



HOLLYWOOD

Next stop: key rail connections.

K LINE NORTHERN EXTENSION

Community Meeting
Nate Holden Performing Arts Center
September 4, 2024



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 and allow everyone an opportunity to comment
- Turn off cell phones and background noise when speaking
- Treat fellow community members, agency representatives, Metro staff and others with respect
- Address all comments to Metro staff and consultants – not to other attendees

Tonight's Meeting

- > Provide project history and overview
- > Share Metro's experience and approach to tunneling
- > Answer your questions and concerns regarding the project and your homes at various stages of presentation
- > Provide information on the next steps
- > Public comment period is extended to Sept 20th
- > Court reporter is present and will capture your comments and questions for the Draft EIR record



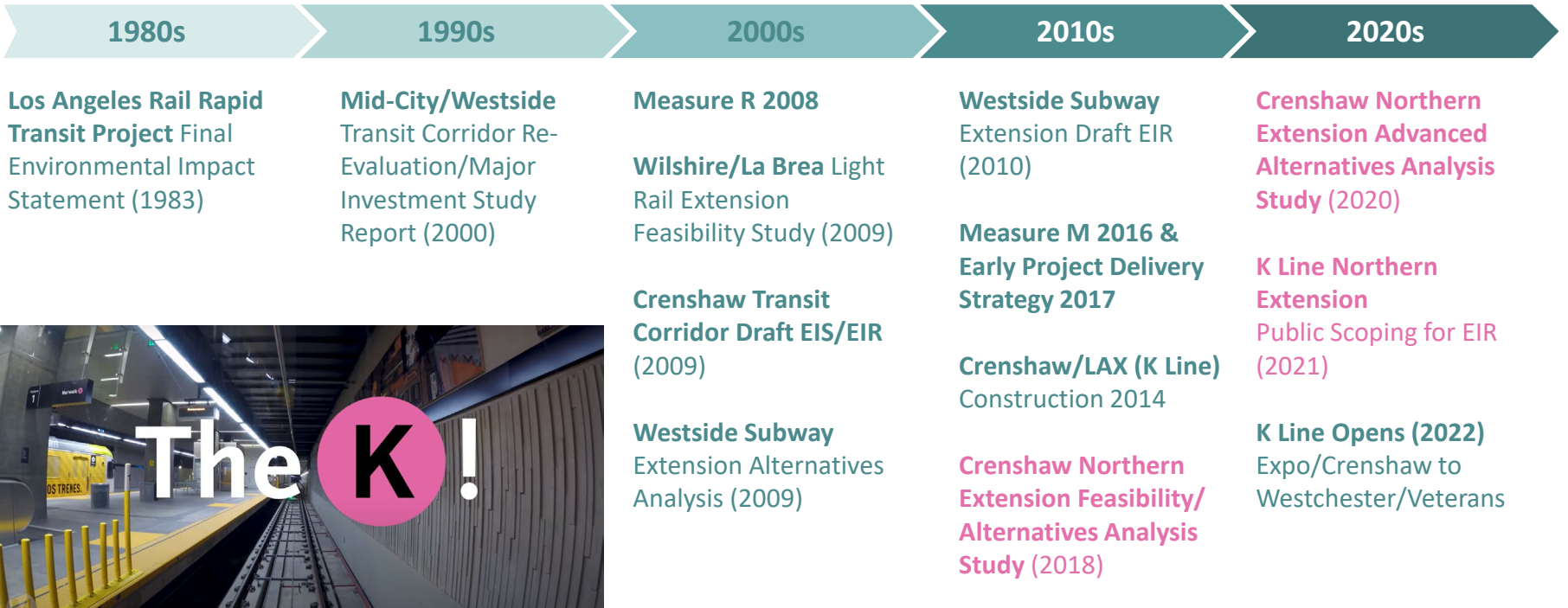
Community Engagement

- > Public has been actively engaged in providing feedback and comments in these communities
 - Over 400 people attended public scoping meetings, over 700 comments submitted during COVID (Spring 2021)
- > Metro notifies communities through e-blasts, social media, briefings, transit rider intercepts, and mailers to properties along the project corridor



Project History

Metro has completed numerous studies to address regional and local transit connectivity to serve the area and engaged communities in the area through construction of D and K Lines.



K Line Northern Extension Project Overview



Metro

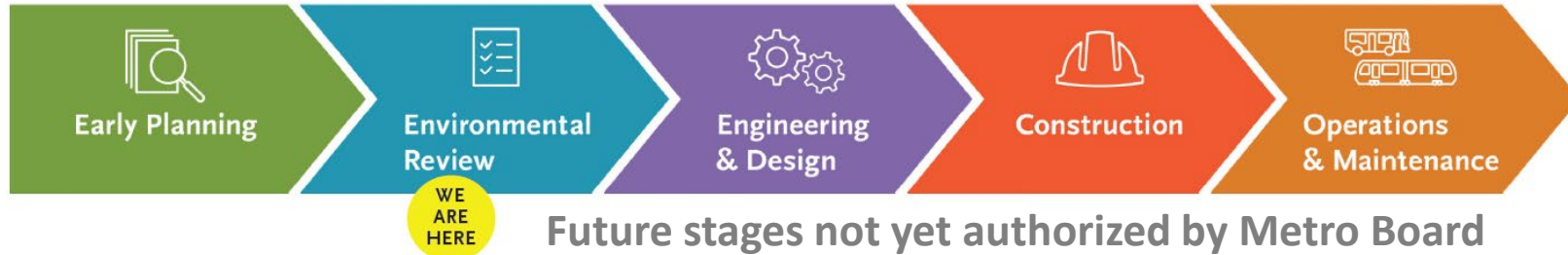
Overview

- > 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 major employment/activity centers
- > **Measure M: \$2.24 Billion (2015\$)**
 - 2041 Groundbreaking
 - 2047-2049 Opening
- > **Draft EIR Release July 2024**
 - Draft EIR to inform selection of LPA
 - Local efforts underway to identify additional funding & financing strategies to accelerate project per the Measure M Early Project Delivery Strategy



NOTE: Diagram illustrates potential future rail connections with implementation of K Line Northern Extension Project.

Stages of Project Development



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

- > Public scoping held in Spring 2021 (during COVID)
- > Early in planning and design process (~15% design complete)
- > Released Draft EIR on July 23, 2024
- > **Gathering public comments on Draft EIR through September 20th** (15-day extension)
- > Will continue to receive input on the project to share with the Metro Board
- > Advancing to Final EIR and future stages of development requires Metro Board direction

Project Area

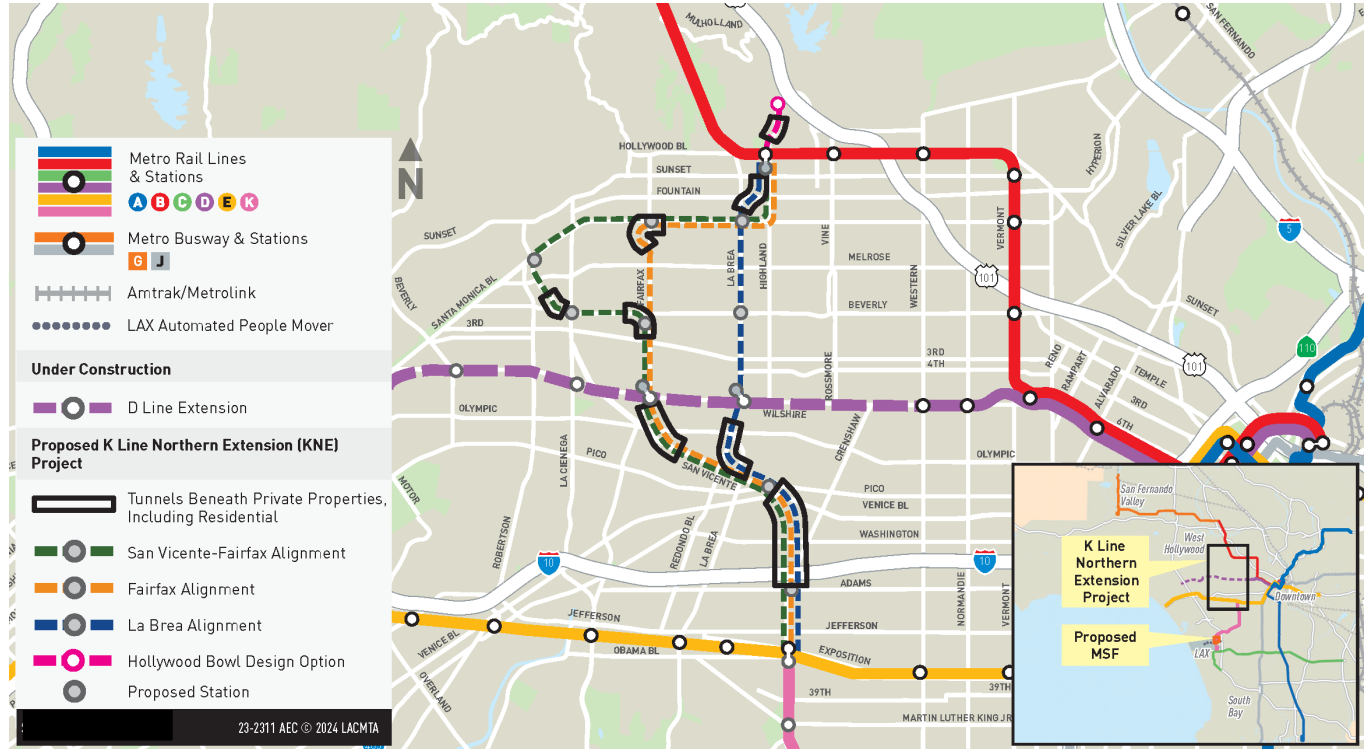
Draft EIR evaluates underground light rail alignments equally

- > Project would be implemented in sections
- > First section would connect E Line to D Line
- > All alignments are the same from E Line to Midtown Crossing in Section 1



Proposed Tunnels Under Residential Properties

- > Proposed tunnels would travel under residential properties in several areas to make efficient connections to stations
- > **No homes would be acquired to construct project**

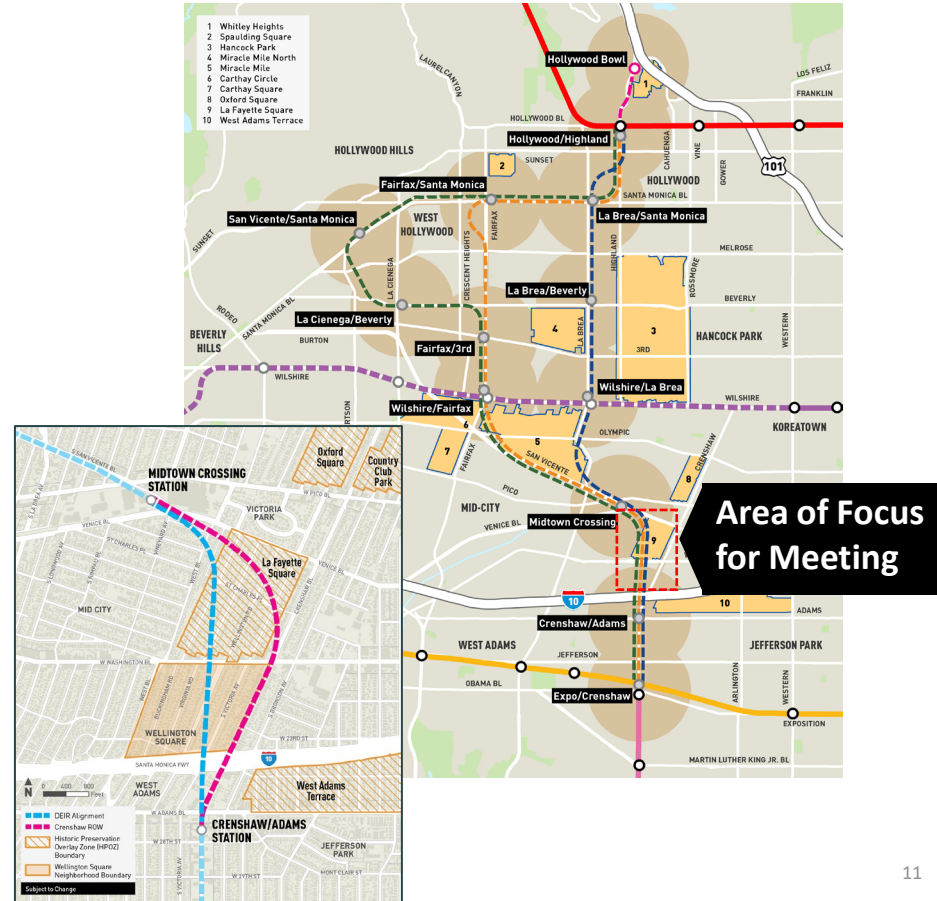


Historic Resources, Districts & Zones

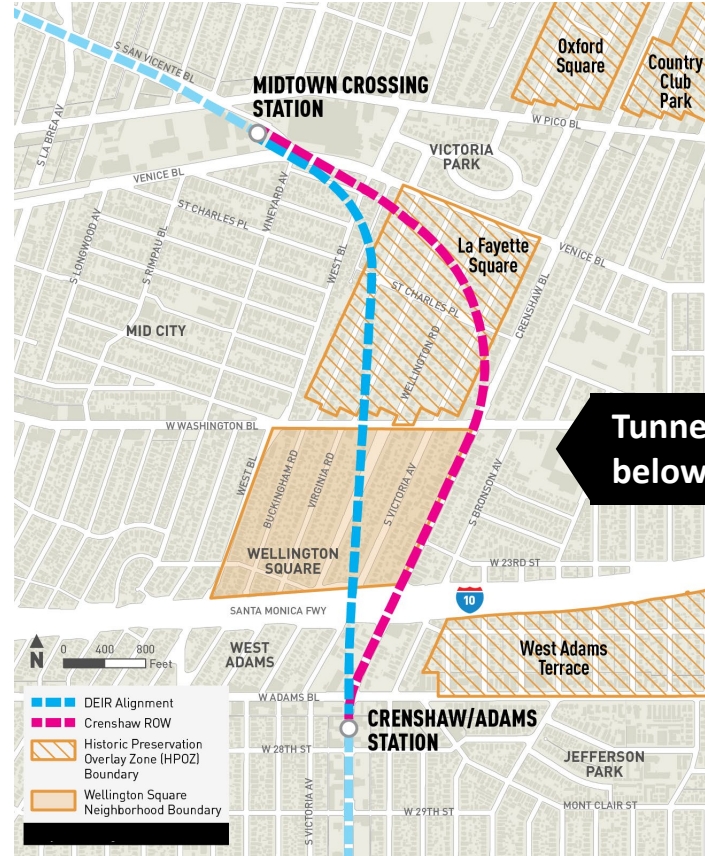
Draft EIR evaluates historic district and properties to understand existing conditions and analyze potential environmental impacts

- > 10 historic preservation overlay zones (HPOZs) within half-mile of proposed stations including LaFayette Square
- > Historic district and properties in study area
- > **No homes to be acquired for project**
- > Surveys would be prepared for historic properties

Draft EIR: Chapters 3.06 Cultural Resources, 3.13 Land Use



Historic Neighborhoods along Crenshaw Blvd



- DEIR Alignment
- Crenshaw ROW
- Historic Preservation Overlay Zone (HPOZ) Boundary
- Wellington Square Neighborhood Boundary

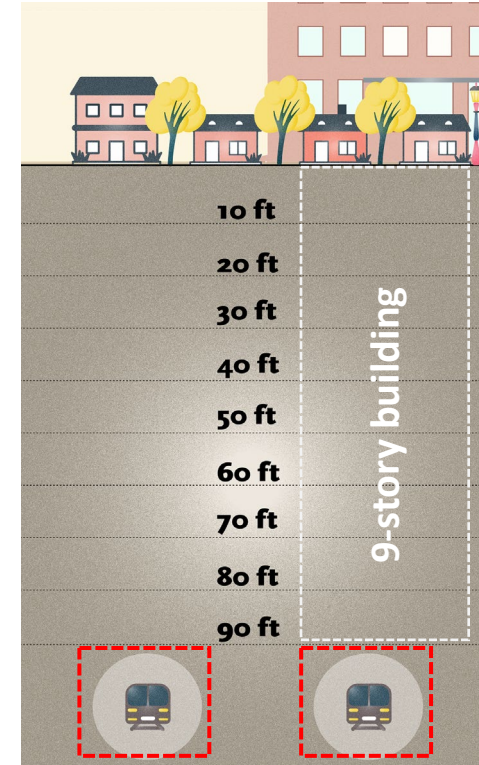
Potentially Affected Properties

No homes to be acquired to construct or operate project

- > Metro notified homeowners where potential **subsurface easements** may be needed for underground tunnels

Subsurface (Underground) Easements

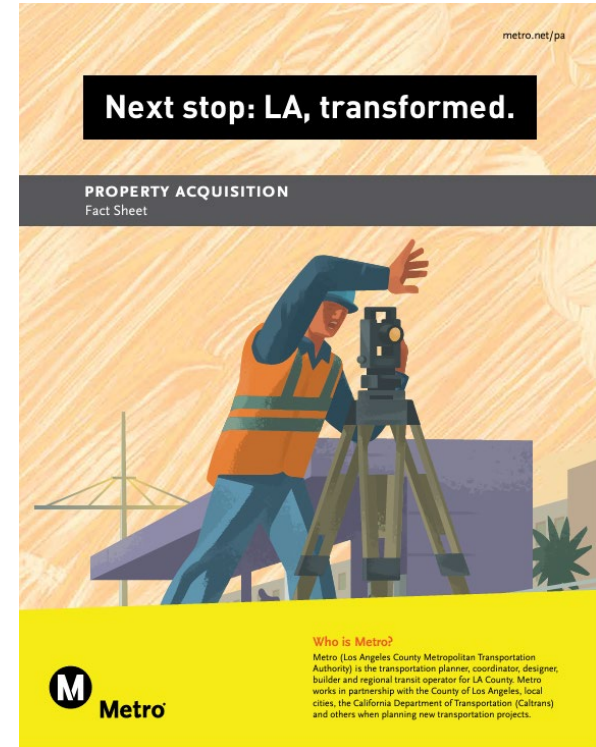
- Right to cross or use another property owner's land underground for a stated purpose
- Can involve a general or specific portion of the property and can be temporary or permanent
- **Does not acquire property or its structures**
- **Does not impact ability to remodel/expand homes**
- **Compensation for owners for subsurface easements**



Subsurface Easement

Letters to Property Owners

- > Notifications are required under CEQA for any properties affected including **subsurface easements**
 - > Letters sent by certified mail to ensure tracking and delivery
 - > **No mention of eminent domain**
- > Public input on Draft EIR is an important part of CEQA process
 - > Metro will perform additional environmental analysis to respond to public comments on the Draft EIR
- > Final list of properties potentially affected would be confirmed after Metro completes all environmental documentation (CEQA and likely NEPA) and Metro Board approves and certifies environmental document



www.metro.net/about/property-acquisition/

Metro's Experience with Tunneling



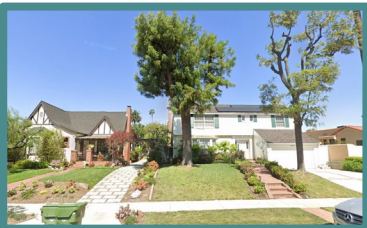
Metro

Metro's Experience with Tunnels Under Private Property (Residential & Commercial)

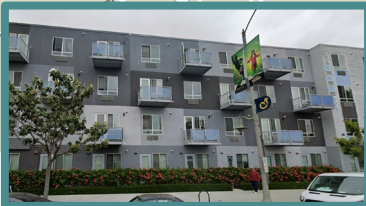
Metro Rail Lines
Under Construction
Tunnel Locations Under Private Properties



Beverly Hills High School
 Depth to tunnel: 60-70 feet



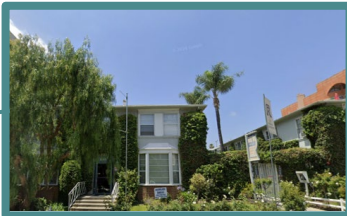
Westwood
 Depth to tunnel: 60-115 feet



Leimert Park
 Depth to tunnel: 23-25 feet



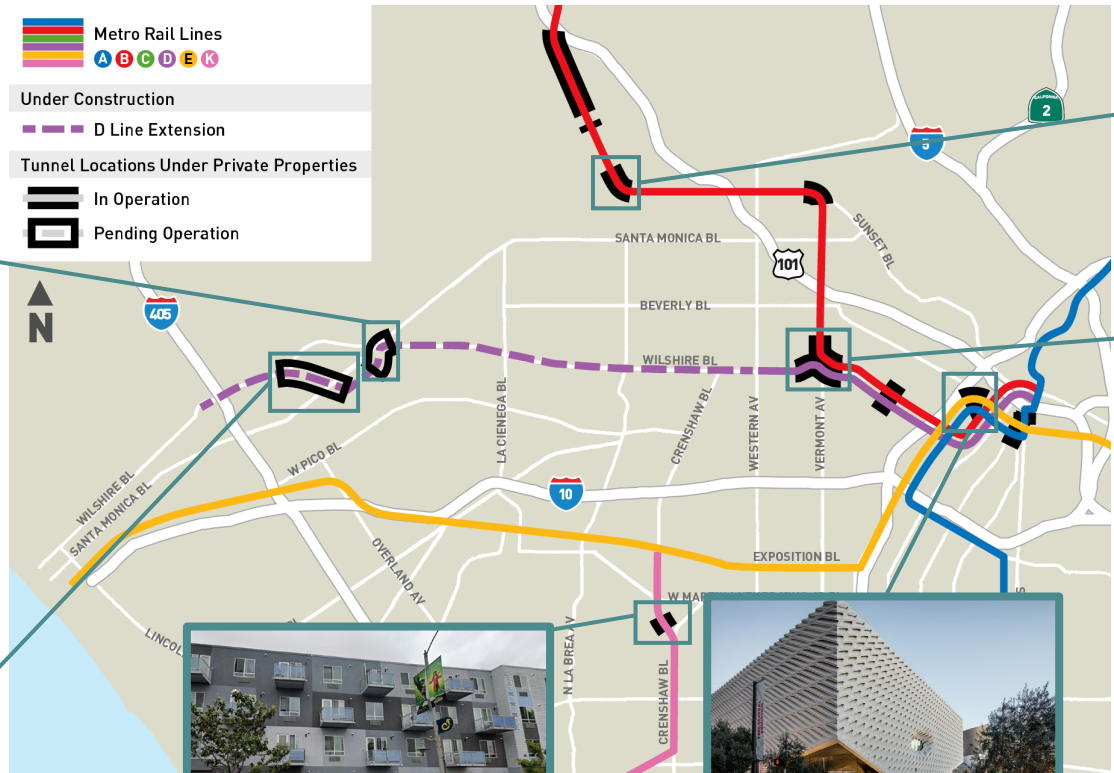
DTLA – Broad & Colburn School
 Depth to tunnel: 100-130 feet



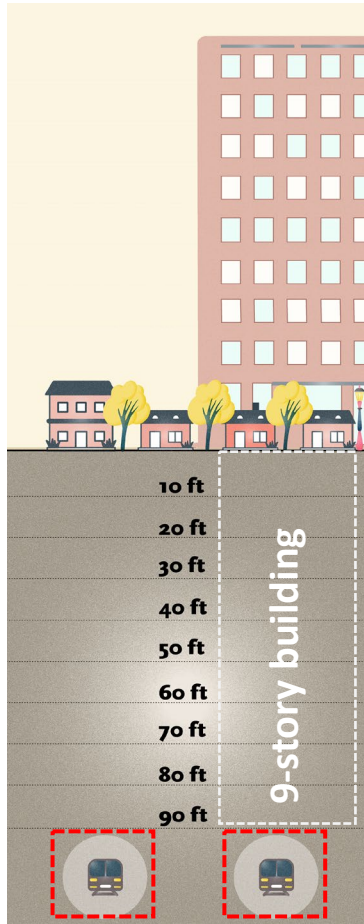
Hollywood
 Depth to tunnel: 40-55 feet



Wilshire/Vermont
 Depth to tunnel: 50 feet



Tunnels Under Private Property



Metro A/E, B, D and K Lines travel underground in tunnels

- > Current tunnels range from 25 to hundreds of feet underground (deeper than older systems in U.S.)
- > Proposed KNE tunnels would be 40 to 120 feet underground
- > Between I-10 and Venice Blvd, KNE tunnels would range from 80 to 120 feet (would be some of the deepest in the Metro system)

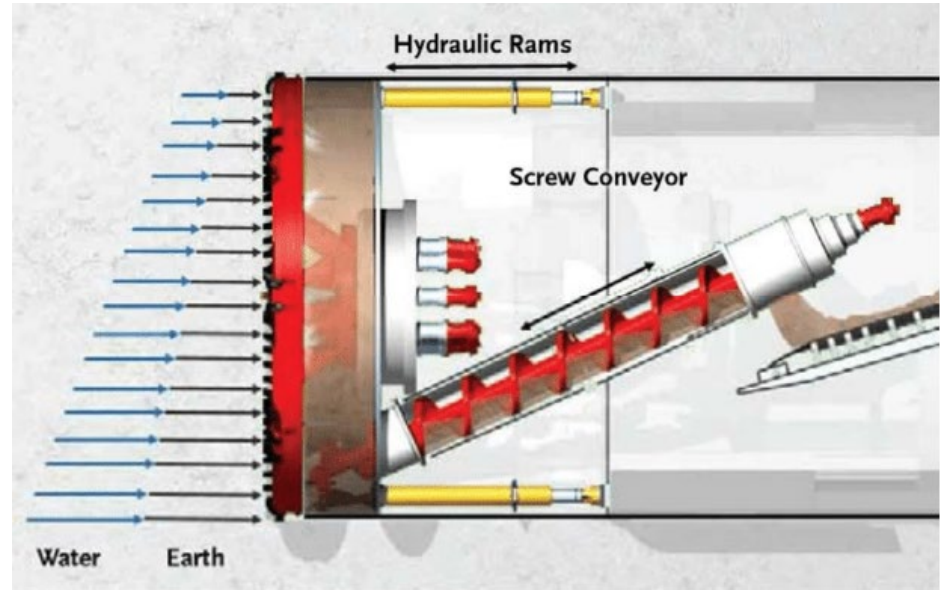
Some segments travel under private property to:

- > Connect to stations at major centers and destinations
- > Allow for large radius turns for operations and construction compared to at-grade or aerial rail configurations
- > Provide most direct route to save travel time
- > Avoid surface impacts to residential and commercial properties

Tunnel Boring Machine Approach



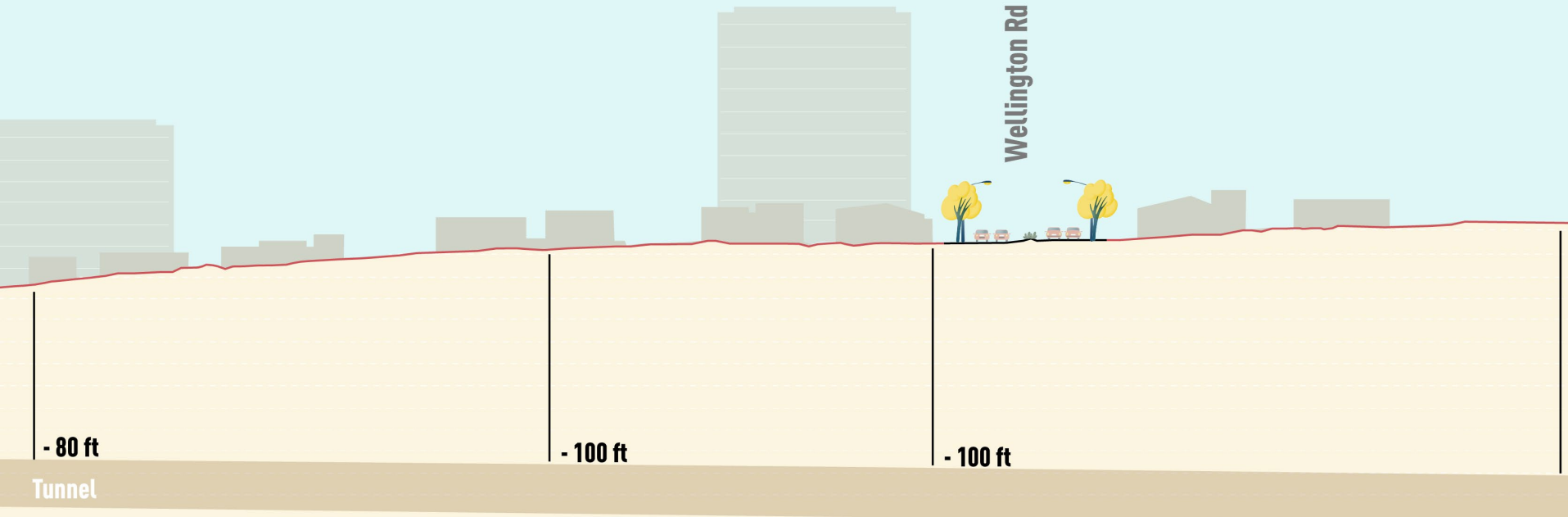
Tunnel Boring Machine (TBM)



Tunnel Depth from South to North

This illustrative diagram shows the approximate depth of the tunnels and station.

South of Wellington Rd to Buckingham Rd, the tunnel is approx. 80-120 feet below ground.

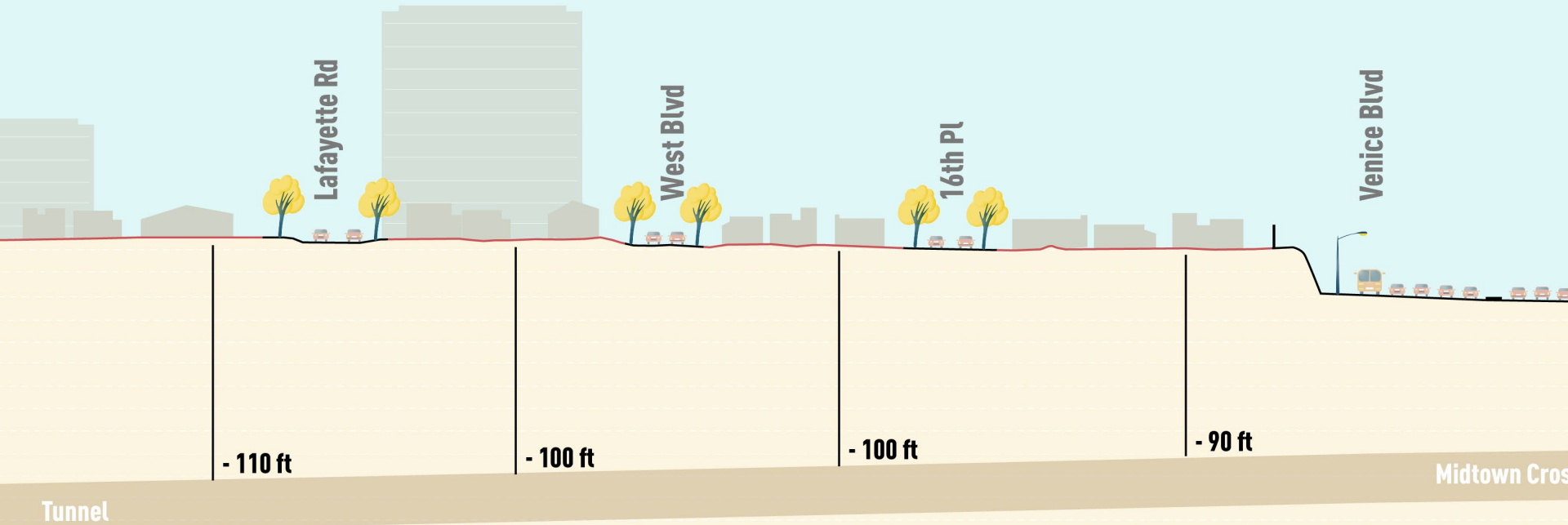


Note: Illustrative drawing. Buildings are for scale purposes only and do not reflect specific properties.

Tunnel Depth from South to North

This illustrative diagram shows the approximate depth of the tunnels and station.

South of Lafayette Rd to Venice Blvd, the tunnel is approx. 90-110 feet below ground.



Note: Illustrative drawing. Buildings are for scale purposes only and do not reflect specific properties.

D Line Extension Tunnels Under Homes

- > Metro successfully completed tunneling underneath Westwood in Spring 2024
- > 82 subsurface easements in this segment
 - > 72 of 82 are residential
- > Tunnel depths 60-115 feet



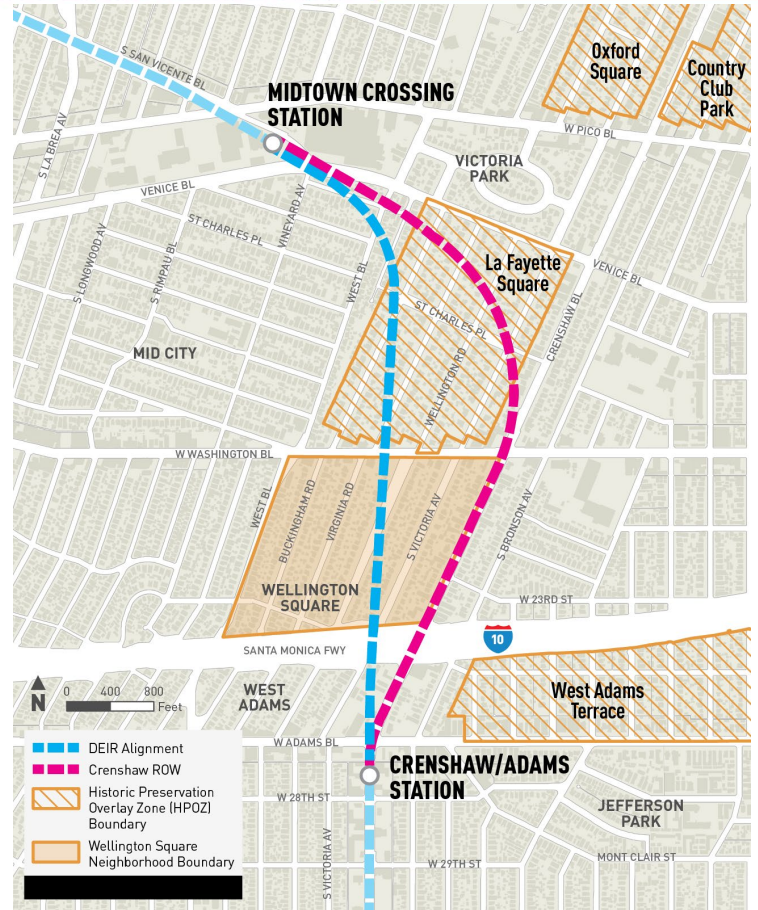
Westwood



Alignments Considered between Crenshaw/Adams & Midtown Crossing Stations

Multiple factors evaluated to compare alignments during environmental analysis

- > Engineering feasibility
- > Tunnel length, depth, radius to connect stations
- > Environmental Impacts
- > Underground Easements
- > Constructability
- > Operability (speed of travel and safety of curves)
- > Cost



Tunnel Construction Approach



Metro

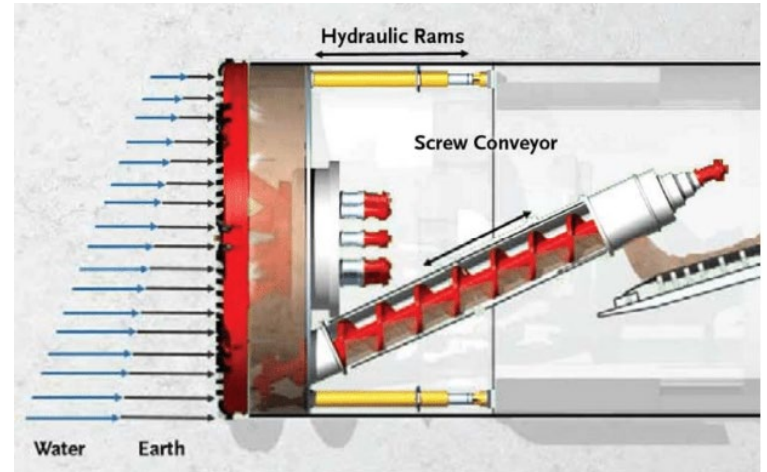
Tunnel Boring Machines (TBMs)

> Process

- Excavate the full diameter of the tunnel
- As the TBM advances, concrete tunnel liners are immediately installed to support tunnel
- Grouting addresses any voids

> Latest technology

- Designed for specific ground conditions in which they would operate
- Maintain ground pressure ahead of the TBM
- Continuous monitoring of ground above and around TBM to ensure safety and avoid settlement
- TBMs are imperceptible to people on the surface



Metro's Recent Experience with Tunneling

- > Recently successfully completed 12 miles of tunnel using pressurized face TBMs
 - K Line
 - D Line
 - A/E Line
- > Independent Tunnel Advisory Panel advises on international best practices and innovations
- > Extensive testing before and monitoring during construction
- > Operate trains below sensitive uses with no impacts
- > No complaints of noise and vibration due to underground operations



www.metro.net/about/tunneling/

Investigations During Environmental & Design Phases

Before the project is put out to bid for construction, Metro performs numerous investigations and analyses:

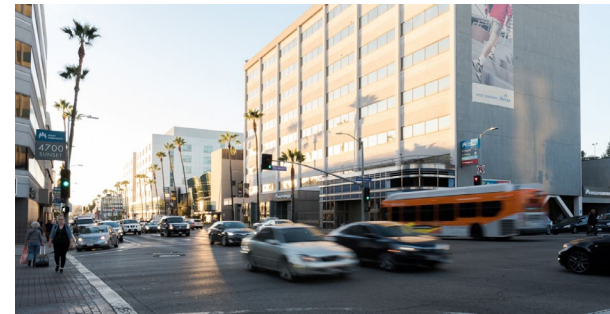
- > Geotechnical investigations
 - Soil and groundwater conditions
 - Seismic analysis
 - Contamination
- > Utility infrastructure location
- > Noise and vibration assessment (includes historic buildings)
- > Building assessment
 - Building type (type of construction)
 - Depth of tunnel under building
 - Evaluate need for mitigation (not needed for recent D Line)
- > Local business and property surveys

Noise Analysis & Findings

- > Noise analysis considers sensitive receptors (homes), distance from source, soil conditions
- > Apply design strategies, materials, and mitigations strategies to minimize impacts
- > Construction noise would be localized at stations, not in tunneled areas
 - Metro would mitigate construction noise around stations and maintenance yard
- > Operational noise would not be perceptible in neighborhoods
 - No change in tunnel areas
 - Predicted to be same as existing conditions



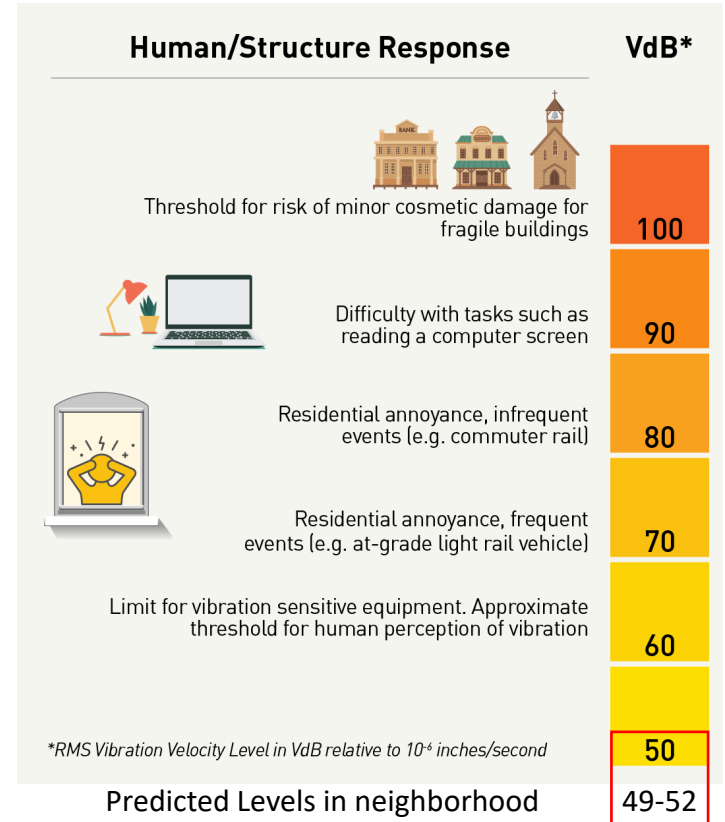
Performance Venues & Recording Studios



Medical buildings with sensitive equipment

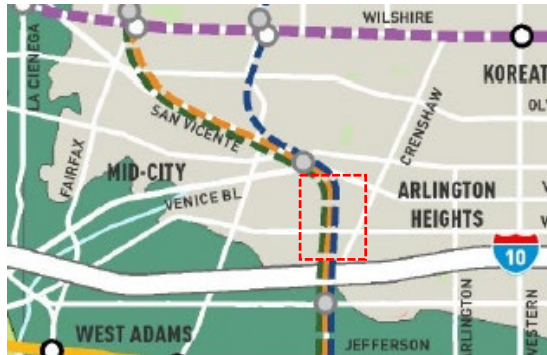
Vibration Analysis & Findings

- > Vibration analysis considers sensitive uses, distance from source, and potential for
 - Human Annoyance
 - Issues for sensitive equipment
 - Damage to buildings
- > **No significant vibration impacts during construction and operations**
 - Below levels of human perception
 - Predicted levels in these neighborhoods: 49-52 VdB
 - Far below FTA threshold: 72 VdB



Seismic Safety

- > Geology analysis shows neighborhoods are outside fault zone, and liquefaction zone
- > Tunnels move with the ground during seismic activity
- > Tunnels have performed well during seismic events



Draft EIR: Chapter 3.08 Geology

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

Tunneling with High Groundwater

- > Experience with dewatering on other Metro underground projects (A/E, B, D, K Lines)
- > Geology analysis shows groundwater would be encountered in project area during tunneling
- > Precast concrete tunnel lining would prevent groundwater intrusion
- > Prior to construction, Metro would conduct additional geotechnical investigations to more precisely measure groundwater depths
- > During construction, dewatering may occur in tunnel cross passages to remove excess groundwater

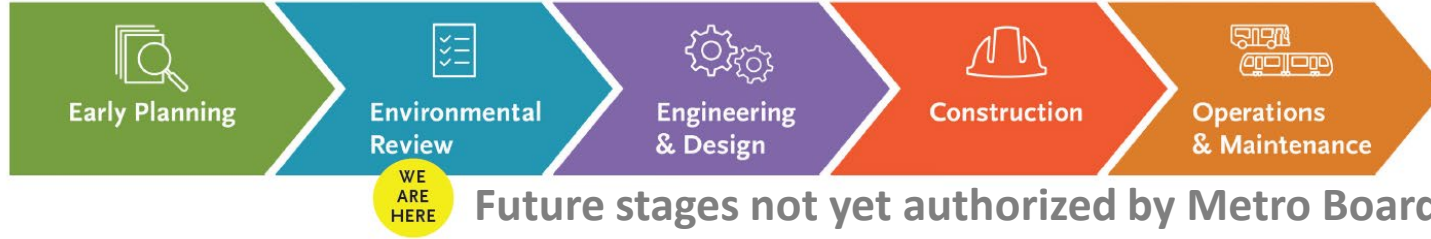


Next Steps



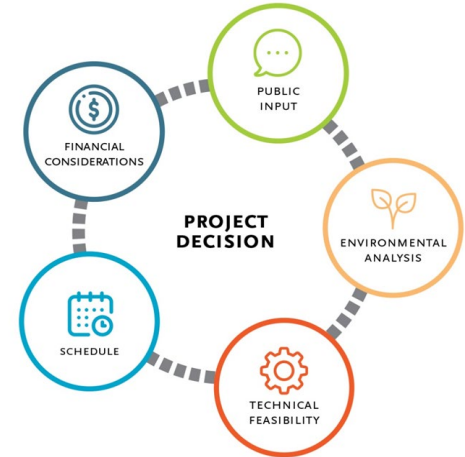
Metro

Next Steps in Planning Process



Following Sept 20th close of Draft EIR public comment period, Metro will:

- Review comments, questions and stakeholder input
- Continue to meet with you and other communities along the corridor
- Considering public input and technical analysis, prepare a staff recommendation for the Metro Board of Directors to consider when selecting a Locally Preferred Alternative (LPA)
- Receive direction from Metro Board on next steps



You can share feedback by email, mail, phone, and at Metro Board meetings

Questions & Comments



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