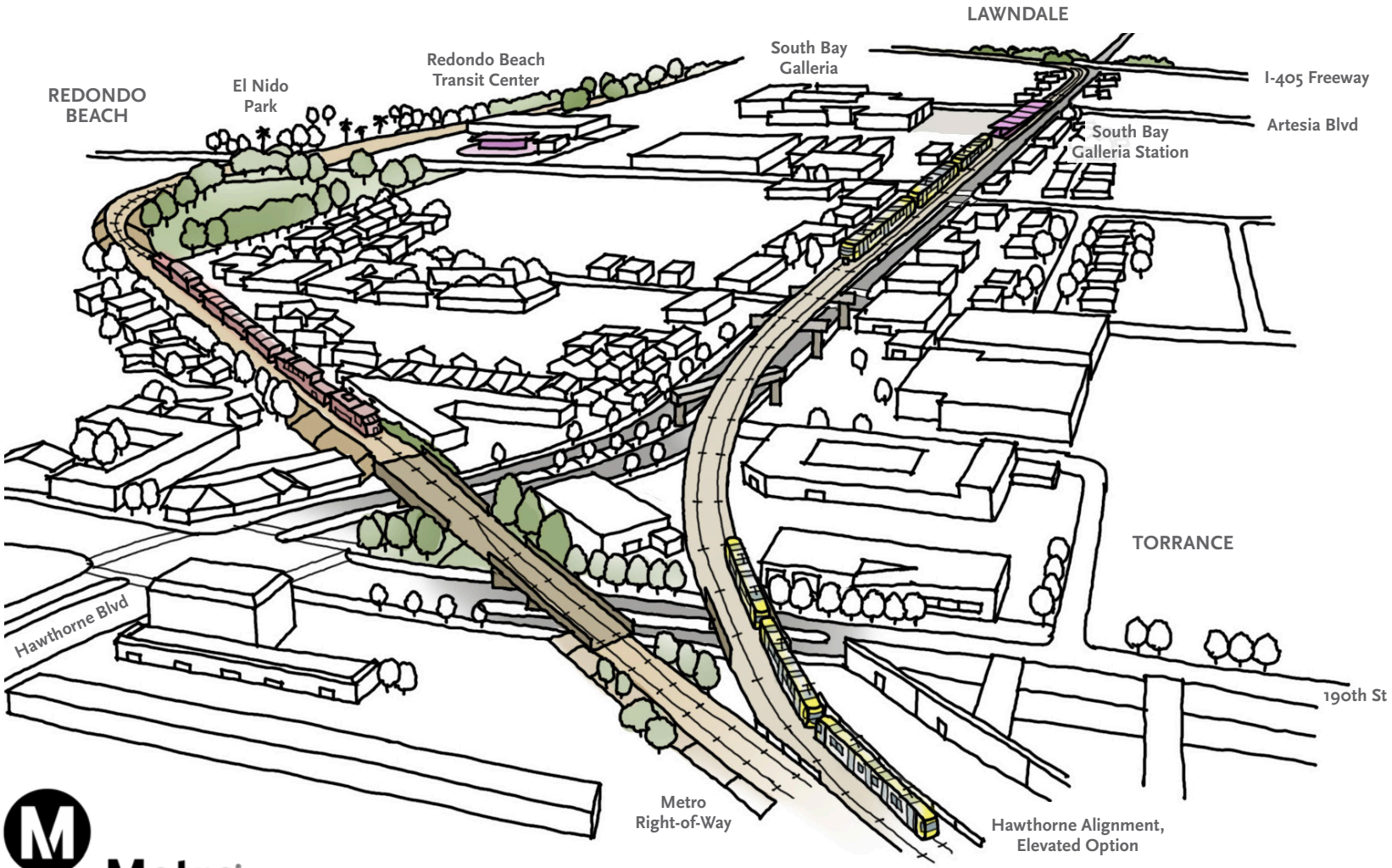
Los Angeles County
Metropolitan Transportation Authority

C Line (Green) Extension to Torrance Transit Corridor

Urban Design Report 2023



Metro

Los Angeles County
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Urban Design Report

February 2023

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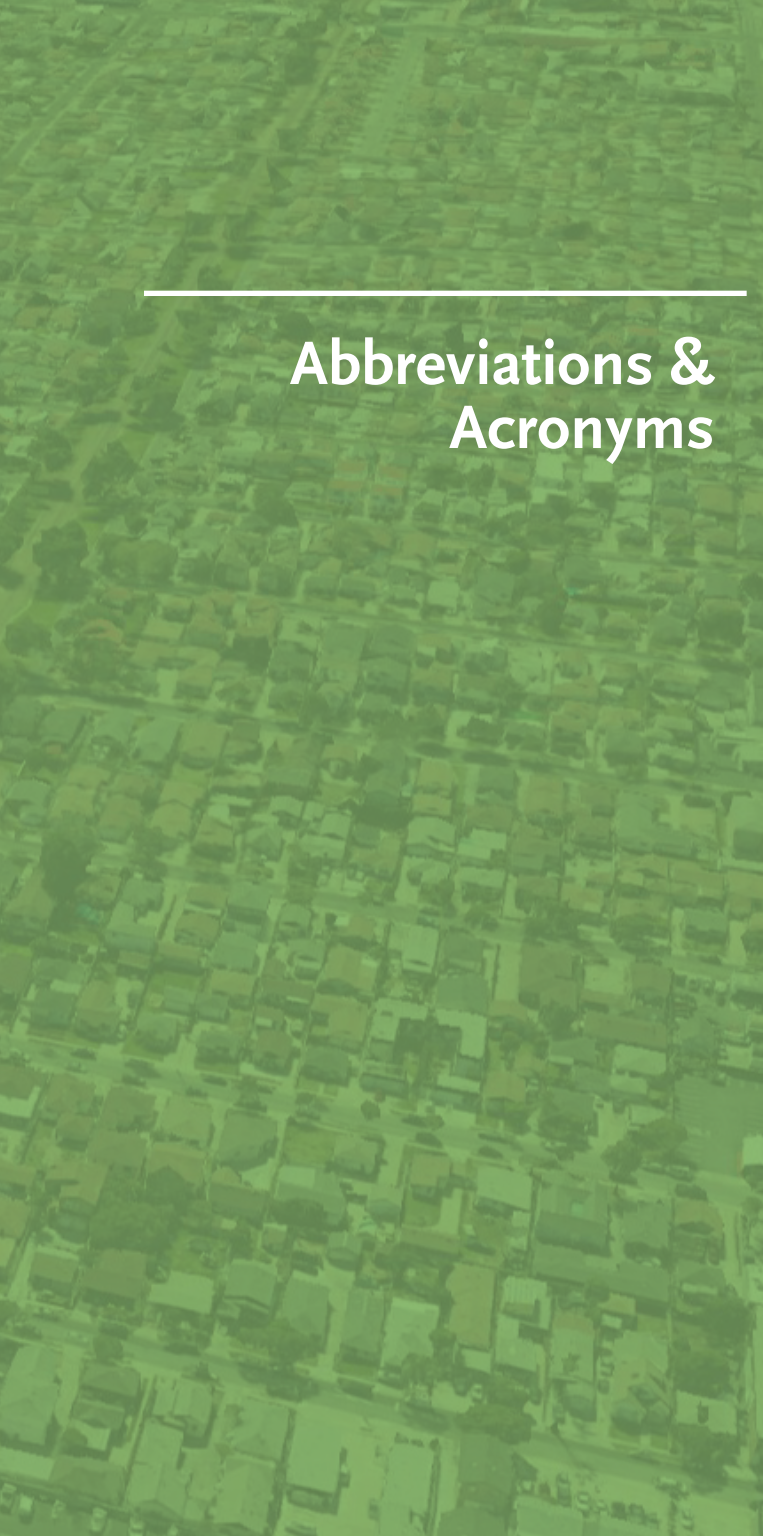


Abbreviations & Acronyms

AA	Alternatives Analysis
ACE	Advanced Conceptual Engineering
ADA	Americans with Disabilities Act
AMC	Airport Metro Connector
APM	Automated People Mover
BNSF	Burlington Northern and Santa Fe
BRT	Bus Rapid Transit
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FLM	First/Last Mile
FRA	Federal Railroad Administration
I-405	Interstate 405
LAWA	Los Angeles World Airports
LAX	Los Angeles International Airport
LID	Low impact development
LPA	Locally preferred alternative
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MSE	Mechanically stabilized earth
OCS	Overhead Contact System
Project	C Line (Green) Extension to Torrance Project
RHNA	Regional Housing Needs Allocation
ROW	Right-of-Way
RR	Railroad
RTP/SCS	Regional Transportation Plan/ Sustainable Communities Strategy
SAA	Supplemental Alternatives Analysis
SCAG	Southern California Association of Governments
SWSD	Systemwide Station Design
TOC	Transit Oriented Communities
TPSS	Traction Power Substation

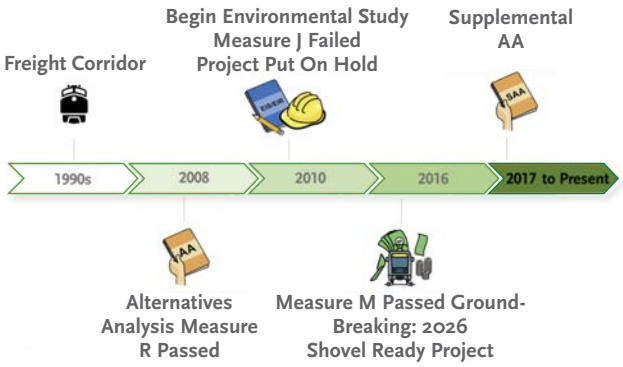
Table of Contents

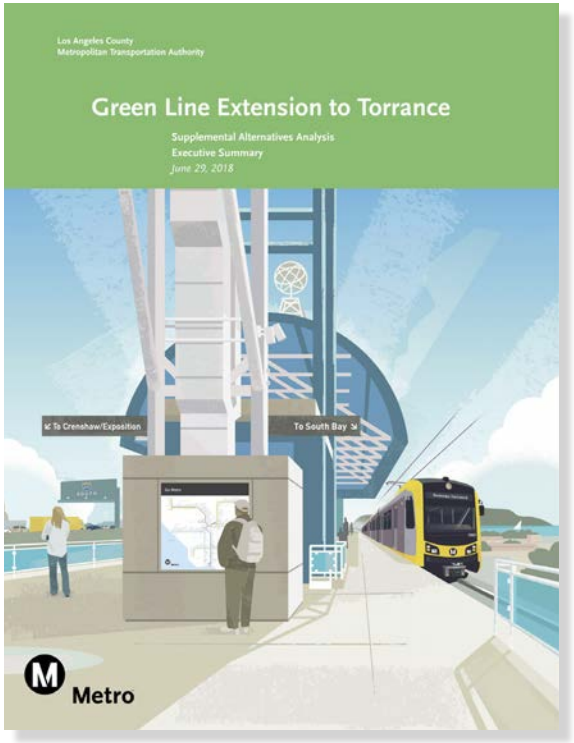
Introduction

1. Introduction

1.1 Study Background

The Los Angeles County Metropolitan Transportation Authority (Metro) is leading the extension of the existing Metro C (Green) light rail transit line a further 4.5 miles connecting Redondo Beach southeast to Torrance.





The Los Angeles County Metropolitan Transportation Authority (Metro) has initiated a Draft Environmental Impact Report (EIR) for the C Line (Green) Extension to Torrance Project (Project) pursuant to the California Environmental Quality Act (CEQA). Metro is the lead agency for the Project. The Project is a proposed light rail transit line that would extend approximately 4.5 miles from the end of the existing Metro C Line (Green) in Redondo Beach southeast to Torrance traveling along portions of the Metro-owned Harbor Subdivision freight railroad right-of-way (Metro ROW). The proposed light rail line would connect the Metro system further into the South Bay with connections to the K (Crenshaw), J (Silver) and A (Blue) Lines. The Project has evolved over the years, based on several planning studies, which are discussed in greater detail in the Alternatives Considered and Eliminated Report (Metro, 2023) on the project website. The SAA evaluated four light rail transit alternatives and on September 27, 2018, Metro's Board approved carrying forward two light rail transit (LRT) alignments for environmental analysis.

1. Introduction

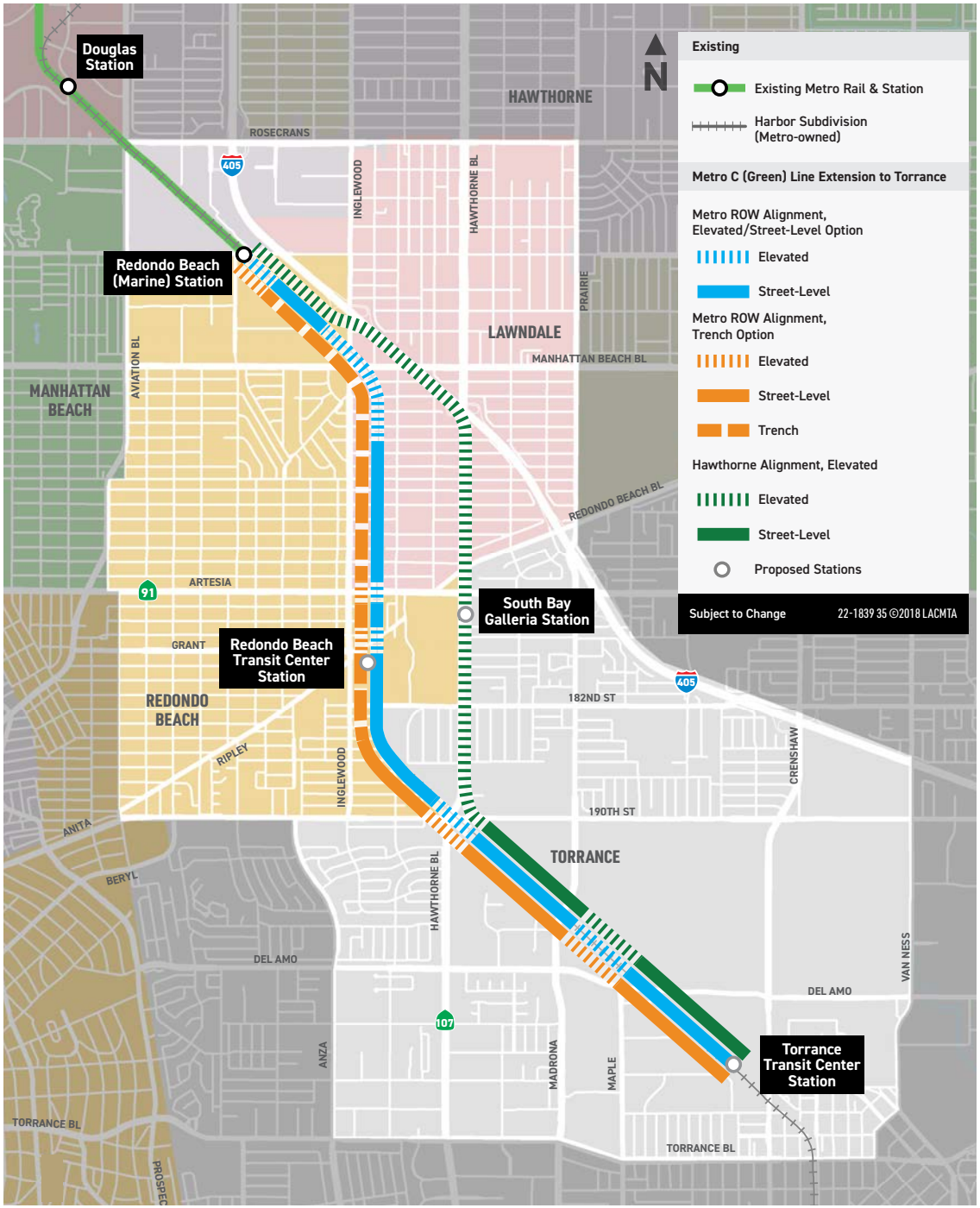
The Draft EIR evaluates three alignments, which are summarized below and illustrated into this report:

- **Metro ROW Alignment, Elevated/Street-Level Option:** Follows the Metro ROW for the length of the Project from the existing Redondo Beach (Marine) Station to the Torrance Transit Center (TC), with an elevated segment, followed by an at-grade segment. Two rail stations are proposed adjacent to the Redondo Beach Transit Center and Torrance Transit Center. This is referred to as the Proposed Project in the Draft EIR as it is alignment that has been studied and advanced over the years.

- **Metro ROW Alignment, Trench Option:** Follows the Metro ROW for the length of the project, with a below-grade trench segment between Inglewood Avenue and 170th Street, followed by at-grade segments with a short trench to cross under 182nd Street. Includes the same station locations as the Metro ROW Alignment, Elevated/Street-Level Option. This is referred to as the Trench Option in the Draft EIR.

- **Hawthorne Alignment, Elevated Option:** Starts within the Metro ROW, then leaves Metro's ROW to run along Interstate 405 (I-405) and turns onto Hawthorne Boulevard near 162nd Street to travel in the center median of the street before rejoining the Metro ROW south of 190th Street. The entire alignment is elevated. A station would be located in the median of Hawthorne Boulevard, south of Artesia Boulevard, adjacent to the South Bay Galleria. This is referred to as the Hawthorne Option in the Draft EIR.

For the purposes of CEQA, Metro must define one of the three alignments as the Proposed Project. This term does not convey any preference or recommendation. Metro staff will prepare a recommendation in Spring 2023 based on findings from the Draft EIR, public comments made during the comment period, technical analysis, stakeholder input, and other factors such as cost, ridership, and project objectives. The Metro Board of Directors (Metro Board) will vote to approve a Locally Preferred Alternative (LPA) to advance the design of one alignment and prepare for construction.



1. Introduction

1.2 Report Purpose and Structure

The purpose of this 'Urban Design Report' is to illustrate how the Project will extend south from the Redondo Beach Marine Station to the Torrance Transit Center Station. This report aims to:

- Supplement the technical content of the Project's Draft EIR
- Clarify how the three alignments under study will be integrated into the Cities of Lawndale, Redondo Beach and Torrance in order to meet the Project's goals
- Provide residents, stakeholders, city staff, and elected officials with an understanding of the Project's look and feel to inform decision-making

This report provides the means by which the Project's three study alignments can improve local access to regional transportation and a multi-modal mobility network, while integrating the light rail system into communities' diverse urban conditions for mutual benefit.

Chapter 1 provides a brief introduction of the Project, its context, and how the Urban Design and Transit Oriented Communities (TOC) planning approach considers the alignment and station area options. Informed by on-going stakeholder engagement and collaboration with each city, this report documents key design elements for each station area and alignments under study.

The second chapter describes the team's approach to urban design. The Project can align transit goals with city goals for placemaking and local amenities. This chapter outlines Metro's principles for transit stations as defined in the agency's Systemwide Station Design Standards Policy (2018). The standards bring design continuity to all of Metro's stations, and also provide for integrated public art and sustainable landscaping, as elements of variability developed in consultation with, and responsive to the surrounding community.

The final chapter establishes key urban design themes for each city, beginning with a brief overview and history of Lawndale, Redondo Beach and Torrance respectively. Each city has a distinct character, urban fabric and sensitivities that directly informs Metro's design of the Project alignment and stations.

The following section largely introduces the corridor conditions for the Metro ROW and Hawthorne Alignments, highlighting differences in existing conditions that inform design interventions being studied for each corridor. Design considerations include ROW width varations, station platform locations, street crossings and opportunities for multi-use recreational paths.

The final sections of this chapter methodically present each light rail transit alignment and corresponding station design options. The three alignments under study: Metro ROW Alignment, Elevated/Street-Level Option, Metro ROW Alignment, Trench Option, and the Hawthorne Alignment, Elevated Option, are described with illustrative plans, sections, and concept views. Key segments of each study option are detailed, revealing the potential for the C Line's integration into each city. The Metro ROW Alignments will describe the sections along Condon Ave and the Redondo Beach Transit Center Station areas. The Hawthorne Alignment will focus on segments that relate to the I-405 Freeway, Grevillea Ave, Hawthorne Blvd, and the South Bay Galleria Station Option. The chapter ends with the segment that runs from 190th St to the terminus station that is consistent for all three alignments. Running south under Del Amo Blvd and terminating with a street-level (at-grade) station, the final station design option is the Torrance Transit Center Station.

All dimensions, ROW boundaries, and proposed fencing locations presented in this report are preliminary and subject to confirmation in future phases of design.

1. Introduction

1.3 Urban Design and Transit Oriented Communities

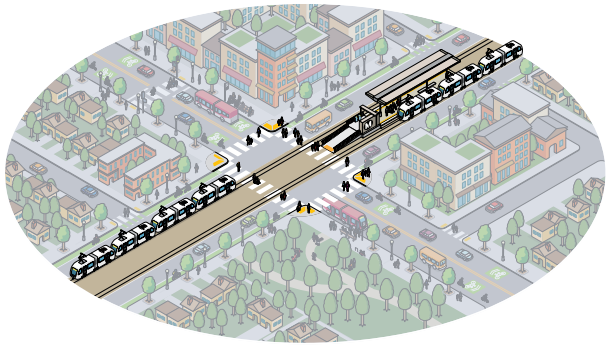
The planning and design of the Project aims to integrate station areas into the community fabric, promoting accessibility, equity and inclusivity. Several Metro policies form a TOC framework to ensure facilitated access to transit by establishing land use, First/Last Mile (FLM) and community development goals. The advancement of each station area in the Project considers the following guidelines, standards and plans:

- **Systemwide Station Design Standards Policy** (2018)
- **TOC Policy** (2018)
- **TOC Implementation Plan** (2020)
- **Active Transportation Strategic Plan** (2016)
- **Transfers Design Guidelines** (2018)
- **Long Range Transportation Plan** (2020)
- **First/Last Mile Strategic Plan** (2014)
- **First/Last Mile Guidelines** (2021)
- **Metro Art Program Policy** (2021)

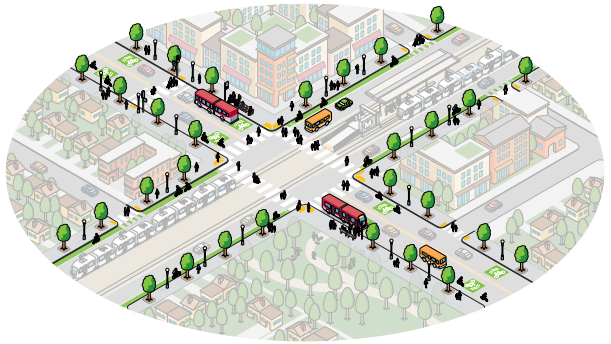
Metro performed a TOC assessment to evaluate existing conditions in the built environment, demographics, and land-use/development policies as they relate to TOC goals, opportunities, and constraints within the half-mile station areas. This assessment helped inform the station plans and options in this report and will be referenced to guide future station design and First & Last Mile Planning efforts, which will begin after the Metro Board approves a LPA.

Focused study of the half-mile station area also ensures that the access to the multimodal transit is safe for the most vulnerable users. Pedestrian and bike infrastructure will create more hospitable communities, while expanded FLM transportation will improve connectivity to local destinations. Transit related investments will be aimed to benefit all income levels through a mix of uses: affordable housing, jobs, retail, services and recreation. These Project half-mile station areas are unique opportunities to offer sustainable and equitable living for the region.

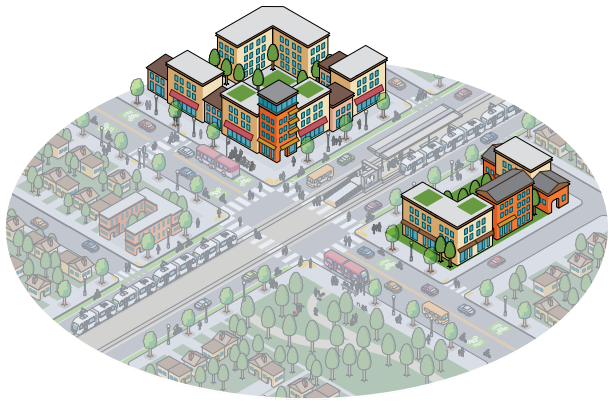
The TOC planning process integrates local stakeholder input. The cities of Lawndale, Redondo Beach and Torrance are actively engaged to ensure that the investment in transit infrastructure is leveraged with community improvements. This strong collaboration is necessary for planning and design efforts to focus on improvements for local users and residents.



Transit Improvements



Safe Pathways to Transit



Development around Stations

1. Introduction

1.4 Stations and Streets

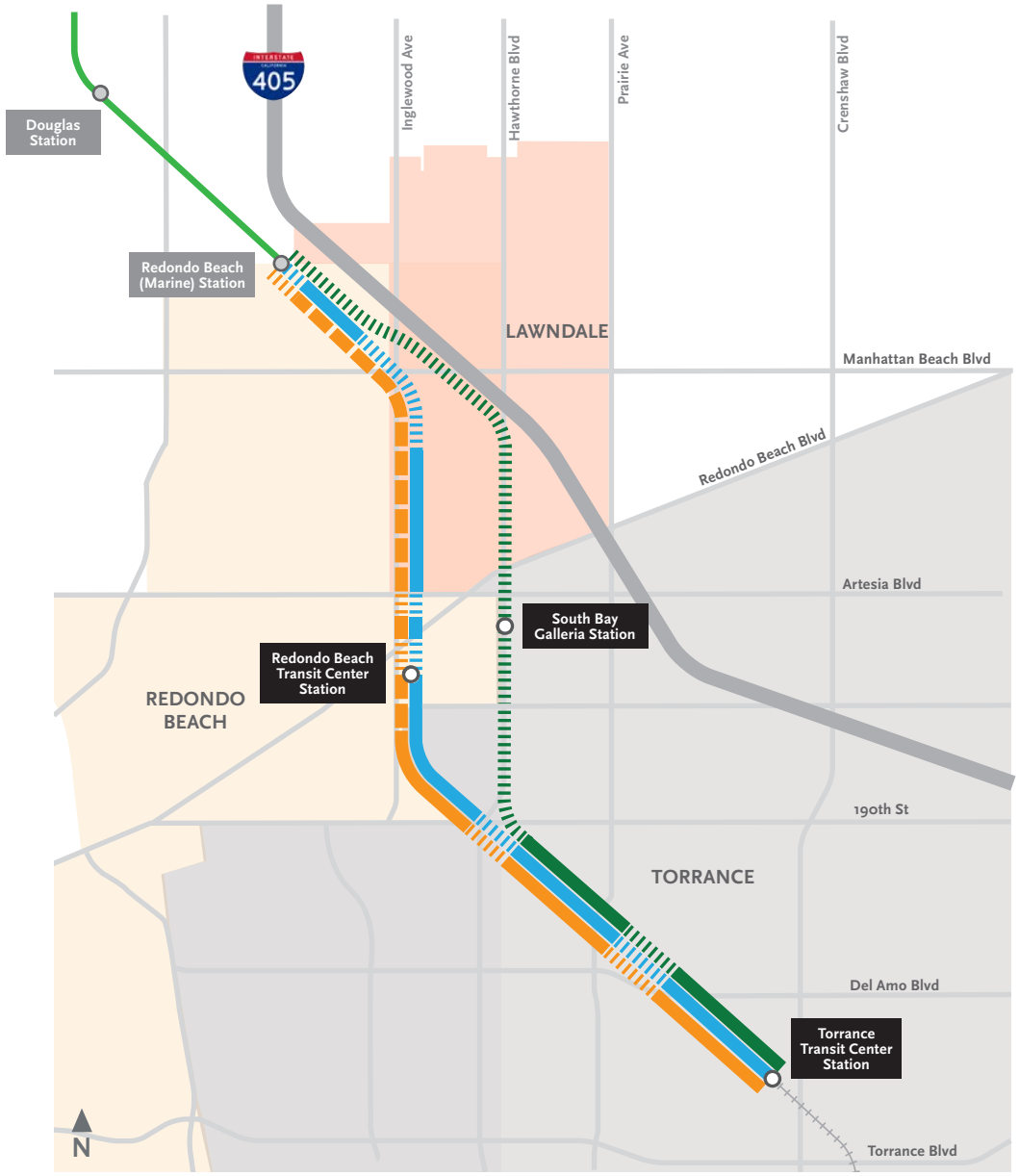
There are three potential station area locations proposed for the Project:

- **Redondo Beach Transit Center Station**
- **South Bay Galleria Station**
- **Torrance Transit Center Station**

All the stations are proposed as a center-platform configuration, allowing passengers to travel in either direction. The station platforms will be capable of accommodating three-car trains and will allow level-boarding and full accessibility compliance with the Americans with Disabilities Act (ADA).

The stations will follow Metro's Systemwide Station Design (SWSD) Standards Policy (2018) Criteria and share common elements such as canopy design, signage, communications equipment, fare collection equipment, and safety and security systems.

Metro's SWSD Standards Policy allows for elements of variability, so the station can respond to the character of the surrounding community and promote a sense of place, safety, and walkability. Details regarding each station configuration and design and the areas they serve are provided in Chapter 3 of this report.



1. Introduction

1.5 City and Stakeholder Input

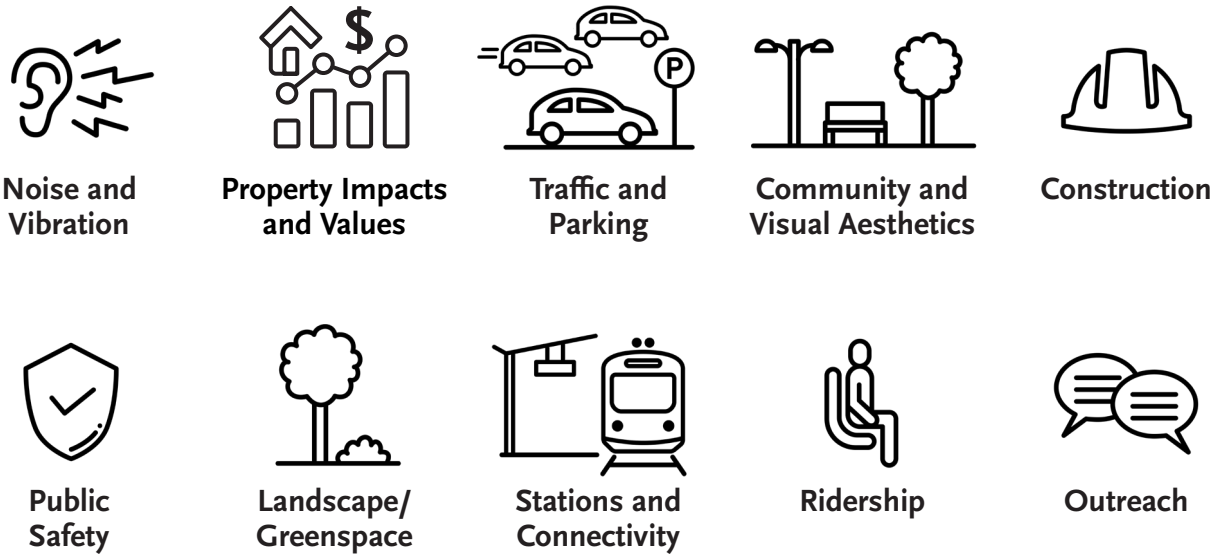
Public input is essential to the project development and design process to help shape the project as well as inform decision-making. This report highlights three alignments that are under study in the Draft EIR. The Metro Board of Directors (Metro Board) will vote to select one of the three options to carry forward into construction based on several factors. These factors include: compatibility with project goals, findings from environmental review process, input from community engagement, connectivity to the regional transit network, ridership estimates, and estimated costs.

Since Metro's most recent EIR Project Scoping (February 2021) there will have been multiple opportunities for residents and stakeholder groups along the Project corridor to find out more about the C Line (Green) Extension to Torrance Project, ask questions and provide individual comments. Community input helped determine the three alignments analyzed in the Draft EIR, and informed the urban design concepts presented in this Report. Different forums for collecting stakeholder and city input were offered, including Community Update Meetings (virtual and in-person), Neighborhood Walking Tours (virtual and in-person), Storymaps (on-line survey), Stakeholder briefings, along with opportunities to provide on-going comments to Metro's project email and phone line.

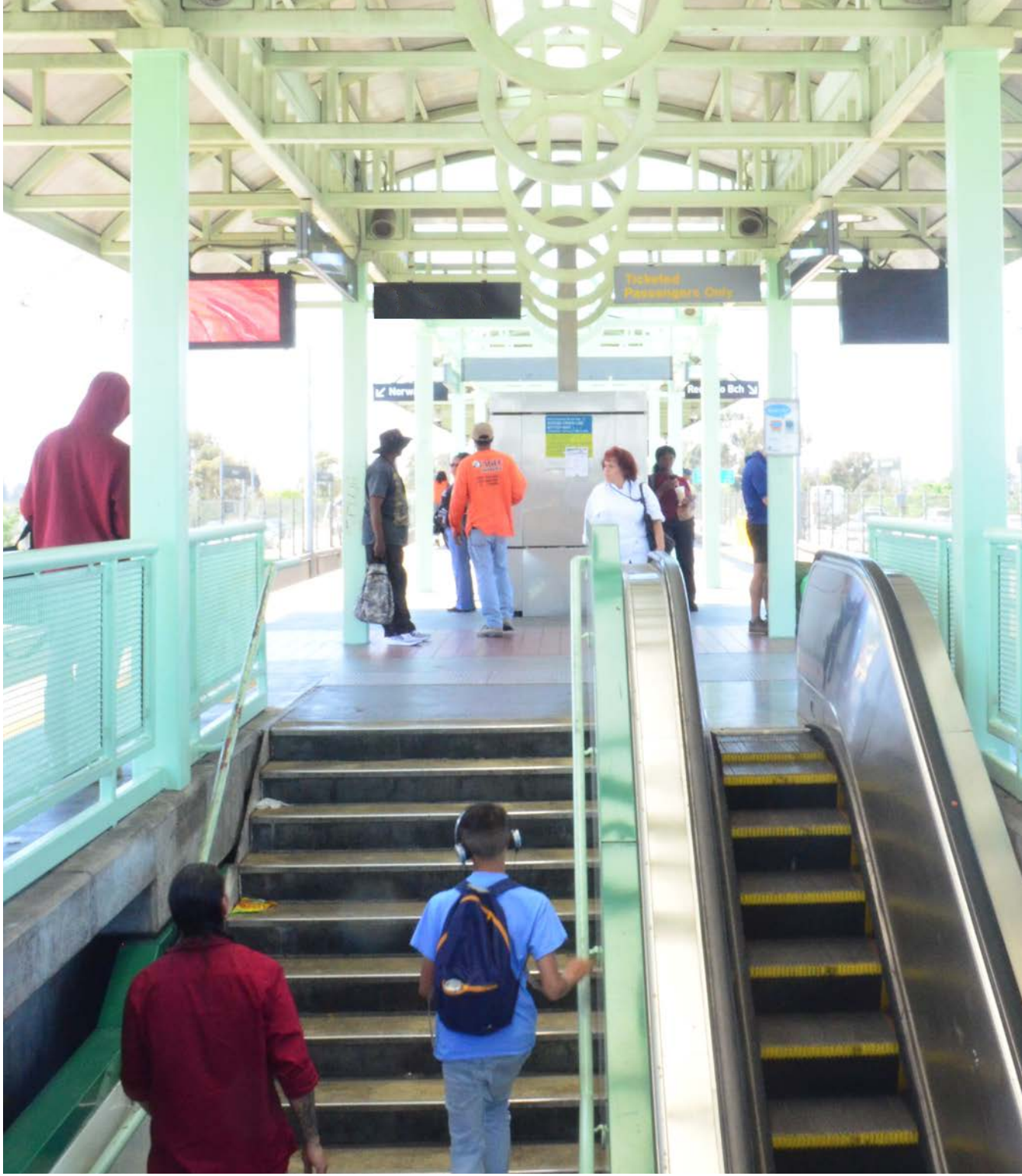
The cities of Lawndale, Redondo Beach and Torrance met with Metro's planning and design team for project updates, and provided comments from department representatives of each city (e.g., City Manager's Office, Planning, Community Development, Transportation and Public Works).

The outreach process and summary of comments are summarized in outreach materials available on the project website.

Comments from outreach events focused on the following themes:



Urban Design

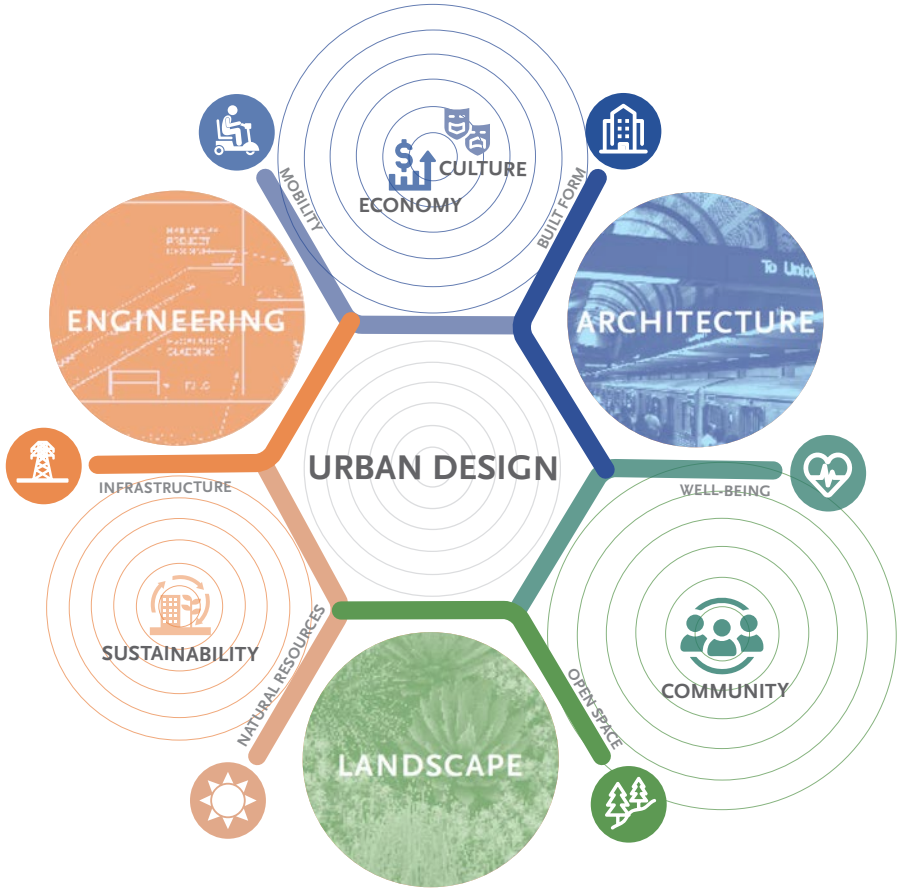


2. Urban Design

2.1 What is Urban Design?

Thoughtful urban design assures that communities can benefit from investments made in their community, whether public or private, for generations.

The practice of urban design considers engineering, architecture, and landscape architecture comprehensively to make communities more livable and sustainable. Urban designers focus on how to integrate new development (whether public improvements or private projects) into the existing street, block or neighborhood. They consider the unique aspects of a place and identify ways to enhance or preserve its character while introducing change – sometimes referred to as "placemaking". It is generally understood that cities experience a continuum of change throughout their history, so integrating new projects or improvements requires careful consideration. Thoughtful urban design assures that communities can benefit from investments made in their community, whether public or private, for generations.



Urban Design Context

The Project will connect Lawndale, Redondo Beach and Torrance with the larger Los Angeles region. Two stations will provide an opportunity for light rail customers to access colleges, major employment centers, parks, and major destinations like LAX.

Urban Design Goals for the Project

- Acknowledge unique neighborhood qualities while integrating light rail
- Improve safety and access for walking, biking, and rolling to/from Metro transit
- Seek to preserve local business and enhance walkability
- Support each city's planning and economic goals
- Consider new housing and development plans when locating stations & entrances
- Aim for seamless transfers to existing/planned transit facilities
- Create a vision for stakeholders that fosters conversations and provides clarity on how each option will serve their needs

2. Urban Design

2.2 Systemwide Station Design

After a thorough review and evaluation of state-of-the-art transit systems and international best practices for transit station design, Metro developed the SWSD Standards Policy in 2018 to improve the rider experience, while streamlining the design, construction, operation and maintenance of stations. Under Metro's SWSD Standards Policy, all future Metro lines, including Rail and Bus Rapid Transit (BRT) shall follow the SWSD Standards Policy to provide continuity design of stations to reflect a safe, smart, clean, and green future. Stations will have open plaza and platform designs, with integration of artwork, lighting, operational equipment, wayfinding, and customer information.

The five guiding principles that follow are organized to illustrate essential aspects of Metro's SWSD.

Principle 1

Distinguish Metro's unified system with high quality materials & elements

To develop systemwide branding, Metro will consistently use high quality, high performing architectural materials and elements that can be configured to meet individual station needs:

- Essential identifying station elements are to be made of materials that provide long-term durability (stainless steel for entry portals, columns and railings and ticketing structures)
- Glass canopy with integrated light-emitting diode (LED) lighting
- Three-tone concrete paving

Principle 2

Offer dependable information throughout the station environment for clear guidance

Project stations will have consistent architecture, integrated signage, and intuitive wayfinding that makes it easier for Metro customers to recognize and navigate stations.

- Consistent architecture and identifiable branding will aid and improve the visibility of Metro stations from the street
- Digital screens with integrated real-time information, customer wayfinding, and advertising
- Consistent station identification signage
- Consistent wayfinding signage
- Real-time electronic signage
- Ticketing structure and fare information
- Wall mounted mapcases

2. Urban Design

Principle 3

Move people efficiently and safely across communities and through Metro's system

The Metro journey includes arriving at the station, moving through the station, and leaving the station. Design for customer movement shall consider location of station amenities and operational equipment that accommodates all passengers, including those with disabilities.

- Vertical circulation
- Bike facilities
- Park and Ride
- Emerging mobility services

Principle 4

Present a comfortable environment for those within and around Metro's system

Metro's SWSD Standards Policy specifies that Metro's "station entrances and public areas should be safe, comfortable, and spacious." Systemwide amenities will provide a comfortable, clean station environment.

- Sustainable landscape
- Site responsive artworks
- Stainless steel station furnishings (benches and trash receptacles)
- Metro call point units

Principle 5

Reflect local context within Metro's system

Local context can be expressed through public art, sustainable landscaping, and project elements. Examples include:

- Landscaping
- Integrated artwork
- Soundwalls

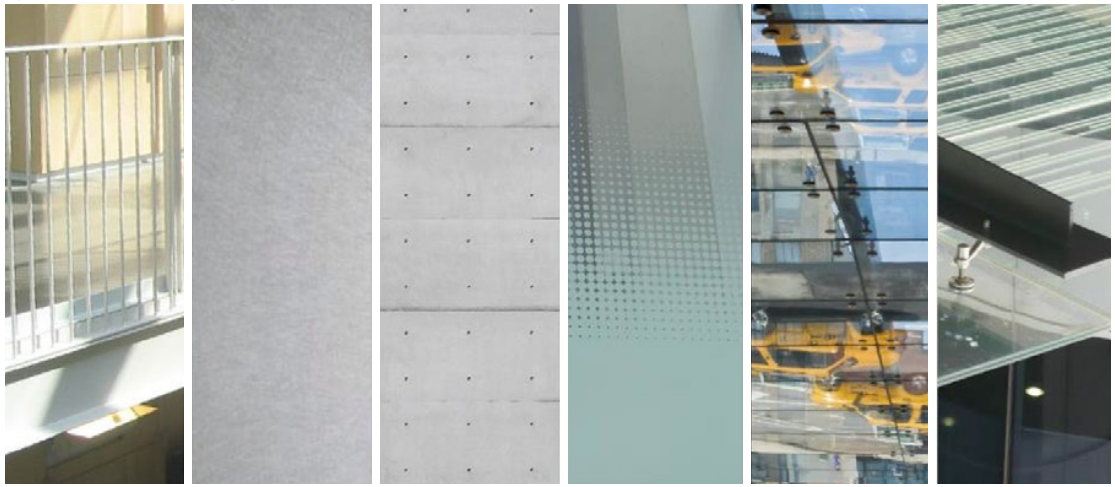
2. Urban Design

2.3 Elements of Continuity and Variation

Elements of Continuity: Station Architecture

Metro stations will be comprised of high quality, high performance architectural materials and standardized elements. These are the Systemwide Station Design elements of continuity that unify station architecture across cities and transit lines to provide predictability for customers. The K Line, Westside D Line (Purple) Extension, and the Regional Connector are other Metro Rail projects that have been shaped by SWSD elements.

Systemwide Station Design Materials



Systemwide Station Design Platform Area

2. Urban Design

Elements of Variation: Landscape & Artwork

Metro's SWSD Standards Policy also provides dedicated areas for elements of variation. Each station offers key opportunities to elevate the customer experience and express the character of place. The sustainable landscaping design and award-winning Metro Art program both include site-specific elements of variability and community-based processes.

Metro's agencywide Tree Policy (2022) will be used to advance landscape elements as part of the next phase of this Project. This policy clarifies and standardizes Metro's practices for protecting the urban canopy throughout a project's construction program, and will consider a sustainable replacement strategy where tree removal is unavoidable.

Metro's Tree Policy also recognizes the benefits that tree canopies provide to transit customers, including shade and protection from extreme heat and improved air quality. As part of the Tree Policy, Metro is committed to providing high quality care and maintenance of the trees on Metro properties, and to pursuing partnerships with cities and local jurisdictions to install trees to provide long-term shade along transit corridors.

Specific trees, plants, and vines will be selected from Metro's native and drought tolerant landscape palettes based on location and micro-climate. Unique landscape colors, textures, and forms can highlight and respond to the light rail station's location and its adjacent area.

Light rail components such as sound walls, retaining walls and structures–or mechanically stabilized earth (MSE) walls–at stations can present opportunities for landscaping and other aesthetic improvementes including concrete form line design.

Metro K Line Hyde Park Station Artwork

Arcadia Plaza, L Line (Gold) Foothill Extension

2. Urban Design

Landscape Opportunities at Stations

Landscape provides a transitional entry from the surrounding community to the station. Metro will propose different tree and plant palettes specific to the needs of each station type (street-level and elevated). Landscape opportunities at stations will depend on whether there is ample space. For example, there is limited landscape opportunity at most street-level stations due to space constraints. The following photos represent drought tolerant trees and plants from a sample landscape palette that can withstand shade, require low maintenance, are evergreen, and provide flowering interest.

Southern California native trees, shrubs, and groundcovers will be selected based on the site-specific conditions and micro-climate of each station outlined in Metro's proposed landscape palettes.

Landscape Opportunities Adjacent to Stations

Other Project station and alignment related areas such as retaining walls and structures, soundwalls, parking and support facilities each have specific Metro proposed landscape palettes. Each of these provide additional opportunities for city-specific identity. Sometimes medians, parkways and other pockets adjacent to stations present additional landscape opportunities.

The following trees and plants are examples of potential plant material for landscape areas adjacent to stations. To achieve stormwater goals and requirements, some Metro facilities will prioritize infiltration, bioretention, or biofiltration in islands and perimeter landscaping. This example palette includes shrubs and grasses suitable for LID (low impact development) planters.

Examples of Drought Tolerant Vine and Shrubs

Examples of Southern California Native Shade Trees

Retaining Wall Planted with Vines and Trees

2. Urban Design

2.4 Other Light Rail Elements

Light Rail Alignment Structures

There are different types of alignment structures proposed to support the light rail tracks for the three options described in Section 3 Urban Design Concepts. The built examples shown here were photographed along some of Metro's operating rail lines to generally convey the differences between the types. When the Project's LPA is selected the design of the light rail system will move into an advanced design phase. The exact design details of the light rail elements will vary from what is shown in the photographs due to current engineering requirements, local site conditions, contractor procurement guidelines, updates to Metro's design standards and project costs. Alignment types included in the Draft Environmental Impact Report (EIR) include:

- **Street-level**
- **Elevated**
- **Trench**

All alignments require overhead contact system (OCS) poles and wires to provide power the electric light rail vehicles.

Street-level (At-grade) Guideways

Elevated (Aerial) Guideways on Structural Columns and Retaining Walls

Trench (Below-grade) Structures

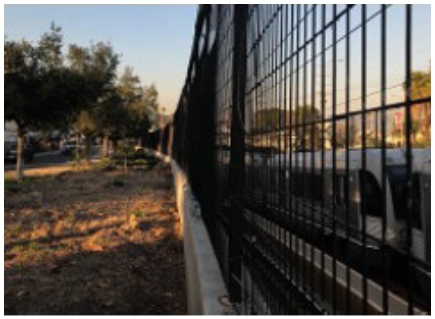
2. Urban Design

Light Rail Fences and Walls

Fences will protect pedestrian and bicyclists from moving light rail vehicles and freight trains and are mainly proposed between street-level street crossings and where rail tracks are adjacent to sidewalks or public walkways. Retaining walls will be needed for transitions of the light rail alignment, in instances between trench and street-level segments, or between street-level and elevated segments. The examples shown include landscape vines that help obscure retaining walls in a neighborhood setting.

If sound walls are deemed necessary to mitigate noise and vibration of the project, the sound wall height, its materials and specific design details will be informed by local conditions and developed during final engineering. The examples shown include textured pre-cast panel sound walls and panelized sound walls.

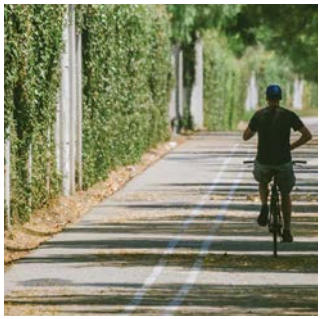
Fences



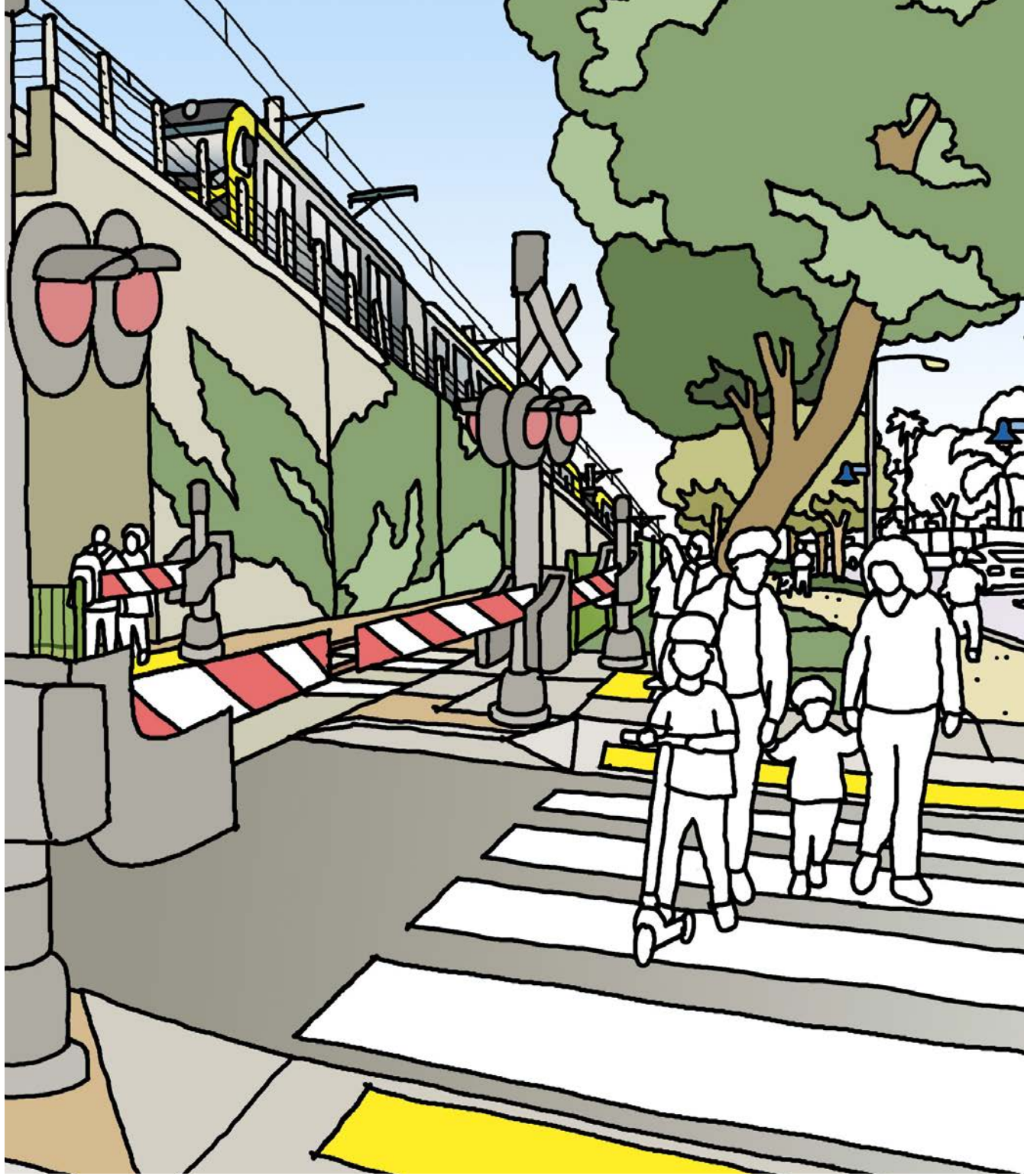
Retaining Walls and Transitions


Soundwalls





Urban Design Concepts



3. Urban Design Concepts

3.1 Neighborhood Character and Urban Design Focus

City of Lawndale

Neighborhood Character

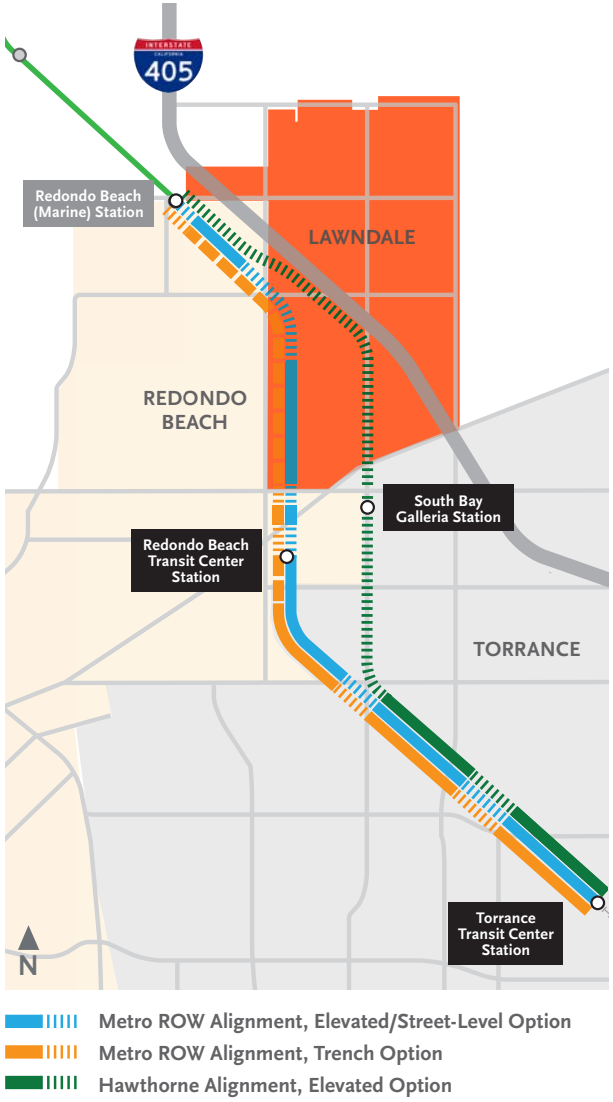
Lawndale is one of Los Angeles County's smallest cities (just under two square miles) located along the northern portion of the Project. The city's motto "Heart of the South Bay" captures its unique placement surrounded by several larger cities and Unincorporated Los Angeles County.

Lawndale's history begins with Native Americans, and later became part the 18th century Spanish land grant. Agrarian land supported farming and livestock which transformed when the Redondo Railway was introduced along what is now Hawthorne Boulevard. After facing annexation pressures from surrounding cities the City of Lawndale was incorporated in 1959. Today, Lawndale's diverse population includes families that have resided in the city for generations.

Southern California's early 20th century growth and larger post-war housing boom shaped many Lawndale neighborhoods, especially those closest to the Proposed Project on Metro's ROW. Condon Avenue, where parallel to Metro's ROW and hidden to most in the region, is known locally for an unofficial neighborhood space defined by an active freight line that transports aviation fuel to LAX. The Lawndale segment of Metro's ROW is an example of how early housing developed along the edges of active railroad (RR) and industrial land. The Hawthorne Blvd segment, Lawndale's downtown, has evolved to serve local needs and regional access to the I-405 Freeway.

Historic View of Hawthorne Blvd, Lawndale, c. 1930s

Historic View of Hawthorne Blvd, Lawndale, c. 1950s



3. Urban Design Concepts

City of Lawndale

Urban Design Focus

Lawndale has maintained a unique relationship between its neighborhood character and transportation infrastructure. There are specific areas of Lawndale that require thorough study when considering the different alignments. These areas are:

- Enhancing and improving walkability, including opportunities for neighborhood connectivity along Condon Ave
- Maintaining and adding greenery to the neighborhood
- Considering how the design of light rail elements will transition into the Metro ROW or Hawthorne Blvd

The key element of introducing the Project into Lawndale is retaining the city's valued existing urban design features. The relationship between the more private, residential areas and its interconnecting public space is a priority. Lawndale's urban design concepts will include strategies to enhance safety and mitigate noise and vibration for residents, while project related improvements can enhance activation of the city's public realm.

Condon Ave, looking north

3. Urban Design Concepts

City of Redondo Beach

Neighborhood Character

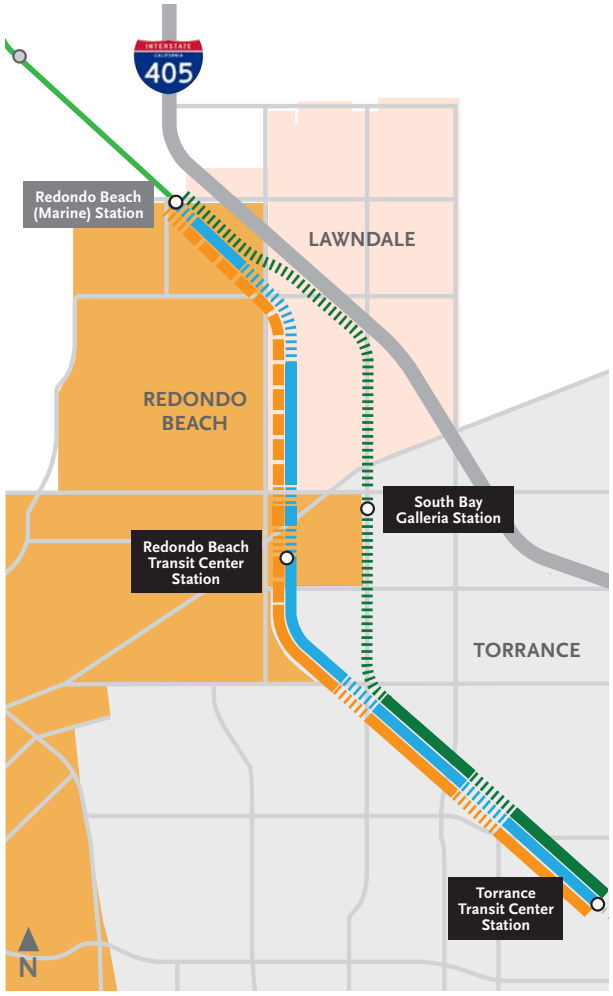
Redondo Beach (just over six square miles) is located along the northern and central portion of the Project. The city's motto "More to Sea" captures its ambitions as a beach city on Santa Monica Bay that offers much to residents and visitors. The city has a commercial harbor, municipal pier, many neighborhoods, employment centers and the South Bay Galleria on Hawthorne Blvd.

Redondo Beach was first inhabited by Tongva Indians on land later claimed by Rancho San Pedro as part of the 18th century California land grants. Redondo became Los Angeles County's first working port, until it was succeeded by San Pedro and Los Angeles Harbors. The city incorporated in 1892 and has a history of rail and streetcar transit offered by Redondo Rail Company, Santa Fe Railway and Pacific Electric Railway. Like much of Southern California, Redondo's population grew dramatically during the post-WWII years. Metro's C (Green) Line introduced light rail transit to the northern corner of the city in 1995.

While Redondo Beach is known for its public beachfront and Riviera Village, the city is mostly comprised of residential neighborhoods. Approximately 1.7 miles of the Metro ROW alignments and .6 miles of the Hawthorne Blvd option are within (or border) the city of Redondo Beach.

Trams in Redondo Beach, 1906

Old Fox Theater, Redondo Beach, 1930



3. Urban Design Concepts

City of Redondo Beach

Urban Design Focus

The following are key urban design focus areas that require thorough study when considering the different alignments within Redondo Beach:

- Design strategies for integrating the C Line into North Redondo Beach and El Nido Park neighborhoods
- Design options for street crossings that result in different pedestrian and bike access, and streetscape characteristics unique to each alignment option
- Develop seamless connections between the Redondo Beach Transit Center and light rail station

There are two design options for the street crossings at Grant Avenue (variation in bridge design) and 182nd Street (street-level and trench light rail crossing options) that result in different pedestrian and bike access, and streetscape characteristics unique to each alignment option.

For the Metro ROW Alignments, the light rail station is adjacent to the Redondo Beach Transit Center Station. For the Hawthorne Alignment the station will be convenient to the South Bay Galleria and proposed mixed-use development. All station design options aim to build upon the city's transit investments by developing seamless connections to Redondo Beach Transit Center. Customers will use ramps and a multi-use recreational path to move between the transit center and light rail station, facilitated by amenities such as wayfinding, seating and lighting.

Integrating the Project at either the Redondo Beach Transit Center Station or at the South Bay Galleria will serve the city's residential neighborhoods. Light rail station design features will enhance safety and help mitigate community concerns where possible.

Metro ROW at 182nd St, looking south

South Bay Galleria Phase One Design

3. Urban Design Concepts

City of Torrance

Neighborhood Character

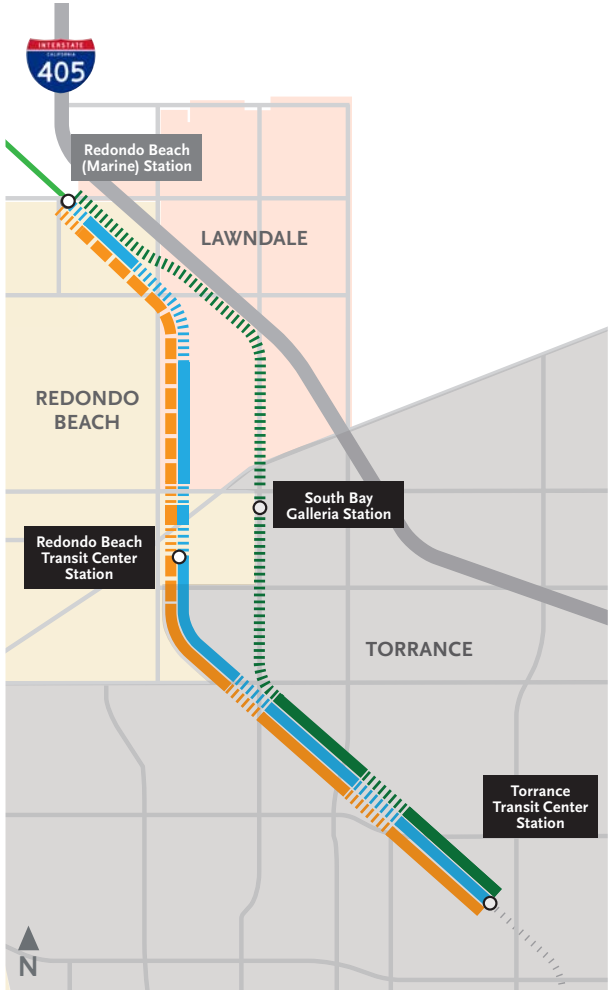
Torrance is the eighth largest city in Los Angeles County (just over 20 square miles) and located along the central and southern portion of the Project. The city's motto "Growth without Strain" conveys its intentions to maintain a thriving industrial and commercial sector alongside livable neighborhoods. Torrance is bordered by several cities but has 1.5 miles of public beach on Santa Monica Bay.

Originally Tongva Native American homeland, the land known today as Torrance was colonized by the Spanish and then deeded by the Spanish crown to Rancho San Pedro which spanned from El Segundo to Long Beach. With major infrastructure projects such as the Los Angeles Aqueduct and the Los Angeles harbor underway in the early 1900's, the region industrialized. Jared Sidney Torrance, a real estate developer, and his partner investors created the Dominguez Land Company, acquiring 3,500 acres of the ranchland and hired the Olmsted Brothers to plan a modern industrial city.

By the 1930s Torrance had a mix of agriculture, industry and retail, with military-related manufacturing and a post-war housing boom coming later in the 1940s. Growth along commercial corridors like Hawthorne Blvd occurred in the late 20th century. Residential neighborhoods, El Nido Park, retail and auto dealerships define Torrance's character north of W 190th St, with industry and oil refining predominant on Metro's ROW south of here.

Torrance Business District, 1920

Construction of Southwood Tract Torrance, 1954



3. Urban Design Concepts

City of Torrance

Urban Design Focus

The Metro ROW Alignment enters Torrance along the western side of El Nido Park. Both the Elevated/Street-Level and Trench Alignments and station options will facilitate access to this recreational space. The following are key urban design focus areas that require thorough study within Torrance:

- Design strategies for integrating an elevated light rail alignment into Hawthorne Blvd's auto-oriented streetscape
- Consider urban design features that mitigate noise and vibration to address resident concerns
- Develop seamless connections between the Torrance Transit Center and light rail station

The Hawthorne Alignment will need to integrate the elevated light rail along a prominent arterial road and commercial boulevard. Visible sightlines and physical access to commercial properties and neighborhoods is an important consideration for Torrance.

The station options at the Redondo Beach Transit Center Station and the station option at the South Bay Galleria can serve Torrance's residents and businesses. All alignments and station areas work to connect users seamlessly to the Redondo Beach Transit Center Station as well as to the Torrance Transit Park and Ride Regional Terminal.

C Line access to the Torrance Transit Park and Ride Regional Terminal will connect users to local and regional bus lines, parking, and drop-off/pick-up areas. There are unused rail spurs dating back to 1911 from Pacific Electric Railway located on the west side of the Metro ROW, adjacent to the proposed Transit Park and Ride Regional Terminal. The city is evaluating opportunities to utilize the rail spurs for First/Last Mile (FLM) connections to downtown Torrance further south.

Hawthorne Blvd at 178th St, looking northeast

Hawthorne Blvd between 186th St and 190th St, looking south

3. Urban Design Concepts

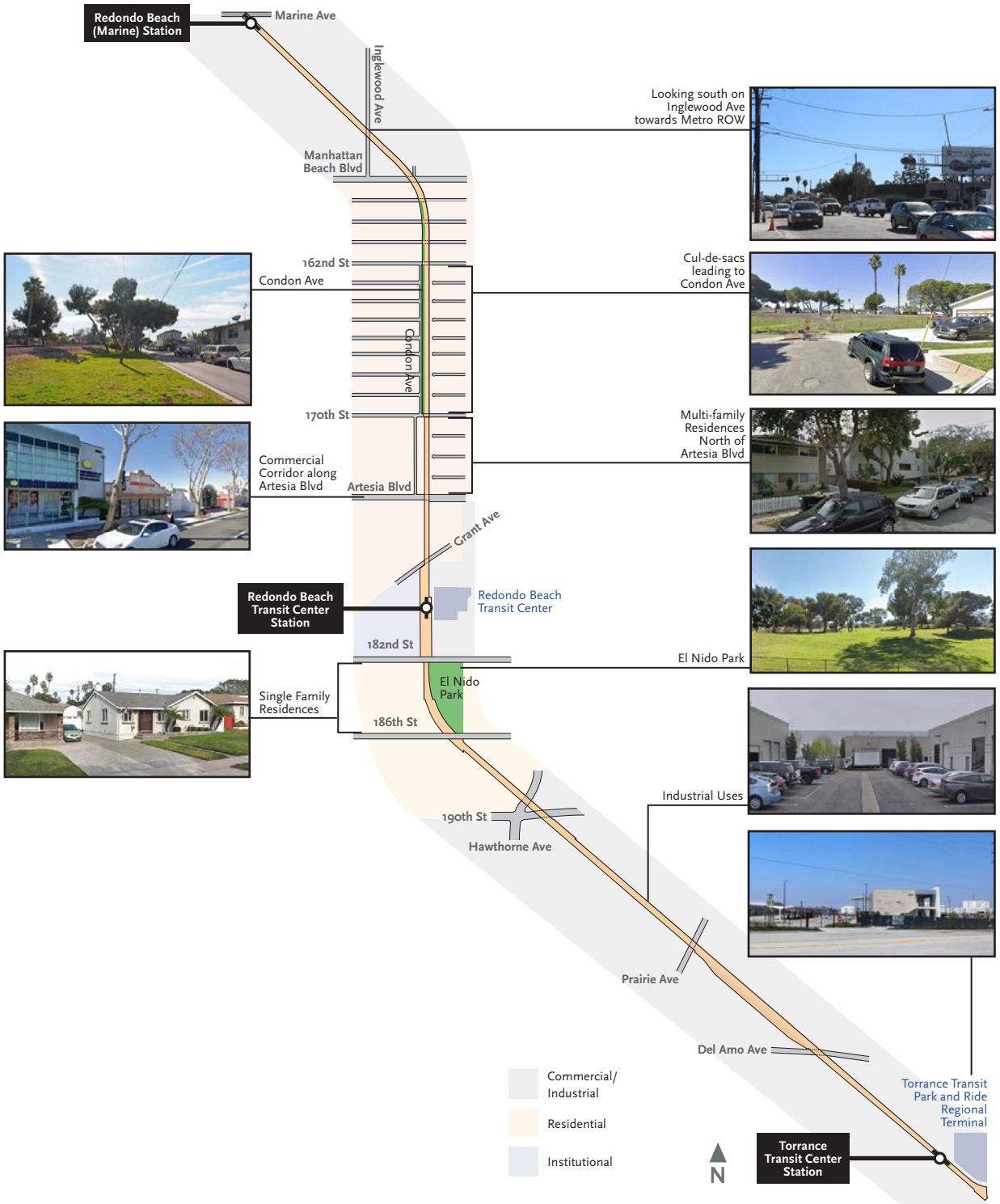
3.2 Corridor Conditions

Metro ROW

The C Line study alignments that follow the Metro ROW are the Elevated/Street-Level and Trench Options. These alignments extend 4.5 miles from the terminus station at Redondo Beach's Marine Avenue Station to the Torrance Transit Center Station. The two alignments follow the existing Burlington Northern and Santa Fe (BNSF) tracks on the Harbor Subdivision ROW. The rights to this ROW were purchased by Metro in the 1990s with plans for passenger rail to connect the South Bay to the rest of the region.

The Metro ROW traverses a variety of urban conditions. The corridor begins in Redondo Beach at Marine Ave in an industrial and commercial area bounded by Manhattan Beach Blvd to the south. South of Manhattan Beach Blvd, the Metro ROW runs along Condon Ave through the City of Lawndale. The neighborhoods from Manhattan Beach Blvd to 170th St are mostly single family residences, with multi-family residential between 170th St and Artesia Blvd.

From Artesia Blvd to 182nd St, the Metro ROW enters the City of Redondo Beach again passing through a variety of uses: single and multi-family residential, institutional, and commercial, including the Redondo Beach Transit Center. Continuing south of 182nd St, the Metro ROW runs through residential neighborhoods with El Nido Park to the east as it enters the City of Torrance at 190th St. Torrance's commercial, business park and industrial uses surround the alignment as it terminates at the Torrance Transit Center Station, adjacent to the city's Torrance Transit Park and Ride Regional Terminal.



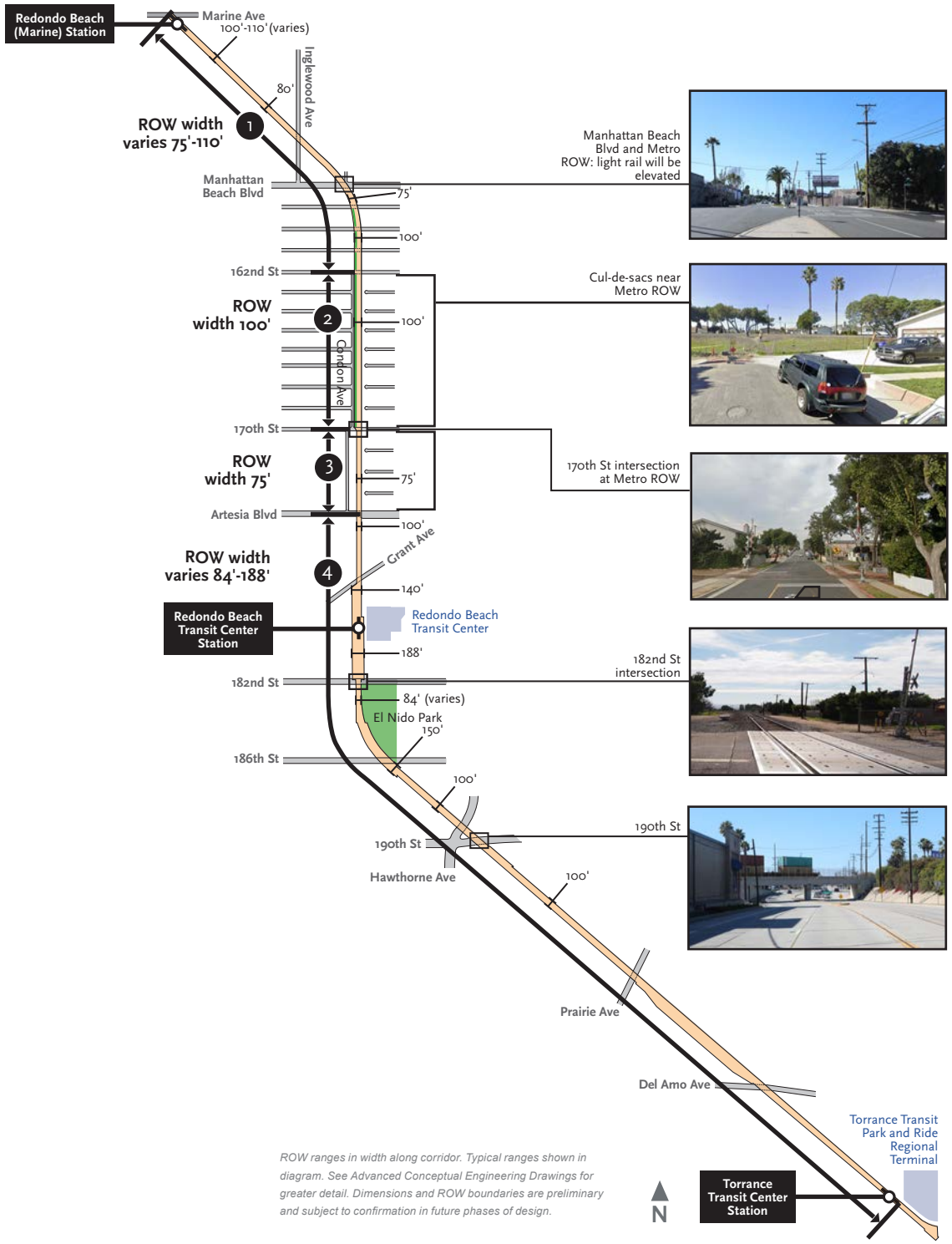
3. Urban Design Concepts

Metro ROW

The BNSF Harbor Subdivision line began in the 1880s to connect downtown Los Angeles to Playa del Rey and the former Redondo port. From the 1900s to the 1920s, the BNSF line ran through the South Bay's oil refineries south to the Port of Los Angeles. Today freight operates along this corridor once or twice a day.

A unique segment of the Metro ROW Alignment exists in the City of Lawndale's residential neighborhoods along Condon Avenue. On the east side of Condon Ave, the streets between 163rd and 169th St and 171st and 173rd St terminate at the Metro ROW in cul-de-sacs. For the elevated option of the Metro ROW alignment, there are two potential intersections where the light rail will cross at street-level. These street-level intersections at 170th St and 182nd St will include safety measures and features illustrated in the Urban Design Concepts section of this document.

The Metro ROW varies in width from the Redondo Beach Marine Station to the Torrance Transit Center Station. Between Marine Ave and 162nd St the Metro and BNSF ROW varies from 75' to 110'. Along Condon Ave from 162nd St to 170th St, the ROW is 100' wide. From 170th St to Artesia Blvd its width reduces to approximately 75'. The Metro ROW is widest between Grant Ave and 182nd St ranging from 140'-188'. The Redondo Beach Transit Center Station is located within the widest segment adjacent to the City of Redondo Beach's Transit Center. South of 182nd St the Metro ROW borders the edge of El Nido Park and turns southeast through the City of Torrance. The Metro ROW ranges in width here until it reaches the Torrance Transit Center Station.



3. Urban Design Concepts

Hawthorne Blvd

The Hawthorne Alignment begins at the Redondo Beach Marine Station on the existing Metro ROW. At the north end of Condon Ave the Hawthorne Alignment leaves the Metro ROW and continues over the Interstate 405 freeway embankment. The alignment turns south at 162nd St to enter Hawthorne Blvd in its center median. Below 190th Street, the alignment returns to the Metro ROW where it will operate mostly at street-level.

Hawthorne Blvd originally served as the Red Car Line, but is now a state road controlled by Caltrans that accommodates high volumes of traffic and provides access to the I-405. Today, Hawthorne Blvd's wide center median supports Lawndale's main commercial corridor with left-turn lanes and surface parking.

Hawthorne Blvd is a mix of uses and conditions. Its streetscape is auto-oriented and challenging for pedestrians and bicyclists. Mature street trees line some segments of the street today. Major redevelopment projects are proposed at the South Bay Galleria with the potential to change the character of this area.

3. Urban Design Concepts

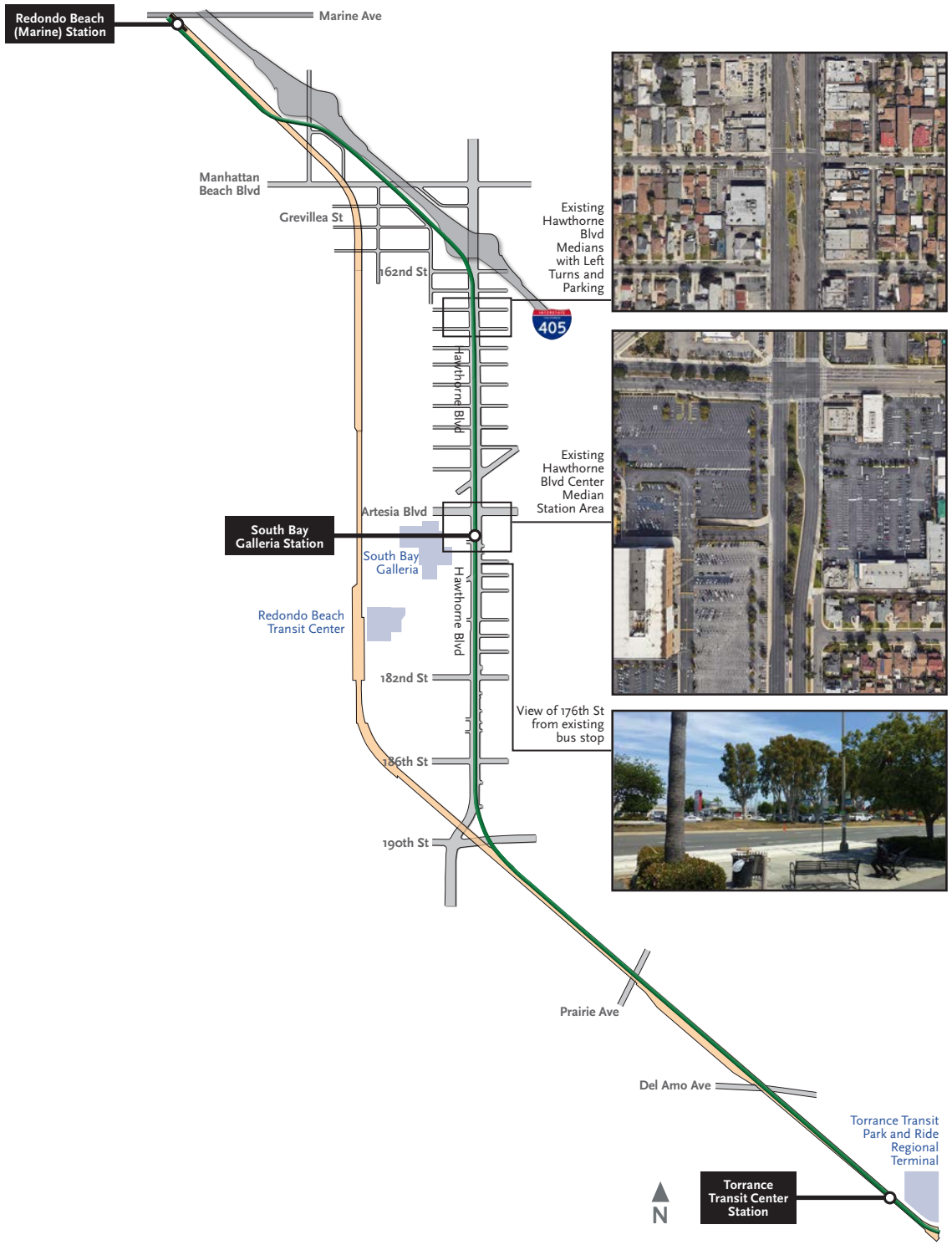
Hawthorne Blvd

The alignment along Hawthorne Blvd will be designed to retain as many existing left-turn lanes and median parking stalls as possible.

The South Bay Galleria Station is located between Artesia Blvd and 176th St. This location takes advantage of the relatively wide center median in Hawthorne Blvd to accommodate a center platform elevated station. This location will complement the South Bay Galleria redevelopment proposals, and is approximately a half-mile from the Redondo Beach Transit Center (or 10-minute walk).

New signalized crosswalks north and south of the station will enhance the connectivity between the residential and commercial uses on each side of Hawthorne Blvd. Design considerations for the South Bay Galleria Station, nearby neighborhoods and commercial uses are illustrated in the Urban Design Concepts section of this report.

Potential changes to roadway striping, median, and parking are discussed in separate report (Transportation Detail Report, 2023) on the project website.

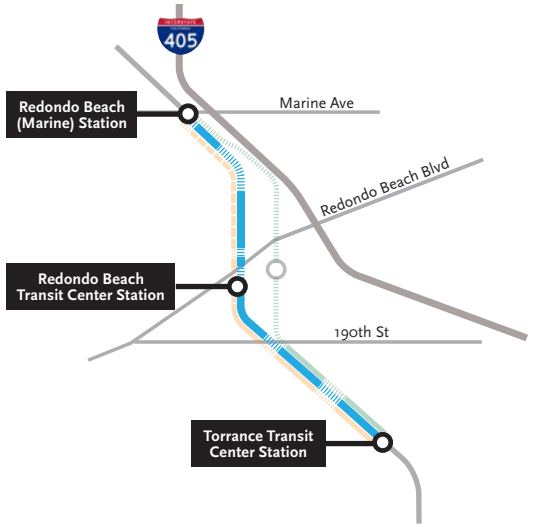


3. Urban Design Concepts

3.3 Metro ROW Alignment, Elevated/Street-Level Option

The first design option follows the existing Metro ROW for the length of the Project, with a street-level and elevated alignment between Redondo Beach (Marine) Station and 190th Street.

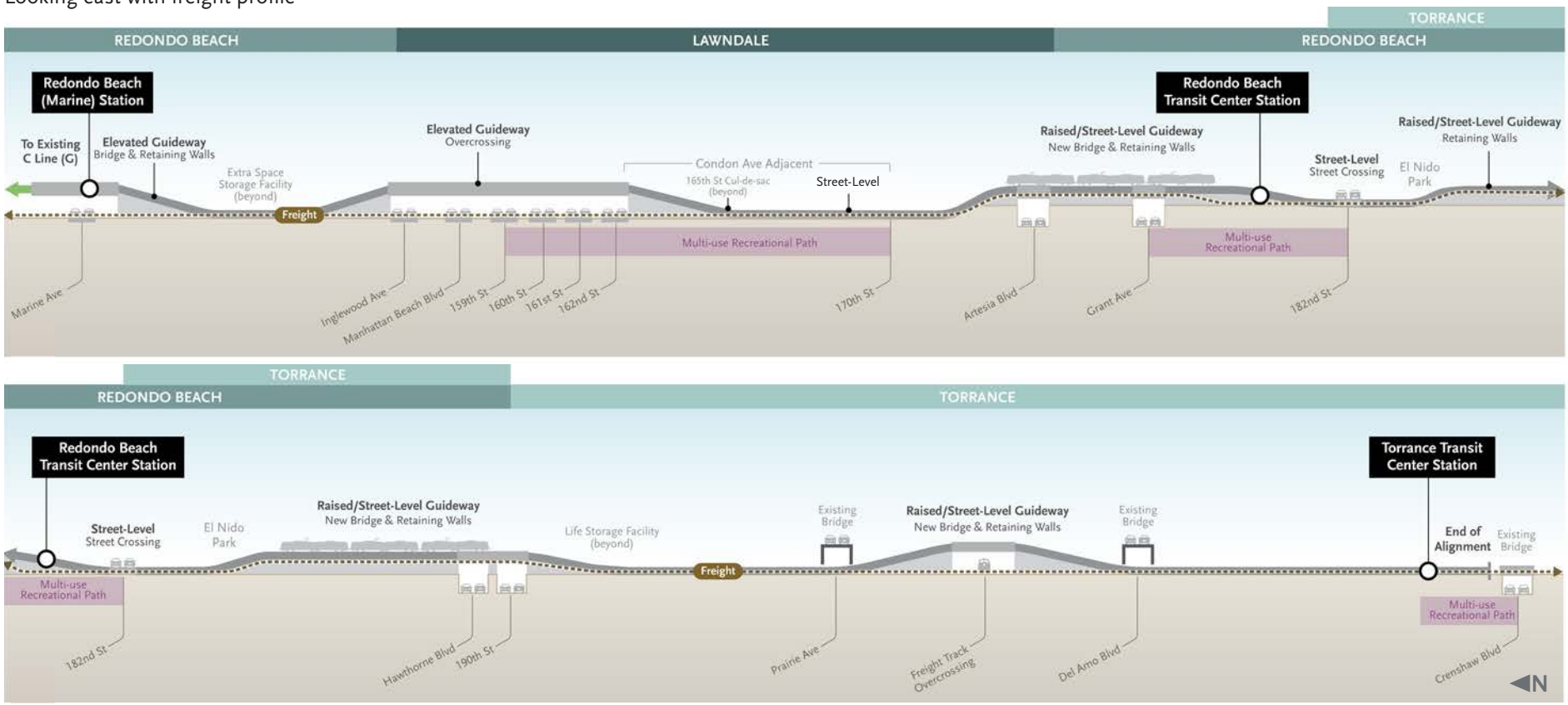
There is one station at the Redondo Beach Transit Center Station sited at street-level and another at the terminus station at the Torrance Transit Park and Ride Regional Terminal.



Metro ROW Alignment, Elevated/Street-Level Option

Redondo Beach Marine Station to Torrance Transit Center Station

Looking east with freight profile

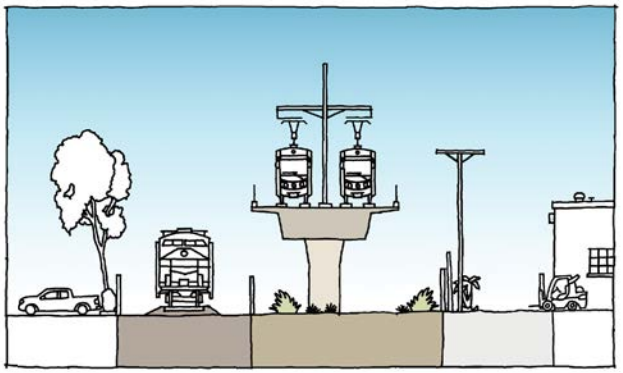


Note: Transition to vertical profile not to scale; dimensions are approximate

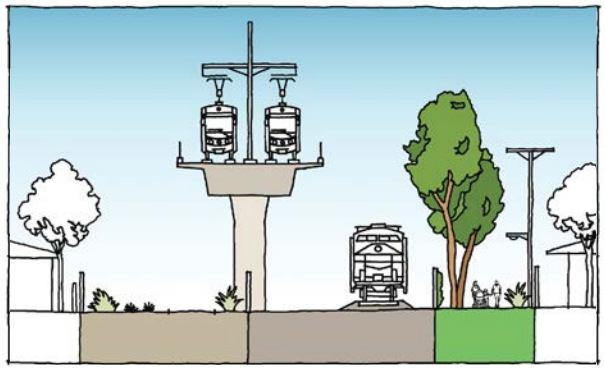
3. Urban Design Concepts

Metro ROW Alignment, Elevated/Street-Level Option Cross Sections

1 Between Inglewood Ave and Manhattan Beach Blvd
Looking south with freight profile

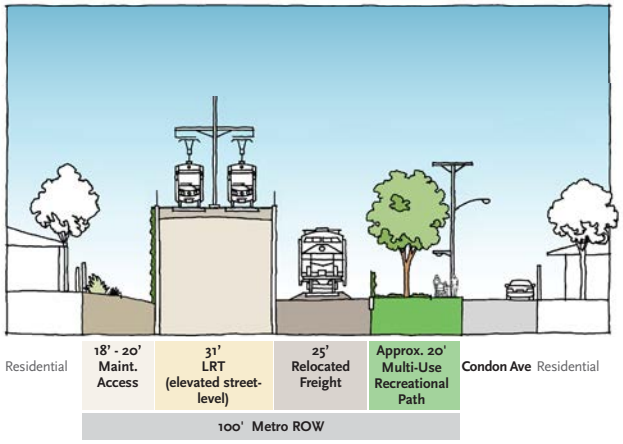


2 Between 159th St and 160th St
Looking south with freight profile

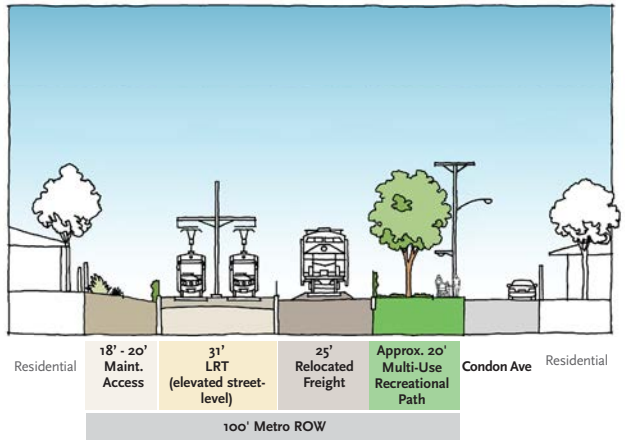


Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

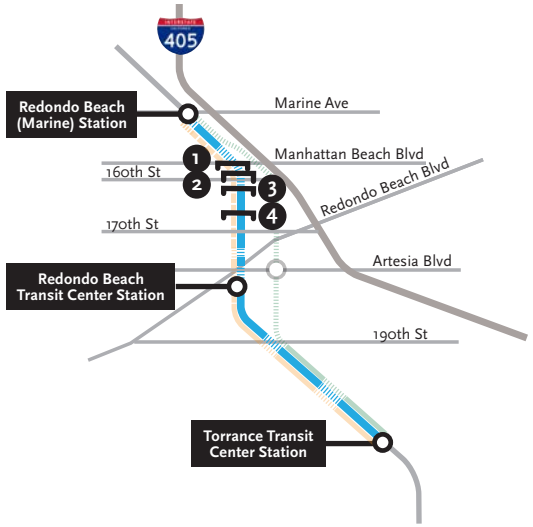
3 Between 162nd and 170th St
Transition from elevated to street-level guideway (high retaining wall): looking south with freight profile



4 Between 162nd and 170th St
Transition from elevated to street-level guideway (low retaining wall): looking south with freight profile



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design



This ROW Elevated/Street-level Alignment travels above street level in an elevated structure supported by columns between Inglewood Ave and 162nd Street. South of 162nd St, the light rail descends on a structure to reach street level and crosses 170th St and 182nd St at street-level.

Between Inglewood Ave and 170th St, the Metro ROW is approximately 100' wide, which can accommodate the relocated freight track, two new light rail tracks, and a new multi-use recreational path.

The multi-use recreational path will allow safe pedestrian and wheel access, with opportunities for new landscape and shade trees. Wherever possible, the existing mature trees will be preserved. This path continues next to Condon Ave from 162nd St to 170th St, as the light rail transitions to street-level. Access points to the multi-use recreational path will include small gathering spaces. Metro and freight safety fencing will provide a buffer between pedestrians and cyclists and active light rail and freight tracks. Design of fencing locations and safety barriers will be determined in future project phases.

3. Urban Design Concepts

To address community concerns related to noise and vibration for the proposed light rail and existing freight trains, all alignments will have project features and mitigations to address noise and vibration, which will be disclosed in the Draft EIR. Specific treatments and designs will be addressed in future project phases with community input.

All street-level roadway grade crossings (for both freight and light rail) have been designed to be "quiet zone ready", which would allow local jurisdictions to implement a quiet zone policy for the corridor in the future. The crossing designs include all measures required by the Federal Railroad Administration (FRA) to allow designation of a quiet zone. These measures include site-specific improvements such as vehicle gates, pedestrian gates, signals such as lights and bells, and sidewalks and ramps that are all Americans with Disabilities Act (ADA) compliant.

In order to establish the quiet zone, local jurisdictions would submit a Notice of Intent to the operating railroads, California Public Utilities Commission, Metro, and FRA. This would allow the freight trains to travel through the corridor without sounding their horns, which would reduce noise to adjacent properties.

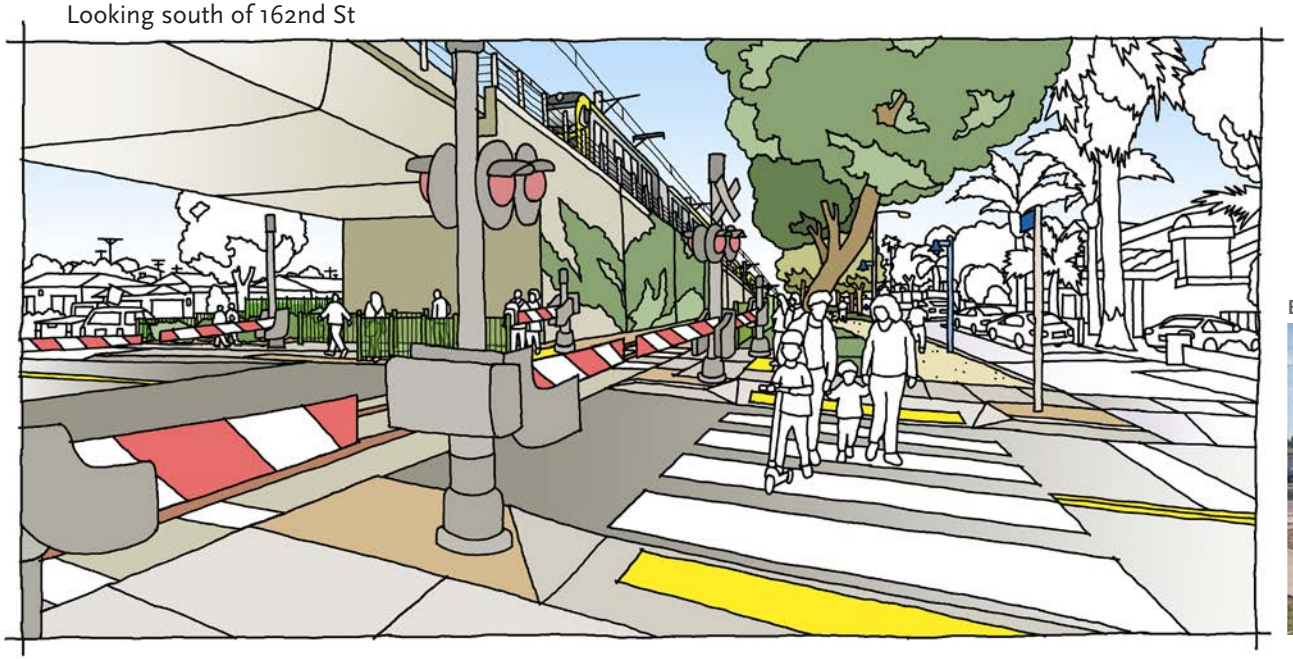
New crosswalks and grade crossings will include safety features for pedestrians, cyclists and vehicular traffic crossing the light rail and freight tracks at intersections.

At the intersection of Condon Ave and 162nd St, the light rail will be overhead on an elevated structure. The freight line will remain at street-level. Details with typical street-crossing plans and additional safety features are described on pages 33 and 42.

5 Metro ROW Alignment, Elevated/Street-Level Option **Conceptual View**

Elevated Guideway Transition, New Safety Features for Freight Railroad Crossing at Street-Level

Looking south of 162nd St

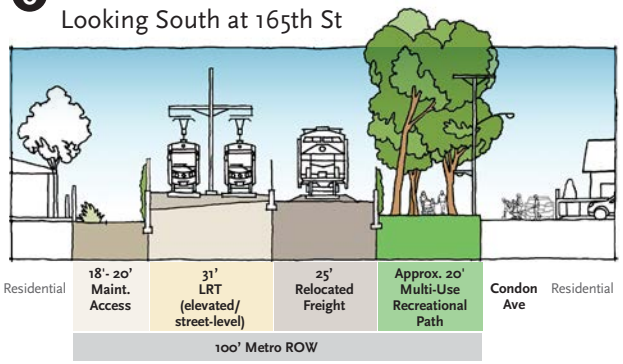


Existing View

3. Urban Design Concepts

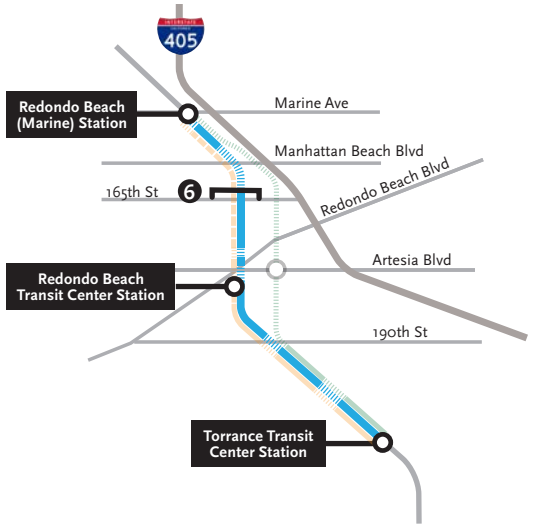
Metro ROW Alignment, Elevated/Street-Level Option Cross Section

6 Condon Ave
Looking South at 165th St



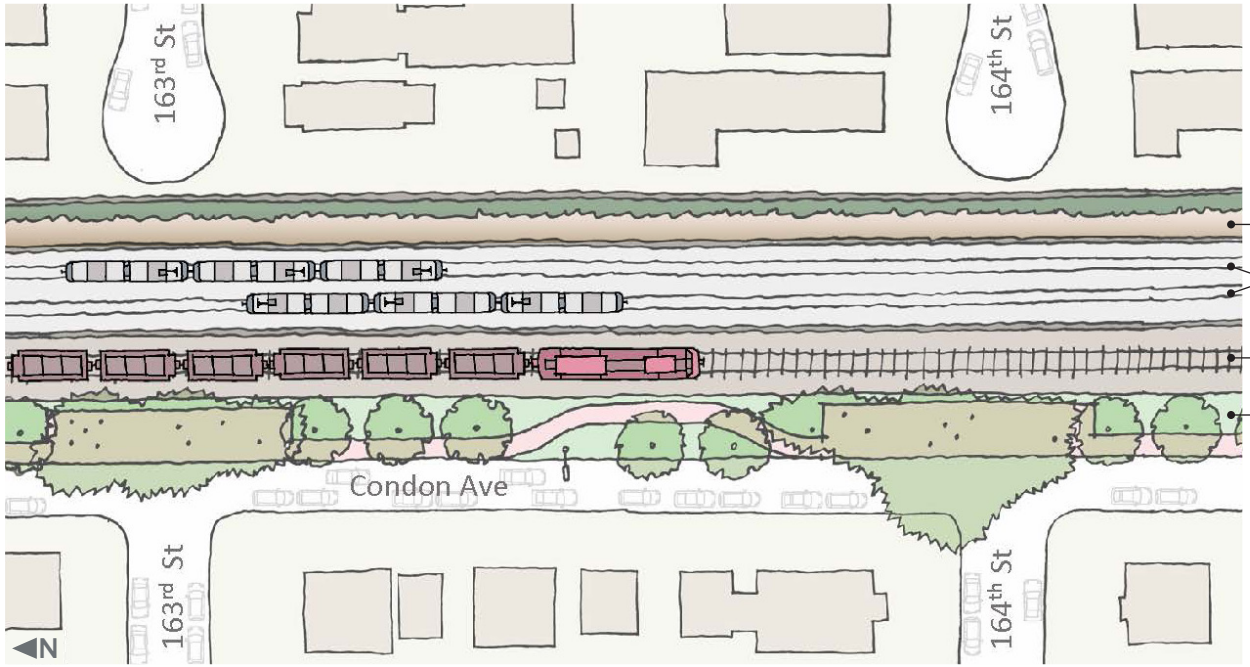
Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Retaining the spirit of the open space along Condon Ave is a central concept for the ROW Alignment Options. A tree assessment will identify existing trees that can potentially remain within the ROW. Maintaining any existing mature trees and introducing new landscape and shade trees will aim to preserve and enhance the character of this corridor.



Metro ROW Alignment, Elevated/Street-Level Option Conceptual Plan

Condon Ave Multi-Use Recreational Path between 163rd and 164th St



3. Urban Design Concepts

For the areas where light rail transit alignments may affect trees and open space such as Condon Ave, future design phases will need to evaluate tree inventory using site surveys, map resources, and identify sensitive plant species. After the Metro Board selects a preferred alignment, Metro will prepare landscaping design plans in compliance with Metro and local policies.

7 Metro ROW Alignment, Elevated/Street-Level Option Conceptual View

Condon Avenue Adjacent Multi-Use Recreational Path

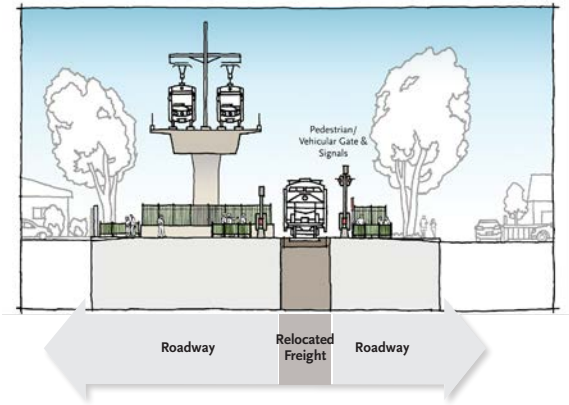
Looking south of 166th St

Existing View

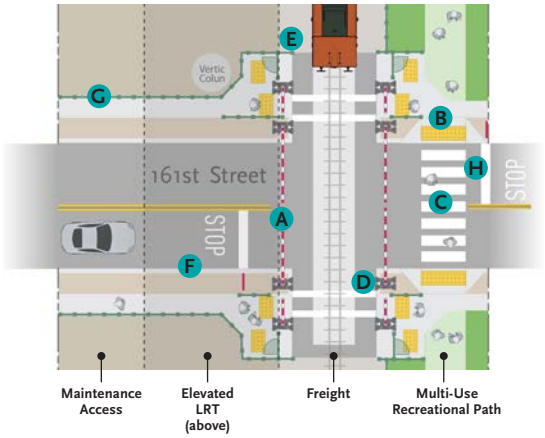
3. Urban Design Concepts

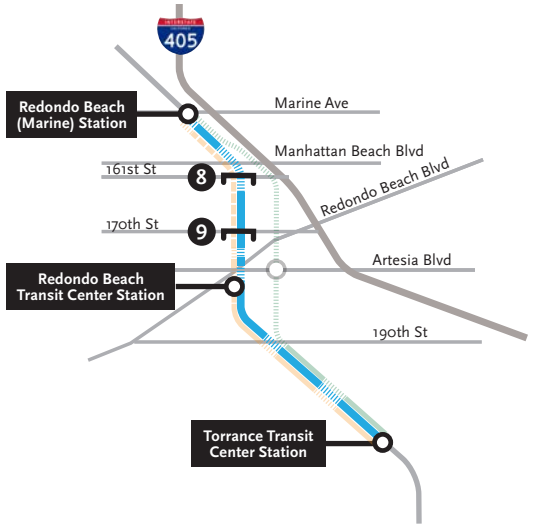
Metro ROW Alignment, Elevated/Street-Level Option

8 Elevated Street Crossing Section
Looking south at 161st St



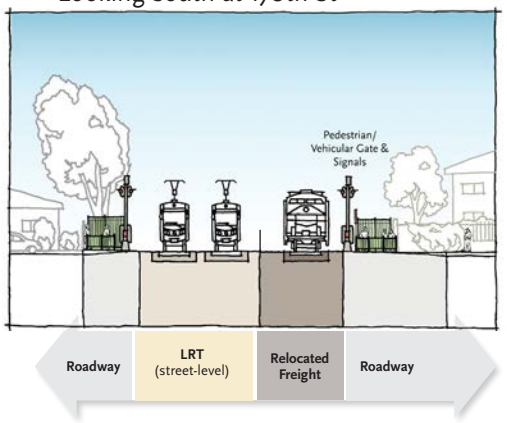
Typical Elevated Street Crossing Plan
At 161st St



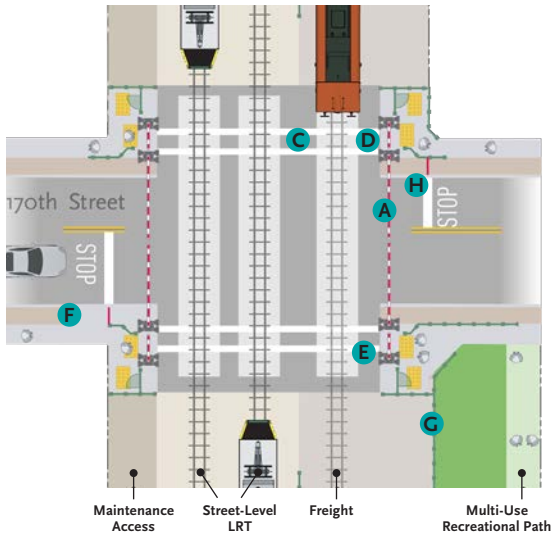


Metro ROW Alignment, Elevated/Street-Level Option

9 Street-Level Crossing Section
Looking south at 170th St



Typical Street-Level Crossing Plan
At 170th St



Additional safety features will improve safety for intersections where light rail and/or freight trains will cross at street-level. These features include vehicular and pedestrian gates and signals, ADA curb ramps, crosswalks, sidewalks with buffer zones, fencing and railing, and signage.

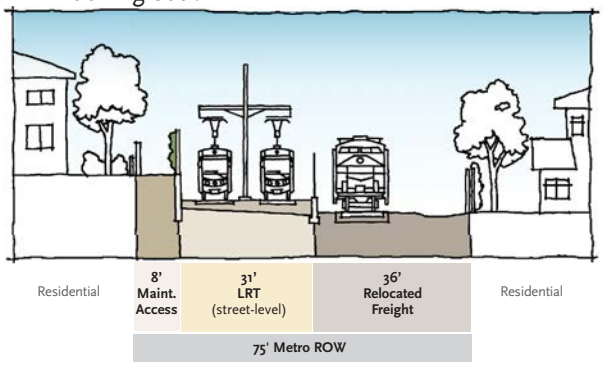
- **A** Relocated Vehicular Gate & Signals
- **B** ADA Curb Ramp
- **C** High Visibility Crosswalk with Rectangular Rapid-Flashing Beacon
- **D** Pedestrian Crossing Gate & Signals with Flashing Lights/Bells
- **E** Emergency Pedestrian Exit
- **F** Sidewalk with Buffer Zone
- **G** Fencing/Railing
- **H** Stop Sign

3. Urban Design Concepts

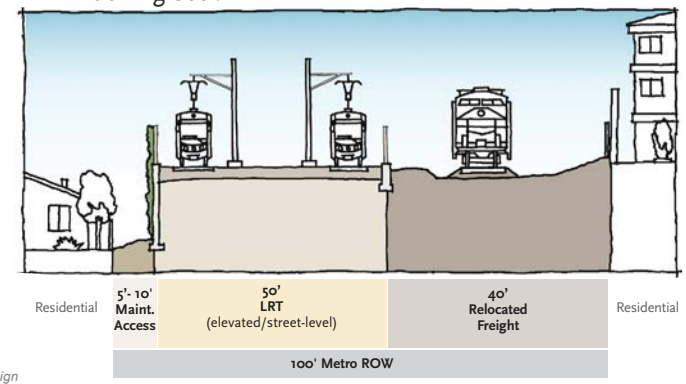
In this segment between 170th St and Artesia Blvd, the Metro ROW narrows from around 100 ft to approximately 75 ft, which does not allow for a multi-use recreational path. The light rail and freight cross 170th St at street-level and continue south to cross over Artesia Blvd on bridges. From Artesia Blvd and Grant Ave, the freight tracks shift west near Grant Ave to approach the elevated station at the Redondo Beach Transit Center.

Metro ROW Alignment, Elevated/Street-Level Option Cross Sections

10 Between 170th St and Artesia Blvd
Looking south

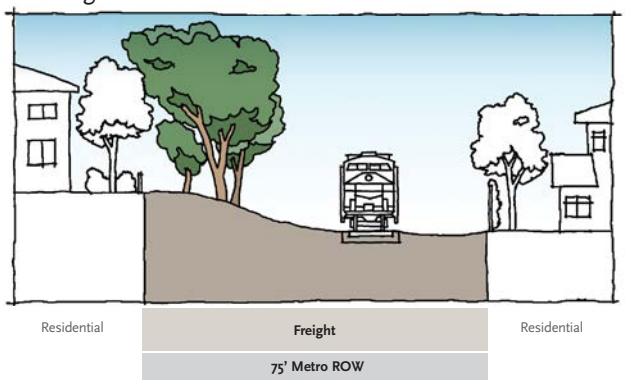


11 Between Artesia Blvd and Grant Ave
Looking south

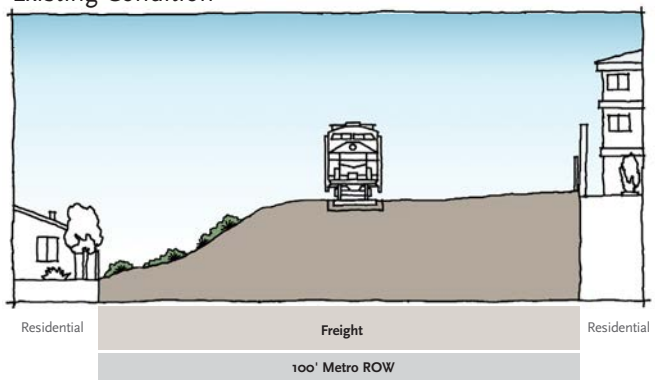


Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Existing Condition



Existing Condition



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

3. Urban Design Concepts

a. Redondo Beach Transit Center Station

The Redondo Beach Transit Center Station will serve a relatively high density population with its proximity to existing and planned multi-family housing. Multi-family housing comprises the largest land use in this station's half mile area. The South Bay Galleria, a large mixed-use re-development and employment center, is also within the Redondo Beach Transit Center Station's immediate vicinity. Other activity centers such as retail, school and parks offer a variety of destinations in the immediate station area.

The Redondo Beach Transit Center is located just south of the intersection of Grant Avenue and Kingsdale Avenue on the east side of the Metro ROW, south of Target. The station will be accessible by a ramp and a multi-use recreational path from the Transit Center parking and bus plaza. The Redondo Beach Transit Center is a hub for local and regional bus lines; it includes parking for bus patrons and a drop-off/pick-up area.

3. Urban Design Concepts

a. Redondo Beach Transit Center Station, Elevated

The Redondo Beach Transit Center Station concept assumes an elevated center platform within Metro's ROW, between Grant Ave and 182nd St. The Metro ROW is up to 190' wide in this segment, with light rail between the relocated freight track to the west and a new multi-use recreational path to the east.

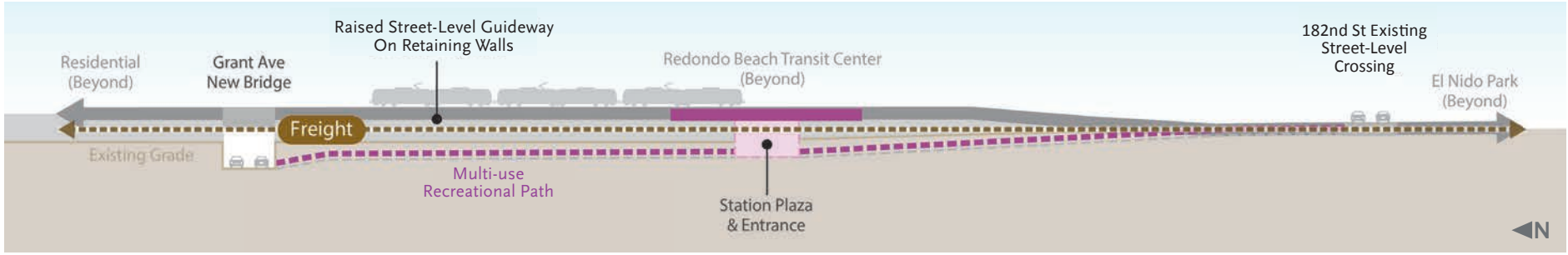
The station will be accessed via vertical circulation elements (stairs, escalators, elevators) connecting to a station plaza below the platform. The station plaza sits at the west corner of the Redondo Beach Transit Center. A new crosswalk will be coordinated with the city of Redondo Beach to provide Metro customers a seamless transfer path between light rail and bus or micro-mobility.

The Trench Alignment has a different configuration for the Redondo Beach Transit Center Station, described on pages 45-47.

Metro ROW Alignment, Elevated/Street-Level Option

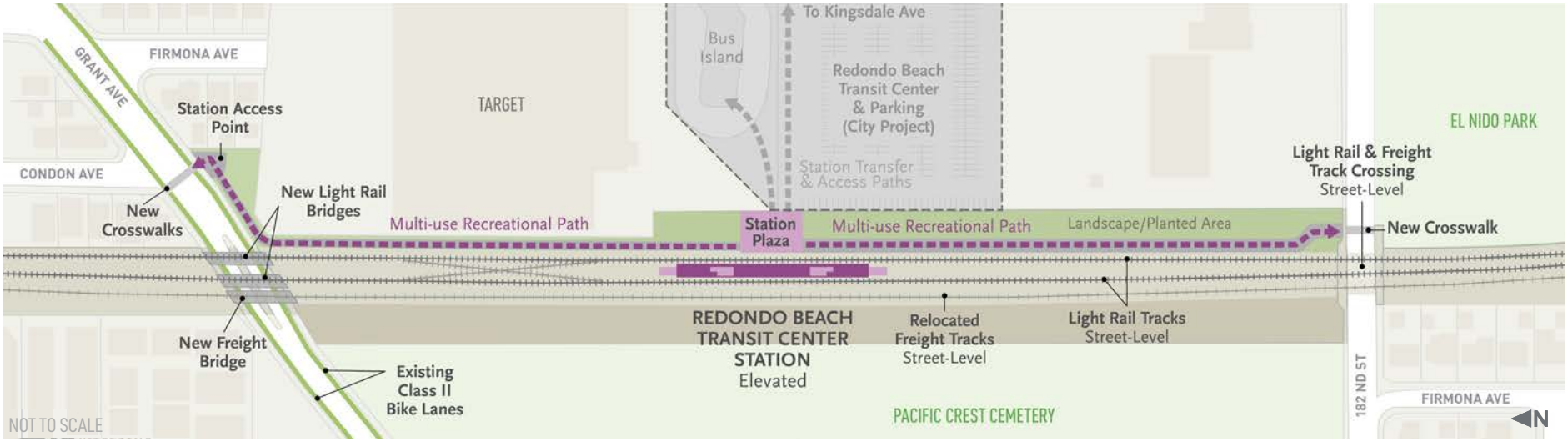
Redondo Beach Transit Center Station, Elevated Option
Looking east

Note: Transition to vertical profile not to scale; dimensions are approximate



Metro ROW Alignment, Elevated/Street-Level Option Concept Plan

Redondo Beach Transit Center Station, Elevated Option



3. Urban Design Concepts

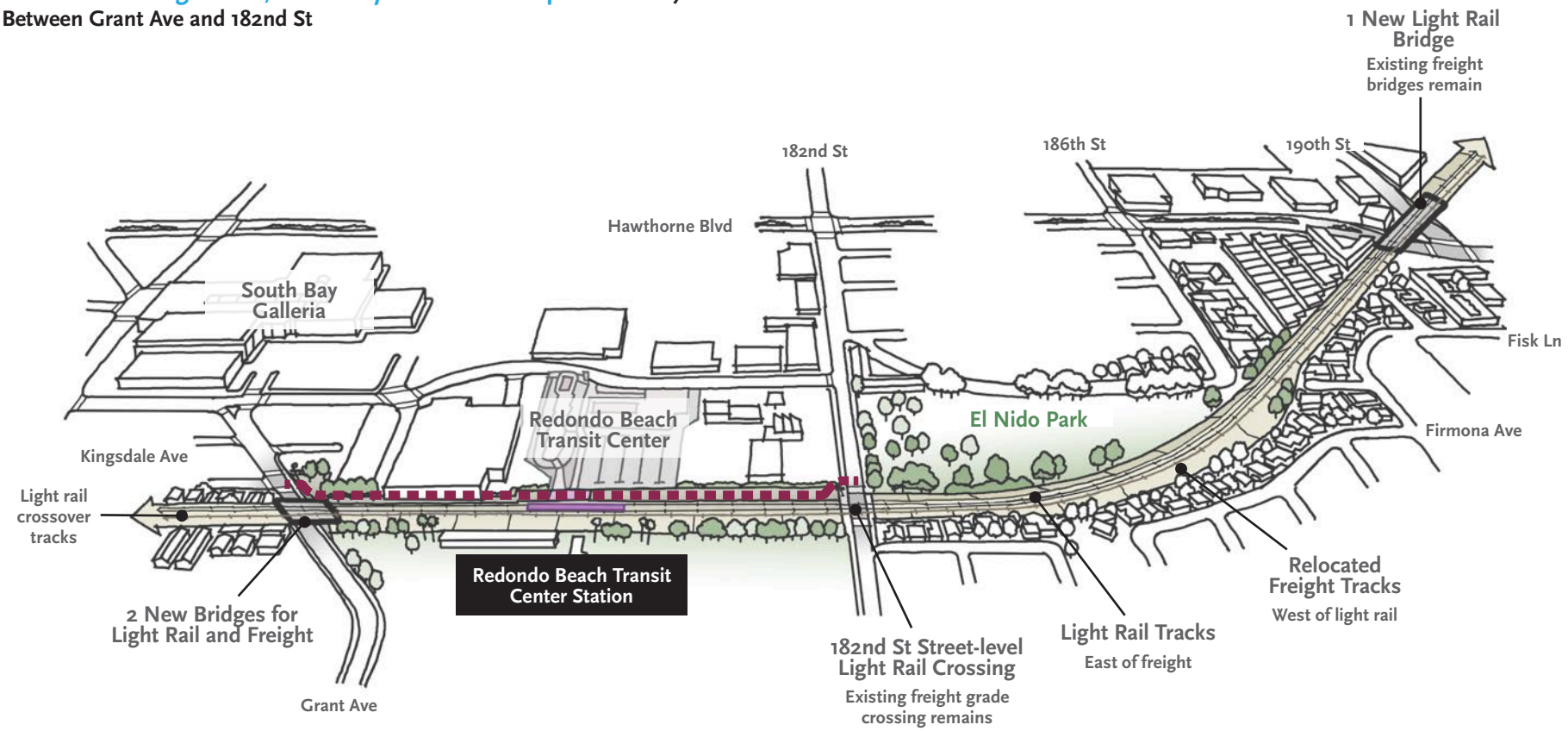
a. Redondo Beach Transit Center Station, Elevated

The new multi-use recreational path will connect the immediate area north of the station at Grant Ave to the El Nido Park Neighborhood south of 182nd St, providing convenient access to the Redondo Beach Transit Center and the Redondo Beach Transit Center Station.

New crosswalks will be located at both the northern and southern entrances of the multi-use recreational path. At Grant Ave, the path will tie into class II bike lanes connecting to communities further east and west in Redondo Beach.

Metro ROW Alignment, Elevated/Street-Level Option Birdseye View

Between Grant Ave and 182nd St



3. Urban Design Concepts

a. Redondo Beach Transit Center Station, Elevated

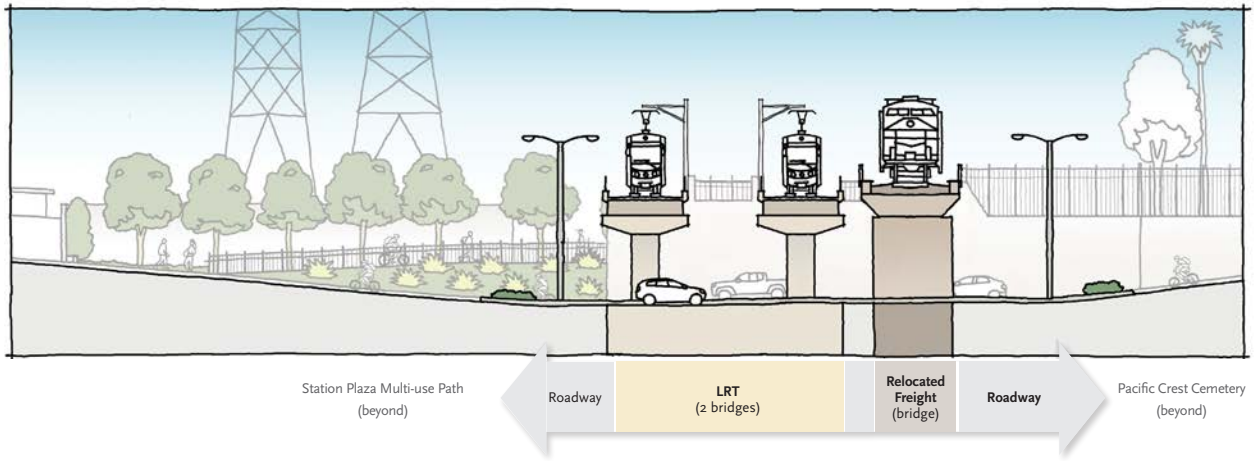
Metro ROW Alignment, Elevated/Street-Level Option **Conceptual View**
Redondo Beach Transit Center Station, Elevated Option
Looking north towards station entrance plaza from multi-use recreational path

Key Plan

3. Urban Design Concepts

Metro ROW Alignment, Elevated/Street-Level Option Cross Section

12 New Bridges at Grant Ave
Looking south



Metro ROW Alignment, Elevated/Street-Level Option Conceptual View

13 New Safety Features for Light Rail and Freight Crossing at Street-Level
Looking southwest at 182nd St

North of the Redondo Beach Transit Center, two new bridges cross over Grant Ave. Freight runs on the western bridge, and light rail runs on the eastern bridge. The Metro light rail tracks and station platform are positioned immediately next to the Redondo Beach Transit Center, allowing for direct connections to the transit hub.

For the Metro ROW Alignment, Elevated/Street-Level Option, the existing freight track crossing at 182nd St will remain at street-level. A grade-separated light rail undercrossing is not possible given the proposed elevation of the light rail guideway and station platform. With both freight and light rail crossing 182nd St at street-level, enhanced pedestrian safety crossing features are proposed.

Existing View

3. Urban Design Concepts

3.4 Metro ROW Alignment, Trench Option

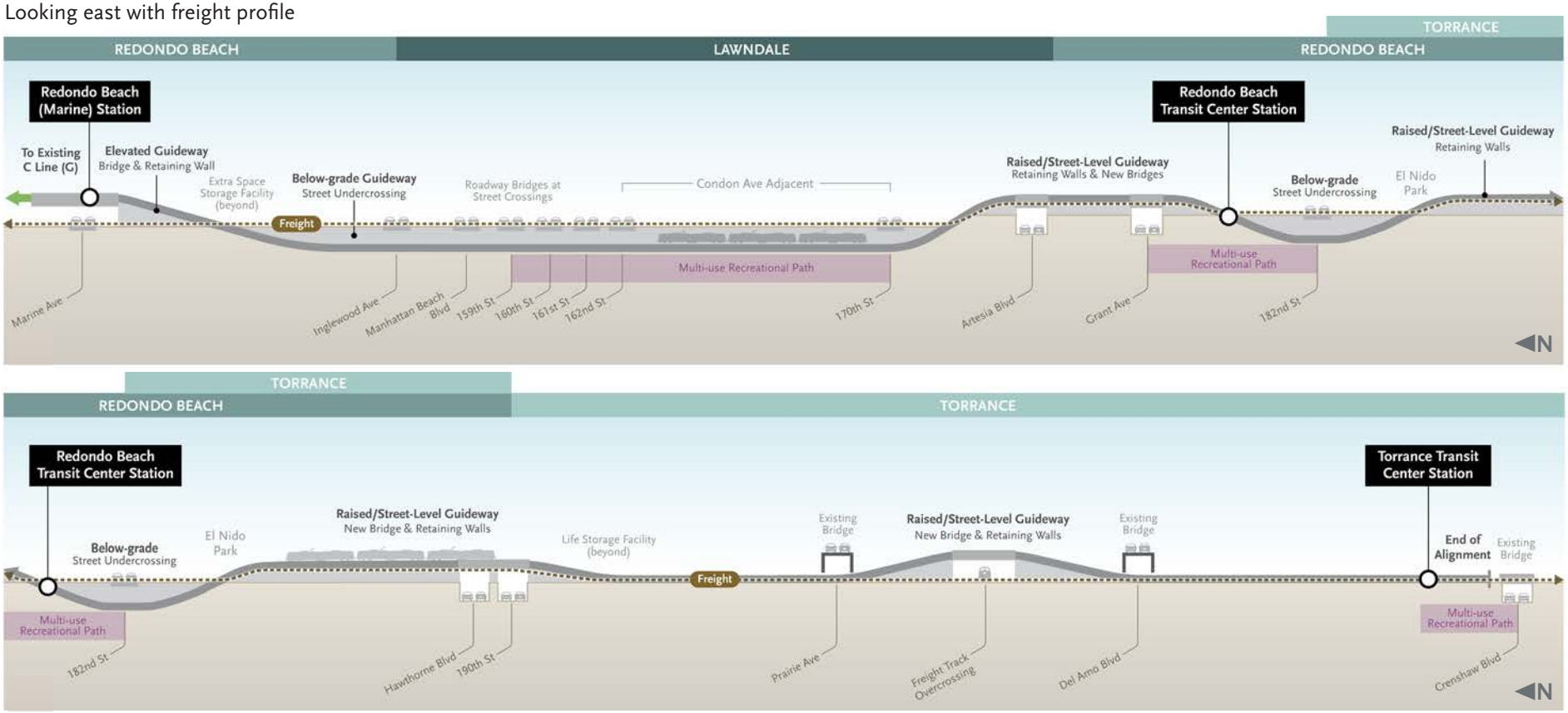
The Trench Option will have stations in the same locations as the Metro ROW Elevated/Street-Level option. These stations are Redondo Beach Transit Center Station at the Redondo Beach Transit Center and the Torrance Transit Center Station at the Torrance Transit Park and Ride Regional Terminal.

Metro has developed the Trench Option in response to community concerns related to views, potential noise levels, and vibration. This alignment follows the Metro ROW, but travels below streets in an open air trench for approximately a mile (between Inglewood Ave and 170th St), with an undercrossing at 182nd Street. The Trench Option is entirely grade separated, unlike the Metro ROW Elevated/Street-Level Alignment, which has two street-level grade crossings (170th St and 182nd St).

Metro ROW Alignment, Trench Option

From Redondo Beach Transit Center Station to Torrance Transit Center Station

Looking east with freight profile

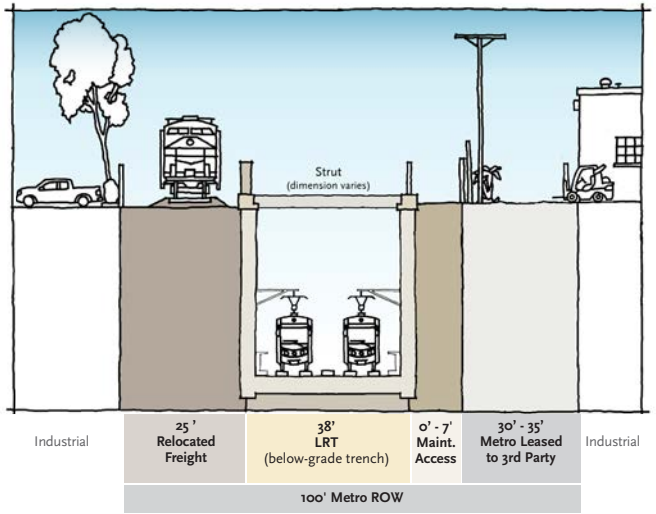


Note: Transition to vertical profile not to scale; dimensions are approximate

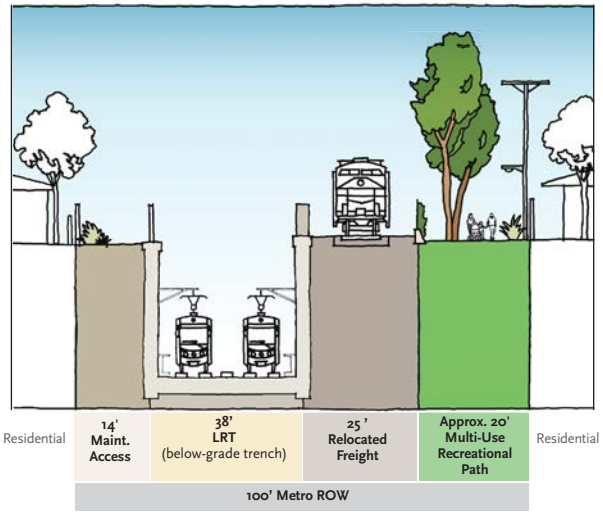
3. Urban Design Concepts

Metro ROW Alignment, Trench Option Cross Sections

1 Between Inglewood Ave Manhattan Beach Blvd
Looking south with freight profile



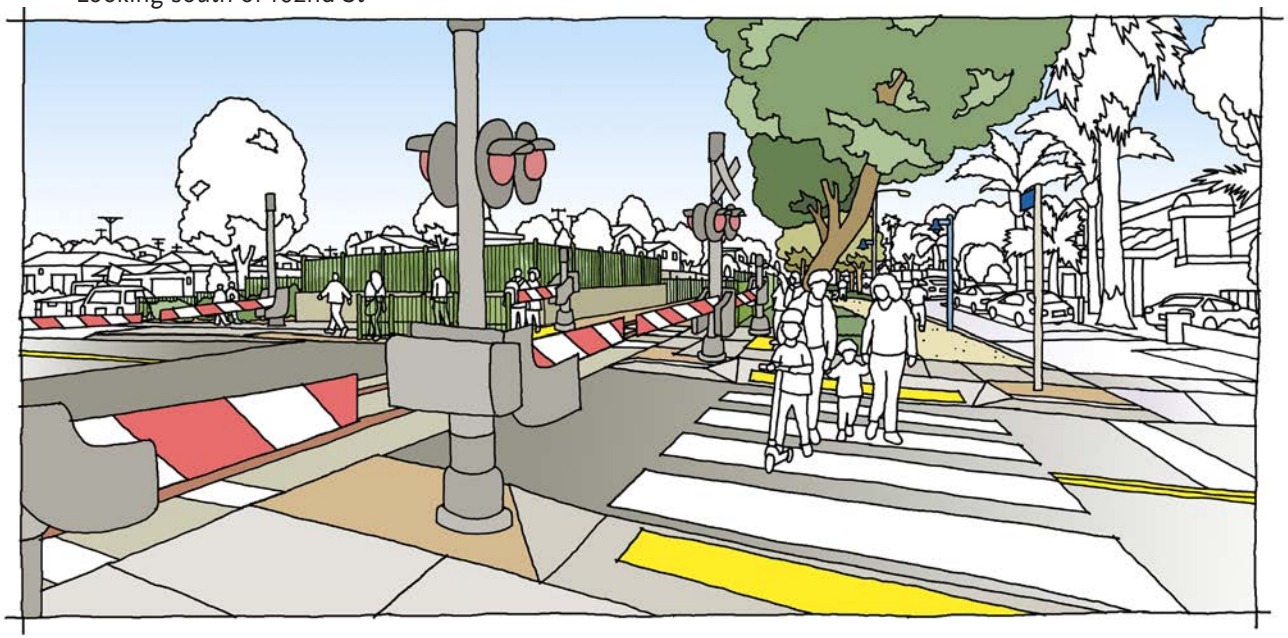
2 Between 159th St and 160th St
Looking south with freight profile



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Metro ROW Alignment, Trench Option Conceptual View

3 Below-Grade Street Crossing, New Crosswalk
Looking south of 162nd St



From Inglewood Ave to 170th St, the light rail travels through Lawndale in an open air trench below street-level. In this segment, the trench will need to be deep in order to avoid utility conflicts. This trench condition continues below seven local cross streets, separating light rail from pedestrians, cyclists and vehicular traffic. From 159th St to 170th St, this alignment will also include a multi-use recreational path, providing a landscaped walking space for local residents to enjoy. The trench alignment continues under street crossings, like 162nd St, however the trench depth becomes shallower compared to the segment north of 170th St due to no known utility conflicts. Freight trains will remain at street-level. This configuration requires that street crossings and the light rail trench perimeters have additional safety measures.

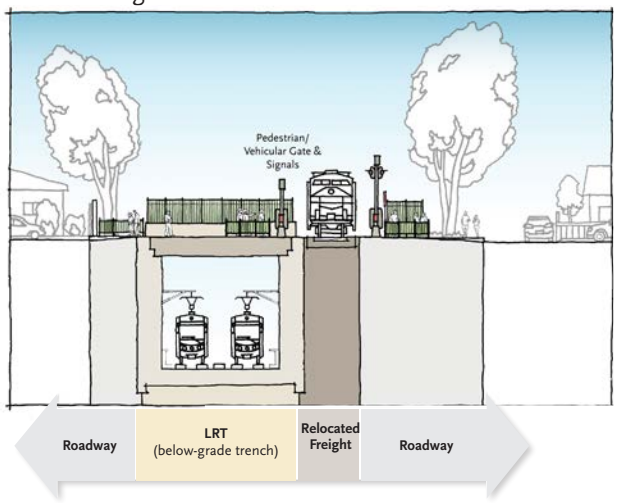
Existing View

3. Urban Design Concepts

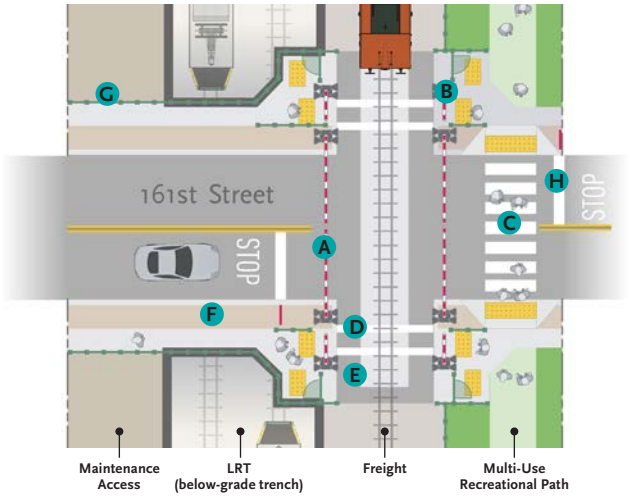
For the Trench Option, additional safety measures for street crossings include vehicular and pedestrian gates and signals, ADA curb ramps, high visibility crosswalks, sidewalks with buffer zones, emergency pedestrian exits, fencing, railing, and traffic signs.

Metro ROW Alignment, Trench Option

4 Below-Grade Crossing Section
Looking south at 161st St



Typical Below-Grade Crossing Plan
At 161st St

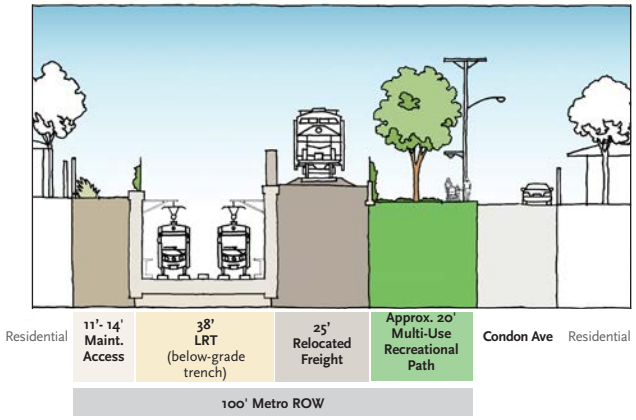


- **A** Relocated Vehicular Gate & Signals
- **B** ADA Curb Ramp
- **C** High Visibility Crosswalk with Rectangular Rapid-Flashing Beacon
- **D** Pedestrian Crossing Gate & Signals with Flashing Lights/Bells
- **E** Emergency Pedestrian Exit
- **F** Sidewalk with Buffer Zone
- **G** Fencing/Railing
- **H** Stop Sign

3. Urban Design Concepts

Metro ROW Alignment, Trench Option Cross Section

5 Between 162nd and 168th St
Typical below-grade guideway looking south



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Wherever possible, mature existing trees will be preserved. New landscaping, safety, and noise mitigation features are proposed along the Metro ROW to enhance neighborhood accessibility and to acknowledge the unique setting of Condon Ave.

Metro ROW Alignment, Trench Option Conceptual View

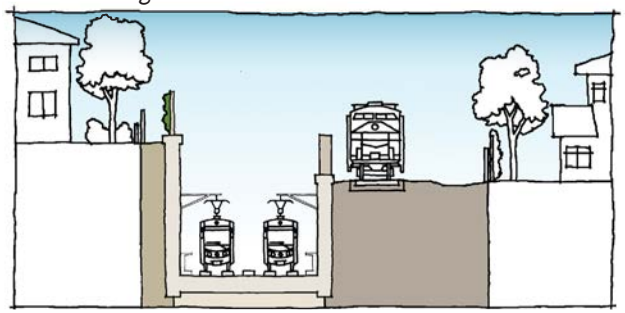
6 Condon Avenue Adjacent Neighborhood Path
Looking south of 166th St

Existing View

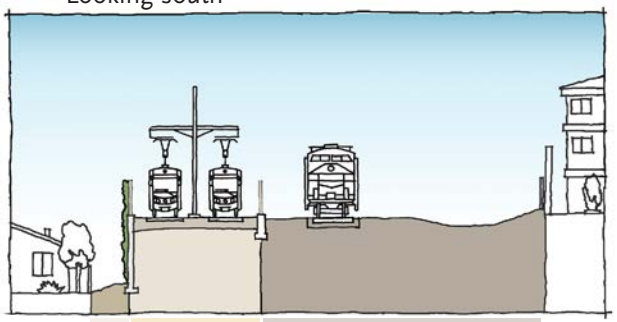
3. Urban Design Concepts

Metro ROW Alignment, Trench Option Cross Sections

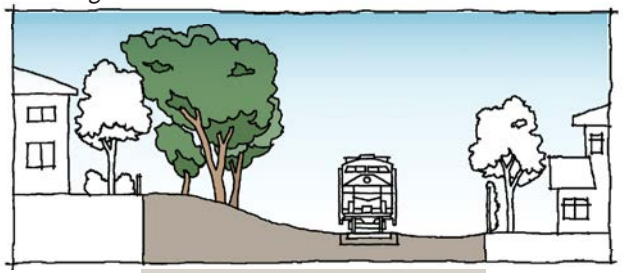
7 Between 170th St and Artesia Blvd
Looking south



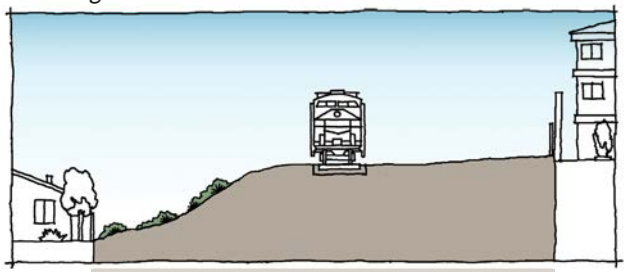
8 Between Artesia Blvd and Grant Ave
Looking south



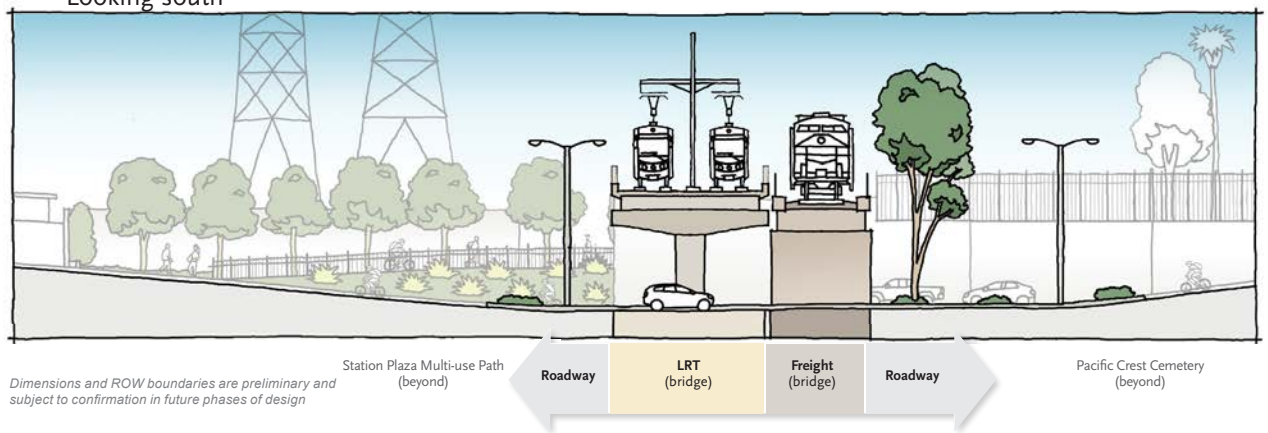
Existing Condition



Existing Condition



9 New Bridges at Grant Ave
Looking south



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

For the Trench Option, the light rail crosses under 170th St and then ascends to travel street-level to cross over Artesia Blvd on a bridge parallel with freight. The narrowing of the Metro ROW in the segment between 170 St and Artesia Blvd does not allow for a multi-use recreational path.

The light rail will transition up to street-level south of 170th St. The light rail crosses both Artesia Blvd and Grant Ave on a new elevated bridge. Between Artesia and Grant Ave, the freight track does not shift and remains in place. The light rail will then descend into a short trench in order to run under 182nd St.

Existing Freight Bridge on Grant Ave, Looking West

3. Urban Design Concepts

b. Redondo Beach Transit Center Station, Street-Level

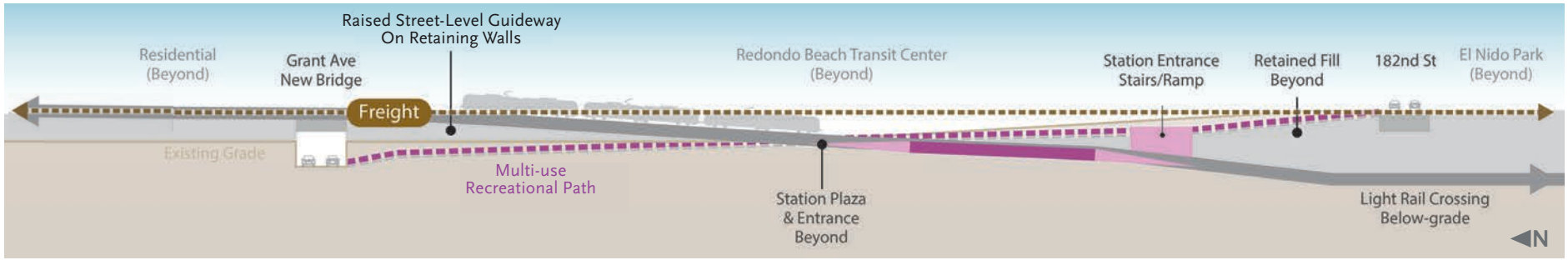
The Trench Option has a design concept that assumes a street-level station platform within Metro's ROW, between Grant Ave and 182nd St. For this Option, the station platform sits at a lower elevation to accommodate the light rail crossing below 182nd St. Light rail tracks and station platform are located in between freight track (to the east) and a new multi-use recreational path (to the west).

The station plaza is connected via ADA accessible ramps from the northern platform end, or via a multi-use recreational path from the southern platform entrance. Metro customers would cross the light rail northbound track at either station entrance to connect to the multi-use path to access final destinations. The station plaza sits along the western corner of the future Redondo Beach Transit Center. A new crosswalk will be coordinated to provide Metro customers a direct transfer path between stations.

Metro ROW Alignment, Trench Option

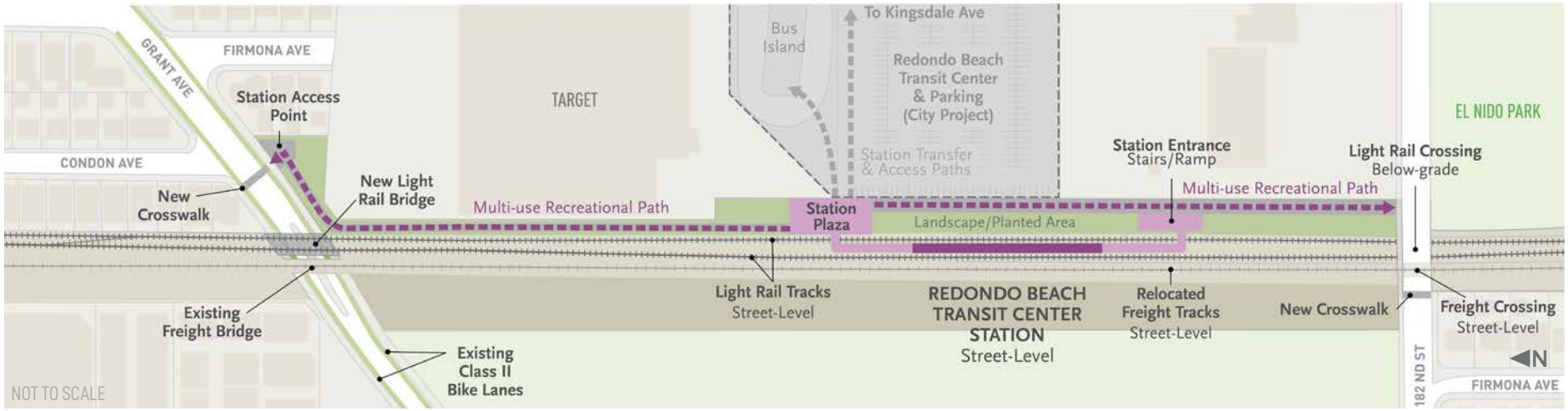
Looking east with freight profile

Note: Transition to vertical profile not to scale; dimensions are approximate



Metro ROW Alignment, Trench Option Concept Plan

Redondo Beach Transit Center Station (Street-Level)



3. Urban Design Concepts

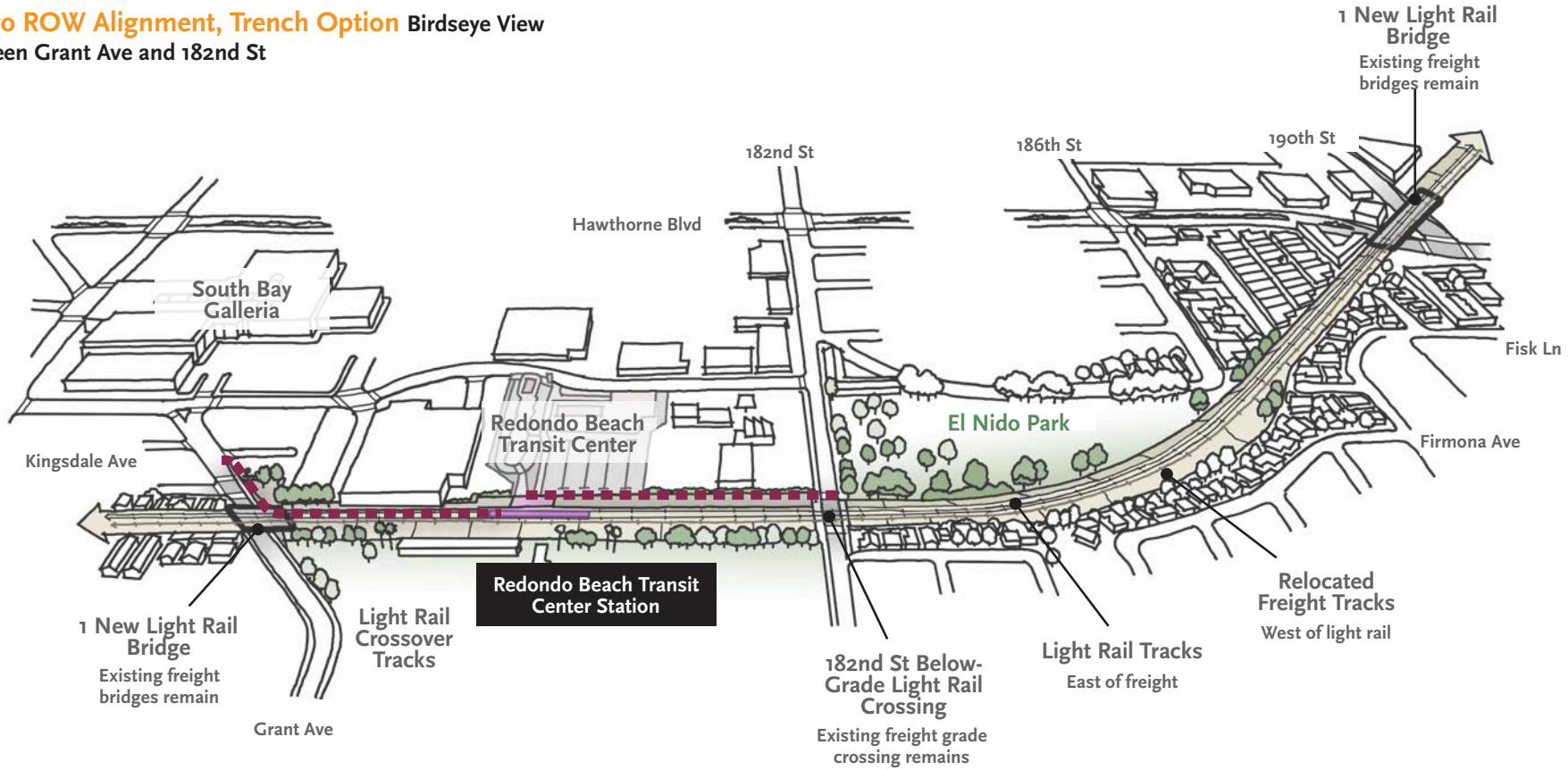
b. Redondo Beach Transit Center Station, Street-Level

The new multi-use recreational path in this station option provides a convenient connection serving the immediate area north of the station from Grant Ave, and El Nido Park Neighborhood south of 182nd St. New crosswalks are proposed near both pathway entrances. This pathway ties into class II bike lanes on Grant Ave, connecting to communities further east and west in Redondo Beach and Lawndale.

At Grant Ave, Metro would construct a new bridge parallel to the existing freight bridge for the light rail trains to travel to meet the Redondo Beach Transit Center Station. The station would be located south of the Redondo Beach Transit Center and the platform would be at a lower elevation so that the Trench Option can travel under 182nd Street. The freight track would be rebuilt and would cross 182nd Street as it does today.

This station option maintains the existing freight track crossing at 182nd St and includes additional pedestrian safety crossing features.

Metro ROW Alignment, Trench Option **Birdseye View**
Between Grant Ave and 182nd St

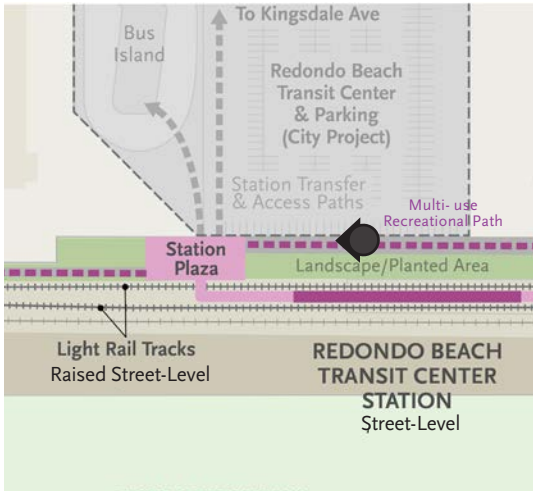


3. Urban Design Concepts

b. Redondo Beach Transit Center Station, Street-Level

Metro ROW Alignment, Trench Option **Conceptual View**
Redondo Beach Transit Center Station
Looking north towards station entrance plaza and platform from multi-use recreational path

Key Plan

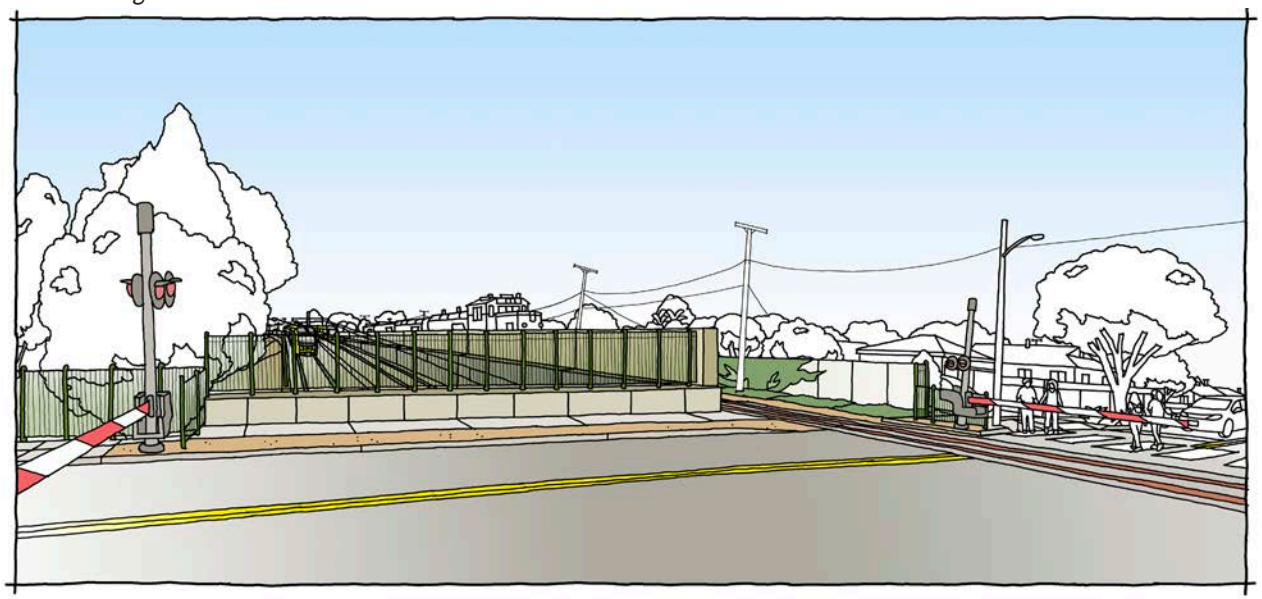


3. Urban Design Concepts

At 182nd St, the Trench Option has light rail descending down from the bridges at Grant Ave to traverse under 182nd St in a short trench. While freight remains at street-level, it only runs once or twice a day. A grade separated light rail crossing at 182nd St will not effect local pedestrian, cyclist or vehicular traffic at this intersection.

Metro ROW Alignment, Trench Option Conceptual View

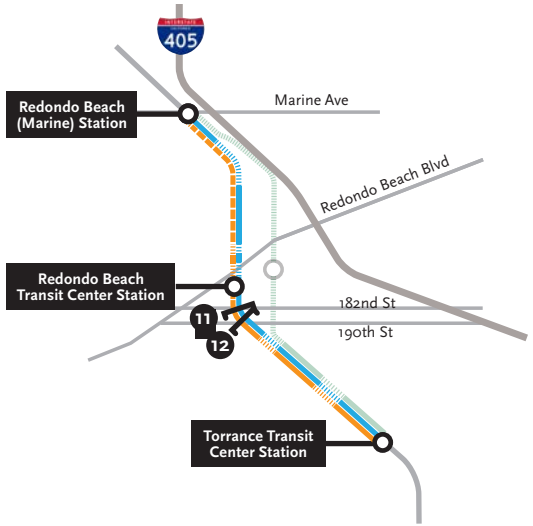
10 Below-Grade Light Rail and Street-Level Pedestrian Safety Crossing Features
Looking southwest at 182nd St



Existing View

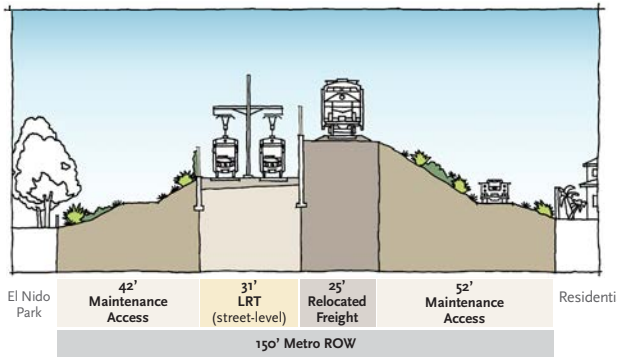
3. Urban Design Concepts

Both Metro ROW Alignments (Elevated/Street-Level and Trench Options) will carry light rail trains through residential neighborhoods from 182nd St to 190th St. The light rail tracks along the Metro ROW are lowered related to the freight tracks based on community input to help address concerns of noise, vibration and views of the light rail train.

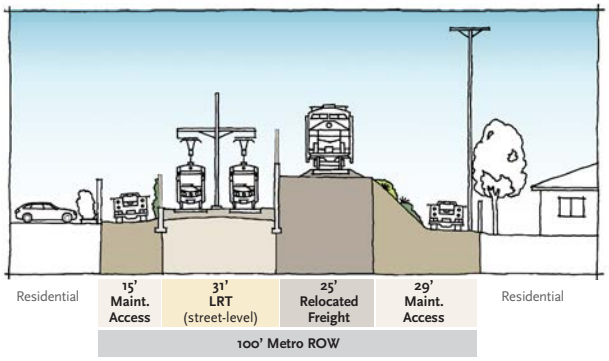


Metro ROW Alignment, Trench Option Cross Sections

11 Between 184th St and 186th St
El Nido Park Adjacent Looking South

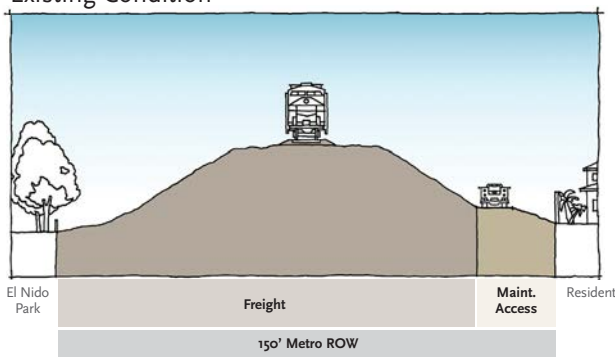


12 Between 186th St and Hawthorne Blvd
Residential Adjacent Looking South

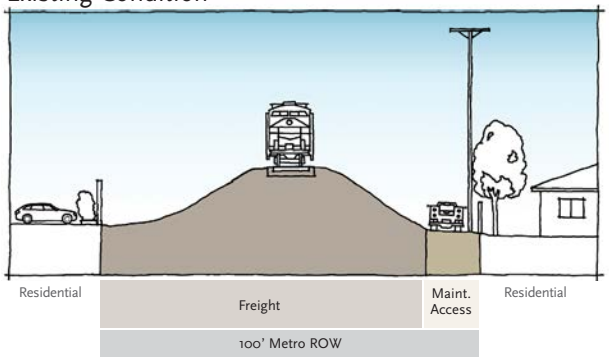


Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Existing Condition



Existing Condition



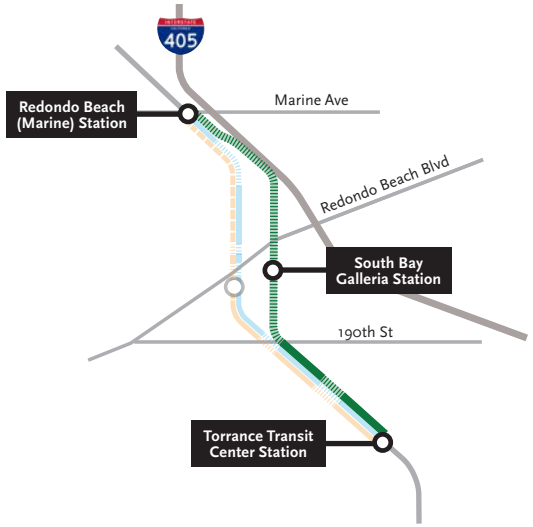
Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

3. Urban Design Concepts

3.5 Hawthorne Alignment, Elevated Option

The Hawthorne Alignment is entirely elevated. It begins at the Redondo Beach (Marine) Station within the existing Metro ROW, then it leaves the ROW at Condon Ave to run in the embankment alongside the I-405. The guideway then turns to enter Hawthorne Blvd at 160th St in an elevated alignment, centered over the Hawthorne Blvd median. At 190th St, the alignment rejoins the Metro ROW as it turns southeast towards the Torrance Transit Center Station.

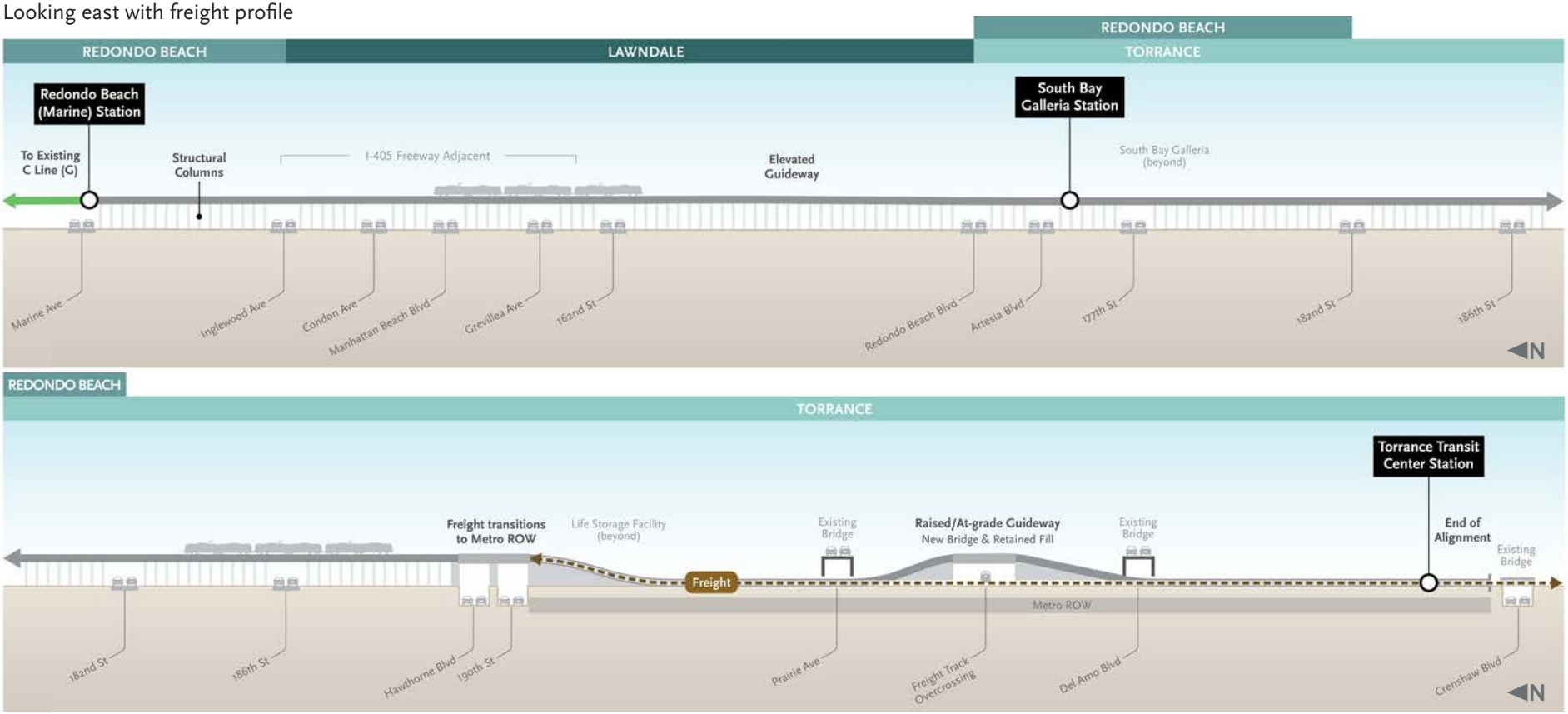
The Hawthorne Alignment station is located east of the South Bay Galleria. The southernmost station for all three alignments is the Torrance Transit Center Station which is located adjacent to the northwestern side of the Torrance Transit Park and Ride Regional Terminal.



Hawthorne Alignment, Elevated Option

From Redondo Beach Transit Center Station to Torrance Transit Center Station

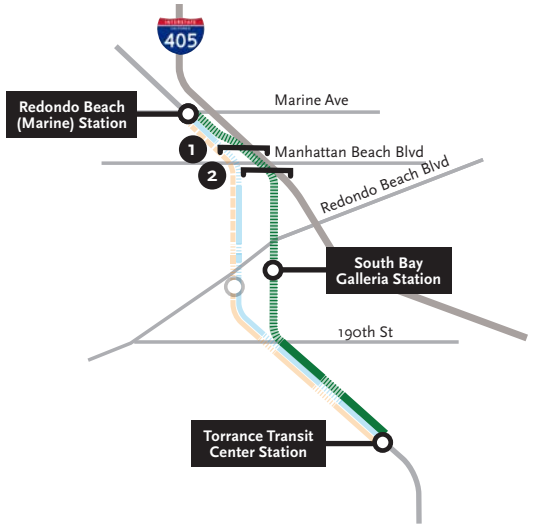
Looking east with freight profile



Note: Transition to vertical profile not to scale; dimensions are approximate

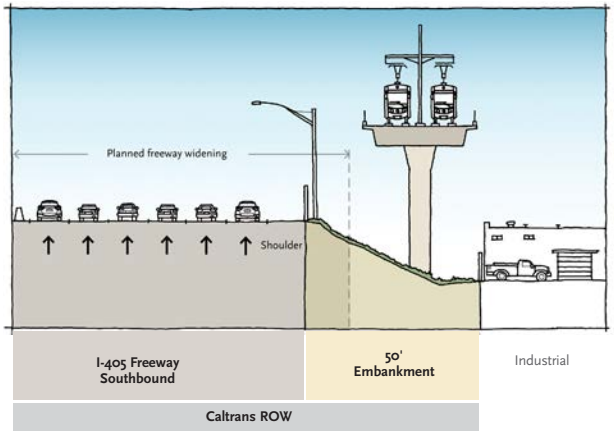
3. Urban Design Concepts

The Hawthorne Alignment is elevated, supported by large concrete columns. The alignment begins to move away from the Redondo Beach Marine Station and Metro ROW at 156th St. The alignment continues along the west side of the I-405 from approximately 156th St to 162nd St. This alignment path sits just on the edge of Lawndale's neighborhood near Condon Ave before it enters Hawthorne Blvd. The structural columns supporting the light rail guideway throughout the segment from 156th St to 162nd St are located in the embankment along the I-405 and Grevillea Ave.

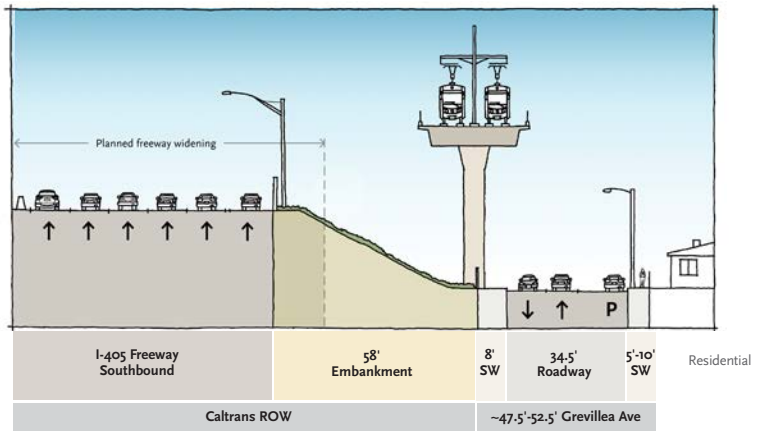


Hawthorne Alignment, Elevated Option Cross Sections

1 Between Condon Ave and Manhattan Beach Blvd
Looking south on Caltrans ROW



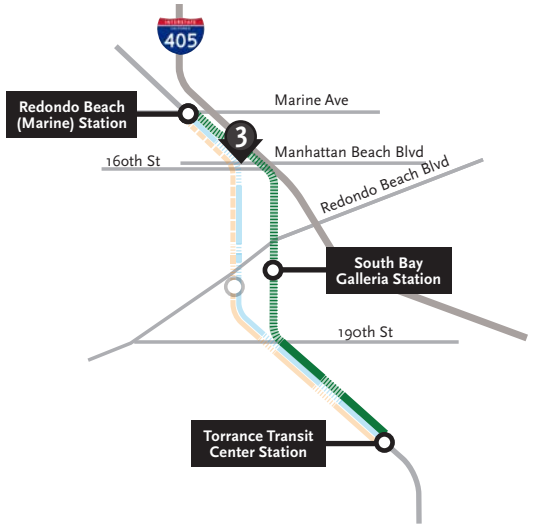
2 At Grevillea Ave Between 159th St and 160th St
Looking south on Caltrans ROW/Grevillea Ave



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

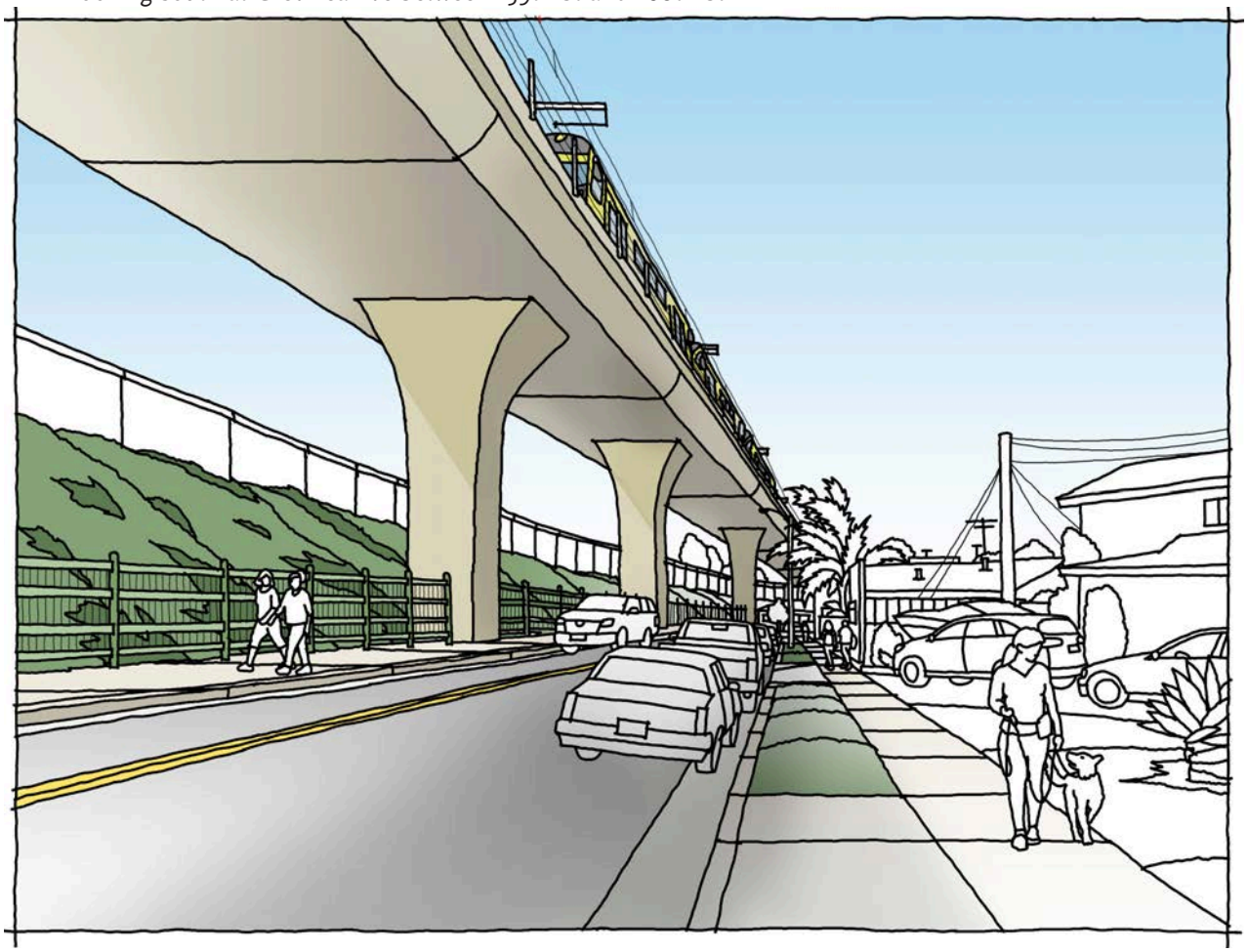
3. Urban Design Concepts

The integration of the Hawthorne Alignment's elevated guideway into the fabric of Lawndale was positioned alongside the I-405 Freeway and Grevillea Ave to avoid intrusion into the neighborhood streets of Lawndale. The Hawthorne Alignment will include project features and mitigations to address noise and vibration, which will be outlined in the Draft EIR.



Hawthorne Alignment, Elevated Option Conceptual View

3 Elevated Guideway along I-405 Freeway
Looking south at Grevillea Ave between 159th St and 160th St



Existing View

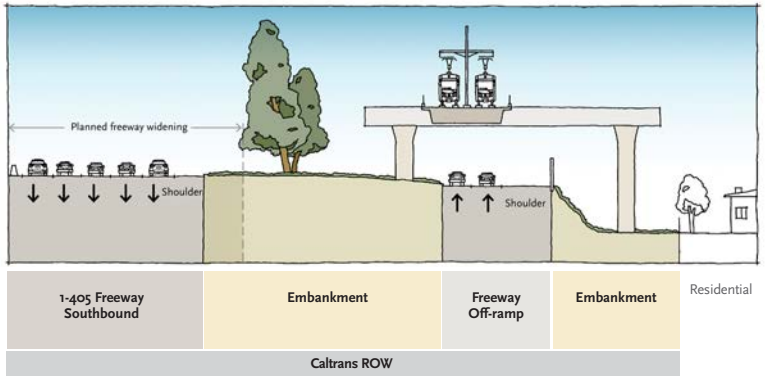
3. Urban Design Concepts

The Hawthorne Alignment is an elevated guideway supported by vertical concrete columns. As the guideway transitions onto and off of Hawthorne Blvd at around 160th St and 190th St, straddle bents may be needed. The columns will be located in the middle of Hawthorne Blvd where the median is today. Hawthorne Blvd's travel lanes will be retained with a priority on maintaining vehicular access to the commercial and residential neighborhoods along the corridor.

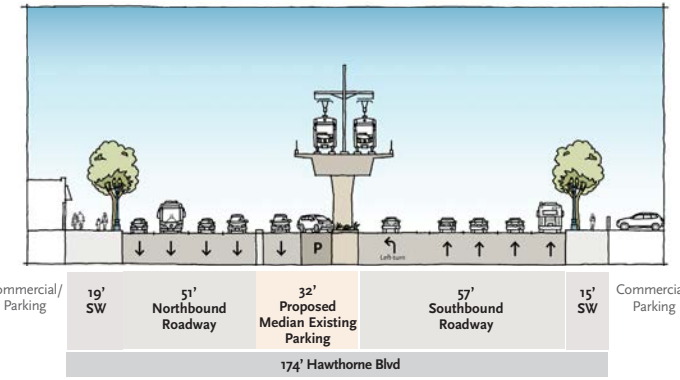
The north and southbound travel lanes on Hawthorne Blvd will be retained. Existing left-turn movements, center median parking, and streetscape may be affected. Metro's goal is to retain as many of these features as possible. New street trees will be infilled with existing landscape where feasible.

Hawthorne Alignment, Elevated Option Cross Sections

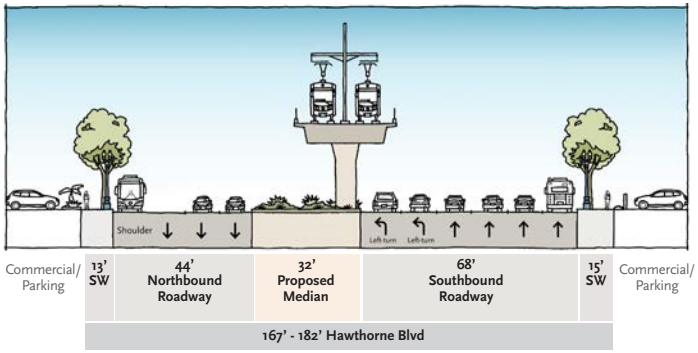
4 Between 160th St and Hawthorne Blvd
Looking south of 160th St



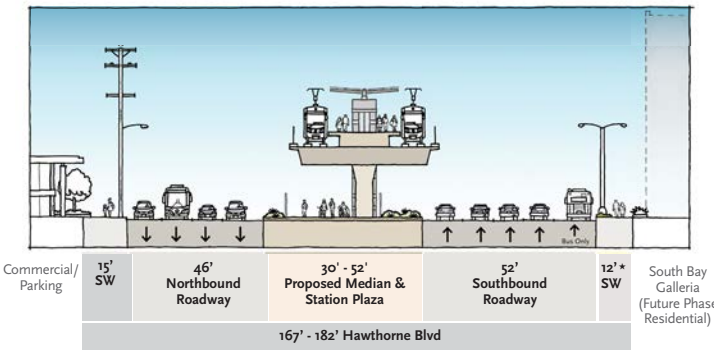
5 Between 165th St and 166th St
Looking south on Hawthorne Blvd



6 Between 171st St and Redondo Beach Blvd
Looking south on Hawthorne Blvd



7 South Bay Galleria Station
Looking south of Artesia Blvd



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

**Proposed sidewalk improvements by South Bay Galleria*

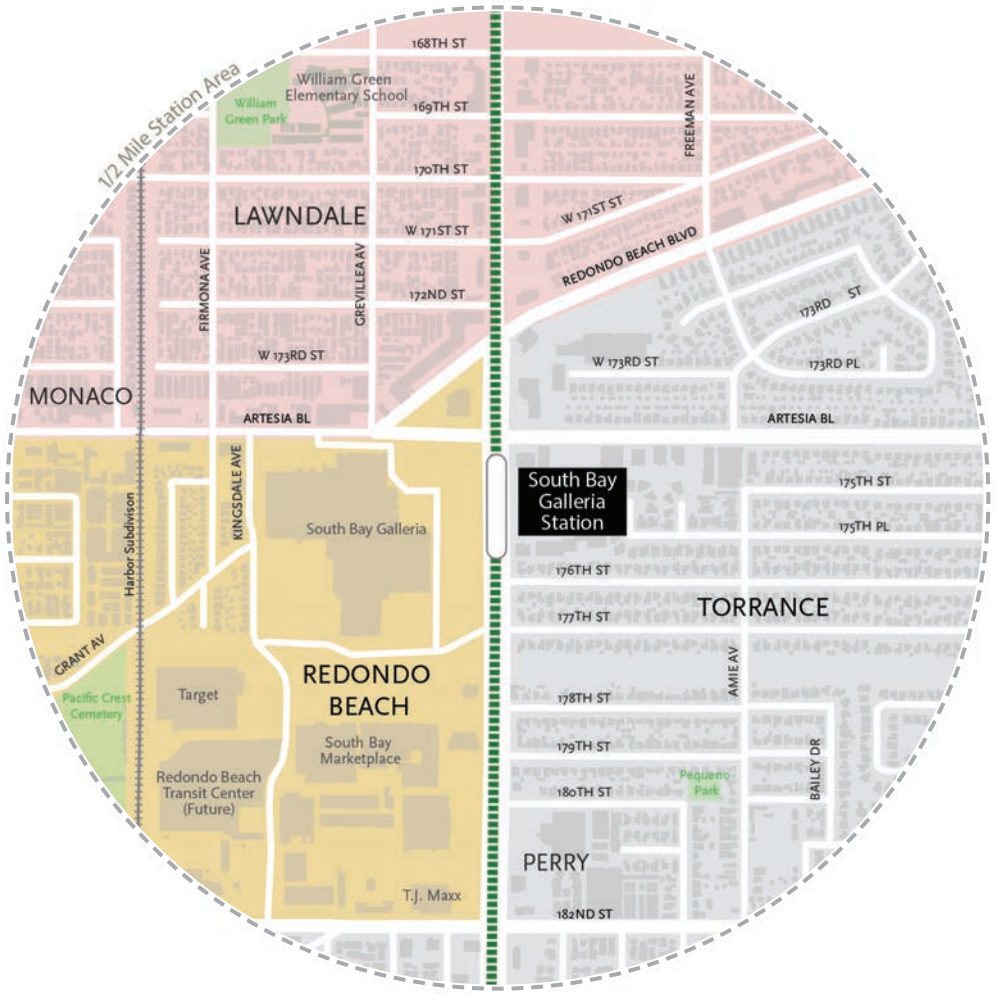
3. Urban Design Concepts

c. South Bay Galleria Station, Elevated

The South Bay Galleria Station is approximately a half mile from the Redondo Beach Transit Center. Metro would coordinate with local bus operators to improve the bus connections adjacent to the station along Hawthorne/Artesia, and to address the long transer distance between the light rail station and Redondo Beach Transit Center. The station area is similar to that of the Redondo Beach Transit Center Station and has comparable population density. Redevelopment of the 30-acre South Bay Galleria Improvement Project includes the construction of retail stores, dining, entertainment, a hotel, residential units, and creative office space. The developer's Phase I entitlements will increase employment immediately around the station and support Transit Oriented Communities (TOC) goals of compact design and complete neighborhoods.

The South Bay Galleria Station will be oriented towards Hawthorne Blvd, a major commercial corridor and at the nexus of all three cities. The South Bay Galleria Station will be located on the border of Redondo Beach and Torrance. The elevated center platform will be accessed from a street-level plaza with newly configured crosswalks at Artesia Blvd and north of 176th St at a new signalized crossing. Hawthorne Blvd sidewalks will remain or be improved by the developer at the South Bay Galleria frontage.

The South Bay Galleria Station area has a suburban character with big box retail and surface parking lots. On the west side of Hawthorne Blvd south of the South Bay Galleria development, the station area comprises of a variety of strip-mall commercial. Land use changes on the east side of the alignment. Low density residential neighborhoods in Torrance are located on east side of Hawthorne Blvd from Redondo Beach Blvd to 190th St. A South Bay Galleria Station will maintain the frontage roads adjacent to Hawthorne Blvd that provide local access to these single family homes in north Torrance.



3. Urban Design Concepts

c. South Bay Galleria Station, Elevated

Access to the elevated South Bay Galleria Station will be provided from a street-level station plaza in the center of Hawthorne Blvd. The crosswalk at Artesia Blvd will connect directly to the northern end of the station plaza, with two new mid-block signalized crosswalks connecting to the southern end, north of 176th St.

These signalized crossings will provide safe and convenient access across the north and southbound traffic for Metro customers coming from South Bay Galleria (via west sidewalk on Hawthorne Blvd) and commercial properties and residences (via east sidewalk on Hawthorne Blvd).

The existing center median on Hawthorne Blvd will be modified to accommodate the station plaza and required structural columns, stairs, escalators, and elevators. Potential changes to roadway striping, median, and parking are discussed in separate report (Transportation Detail Report, 2023) on the project website.

Hawthorne Alignment, Elevated Option

South Bay Galleria Station, Station Access Plan

South Bay Galleria Station, Platform Level Concept Plan

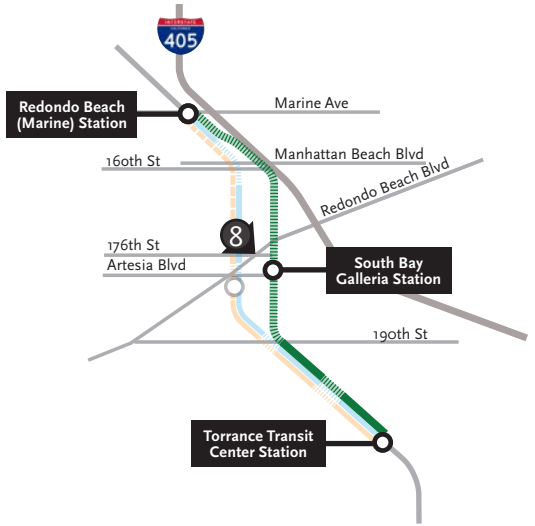
South Bay Galleria Station, Street-Level Concept Plan

3. Urban Design Concepts

c. South Bay Galleria Station, Elevated

The station platform will be approximately 24 feet wide sitting approximately 30.5 feet above the center median of Hawthorne Blvd. Column spacing will maximize customer visibility and flow to and from the station.

At the street level, a station plaza will include amenities such as a ticketed fare zone with safety features to buffer customers from the adjacent vehicular traffic. Features may include fencing, railing, or glass panels per Metro's Systemwide Station Design.



Hawthorne Alignment, Elevated Option Conceptual View

8 South Bay Galleria Station
Looking southeast to street-level station plaza and elevated station platform from existing bus stop

Existing View

3. Urban Design Concepts

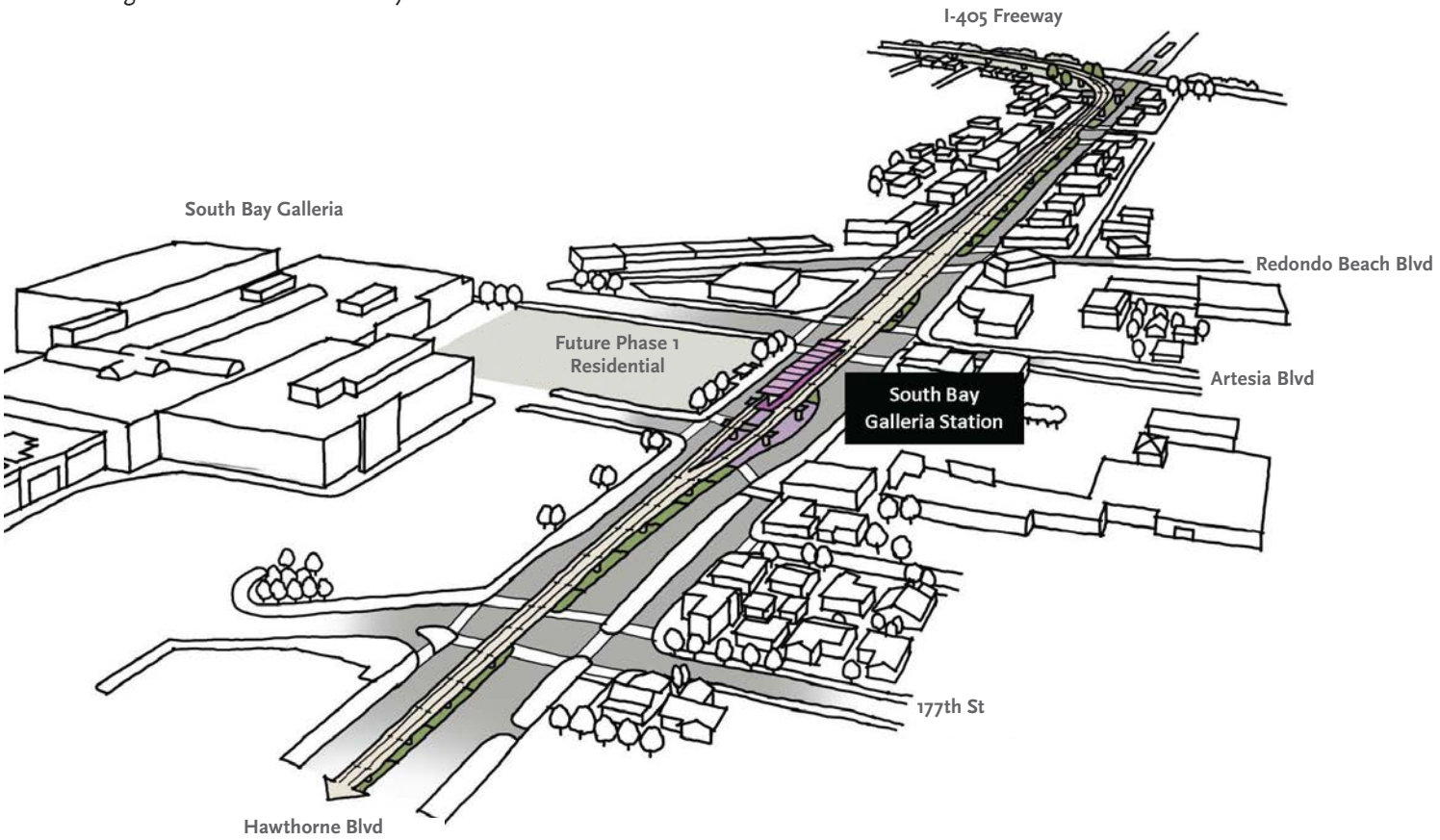
c. South Bay Galleria Station, Elevated

The Hawthorne Alignment will preserve auto-oriented access, driveways, and parking by introducing an elevated light rail guideway above. Grade separated crossings will minimize effects to crossings at Redondo Beach Blvd and Artesia Blvd.

The South Bay Galleria has proposed new pedestrian and cycle pathways around the development, facilitating connectivity from the South Bay Galleria Station to the newly constructed Redondo Beach Transit Center approximately a half-mile away.

FLM improvements could also be identified in a future project phase to address transfer opportunities, which may include bus connections.

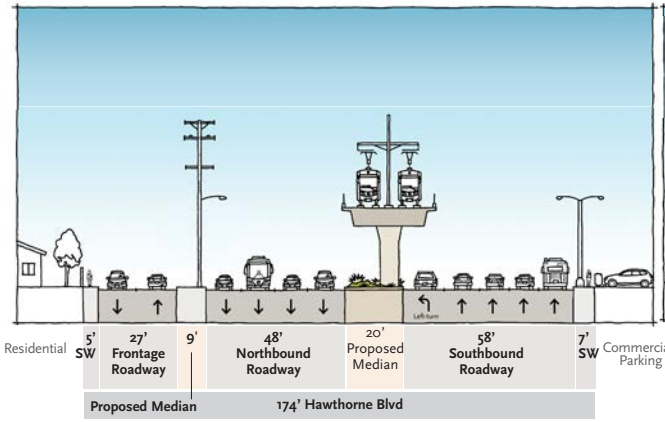
9 Hawthorne Alignment, Elevated Option **Birdseye View**
Looking north towards South Bay Galleria Station



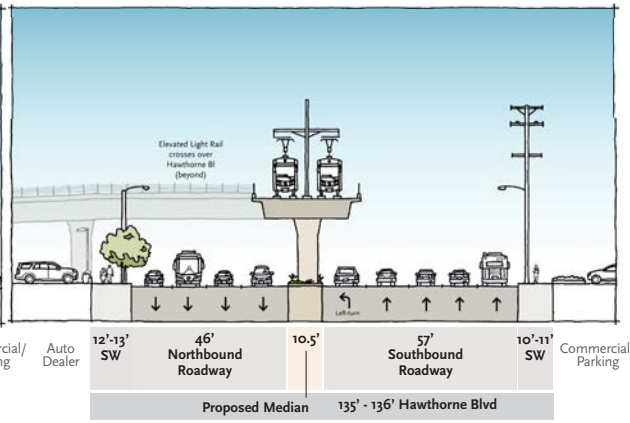
3. Urban Design Concepts

Hawthorne Alignment, Elevated Option Cross Sections

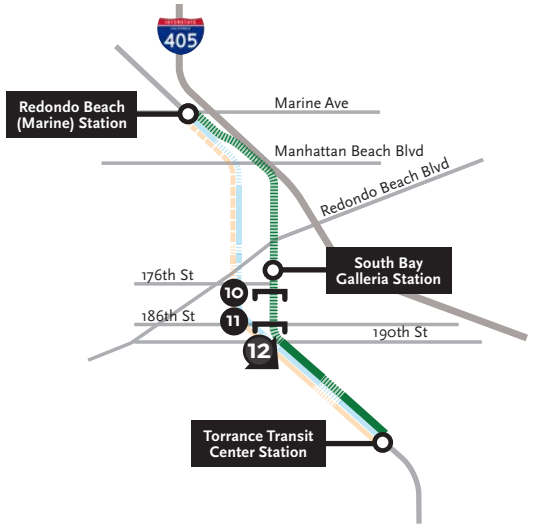
10 Between 178th St and 179th St
Looking south on Hawthorne Blvd



11 At 186th St
Looking south on Hawthorne Blvd

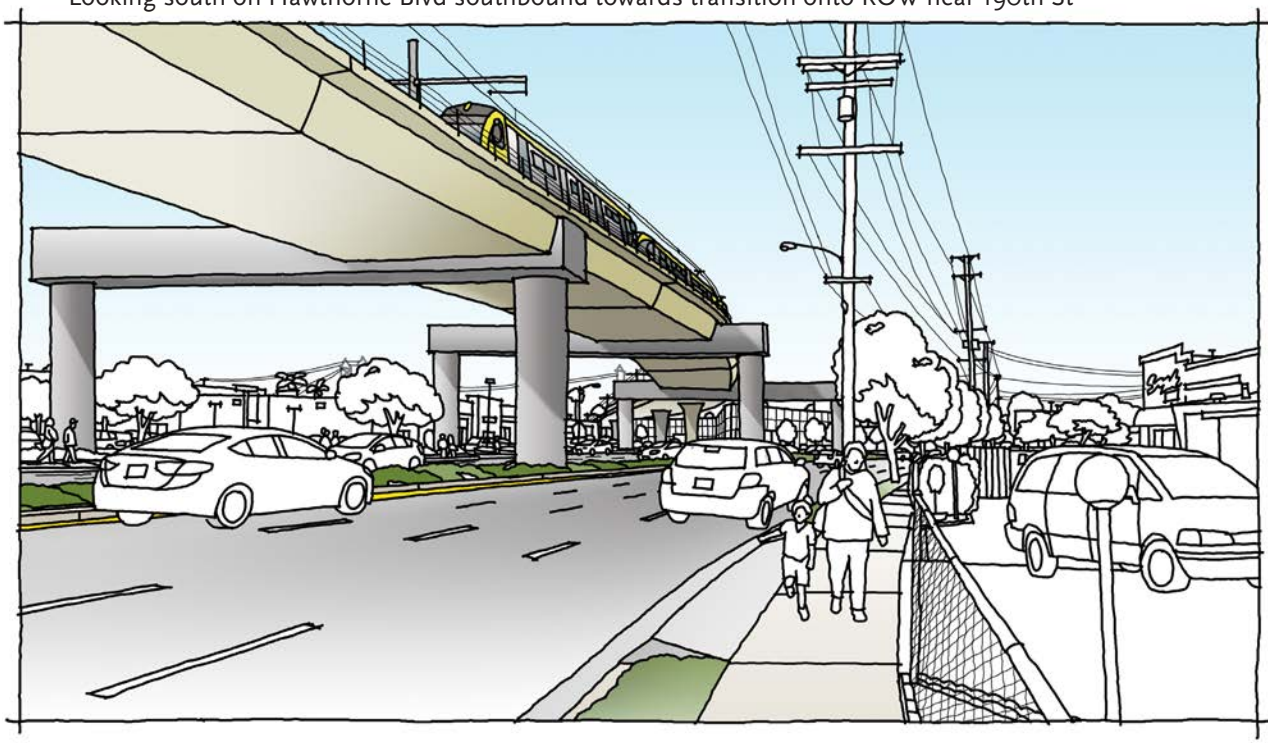


Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design



12 Hawthorne Alignment, Elevated Option Conceptual View

Looking south on Hawthorne Blvd southbound towards transition onto ROW near 190th St



An elevated, grade separated Hawthorne Alignment allows the light rail to operate independently from other modes transportation. Trains run without interacting with the cars, pedestrians or cyclists below.

The Hawthorne Alignment may require straddle bents as the guideway transitions onto and off of Hawthorne Blvd. The effects of these straddle bents on adjacent properties will be described in the Draft EIR.

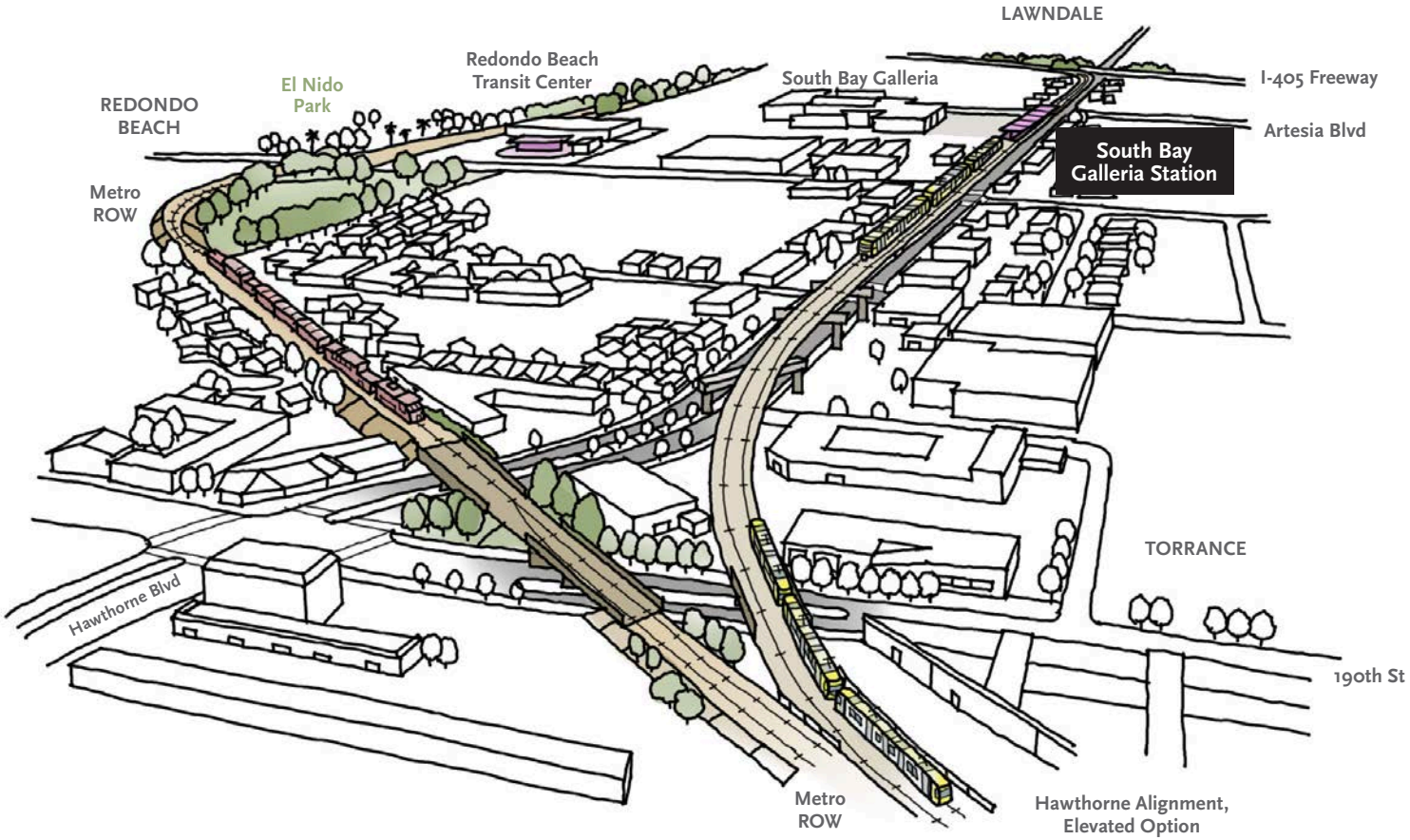
Existing View

3. Urban Design Concepts

South of 190th Street, all three alignments would run within the Metro ROW to continue traveling a southeast direction towards the Torrance Transit Center Station.

13 Hawthorne Alignment, Elevated Option Birdseye View

Looking north from ROW transition near 190th St



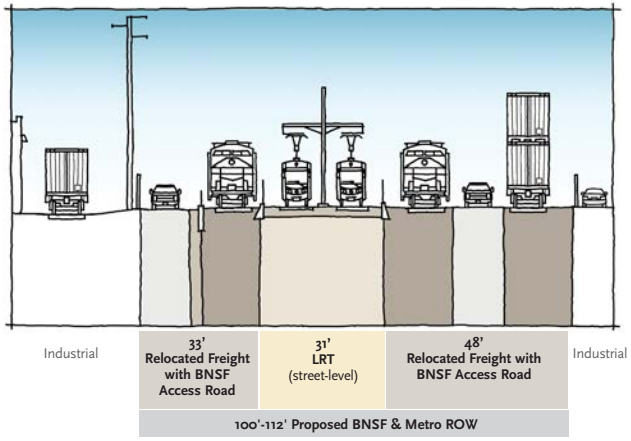
3. Urban Design Concepts

3.6 All Alignments South of 190th St

From 190th St to the Torrance Transit Center, all three alignments in the north follow the same route and travel along the Metro ROW adjacent to existing freight tracks. The context is primarily an industrial freight corridor in this segment. Metro and BNSF share ownership of the ROW south of 190th St. Metro is working with BNSF to realign the freight tracks so that BNSF can continue operations and accommodate the two new light rail tracks for transit.

Metro ROW Alignment, Elevated/Street-Level Option
Metro ROW Alignment, Trench Option
Hawthorne Alignment, Elevated Option **Cross Section**

14 At 190th St
Looking south of 190th St



Dimensions and ROW boundaries are preliminary and subject to confirmation in future phases of design

Existing birdseye view of industrial uses along railroad ROW, looking North

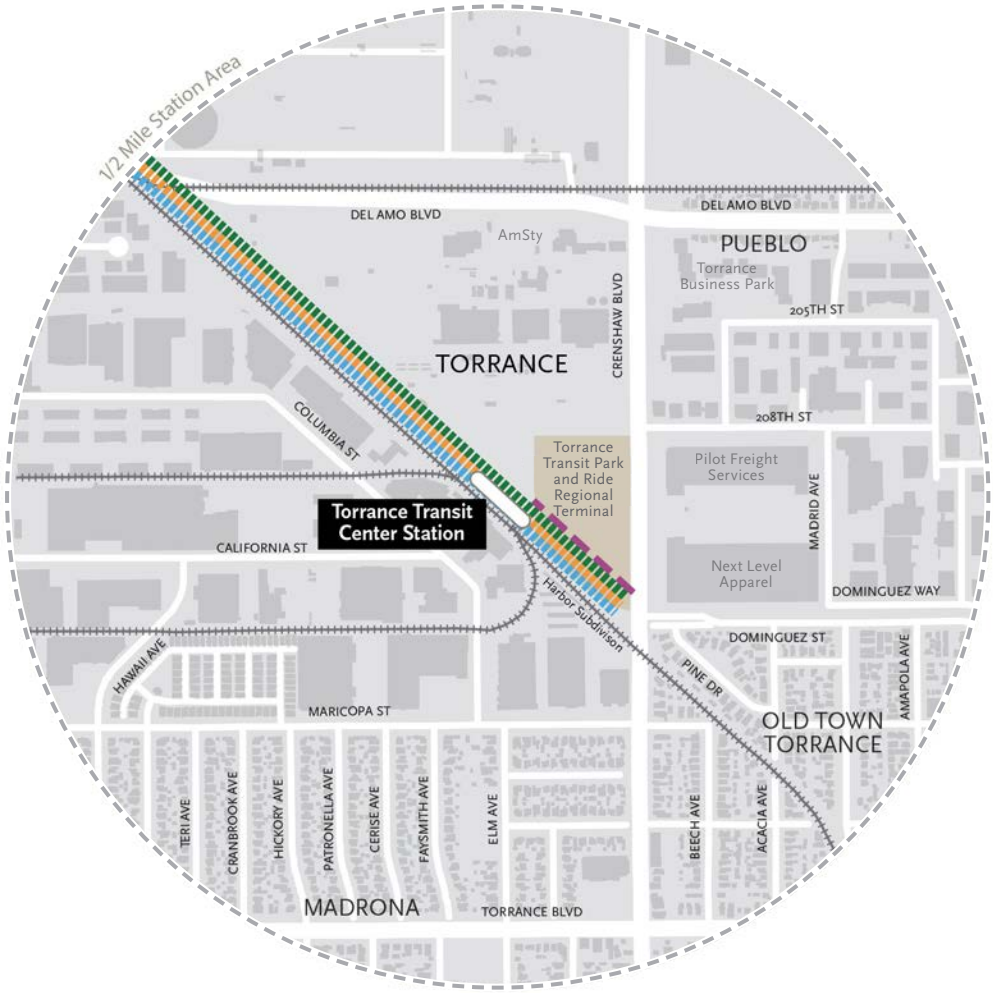
3. Urban Design Concepts

d. Torrance Transit Center Station, Street-Level

Development around the Torrance Transit Center Station consists of one- to two-story industrial or manufacturing uses and residential neighborhoods to the south. The Torrance Transit Center Station provides the opportunity to connect users to employment, residential and downtown destinations. The station is adjacent to the Torrance Transit Park and Ride Regional Terminal and Old Town Torrance.

The surrounding street grid is not contiguous, and with limited pedestrian access the area is highly auto-oriented. With Downtown Torrance just beyond the station's half mile radius, there are opportunities for FLM planning to make safe and accessible connections throughout the city using Crenshaw Blvd, Torrance Blvd, Del Amo Blvd, and the broader South Bay bicycle network. FLM planning will be initiated after the Metro Board selects the LPA.

A street-level station will connect to the Torrance Transit Park and Ride Regional Terminal located on the triangular parcel at the intersection of the Metro ROW and Crenshaw Blvd. The station will be accessible by pedestrian pathways and crosswalks from the Torrance Transit Park and Ride Regional Terminal's bus plaza, parking areas, and Crenshaw Blvd sidewalk. The multi-modal transit center will be a hub for local and regional bus lines and provide parking and drop-off/pick-up area.



3. Urban Design Concepts

d. Torrance Transit Center Station, Street-Level

As the final station in the 4.5 mile Project, the Torrance Transit Center Station will serve as the terminus. Its design will not preclude studying a future extension of service further south if funding becomes available.

This street-level station will be connected to the Torrance Transit Park and Ride Regional Terminal. Passengers will board and alight onto a wide station platform that provides extra space for increased ridership during regional events. From the platform, passengers will cross over one active northbound light rail track to reach a multi-use recreational path. This path will directly connect to the Torrance Transit Park and Ride Regional Terminal via a new crosswalk to the central bus island. The station plaza can accommodate a future bridge if a connection to a future city parking structure is desired. Metro is coordinating station design and access with the City of Torrance to allow for seamless transfers between the rail station and bus center, parking, and pathway for pedestrians and cyclists to the surrounding neighborhood.

Future FLM planning can support the city's connectivity plans. Pedestrian and bike infrastructur that enhances the C Line's connection to downtown Torrance can address the city's vision for a potential active transportation path or facility east of Crensha Blvd.

Torrance Transit Center Station
Street-Level Concept Plan

Conceptual View
Looking south towards Torrance Transit Center (City Project) from station platform

Next Steps

4. Next Steps

Metro is poised to take important steps to advance the C Line Project. The key findings and recommendations described in the Urban Design Report are the first of many steps Metro will take to support transit-oriented communities and compatibility of the C Line Extension with neighborhoods along the proposed alignment and at individual station areas. These next steps include Selection of the Locally Preferred Alternative, Advancement of Design, and First/Last Mile Planning.

Throughout these steps, continued coordination with local jurisdictions will be critical to ensure that C Line stations promote connected, inclusive and accessible TOCs.

Selection of the Locally Preferred Alternative

Based on Project information, Metro's Board will vote to approve the LPA. The Metro Board will look at many factors to select the LPA. These factors may include: findings from the Draft EIR, community input received throughout the Project, ridership estimates, cost estimates, and other topics of community concern such as property acquisitions. This information will be shared publicly with the release of the Draft EIR.

Advancement of Design

If the Metro Board votes to proceed with a LPA, the Project team will prepare a Final EIR and begin to advance the design (preliminary engineering phase) for the selected LPA.

First/Last Mile Planning

Following selection of a LPA, the Project team will begin first/last mile planning for stations along the selected alignment. FLM refers to the entire pathway a transit customer uses to walk or wheel between the station and home, work, school or other destination. A walk analysis will be performed within a half-mile of each station, and a wheel analysis will be performed up to three miles from each station. During the planning process Metro will partner with community-based organizations to engage local residents, businesses and stakeholders in the planning process. The resulting product will be a First/Last Mile Plan that reflects the needs and priorities of the community. The plan will be an important tool for Metro and cities to seek funding and to prioritize walk and wheel improvements when the Project is implemented.

Image References

Image References

Title Page	Birdseye View of the Hawthorne Alignment, Elevated Option Source: Cityworks Design, 2022
Abbreviations and Accronyms	Aerial of Project Area Source: Google Maps
Table of Contents	Aerial of Project Area Source: Google Maps
P. 1	Light Rail Elevated Train Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 2	Green Line Extension to Torrance - Supplemental Alternatives Analysis Executive Summary Cover Image Source: Metro, 2018
P. 3	C Line (Green) Extension to Torrance – Overview of Alignment Alternatives Source: STV, 2022
P. 5	Metro Transit Improvements, First/Last Mile Planning, and Joint Development illustrations Source: Cityworks Design, 2022
P. 6	Study Area Map Diagram with Alignment Alternatives and Station Options Source: Cityworks Design, 2022
P. 7	C Line (Green) Outreach illustrations Source: Courtesy of Los Angeles Metro
P. 8	C Line (Green) Station Source: https://lametro.smugmug.com/Transit-Facilities/Green-Line-stock-photos/
P. 9	Urban Design Nexus Diagram Source: Cityworks Design, 2022
P. 10	Principle 1-Metro K Line Station Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 10	Principle 2-IxNTouch information screens at Metro A Line (Blue) Station Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 11	Principle 3-Metro K Line Station Plaza Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 11	Principle 4-Metro K Line Martin Luther King Jr Station Artwork "Leimert Park Landscape" by Mara Lonner Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 11	Principle 5-Metro K Line Fairview Heights Station Artwork, "Inglewood CA Series: Metro collection 1-10" by Kim Schoenstadt Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 12	Metro Systemwide Station Design Source: https://www.metro.net/projects/station-design-projects/systemwide-design-program-info/
P. 12	SWSD materials, SWSD At-grade Station Platform, METROKIT_V01 Source: Courtesy of Los Angeles Metro
P. 13	Metro K Line Hyde Park Station Artwork, "Hyde Park Oasis" by Carlson Hatton Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)e
P. 13	Arcadia Plaza, Gold Line Foothill Extension Source: Metro Flickr page https://www.flickr.com/photos/metrola/
P. 14	Examples of drought resistant, Southern California native plant species Source: Yunsoo Kim Design
P. 14	Retaining Wall Planted with Vines and Trees Source: Cityworks Design
P. 15	Examples of LA Metro Light Rail Design Features: Station and Alignment structures Source: Cityworks Design, Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 16	Examples of LA Metro Light Rail Fences and Walls Source: Cityworks Design, Courtesy of Los Angeles Metro (Metro K Line Press Kit)
P. 17	C Line (Green) Urban Design illustration Source: Cityworks Design, 2022

Image References

P. 18 Historic View of Hawthorne Blvd, Lawndale
Source: https://www.lawndalecity.org/community/history

P. 18 Lawndale
Source: https://www.lawndalecity.org/community/history

P. 19 Condon Ave
Source: Cityworks Design

P. 20 Historic Trams in Redondo Beach, California, 1906
Source: alamy

P.20 Historic Old Fox Theater
Source: Redondo.org

P. 21 Metro ROW at 182nd St
Source: Cityworks Design

P. 21 South Bay Galleria Phase One Design
The South Bay Phase One Design Package: 2021-09-03
Source: AO and the City of Redondo Beach

P. 22 Torrance Business District, Torrance 1920s
Source: City of Torrance Spanning the Years

P. 22 Southwood tract at Sepulveda Boulevard in construction 1954
Source: City of Torrance Spanning the Years

P. 23 Hawthorne Blvd at 178th St, looking northeast
Source: Google Earth

P. 23 Hawthorne Blvd, looking south
Source: Cityworks Design

P. 24 - P. 27 Corridor Conditions photos
Source: Google Earth, Cityworks Design

P. 30 Intersection of Condon Ave and 162nd St, looking south
Source: Cityworks Design

P. 32 Condon Ave at 166th St, looking south
Source: Cityworks Design

P. 39 Condon Ave at 182nd St, looking southeast
Source: Cityworks Design

P. 41 Intersection of Condon Ave and 162nd St, looking south
Source: Cityworks Design

P. 43 Condon Ave at 166th St, looking south
Source: Cityworks Design

P. 44 Grant Ave, Existing Bridge
Source: Cityworks Design

P. 48 Condon Ave at 182nd St, looking southeast
Source: Cityworks Design

P. 52 Grevillea Ave at 159th St
Source: Cityworks Design

P. 56 Hawthorne Blvd at 176th St, looking southeast
Source: Cityworks Design

P. 58 Hawthorne Blvd at 190th St, looking south
Source: Cityworks Design

P. 60 Birdseye View of Torrance
Source: Google Earth

P. 65 Light Rail Street-Level Train
Source: Courtesy of Los Angeles Metro (Metro K Line Press Kit)


Metro