Sepulveda Pass Corridor Systems Planning Study Update

June 20, 2012
Measure R Transit Corridors

- One of 12 Measure R Transit Corridors approved by Voters in 2008

- Systems Planning Study is first step in corridor planning

- LRTP includes $2.468 billion (escalated) in third decade
Sepulveda Pass Study Corridor

- Extends for 30 miles
  - San Fernando Valley - 12 miles
  - Sepulveda Pass – 8 miles
  - Westside to LAX – 10 miles

- Potential Transit Connections:
  - Metrolink Antelope Valley Line
  - Metrolink Ventura Line
  - East San Fernando Valley North/South Corridor
  - Metro Orange Line
  - Westside Subway Extension
  - Expo Line Phase 2
  - Crenshaw/LAX LRT Project
  - Airport Metro Connector
  - Metro Green Line

- Current I-405 Improvement Project
  - Adding NB HOV Lane
  - Existing SB HOV lane operates over capacity at peak periods (2+ carpool)
Corridor Travel Challenges

• 3rd Most Congested Highway Segment in the U.S.*
  • 295,000 vehicles per day (2010)
  • 430,000 vehicles per day (2030)

• Severe Transit Limitations
  • Metro Rapid 761 scheduled run time between Van Nuys and Westwood:
    • AM Southbound – 65 minutes to go 12 miles (11 mph)
    • PM Northbound – 74 minutes to go 12 miles (9.7 mph)

• Peak Demand Between US 101 and I-10
  • 45% of trips enter and exit in this 12 miles segment

*Source: Texas Transportation Institute (2011)
Sepulveda Pass Corridor Concepts

- **Lower Cost** (within Measure R Budget)
  - Concept 1: At-Grade BRT
  - Concept 2: Managed Lanes with BRT

- **Higher Cost** (requires supplemental funding, long-term phasing or other delivery strategies)
  - Concept 3: Caltrans Project Report Aerial Viaduct
  - Concept 4: Toll Tunnel (Highway and BRT)
  - Concept 5: Fixed Guideway Rail Tunnel
  - Concept 6: Toll Tunnel and Rail Tunnel
Concept 1: Sepulveda/Van Nuys BRT

Freeway with Shoulder Running BRT - Minneapolis

Metro Orange Line BRT
Concept 1: Sepulveda/Van Nuys BRT

- Sylmar to LAX- 30 miles with partial priority lanes
- Use of Sepulveda Pass freeway shoulders during peak
- Potential Connection to ESFV Transit Corridor
- Priority treatment on Sepulveda Blvd through and south of the Pass

Metro
Concept 2: Managed Lanes with BRT

- I-15 Managed Lanes San Diego County
- Metro Express Lanes Project
- I-10 and I-110 Freeways
- Route 91 Toll Lanes- Riverside/Orange Counties
Concept 2: Managed Lanes with BRT

- Sylmar to LAX - 29 miles with Potential Connection to ESFV Transit Corridor
- High Occupancy Toll Lanes
  - 2 HOT lanes in Sepulveda Pass (each direction)
  - 1 HOT lane (3+ min. occupancy) north of Sepulveda Pass and south of I-10
- Potential Connection to ESFV Transit Corridor
- Public Private Partnership Potential
Concept 2: Managed Lanes and BRT

Southbound "R405" Line

I-405 Before Current Widening Project

4 General Purpose + 1 HOV

Northbound "R405" Line

Southbound "R405" Line

I-405 With Current Widening Project

5 General Purpose + 1 HOV

Northbound "R405" Line

Southbound "R405" Line

Possible Future I-405 With Addition of Managed Lanes

5 General Purpose + 2 HOV (Modified)
Concept 3: Highway Viaduct

I-5 Highway Viaduct – Santa Ana
Concept 3: Highway Viaduct with BRT

- US 101 to I-10 Aerial Viaduct above Freeway – 10 miles
  - 2 HOT lanes in each direction on an elevated structure, freeing existing HOV lanes for dedicated busway beneath viaduct
- Potential Connection to ESFV Transit Corridor
- Conforms to Caltrans Route Study Report, but was eliminated as an alternative in current I-405 Improvement Project
  - May not be feasible due to environmental and engineering constraints
Concept 4: Highway Toll Tunnel with BRT

Concept Envisions one large bore tunnel similar to above left Alaska Highway Viaduct Tunnel (Under Construction) – Seattle Subway entrance portals would be similar to above Sepulveda Pass Tunnel on Sepulveda Boulevard near Mulholland Drive
Concept 4: Highway Toll Tunnel with BRT

• Tunnel with four toll lanes (two per direction) under Sepulveda Pass - Minimum length of 10.5 miles

• BRT in Tunnel with potential connection to ESFV Transit Corridor

• Potential Direct Freeway Connections at
  – US 101 and I-405 (SFV)
  – Santa Monica Boulevard and Venice Boulevard (Westside)

• Public-Private-Partnership potential
Concept 5: Rail Transit Tunnel

Metro Gold Line – Pasadena Tunnel near Colorado Boulevard
Concept 5: Rail Transit Tunnel

• Tunnel for Light Rail Transit (LRT) with surface operations north and south of Sepulveda Pass from Sylmar to LAX - 28 miles

• LRT travels underground in transit-only tunnel in the Sepulveda Pass (Minimum tunnel length- 6 miles)

• Potential Connection to ESFV Transit Corridor

• Connectivity to Metro Rail system; low public private partnership potential
Concept 6: Highway/Transit Tunnel

Concept Envisions one large bore tunnel similar to above left Alaska Highway Viaduct Tunnel (Under Construction) – Seattle and two 20’ diameter rail tunnels similar to Metro Gold Line (shown above)
Concept 6: Highway/Transit Tunnel

Combines Concepts 4 and 5

Potential Highway and Private Rail Shuttle Tunnels from mid San Fernando Valley to LAX

Highway Tunnel:

- Tolled highway with tunnel segment- length up to 21 miles
  - Potential direct connectors from eastbound US 101 and southbound I-405 freeways with Intermediate Access Points at Ventura, Venice and Howard Hughes Parkway

Private Shuttle Tunnel

- Shuttle length: up to 20 miles
  - Private shuttle with rail tunnel between Van Nuys Metrolink Station and Century/Aviation

Public-Private Partnership potential
Comparisons – Cost per mile

Sepulveda Pass Corridor Systems Planning Study
Concept Cost Per Mile

- Concept #1 At-Grade Semilneda BRT: $12M/Mile
- Concept #2 At-Grade Freeway Managed Lanes: $120M/Mile
- Concept #3 Highway Viaduct Managed Lanes: $187M/Mile
- Concept #4 Tolled Highway Tunnel: $1,044B/Mile
- Concept #5 Fixed-Guideway Light Rail Transit Tunnel: $540M/Mile
- Concept #6 Highway/Private Shuttle Tunnels: $1,548B/Mile

Concept #1 - Cost based on Metro HCT Lane Average Bid Prices (2 Express Lanes)
Concept #2 - Cost based on Metro HCT Lane Average Bid Prices (4 Express Lanes) & two Direct Access Ramps
Concept #3 - Cost based on Alaskan Way Viaduct Option
Concept #4 - Cost based on Alaskan Way Tunnel (One 58' tunnel)
Concept #5 - Cost based on Metro Westside Subway Extension (Two 12' tunnels)
Concept #6 - Cost based on Concept #4 + Concept #5 (One 58' tunnel and Two 20' tunnels)
Comparisons - Capital Cost

Sepulveda Pass Corridor Systems Planning Study
Conceptual Cost for an Eight Mile Corridor vs. Measure R Funding

- Concept #1: At-Grade Sepulveda BRT
- Concept #2: At-Grade Freeway Managed Lanes
- Concept #3: Highway Viaduct Managed Lanes
- Concept #4: Toggled Highway Tunnel
- Concept #5: Guideway Light Rail Transit Tunnel
- Concept #6: Highway/Private Shuttle Tunnels

Concept #1 - Cost based on Metro HOT Lane Average Bid Prices (2 Express Lanes)
Concept #2 - Cost based on Metro HOT Lane Average Bid Prices (4 Express Lanes) and two Direct Access Ramps
Concept #3 - Cost based on Alaskan Way Viaduct Option
Concept #4 - Cost based on Alaskan Way Tunnel (One 58' tunnel)
Concept #5 - Cost based on Metro Westside Subway Extension (Two 20' tunnels)
Concept #6 - Cost based on Concept #4 + Concept #5 (One 58' tunnel and Two 20' tunnels)
Next Steps

• Fall 2012
  – Complete Systems Planning Study
  – FTA Livability Grant Notification
    (Provides funding for Alternatives Analysis Study)