Study Area, Related Projects and Travel Markets

Study area and related projects

- **North San Fernando Valley BRT (Alignment TBD)**
- **Orange Line Improvements and Conversion to LRT**
- **I-405 Express Lanes**
- **Countywide Bus Rapid Transit (BRT) Expansion Program**
- **Crenshaw Northern Extension (Alignment TBD)**
- **NoHo-Pasadena BRT (Alignment TBD)**

Travel between Valley and Westside

- **East San Fernando Valley Transit Corridor**
- **LAX Automated People Mover**
- **Airport Metro Connector 96th Street Transit Station**
- **Purple Line Extension**
- **Crenshaw/LAX Project**

Travel between Westside and LAX

- **Crenshaw/LAX Project**
- **Sepulveda Transit Corridor Project**
Provide a **high-quality transit service** that effectively serves a **large and growing travel market** between the San Fernando Valley and the Westside, including the LAX area. For transit to be a **competitive travel option** that attracts new riders, there is a need to **increase the speed, frequency, capacity, and reliability of transit service** and provide **convenient connections** to existing and planned transit corridors.

Because of the barrier posed by the Santa Monica Mountains, there are limited high-capacity travel options between the San Fernando Valley, Westside and LAX areas.

The Feasibility Study will first consider transit concepts that connect the San Fernando Valley and the Westside. It will then consider extensions of those concepts to LAX.
**Initial Concepts and Modes (June 2018)**

**Modes**

**Heavy Rail Transit (HRT)**
- Highest speed, fastest loading, requires fully separated right-of-way
  - No street-level crossings (uses third rail for power)
  - Up to 70 mph
  - Typical capacity of 12,000 passengers per hour per direction; can operate longer trains because tracks are separated from city streets
  - Typically 3 doors per car (each side) for faster loading
  - Limited ability to operate on steep grades
  - Examples: Red and Purple Lines

**Light Rail Transit (LRT)**
- High speed, most flexible, can operate in-street or on separated right-of-way
  - Can operate in urban environment with street-level crossings (uses overhead wire for power)
  - At-grade crossings can cause delays, even with signal priority
  - Up to 65 mph
  - Typical capacity of 4,800 passengers per hour per direction; can operate longer trains, but they would block intersections in an urban environment
  - Typically 2 doors per car (each side)
  - Limited ability to operate on steep grades
  - Examples: Blue, Green, Gold and Expo Lines

**Monorail/Rubber Tire (MRT)**
- Lower speed, requires fully separated right-of-way, can operate on steeper grades
  - No street-level crossings
  - Up to 50 mph
  - Typical capacity of 7,500 passengers per hour per direction for monorail or 15,000 for rubber tire; can operate longer trains because tracks are separated from city streets
  - Can sustain operations on steep grades
  - Examples: Las Vegas Monorail and Mexico City Metro
Ridership forecasts indicate that the additional passengers using the East San Fernando Valley (ESFV) Transit Corridor to reach the Sepulveda Transit Corridor will overload some ESFV trains.

The initial transit concepts were refined to address the high demand:

> Eliminate LRT concepts from consideration – insufficient capacity along ESFV corridor for one-seat ride
> Refine the initial MRT and HRT concepts to extend farther north – intercept demand on ESFV

> Eliminate other lower performing concepts/options:
  * Purple Line Extension – lowest performer
  * Connection at Westwood/VA – low ridership
Major Physical Constraints

San Fernando Valley

- 96-inch high-pressure water main under Sepulveda Bl through the entire study area south of the Orange Line
- Major storm drains under Sepulveda Bl and Van Nuys Bl

Sepulveda Pass

- Open space, wildlife crossings and streams adjacent to I-405 in the Santa Monica Mountains
- Topography and existing infrastructure limit aerial alignment options

Westside

- Tall buildings on Wilshire Bl have deep foundations that constrain tunnel alignment options
- Santa Monica Fault Zone limits station location options
- 96-inch high-pressure water main under Sepulveda Bl

Santa Monica Mountains Conservancy Parklands and Open Space

Santa Monica Fault Zone

- Earthquake Fault Zones
- Liquefaction Zones
- Earthquake-Induced Landslide Zones

Source: Santa Monica Mountains Conservancy and Mountains Recreation and Conservation Authority, 2015

Source: California Geological Survey, Geologic Information and Publications, 2018
Elevated above Sepulveda Bl through the San Fernando Valley north to the Metrolink Van Nuys Station.

Uses Metrolink right-of-way to connect to the Metrolink Van Nuys Station.

Trains would operate every 4 minutes from the Metrolink Van Nuys Station to the Expo Line.

Station Locations:
- Metrolink Van Nuys
- Sepulveda Bl/Sherman Way
- Orange Line/Sepulveda
- Sepulveda Bl/Ventura Bl
- UCLA Campus
- Purple Line at Westwood/UCLA
- Expo Line/Sepulveda or Bundy
> Sepulveda Transit Corridor would extend in a tunnel under Van Nuys Bl to the Metrolink Van Nuys Station.
> Station Locations:
  - Metrolink Van Nuys
  - Orange Line/Van Nuys
  - Van Nuys Bl/ Ventura Bl
  - UCLA Campus
  - Purple Line at Westwood/UCLA
  - Expo Line/Sepulveda or Expo/Bundy

> Sepulveda Transit Corridor would extend in a tunnel to the Metrolink Van Nuys Station.
> Station Locations:
  - Metrolink Van Nuys
  - Orange Line/Sepulveda
  - Sepulveda Bl/ Ventura Bl
  - UCLA Campus
  - Purple Line at Westwood/UCLA
  - Expo Line/Sepulveda or Expo/Bundy

> Sepulveda Transit Corridor would extend via an elevated structure above Sepulveda Bl and the Metrolink right-of-way to the Metrolink Van Nuys Station.
> Station Locations:
  - Metrolink Van Nuys
  - Sepulveda Bl/Sherman Way
  - Orange Line/Sepulveda
  - UCLA Campus
  - Purple Line at Westwood/UCLA
  - Expo Line/Sepulveda or Expo/Bundy
> Westwood/UCLA is forecast to become the highest ridership transfer station in the Metro Rail system.
> Orange Line/Van Nuys and Sepulveda stations would have boardings greater than 7th Street/Metro Center does today.

> Sepulveda Transit Corridor HRT concepts would be faster than driving between the Orange Line and Expo Line.
> Monorail/rubber tire concepts would be faster than driving between the Orange Line and Expo Line in most driving scenarios.

> HRT 3 has the highest forecast ridership.
> MRT 1 has the lowest ridership, primarily as a result of its lower speeds.
## Evaluation of Refined Concepts

<table>
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<tr>
<th></th>
<th>HRT 1</th>
<th>HRT 2</th>
<th>HRT 3</th>
<th>MRT 1</th>
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<td><strong>Ridership (daily)</strong></td>
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<td><strong>Travel time (Metrolink to Expo Line, minutes)</strong></td>
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*Low (does not meet goal)*  
*High (meets goal)*
Westside-LAX Goals

Preserve extensions from Expo Line to LAX

Terminate at Airport Metro Connector 96th Street Transit Station

Connect major activity centers

Use existing transportation corridors
> I-405 corridor may allow for aerial alignment
> Potential Station Locations:
  • Venice Bl or Washington Bl
  • Culver City Transit Center or Howard Hughes Center
  • Sepulveda Bl/Manchester Bl
  • Airport Metro Connector 96th Street Transit Station

> Maximizes aerial alignment
> Potential Station Locations:
  • Venice Bl or Washington Bl
  • Culver City Transit Center or Howard Hughes Center
  • Sepulveda Bl/Manchester Bl
  • Airport Metro Connector 96th Street Transit Station
> Southern extension of the Purple Line from its planned terminus at the Westwood/VA Station
> Would connect to Expo/Bundy Station on the Expo Line and follow the Centinela corridor
> Potential Station Locations:
  • Venice Bl or Washington Bl
  • Playa Vista
  • Sepulveda Bl/Manchester Bl
  • Airport Metro Connector
  96th Street Transit Station

> Could extend from Expo/Sepulveda or Bundy
> Potential Station Locations:
  • Venice Bl or Washington Bl
  • Playa Vista
  • Sepulveda Bl/Manchester Bl
  • Airport Metro Connector
  96th Street Transit Station
Metro invites you to stay involved and share your feedback.

Study Schedule

- **STUDY KICKOFF**
  - DECEMBER 2017

- **PROJECT INTRODUCTION**
  - SUMMER/FALL 2018

- **EVALUATION OF VALLEY-WESTSIDE INITIAL CONCEPTS**
  - FALL 2018

- **EVALUATION OF WESTSIDE-LAX INITIAL CONCEPTS**
  - WINTER/SPRING 2019

- **STUDY COMPLETION AND BOARD SELECTION OF ALTERNATIVES**
  - FALL 2019

- **BEGIN ENVIRONMENTAL ANALYSIS FOR VALLEY-WESTSIDE**
  - 2020

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