



HOLLYWOOD

# Next stop: key rail connections.

K LINE NORTHERN EXTENSION

Community Meeting  
*October 4, 2025*

# Interpretation Available

Interpretation in Spanish is available

- For assistance, please visit the Language Station near the entrance
- Someone will help you with headphones

Interpretación en español disponible

- Para recibir ayuda, por favor visite la Estación de Idiomas cerca de la entrada
- Alguien le ayudará con audífonos



# Thanks for joining us!

- **Open House**
- **Presentation**
  - Welcome, Metro Updates, Meeting Guidelines
  - Recap of Recent Meetings
  - Project Overview
  - Findings from Tunnel Safety Report
- **Optional Tour**
  - Pre-Registration is Required

# Community Meeting Guidelines

**Metro is committed to ensuring that all participants can fairly and clearly share ideas, comments and concerns about this project. To provide a safe and equitable process, we are asking for your help.**

## **During this meeting, please:**

- Respect the format of the meeting
- Turn off cell phones and background noise when speaking
- Treat fellow community members, agency representatives, Metro staff and others with respect
- Submit all comments/questions to Metro staff and consultants via comment cards

# How to Submit Questions

- For any questions you have today, please fill out a question/comment card and submit it to staff members who will be collecting them throughout the meeting.
- Questions or comments may also be submitted by placing comment cards in our collection boxes at signs posted.
- We'll answer as many questions as we can in the time available, focusing on questions of broadest interest. We will also have staff available you can pose questions to afterwards.
- All questions (including those we can't get to today) will be shared with the project team.
- All comments will be summarized and shared with Metro Board to help inform selection of a Locally Preferred Alternative (LPA) and project next steps.

We'd like your input.

Date: \_\_\_\_\_ Location: \_\_\_\_\_

We welcome your feedback on the 4 Line Northern Extension Project.  
Your comments help our team understand planning.

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 Metro

We have a copy to use later. Thank you for your input.

# Current Project Status

*\*\*Future stages not yet authorized by Metro Board*



## **Metro is leading the environmental review under California Environmental Quality Act (CEQA)**

- Started public scoping for EIR in Spring 2021
- Released Draft EIR for 60-day public review period in July 2024
- Received approximately 1,300 comments on the Draft EIR
- Prepared additional technical analyses and engagement in response to Mid-City comments
- Hosting community meetings to gather input in summer/fall 2025

Community Engagement Throughout Process

# Recent Work Effort

Metro conducted additional research summarized in three reports available in August 2025 for public review.

1. Mid-City Additional Alignment Analysis
2. Property Considerations
3. Tunnel Safety

To help distill and share findings, Metro prepared:

- Website Story Map
- FAQs of Technical Materials
- Project Fact Sheet

No decisions have been made on project since Summer 2024 (release of Draft EIR).



Updated Project Fact Sheet

[www.metro.net/KNE](http://www.metro.net/KNE)

# Recap of Recent Community Meetings

## August 23rd and 26th Community Meetings

- Focus on Mid-City Alignment Analysis and Property Considerations
- Recording Available at [www.metro.net/kne](http://www.metro.net/kne)

## Community Meetings with Focus on Tunnel Safety

- October 1st, 12pm to 1:30 pm, Virtual
- October 4th, 9am to 1pm, Petersen Museum with Optional Tunnel Safety Tour

**K LINE NORTHERN EXTENSION**

### Community Open Houses – You're Invited!

*We're planning rail to bridge divides.*

The Metro K Line Northern Extension (KNE) would link to the Metro C, E, K, and N Lines, connecting four major rail lines and one of the highest-riding bus lines in LA County. This project creates a vital north-south link by extending the K Line underground from the Metro L Line to West Adams, Mid-City, Miracle Mile, West Hollywood, and Hollywood.

Metro is evaluating additional potential alignment options in Mid-City based on previous transit during the Draft EIR public comment period from residents of Mid-City. Mid-City community about the proposed tunnel alignment, tunnel safety, and property impacts. In response, Metro is developing these technical reports: a Tunnel Safety Report, a Mid-City Additional Alignment Analysis Report, and a Property Values and Rights Summary to address these issues and help guide next steps.

To share these findings and continue the conversation, Metro is hosting two open houses. These meetings are an opportunity for community members to learn more, ask questions, and provide feedback that will help shape the project's next steps.

**The meeting will include:**

- A presentation on the latest findings
- Opportunities to ask questions
- Direct engagement with Metro staff

**In-Person Open House:**  
Saturday, August 23, 10am-2pm  
J. Paulson Jr. Middle School  
4910 J. Paulson Jr. Middle School  
Los Angeles, CA 90004  
Registration for in-person meeting is optional. [bit.ly/195184a](http://bit.ly/195184a)  
To submit questions or concerns, email [KLine@metro.net](mailto:KLine@metro.net)

**Virtual Open House:**  
Sunday, August 24, 10am-2pm  
Webinar Link: Please register at [bit.ly/195184a](http://bit.ly/195184a)  
Webinar ID: 619 666 0000  
Call us: 311-3033

**QR Register Here**  
For the Virtual Open House  
by scanning the QR code.

Handouts and other AEM accommodations available by calling 311-3033 at least 72 hours in advance.

**CONTACT US**

- 311-3033
- [KLine@metro.net](mailto:KLine@metro.net)
- [metro.net/KNE](http://metro.net/KNE)

**M Metro**

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# Tunnel Safety Meeting Will Focus On

- Metro's tunneling experience
- How tunnels are constructed
- Information on community concerns re: noise and vibration, settlement, seismic risk, and groundwater
- Mid-City study of ages of homes
- Examples of existing tunnels beneath historic structures



# K Line Northern Extension (KNE) Project Overview

# Project Overview

- Extends the K Line north from E to B Line
- Closes gap in regional transit network
- Connects 4 Metro Rail lines and 6 of the top 10 busiest bus lines in LA County
- Serves and connects historically under-served communities to job centers, educational institutions, etc.
- Funded by Measure M: \$2.24 Billion (2015\$) with funding available for construction in 2041
- Draft EIR Released in July 2024 for public review over 60-days



# Draft EIR Phased Construction Approach

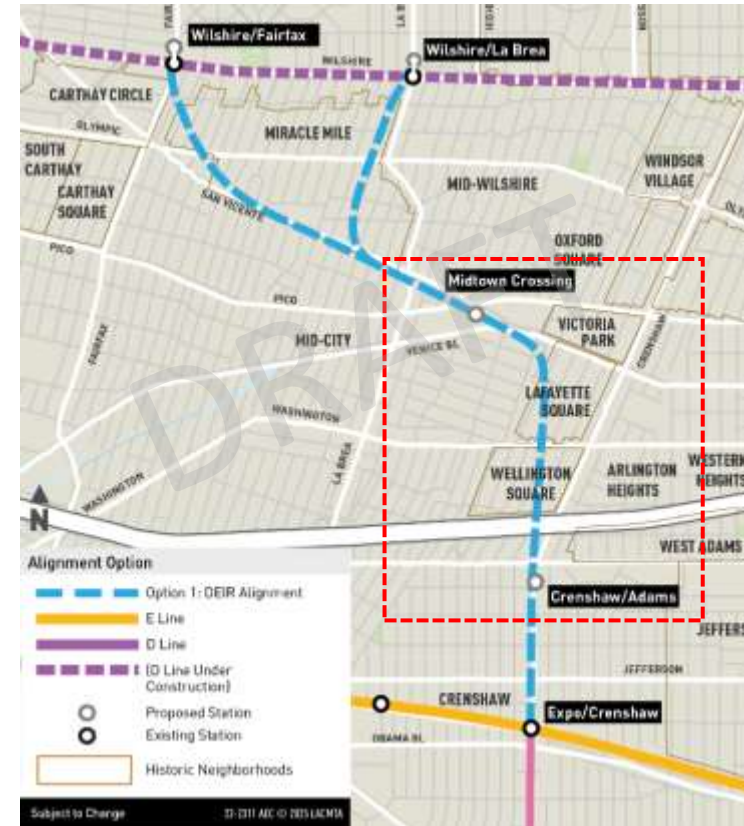
- Draft EIR evaluated three alignments
- Six to ten miles of underground rail tunnels
- Constructed in two or three sections based on alignment section
- First phase (Section 1) would connect E Line to D Line within Mid-City



# Community Concerns from Mid-City Residents

During the 2024 Draft EIR public comment period, Metro received comments from residents of historic Mid-City neighborhoods, specifically Wellington Square and Lafayette Square related to:

- **Opposition to single Draft EIR tunnel alignment in historic Mid-City neighborhoods and request to engage community on alignment options to minimize tunnel easements below homes**
- **Tunnel safety concerns related to building damage**
- **Property concerns**



Area of focus for additional analysis

# Metro's Tunneling Experience

# How Tunneling Works

## Metro uses pressurized Tunnel Boring Machines (TBMs)

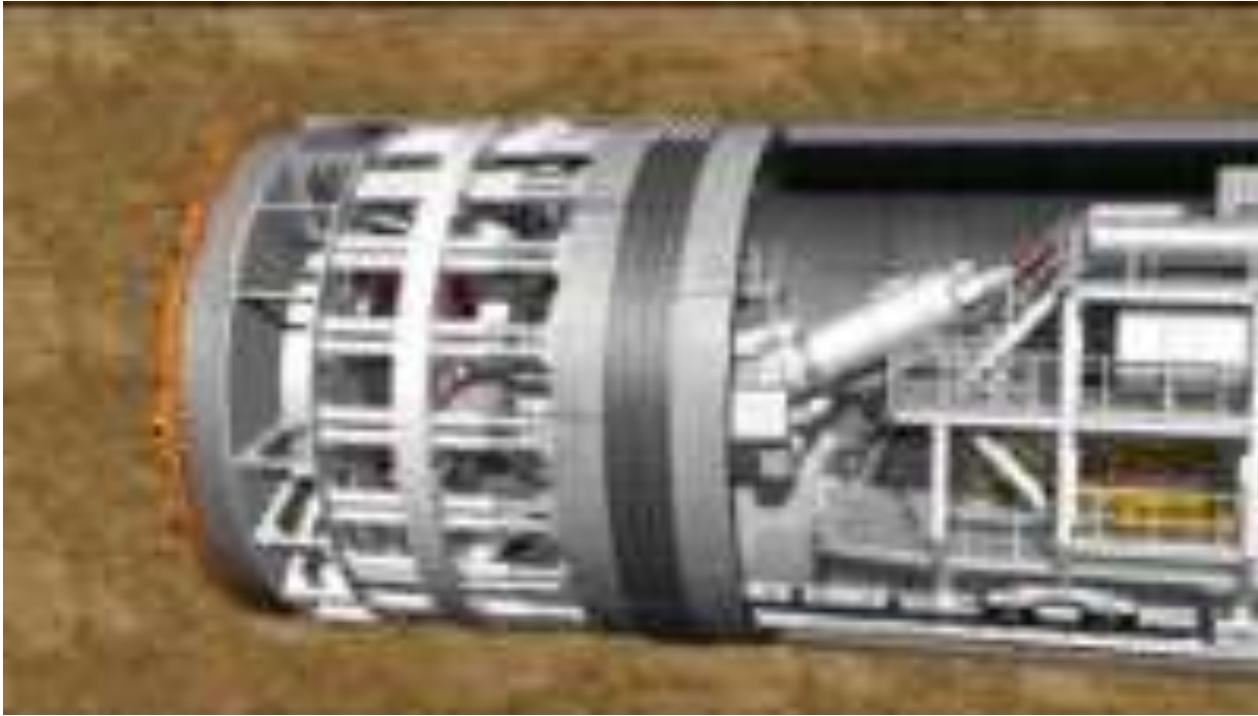
- Advanced to monitor soils and pressure during excavation with pressurized TBM
- Designed for the specific ground conditions
- Balance water and ground pressure ahead of the machine to reduce settlement
- Monitored continuously at the surface and around TBM
- Requires large “launch” sites (3 to 4-acres) required to support TBM assembly, launch, and construction activities.

## Metro works with Tunnel Advisory Panel (TAP)

- Established in 1995 to review tunnel construction methods in Los Angeles
- Independent group of globally recognized experts
- Support Metro on all tunnel projects



# How Tunneling Works



Example of TBM Construction in historic area:

View first two minutes

# Metro Tunneling



[Constructing the Future: Purple Line Extension Transit Project](#)

View 0 to 1:31

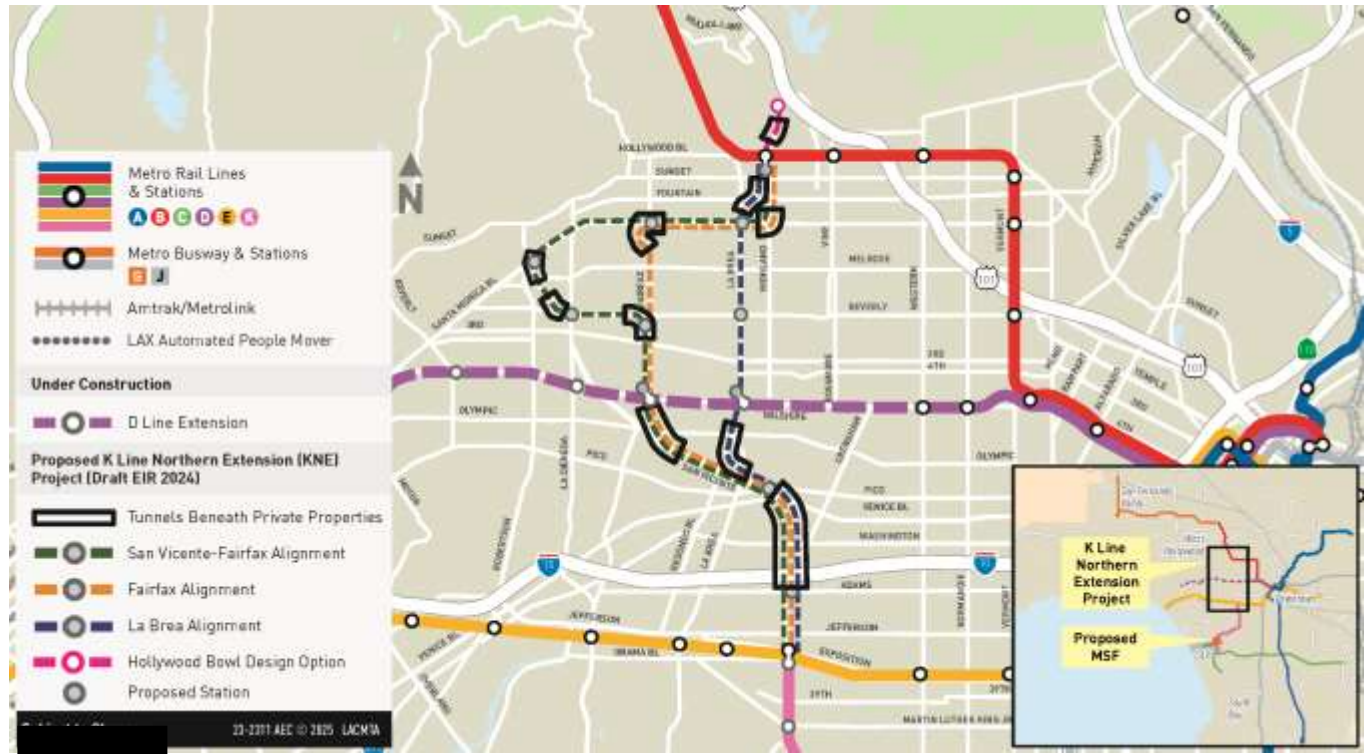
# Metro's Tunnel Experience Across the Region

Metro has constructed over 30 miles of tunnels and safely operates below sensitive uses.



# Proposed Tunnels for Project

- Proposed KNE tunnels would travel under private properties in several areas
- These underground connections ensure safe and efficient connections between stations

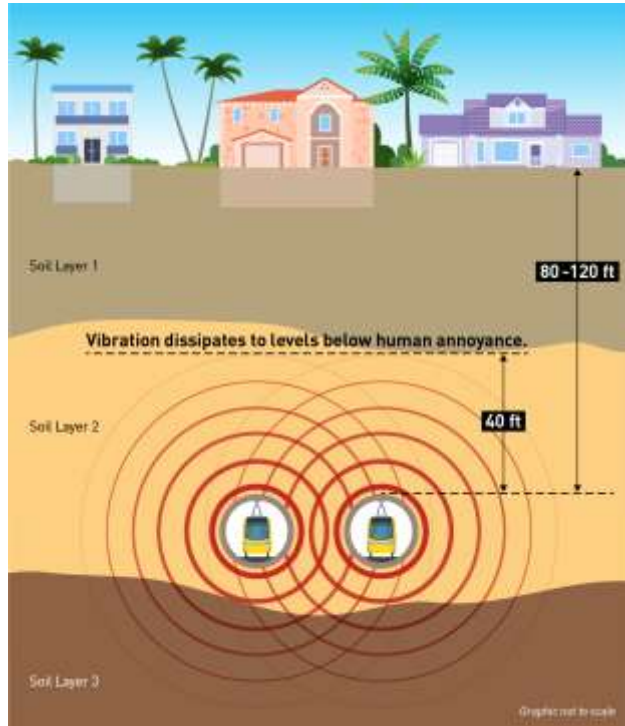


Map of proposed tunnels in the K Line Northern Extension.

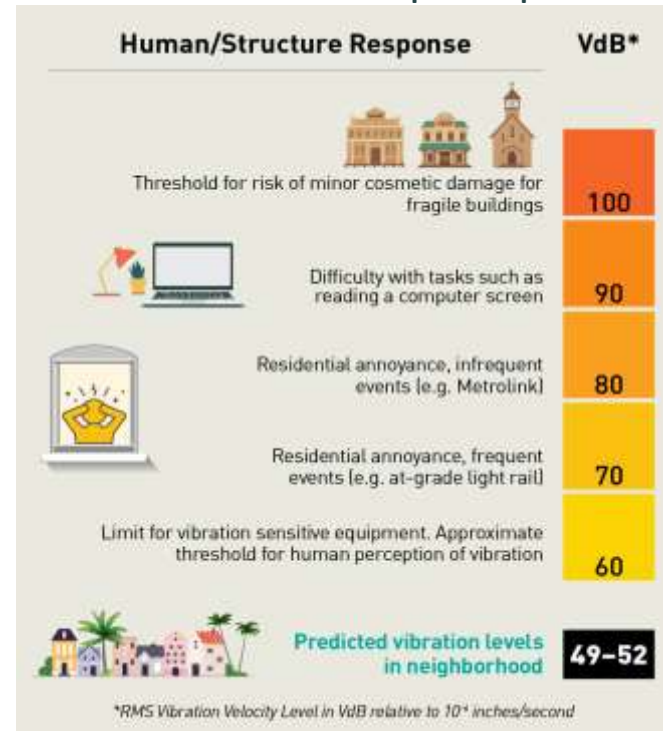
# Responses to Tunnel Safety Concerns

# Vibration & Noise

**TBM construction** from similar locations have been shown vibration levels to be below threshold for damage and human perception.



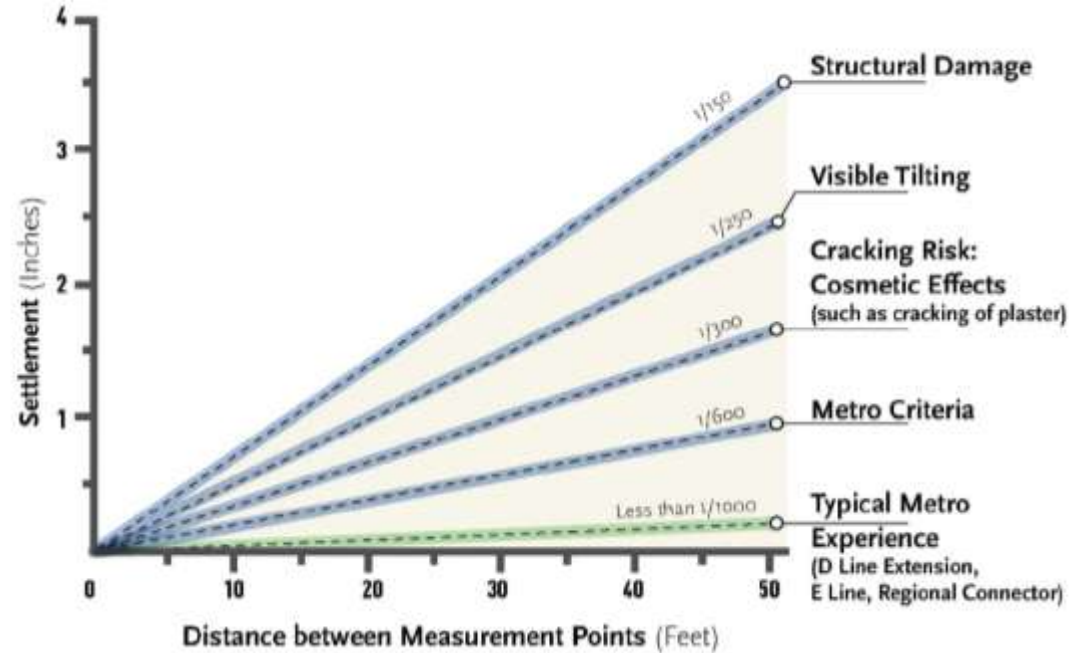
**Tunnel operations** is predicted at vibration levels below threshold of damage as well as less than human perception.



# Settlement

Metro uses pressurized TBMs, which minimize ground settlement risk.

- Metro has successfully tunneled with settlement far below threshold for building damage.
- Settlement refers to the downward movement of the ground.
- Occurs naturally in seismically active areas such as LA.
- Metro carries out design and pre-construction assessment and ongoing monitoring.
- Data is recorded continuously for even the smallest amount of movement.

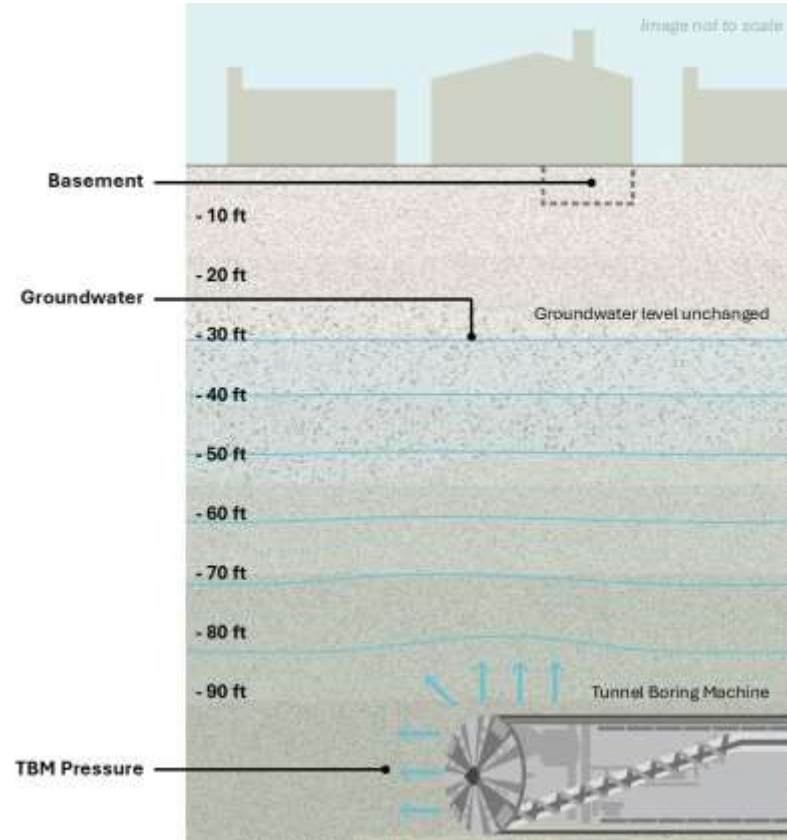


*Metro Rail Design Criteria (MRDC) requires maximum allowable slope of 0.5 inch over 25 feet of building length.  
Metro projects reported less than 0.15 inch.*

# Groundwater

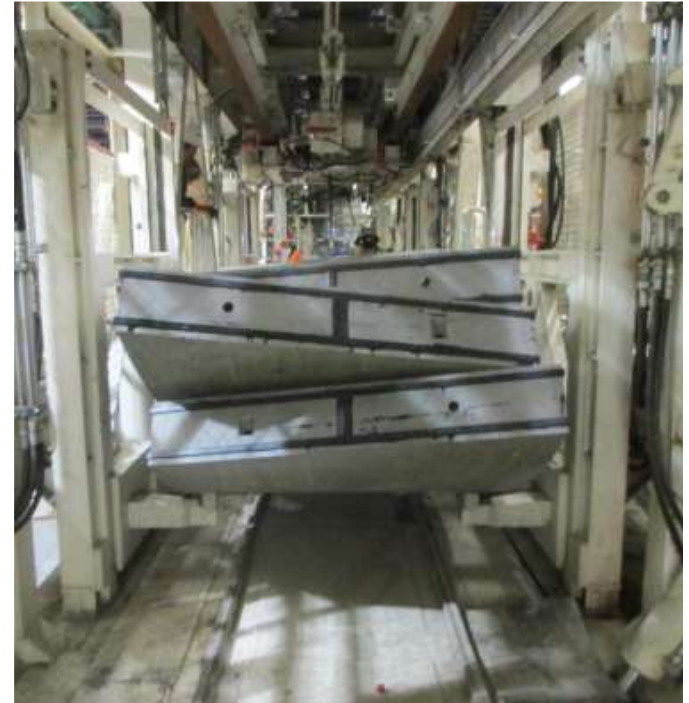
Groundwater levels do not change during or after tunneling. Water pressure around the TBM varies slightly, but the pressure dissipates before it reaches the ground.

- Groundwater is 10-80 feet below ground in the LA Basin.
- Groundwater is 20-60 feet below the Mid-City neighborhoods of Wellington and Lafayette Squares.



# Tunneling in Gassy Soils

- **Metro has successfully tunneled through gassy soils.**
- **Completed tunnels have little to no effect on movement of soil gas to the ground surface or into buildings, and do not increase risks at the surface.**
- There are subsurface gases such as methane and hydrogen sulfide in the soil in much of the Los Angeles area.
- Subway tunnels include liners sealed with gaskets, an automated gas detection system, and a robust ventilation system that is activated if gas levels increase even a small amount.



*Concrete tunnel lining with double-gaskets and cross-gaskets provide robust and repairable seals against subsurface gas and water intrusion.*

# Seismic Safety

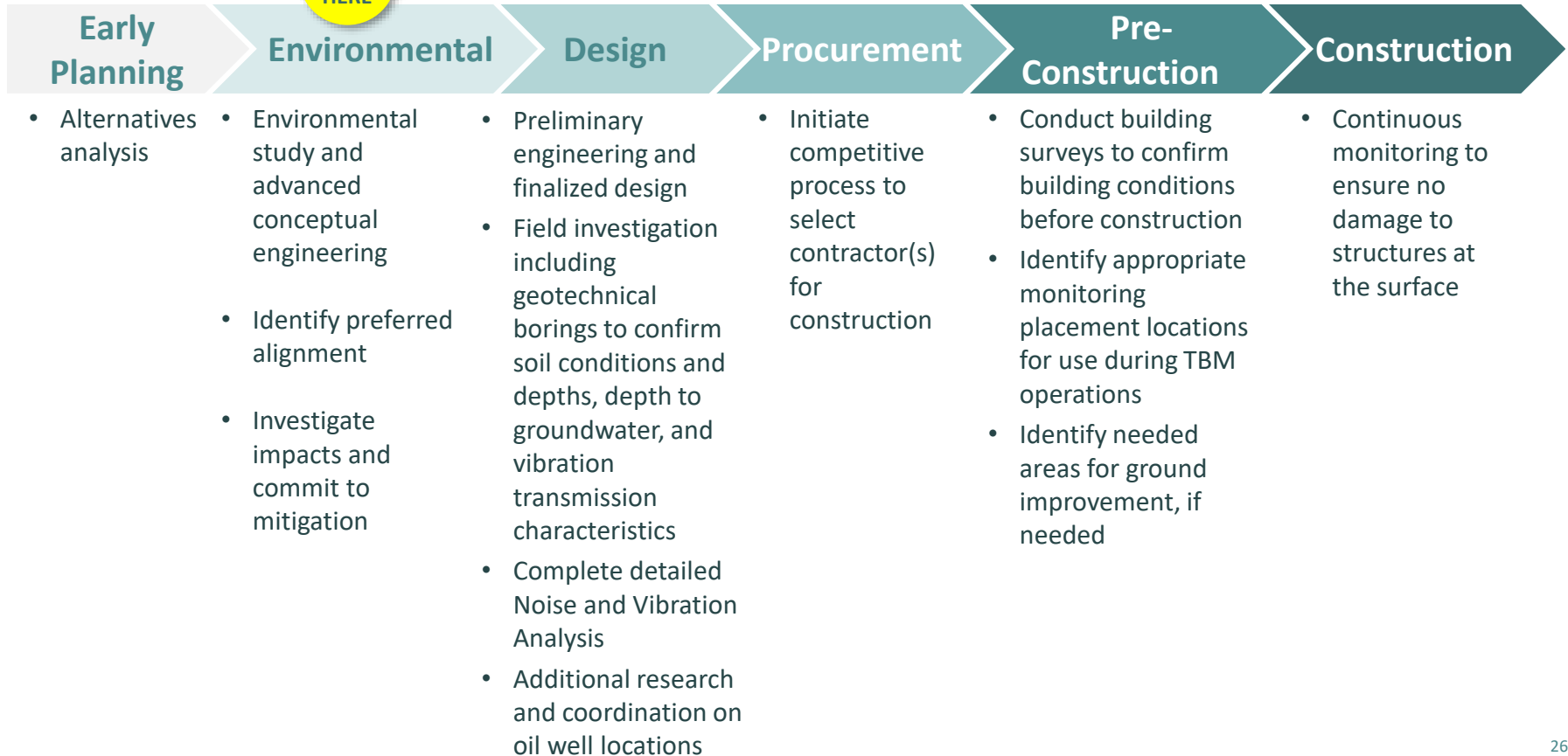
**Buildings above the tunnel would not be affected by the presence of the tunnel during earthquakes.**

- Mid-City is not located within a fault zone.
- Tunnels are stable and are designed to avoid damage during earthquakes.
- During earthquakes, tunnels move very slightly compared to tall buildings swaying at the surface.
- The tunnel structure replaces the excavated ground so the effect of an earthquake at the surface is the same as without the tunnel.

Earthquake	Date	Magnitude	Impact on Subway
Mexico City, Mexico	1985	8.1	No damage to tunnels. Some power disruption. Patrons evacuated safely. Used to transport rescue personnel.
Loma Prieta, CA	1989	6.9	No damage to tunnels.
Northridge, CA	1994	6.7	No damage to tunnels.
Kobe, Japan	1995	7.2	No damage to tunnels. Damage to station and sewer pipes – attributed to 1962 design with inadequate seismic provision.
Taipei, Taiwan	2002	6.8	No damage to tunnels.
Pelluhue, Chile	2010	8.8	Running next day. Some damage at entrance to stations.
Mexico City, Mexico	2017	7.1	No damage to tunnels.

# Analysis & Monitoring Occur Throughout the Project

WE ARE  
HERE



# Metro's Track Record of Successful Tunneling

In coordination with the Tunnel Advisory Panel, Metro has safely constructed the E Line (Eastside) Extension, K Line, Regional Connector, and the D Line Extension with:

- Minimal ground settlement beneath buildings
- No operational issues related to subsurface gas or groundwater
- No vibration impacts to surface structures above tunnels including sensitive uses (e.g. historic buildings, concert halls)



*Historic Hotel in Boyle Heights, E Line*



*Colburn School of Music, A/E Line*



*Historic Japanese Village Plaza, A/E Line*

# Case Studies

# Researching Age of Mid-City Homes

Metro conducted a study of the ages of homes in historic Mid-City neighborhoods.



- 56% constructed in 1920s.
- 24% constructed in 1910s.
- No properties constructed before 1910.



- 64% constructed in 1920s.
- 18% constructed in 1910s.
- Three properties constructed between 1900 and 1910.



- 68% constructed in 1920s.
- 16% constructed in 1930s.
- Two properties constructed before 1920.



Built in 1916.



Built in 1925.



Built in 1909.



Built in 1923.



Built in 1910.



Built in 1927.

# Case Studies: Historic Homes & Structures

Examples of safe tunnel construction and operations below and adjacent to historic properties without damage.

## Line 6 (Naples, Italy)

Opened 2007

Tunnel depth: 30 ft

Tunnels below a historic church built in 1572



## Broadway Subway (Vancouver, BC)

Opening: 2027

Tunnel depth: 30-60 ft

Travels below homes built in 1908 - 1913



## SR 99 Tunnel Under Pioneer Square (Seattle)

Opened 2019

Tunnel Depth: 30-200 ft

Travels below commercial buildings built in the late 1800s to 1920s



## Eglinton Crosstown (Toronto, ON)

Opened 2024

Tunnel depth: 40-60 ft

Travels below homes built in 1910 - 1920s



## Metro City & Southwest (Sydney, Australia)

Opened 2024

Tunnel depth: 55-72 ft

Travels below homes built in 1860 - 1938



## Line 2/ Line 5 (Barcelona, Spain)

Opened 1995

Tunnel depth: 300 ft

Adjacent to Basilica de la Sagrada Família built in the 1880s



## Crossrail - Elizabeth Line (London, England)

Opened 2022

Tunnel depth: 131 ft

Travels under Novelty Automation at the Tudor House, built in the 17th Century



## Seattle Sound Transit U-Link (Seattle)

Opened 2016

Tunnel depth: 300 ft

Travels below homes built in 1902 - 1914



# Case Studies: State Road 99 Tunnel Project (Seattle)

- Completed in 2019
- 2-mile-long tunnel, 30 to 200 feet deep
- Used pressurized TBM technology
- Passed below historic districts and buildings including Pike Place Market and parts of Pioneer Square
- Settlement below threshold for any structural impacts under buildings (0 to less than 0.1 inch)
- Used by LA Metro as a primary reference to develop requirements for monitoring and controlling pressurized TBMs



Source: Daniel Schwen



Source: Washington State Department of Transportation

# Case Studies: Underground Line 6 Naples, Italy

- Completed in 2011
- Tunnel was approximately 29.5 ft below historic church (built in 1570s)
- Used pressurized TBM technology
- Church was not damaged during construction activities

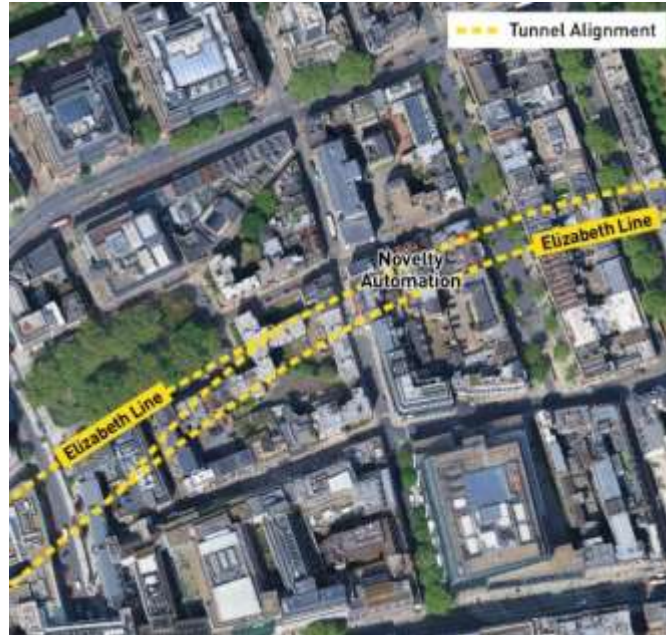


Source: Google Earth Pro 2025, Open Rail 2025



# Case Studies: Elizabeth Line, London, England

- Completed in 2022
- Used hybrid TBM technology\*
- TBM passed beneath historic buildings, such as Tudor House, built in 17th Century
- Included technology and methods to mitigate settlement, groundwater, and noise and vibration issues



Source: Google Earth Pro 2025, Open Rail Map 2025

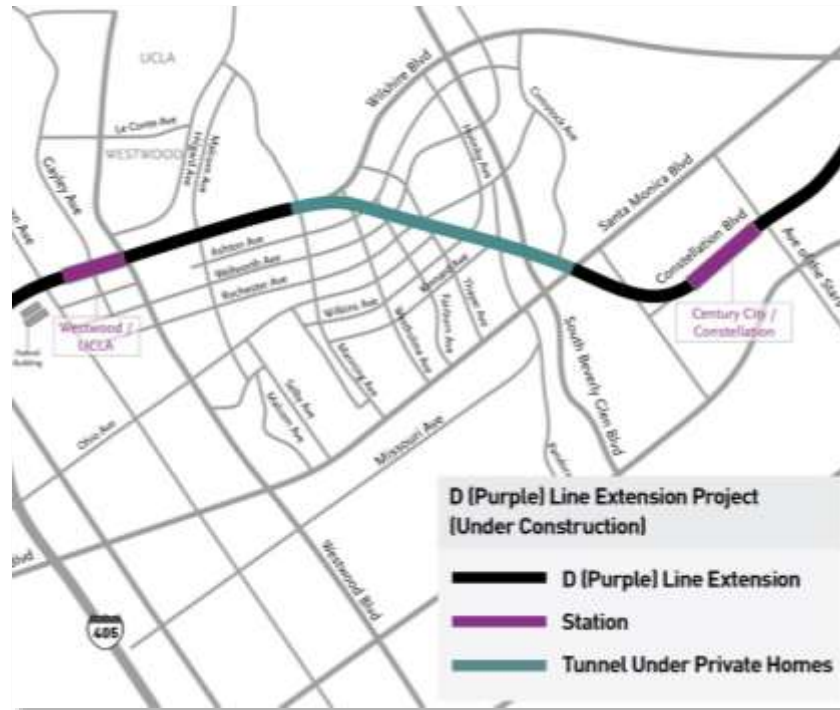


Source: Res.se 2025

\* A hybrid TBM combines features of different TBM types and can change modes depending on soil conditions

# Case Studies - Metro D Line Extension

- Tunneling completed in 2024
- 50 to 115 feet deep
- Travels below more than 139 residential properties, historic Beverly Hills High School, and Westfield Mall
- Settlement below threshold for any structural impacts (0 to less than 0.10 inch)
- No noise or vibration issues were reported from TBM tunneling, including near sensitive noise and vibration receptors



Map of D Line Extension Project tunnel under private homes in Westwood



Built in 1932.



Built in 1928 (left) & 1939 (right).



Built in 1936.

# Tunneling Safety Bus Tour Along D-Line

Time	Stop/Drive Past
11am	Depart from Petersen Museum (adjacent to LACMA Metro Station & Museum Row Properties)
11:20am	UCLA Station Westwood
12:10pm	Westwood Residential Properties
12:35pm	El Rey & Wilshire Ebell Theater
1:00 pm	Return to Petersen, Tour Ends



# Next Steps

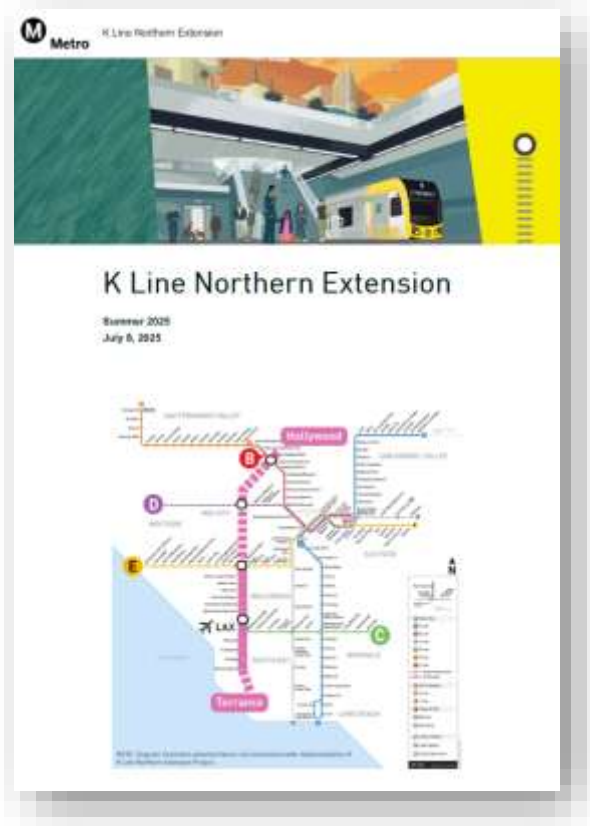


- **October: Tunnel Safety Study Community Meetings & Input**
  - October 1, 12pm to 1pm, Virtual
  - October 4, 9am to 1pm, Petersen Museum with Optional Tunnel Safety Tour
  - October 31: Request feedback on recent studies to help inform staff recommendation
- **Winter 2025/26:** Prepare staff recommendation to the Metro Board of Directors to consider in the potential selection of a Locally Preferred Alternative (LPA) and next steps

Community Engagement Throughout Process

# Learn More

## Explore the [storymap](#).



- **Mid-City Additional Alignment Analysis**
  - [Report](#)
- **Property Considerations**
  - [Report](#)
  - [FAQ](#)
- **Tunneling Safety**
  - [Report](#)
  - [FAQ](#)

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# Metro Tunneling

## D Line Extension Tunneling Complete

