025902	300 (1)	10	30	30
NFF-15	2	Pico Boulevard, 445 feet West of Sawtelle Boulevard	4260039906	300 (1)	10	30	30
NFF-16	3	Southeast corner of South Central Avenue and East 1st Street	5161018903	300 (2)	10	30	30

Table II-2 (Continued)
Non-Freeway Facing TCN Structure Locations

Sign ID	Map No.	Location	Assessor Parcel Number	sf per Digital Display (No. of Digital Display Faces per TCN Structure)	Digital Display Height (ft)	Digital Display Width (ft)	Sign Height (from grade)
NFF-17	2	Century Boulevard, 152 feet West of Aviation Boulevard	4125026904	672 (2)	14	48	80
NFF-18	2	Southwest Aviation Boulevard and South of Arbor Vitae Street	4125020907	672 (2)	14	48	30
NFF-19	2	Northwest corner of Vermont Avenue and Beverly Boulevard	5520019900	300 (2)	10	30	30
NFF-20	2	Southwest corner of Santa Monica Boulevard and Vermont Avenue	5538022903	300 (2)	10	30	30
NFF-21	3	South of 4th Street 210 feet East of South Santa Fe Avenue	5163017900	300 (2)	10	30	65
NFF-22	3	Northwest corner of East 7th Street and South Alameda Street	5147035904	300 (2)	10	30	30

sf = square feet
ft = feet
Source: Eyestone Environmental, 2022.

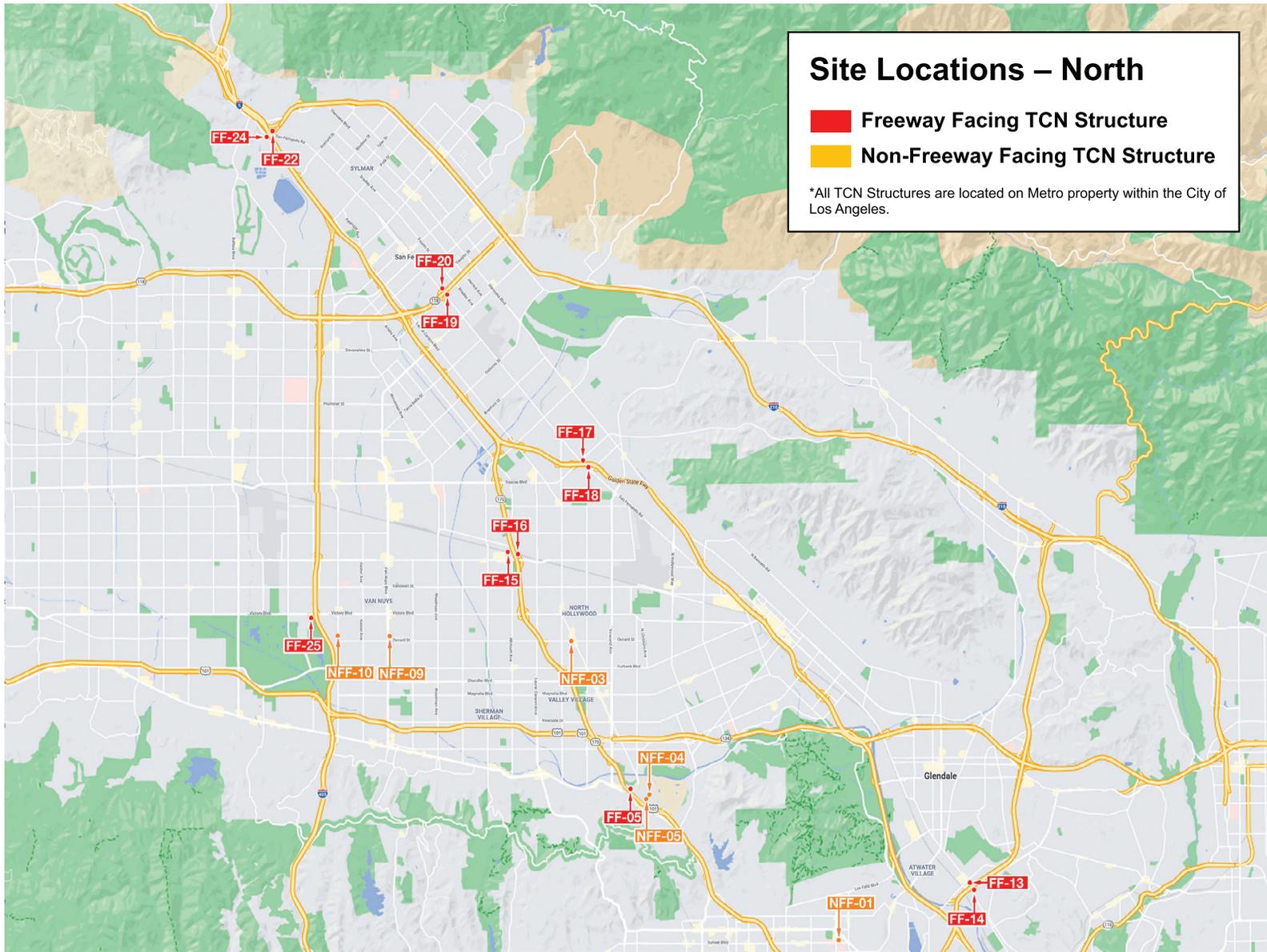


Figure II-1
Regional Project Location Map – North

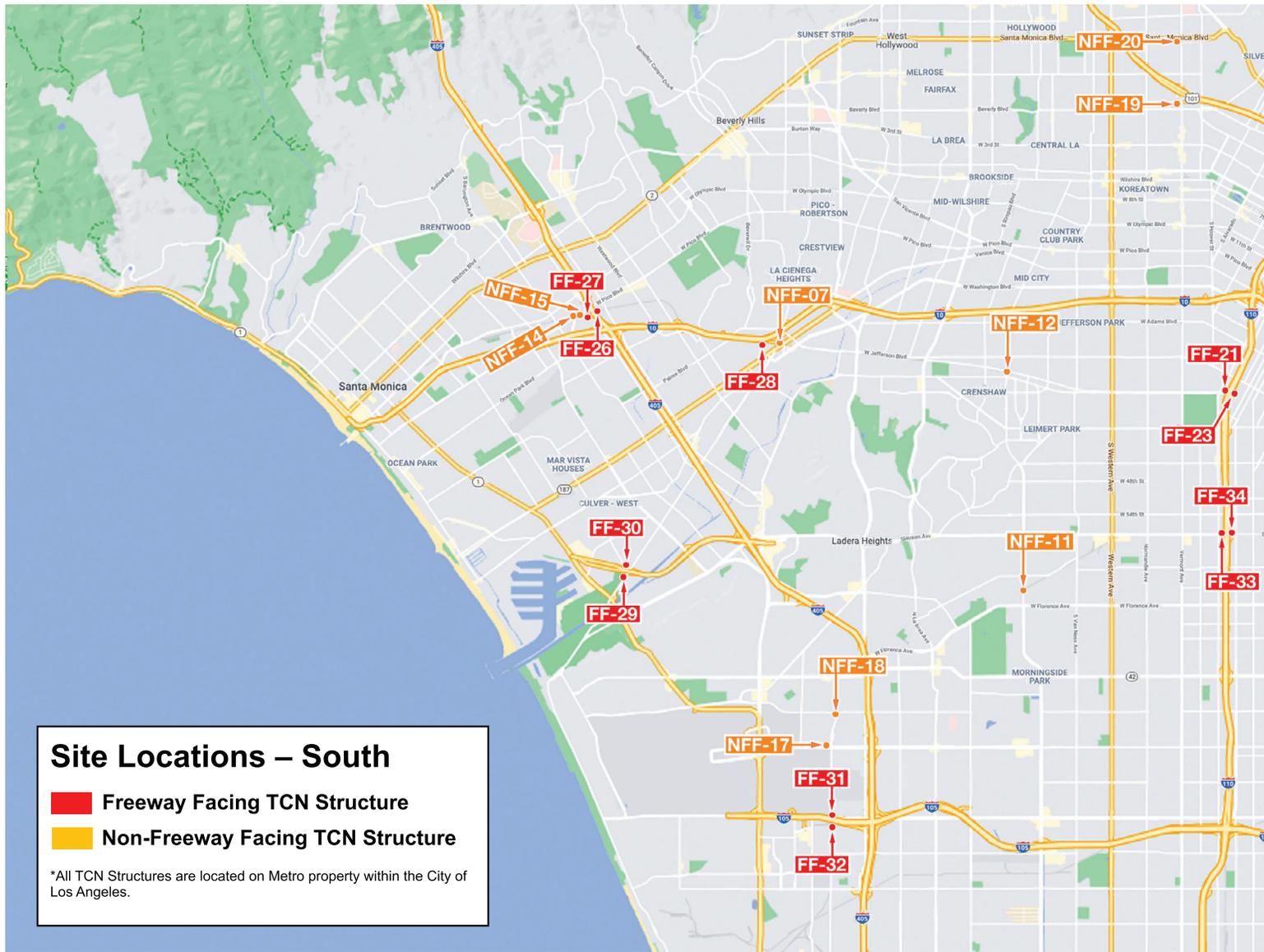


Figure II-2
Regional Project Location Map – South



Figure II-3
Regional Project Location Map – Downtown



Figure II-4
Freeway Facing TCN Structure Conceptual Design



Figure II-5
Non-Freeway Facing TCN Structure Conceptual Design

d. Anticipated Construction and Schedule

(1) Removal of Existing Static Displays

As part of TCN Program, a take-down component would be implemented including the removal of at least 110,000 square feet (2 to 1 square footage take-down ratio) of existing static displays. Signage to be removed would include at minimum approximately 200 static displays located within the City. Removal of the existing static displays would range in size from approximately 8-foot by 8-foot to approximately 10-foot by 30-foot in size. Removal of the existing sign structures would take approximately half a day at each location and would consist of removing the static displays with a mobile crane or a bucket truck. Existing static signage that include a support column would be cut at approximately two feet below grade and filled in with similar material to the surrounding landscape. Removal of the existing static signage would occur concurrently with the installation of the TCN Structures.

(2) Construction of TCN Structures

The TCN Structures are anticipated to be installed in a phased approach, and would take approximately four weeks per sign for installation from start to finish. The TCN Structures would be constructed with the use of a drill rig that would drill a hole up to 50 feet in depth on an approximately 10-foot by 10-foot area, depending on soil conditions and size of the digital display. A steel column for the digital display would be placed with a crane and cast in place with concrete. Excavation and placement of the steel column is anticipated to take up to seven work days for the TCN Structures requiring the maximum depth of excavation, however, the majority of the TCN Structures would require approximately half this time to complete these activities. The digital display face(s) would then be assembled at grade and would be lifted by a mobile crane and affixed to the column structure over the course of approximately six working days. Further, minor trenching would be required to install electrical conduit to connect to Los Angeles Department of Water and Power (LADWP).

Overall, the removal of existing static displays and construction of the TCN Structures is anticipated to commence in 2023 and be completed in 2025. It is estimated that approximately 93 cubic yards of soil export would be required per TCN Structure installation for a total of up to approximately 5,208 cubic yards of export.

5. Requested Permits and Approvals

Discretionary entitlements, reviews, permits and approvals required to implement the Project include, but are not necessarily limited to, the following:

- City adoption of Ordinance Amending Chapter I of the Los Angeles Municipal Code to authorize TCN Structures (Zoning Ordinance), including takedown requirements; and
- City adoption of any other necessary LAMC and General and/or Specific Plan amendments to provide for the implementation of the TCN Program.
- Issuance of a Coastal Development Permit by the California Coastal Commission and/or City for Site Locations FF-29 and FF-30.
- Other Metro and City discretionary and/or ministerial permits and approvals that may be deemed necessary, including, but not limited to, temporary lane closure permits, demolition/removal permits, grading permits, and sign approvals.