

# SR 710 Environmental Study

## Alternatives Analysis

Technical Advisory Committee Meeting No. 6 – July 11, 2012



# Open House Outreach Summary

- > Seven Open Houses held in May 2012
- > Purpose
  - > Provide a study overview
  - > Share study history
  - > Inform stakeholders about the elements of the environmental review process
  - > Present alternatives development process
  - > Introduce full range of multi-modal alternatives
  - > Preview twelve alternative concepts



# Open House Outreach Summary

- Seven Open Houses held in May 2012
  - > El Sereno – May 14
  - > Eagle Rock – May 17
  - > La Cañada Flintridge – May 19
  - > El Monte – May 22
  - > South Pasadena – May 23
  - > Alhambra – May 24
  - > Pasadena – May 30



# Comments Received

- > Freeway Alternative Concept Alignments
- > Tunnel
- > Goods Movement/Freight
- > Air Quality
- > Noise
- > Light Rail Transit/Bus Rail Transit
- > Arterial Highway Alternative Concepts
- > Bicycle Accessibility
- > No Build Alternative
- > Property Values
- > Quality of Life
- > Environmental Justice
- > Local Street Improvements

# Outreach Next Steps

- > Stakeholder Outreach Advisory Committee – July
- > Reconvene Community Liaison Councils – August
- > Outreach to Large Employers – July – September
- > Goods Movement Information Session – September
- > Alternatives Analysis Meetings – October

# Agenda

- > Recap of TAC meeting no. 5
- > Preliminary Alternatives Analysis
  - > Update on transportation system analysis for no build
  - > Initial environmental assessment
  - > Status of conceptual engineering
  - > Transportation system analysis for build alternatives

# Ground Rules

- > Q&A at intervals, between speaker topics
- > Focus questions on previous section
- > General comments and Q&A at the end



# Recap of TAC Meeting No. 5

- > Recommended alternative concepts for conceptual engineering
- > Conceptual design approach
- > Performance measures for screening
- > Overview of forecasting methodology and assumptions



## Feedback Received During TAC No. 5

- > Show adjacent land use on plan and profile sheets
- > Area of study for traffic analyses including truck traffic
- > Show details of TSM/TDM alternative

# Feedback Received During TAC No. 5

- > Clarifications on performance measures related to:
  - > Travel time
  - > Travel time reliability
  - > Number of transfer points
  - > Access to regional transit systems
  - > Hot spot analyses
  - > Number of sensitive receptors
  - > Implement one or more regional RTP goals
  - > Funding

# Selected Results of Alternatives Analysis

- > Transportation system analysis for no build – Loren
- > Initial environmental assessment - Deby
- > Status of conceptual engineering – Steve/Tom
- > Transportation system analysis for build alternatives - Loren

# Transportation System Analysis

- > Evaluation progress update
  - > Review of no build results
- 

## > Selected build results

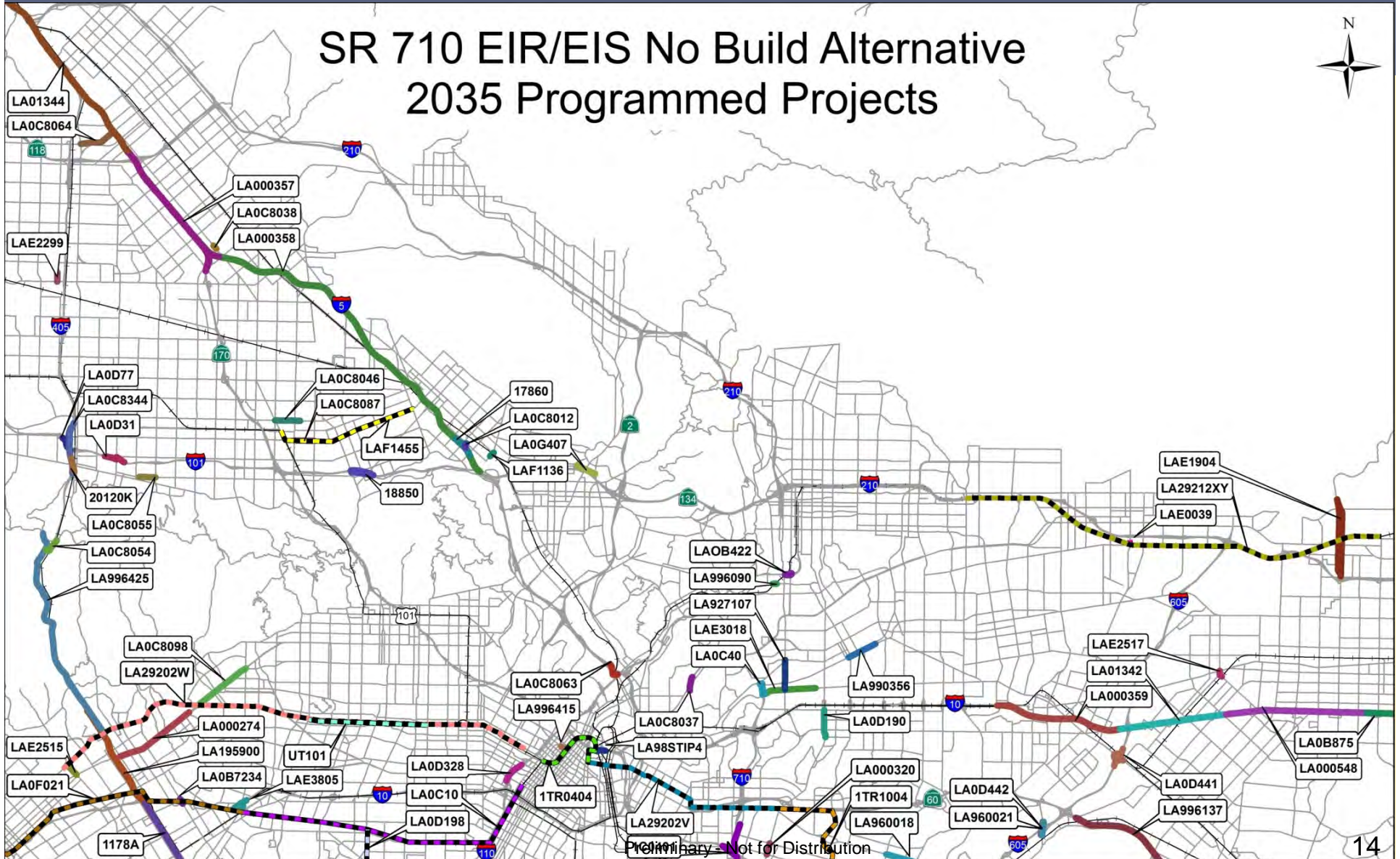
- > freeway alternatives
- > highway alternatives
- > transit alternatives

# Work Steps for Transportation System Analysis

- > Identified performance measures
- > Identified alternatives
- > Identified tools (models, methodologies)
- > Identified model and data needs
- > Collect data/improve models
- > Analysis
  - > Model runs
  - > Data processing
  - > Graphics/results reporting

# No Build

## SR 710 EIR/EIS No Build Alternative 2035 Programmed Projects

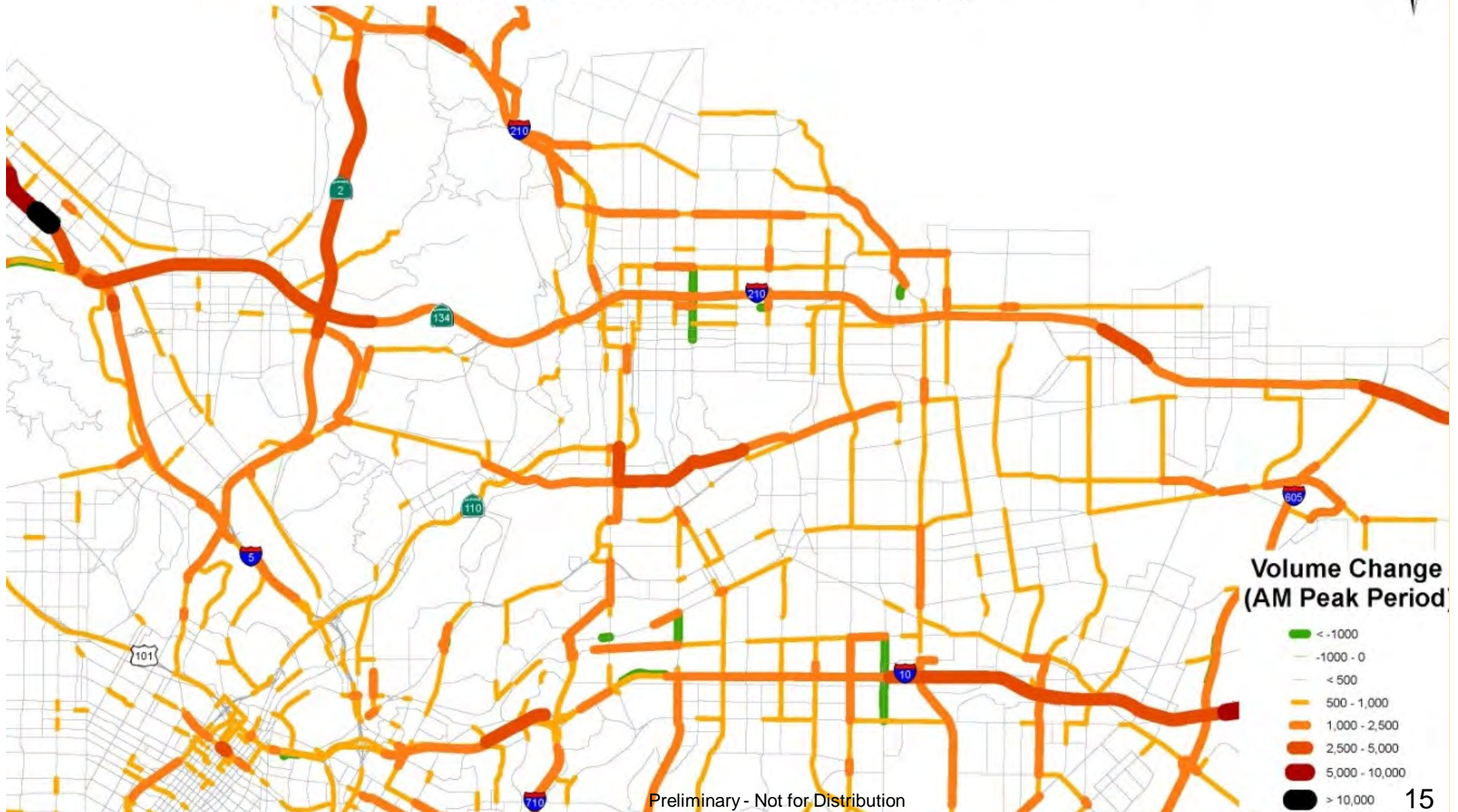


Preliminary - Not for Distribution

# No Build Traffic Conditions – AM Peak Period

## SR 710 EIR/EIS 2035 No Build Traffic Conditions

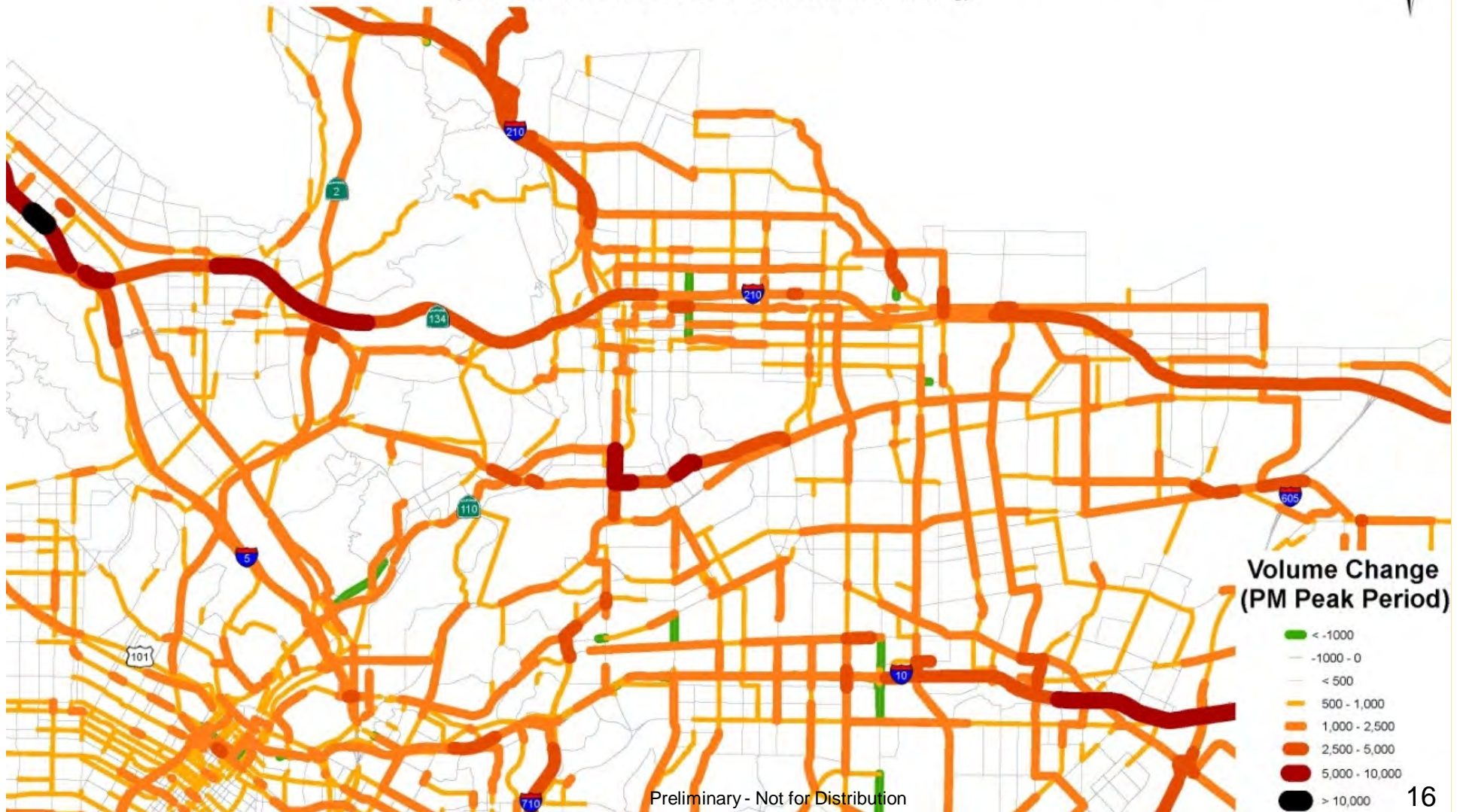
(Estimated Increases in Traffic Volumes from Existing)



Preliminary - Not for Distribution

# No Build Traffic Conditions – PM Peak Period

## SR 710 EIR/EIS 2035 No Build Traffic Conditions (Estimated Increases in Traffic Volumes from Existing)

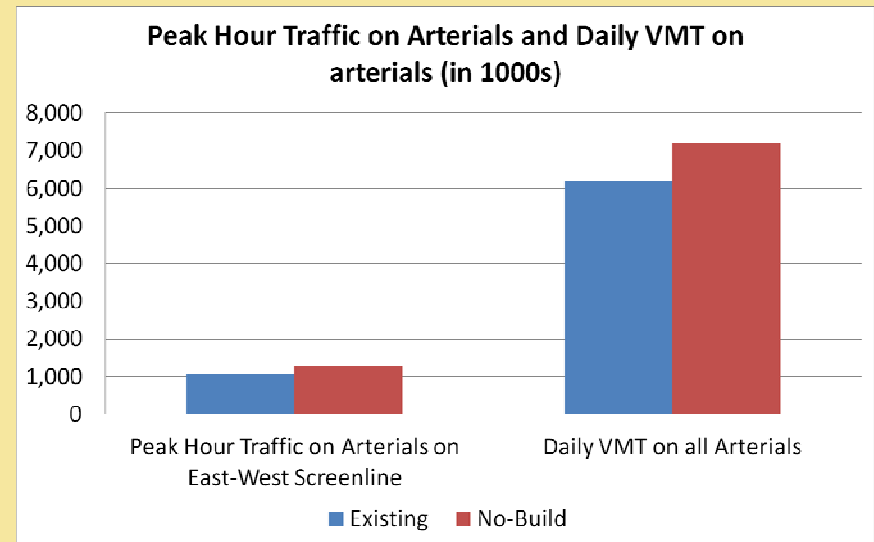
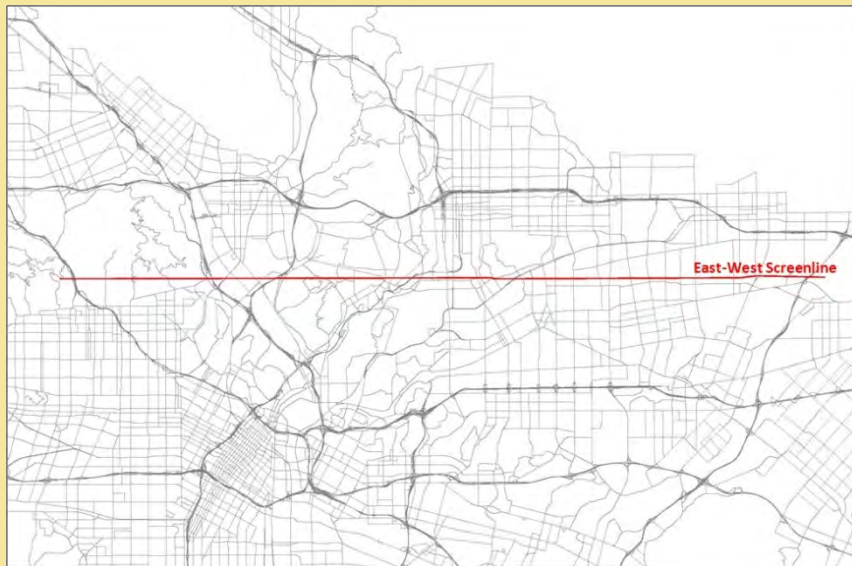


Preliminary - Not for Distribution

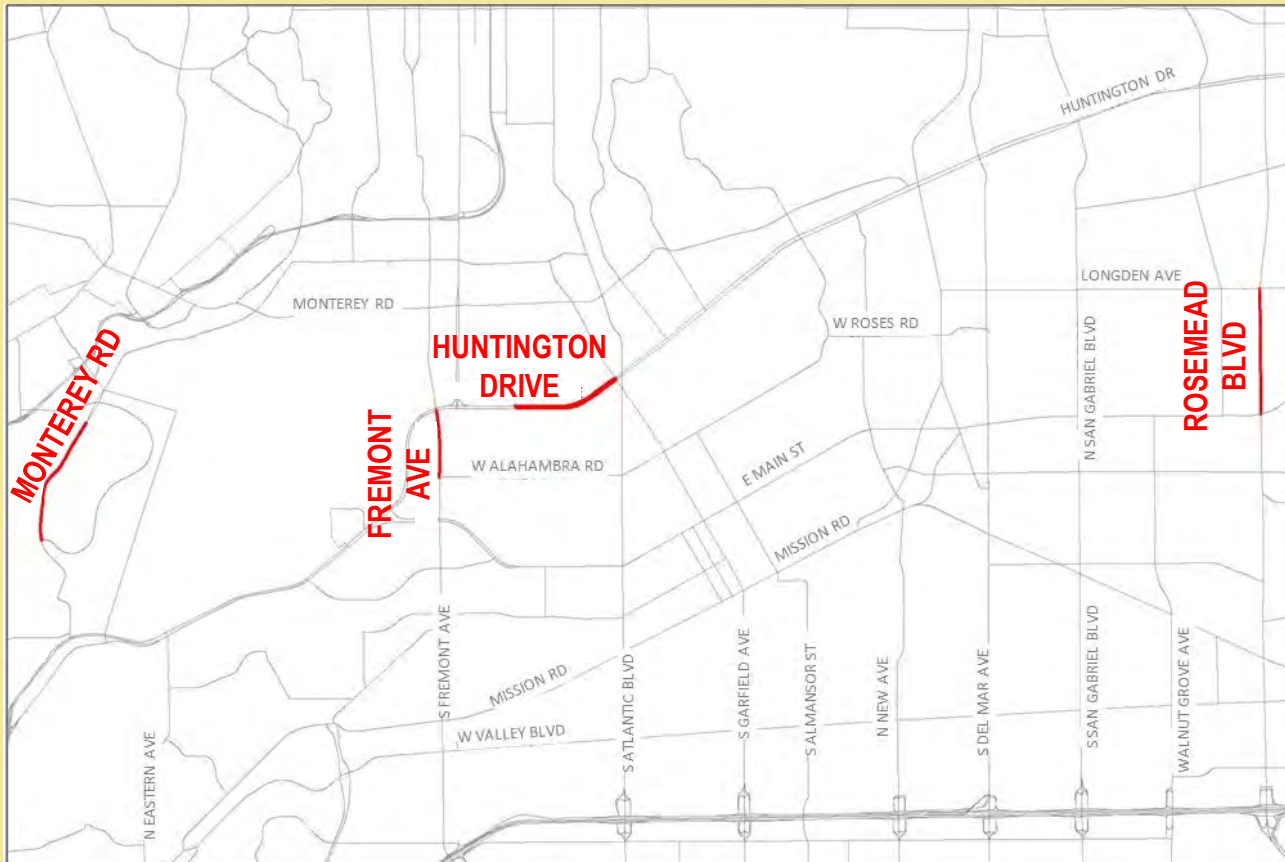


# Preliminary Analysis – 2035 No Build vs. 2008

- > Total PM peak hour traffic on arterials (measured on an east-west screenline through the study area) will increase 19% by 2035. Daily vehicle-miles on all arterials will increase by 16%.

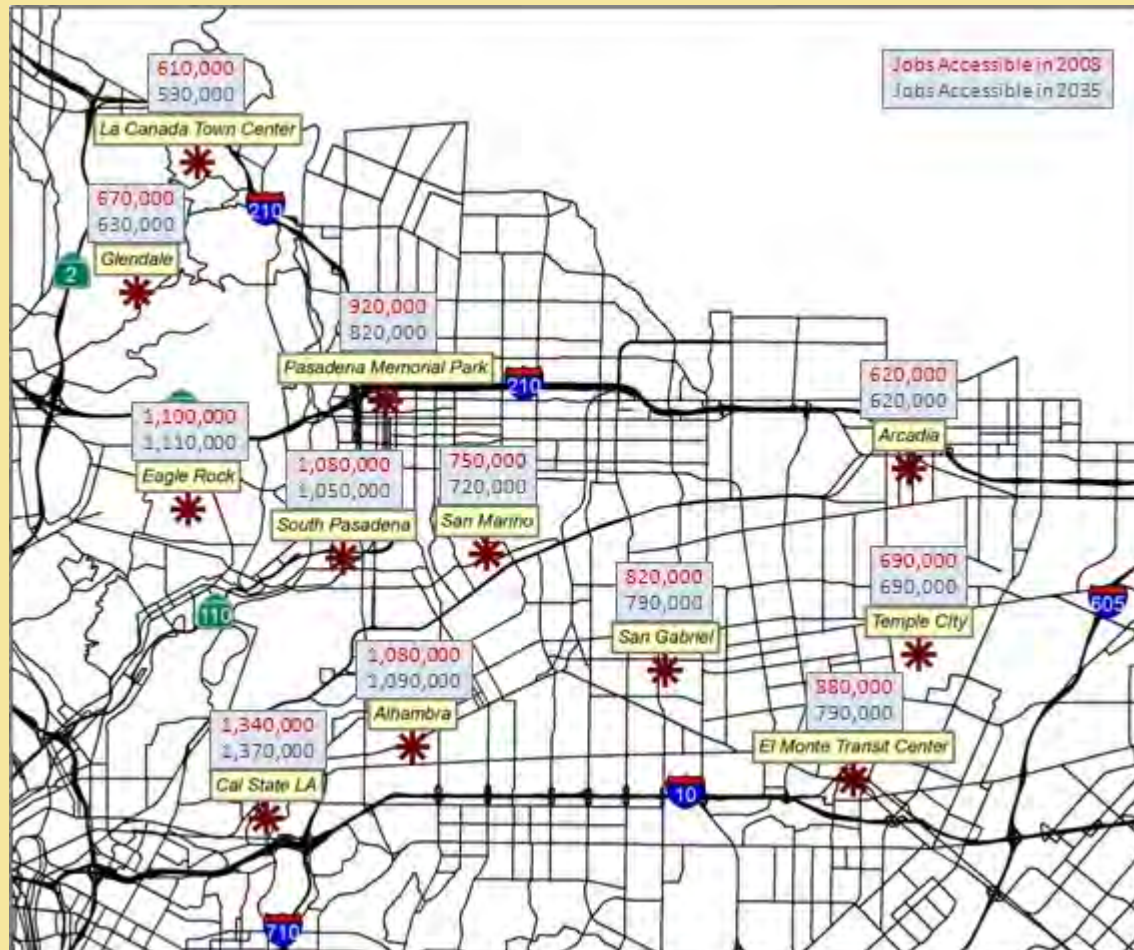


# Preliminary Analysis – 2035 No Build vs. 2008



- > For existing conditions, about 20% of trips on these arterials in the study area have origins and destinations outside the study area.
- > That will increase to approximately 27% by 2035.

# Preliminary Analysis – 2035 No Build vs. 2008



- > Between now and 2035, the number of jobs accessible (by highway or transit) within 25.3 minutes will decrease from 880,000 to 860,000.

# Initial Environmental Assessment

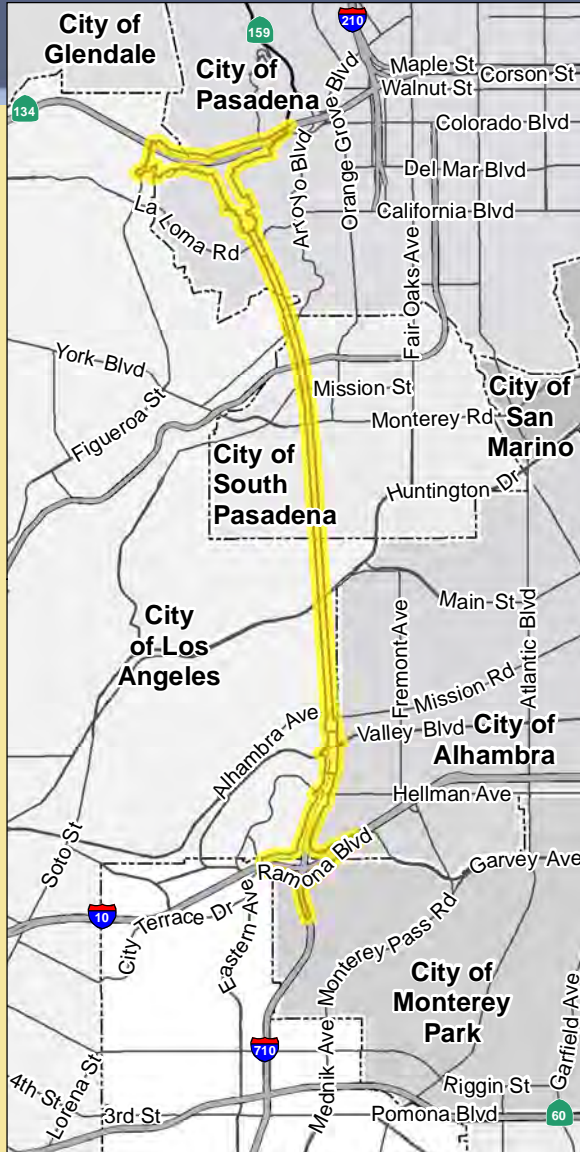


# Initial Environmental Assessment

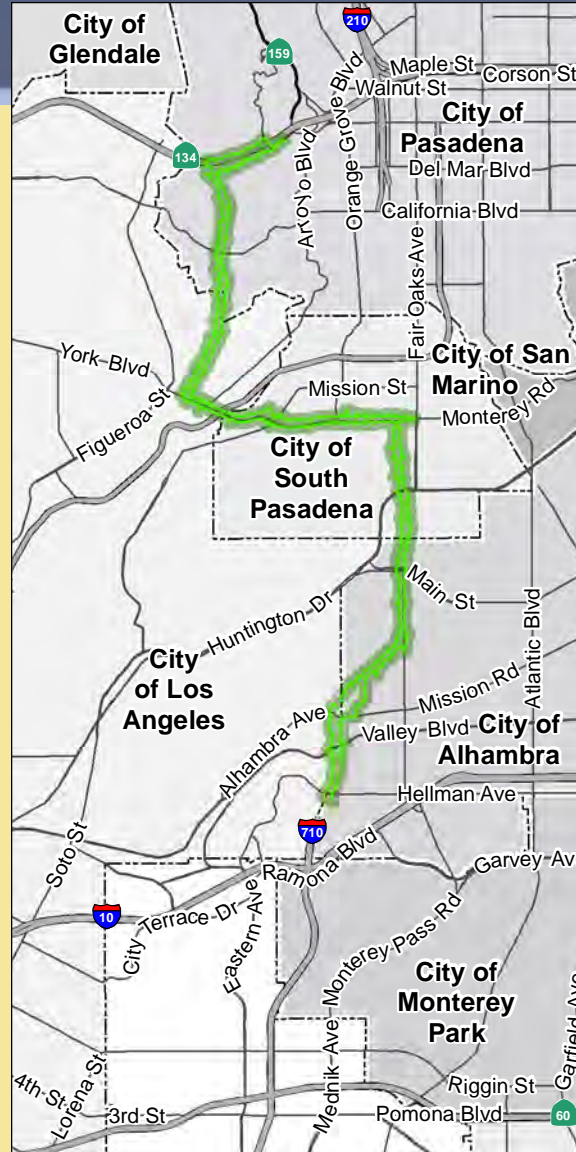
- > Developed maximum disturbance limit for evaluation of alternatives
- > Based on conceptual engineering
- > Included operational features (i.e. stations, kiosks and portals)

# Alternatives

## F-5 Alternative



## H-2 Alternative



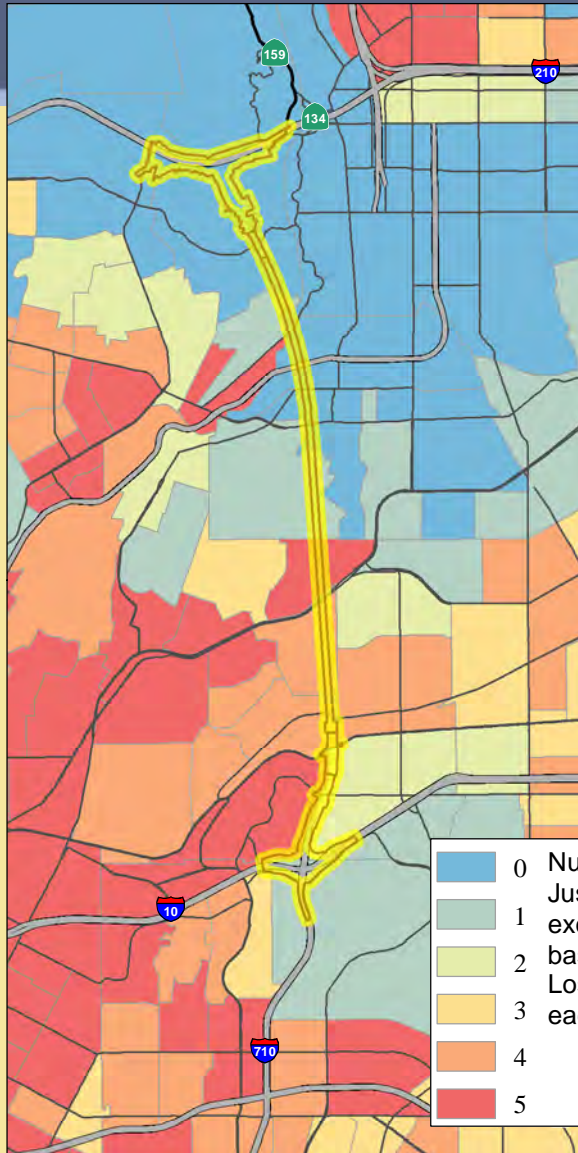
## LRT-4 Alternative



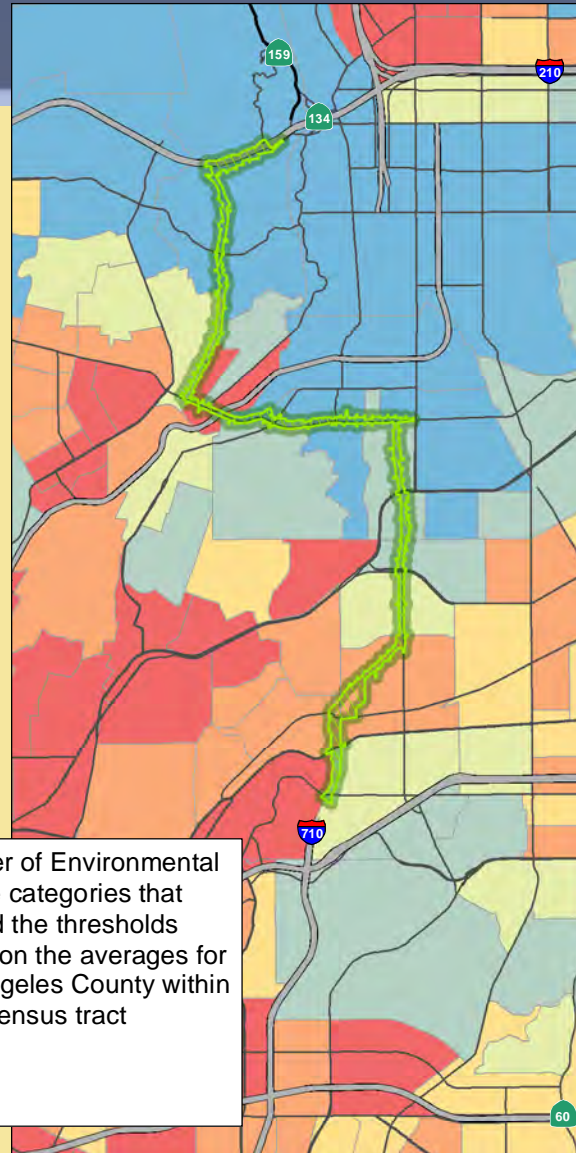
Preliminary - Not for Distribution

# Environmental Justice

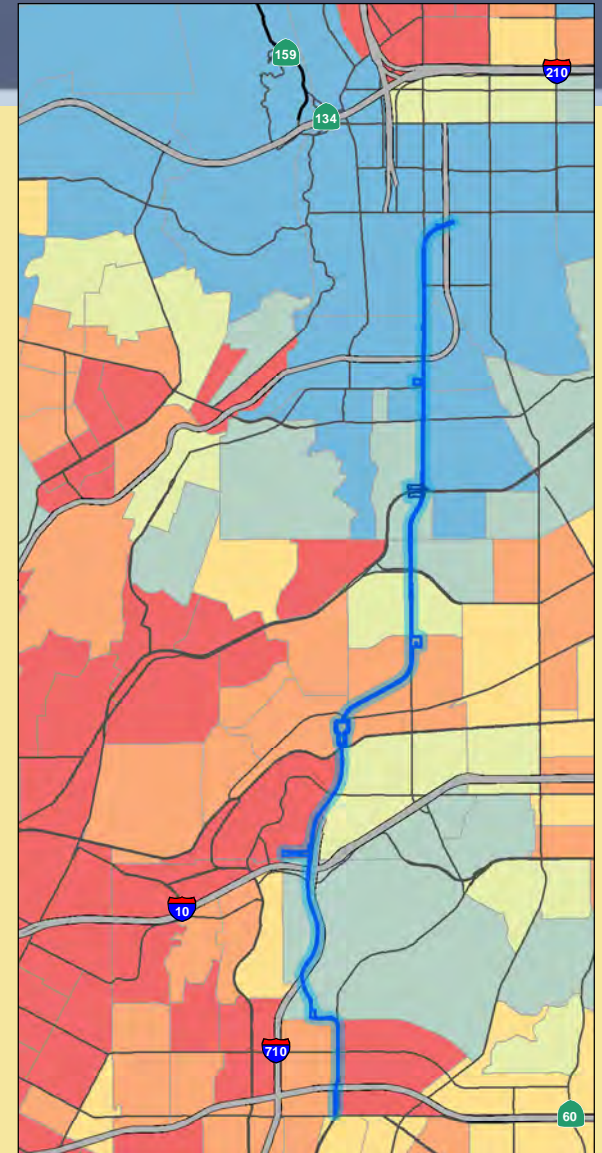
## F-5 Alternative



## H-2 Alternative



## LRT-4 Alternative



0 Number of Environmental Justice categories that exceed the thresholds based on the averages for Los Angeles County within each census tract

1

2

3

4

5

Preliminary - Not for Distribution

# Historic Resources

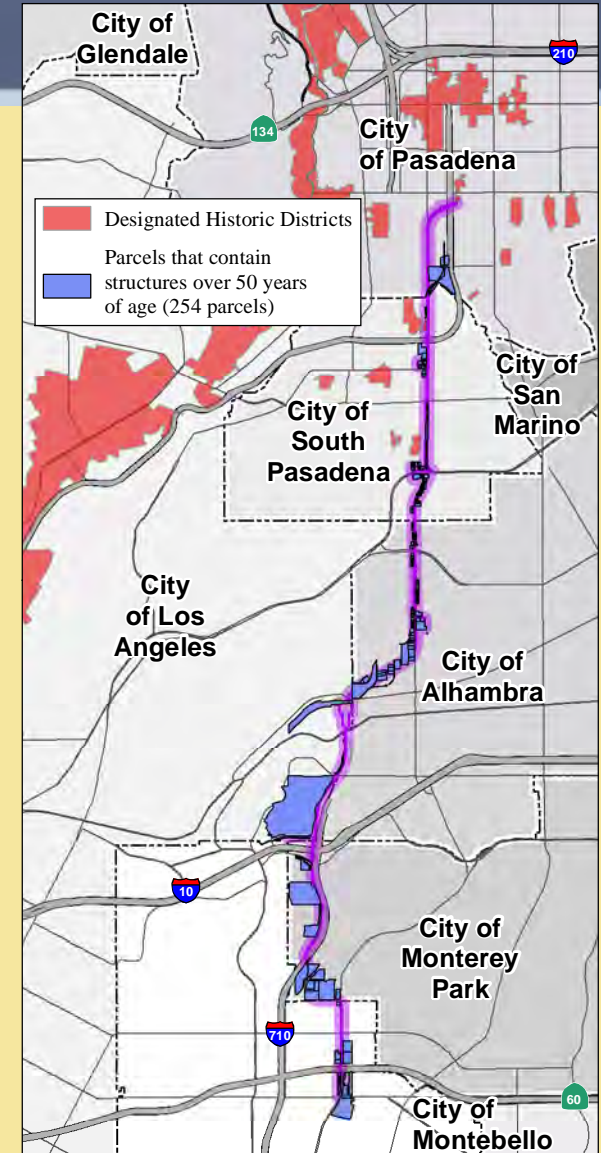
## F-5 Alternative



## H-2 Alternative



## LRT-4 Alternative

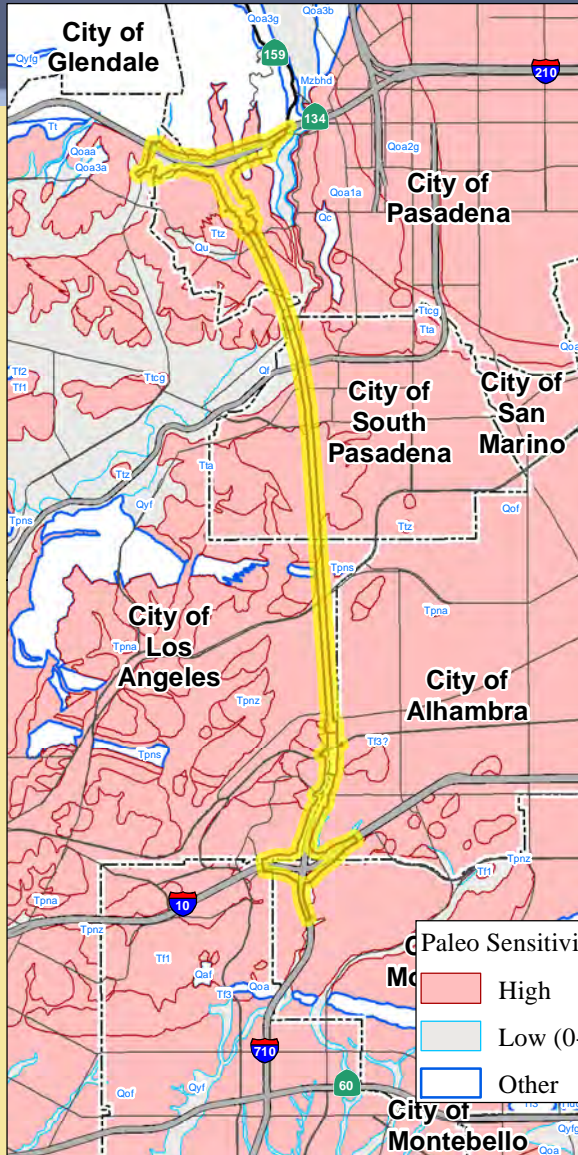


Preliminary - Not for Distribution

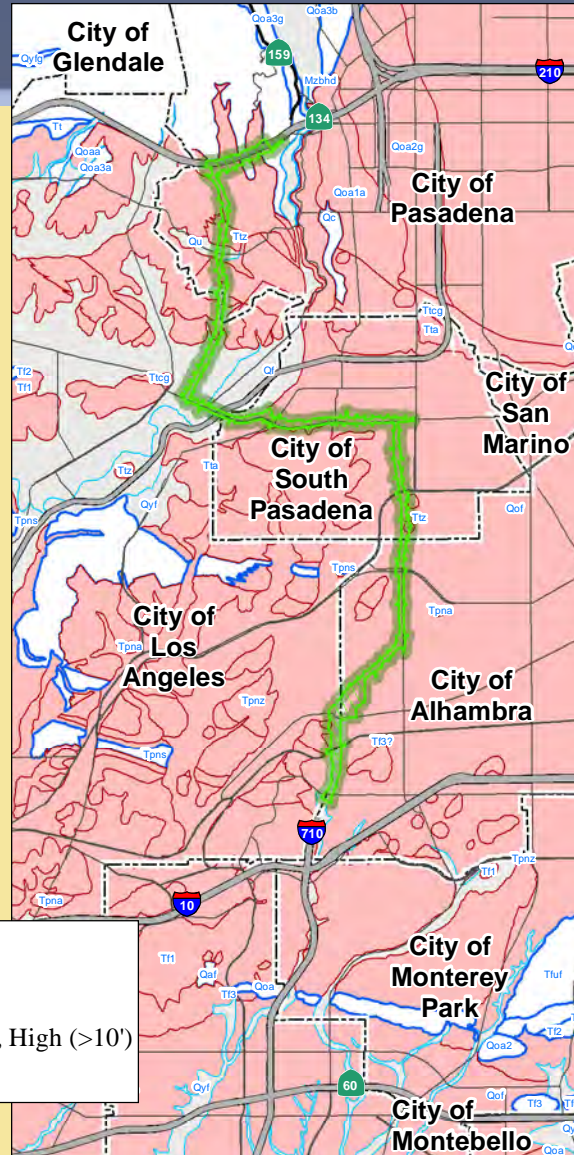


# Paleontological Sensitivity

## F-5 Alternative

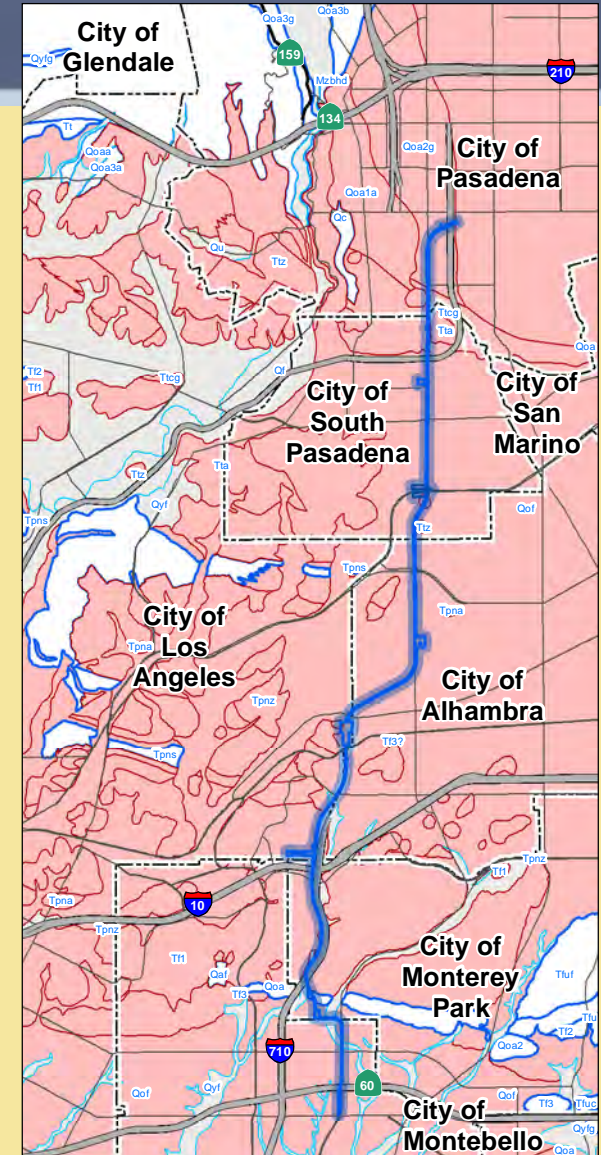


## H-2 Alternative



Preliminary - Not for Distribution

## LRT-4 Alternative



# Additional Environmental Technical Analysis

- > Property Acquisition
- > Community and Neighborhoods
- > Parkland/Community Facilities
- > Biological/Jurisdictional Resources
- > Noise
- > Air Quality
- > Visual Resources
- > Geotechnical
- > Hazardous Waste
- > Traffic

# Status of Conceptual Engineering



# Conceptual Design

- TSM/TDM Alternative
- BRT and LRT Alternatives
- Freeway and Highway Alternatives



# TSM/TDM Alternative Definition

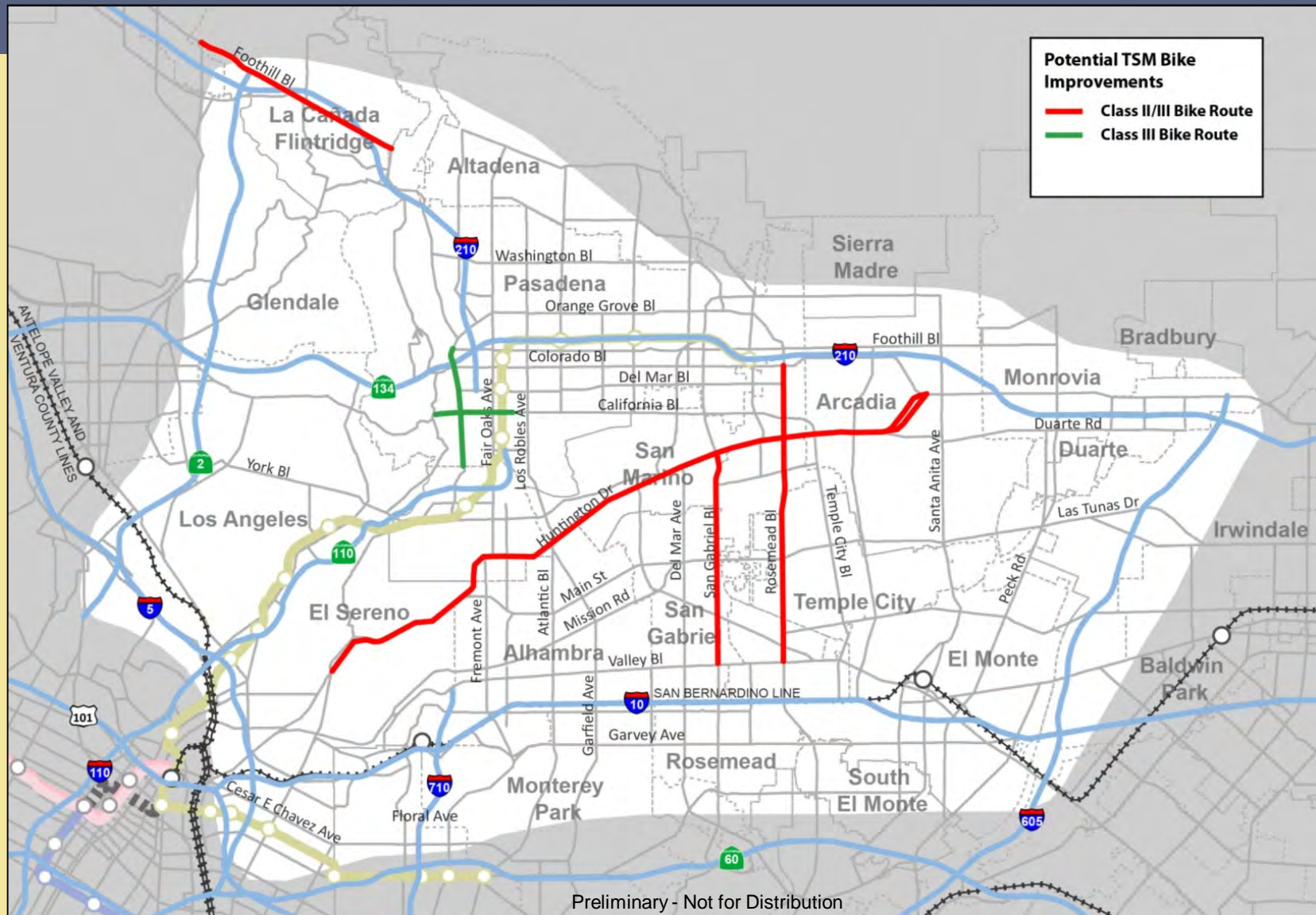
- > Strategies and improvements to enhance efficiency and operations of all transportation modes
- > Oriented to lower cost options with lower potential impacts

# TSM/TDM Alternative Components

- > Expanded transit service (bus service improvements)
- > Active transportation improvements
- > Intelligent Transportation System (ITS) improvements
- > Travel demand management
- > Intersection hot spot improvements
- > Local street improvements

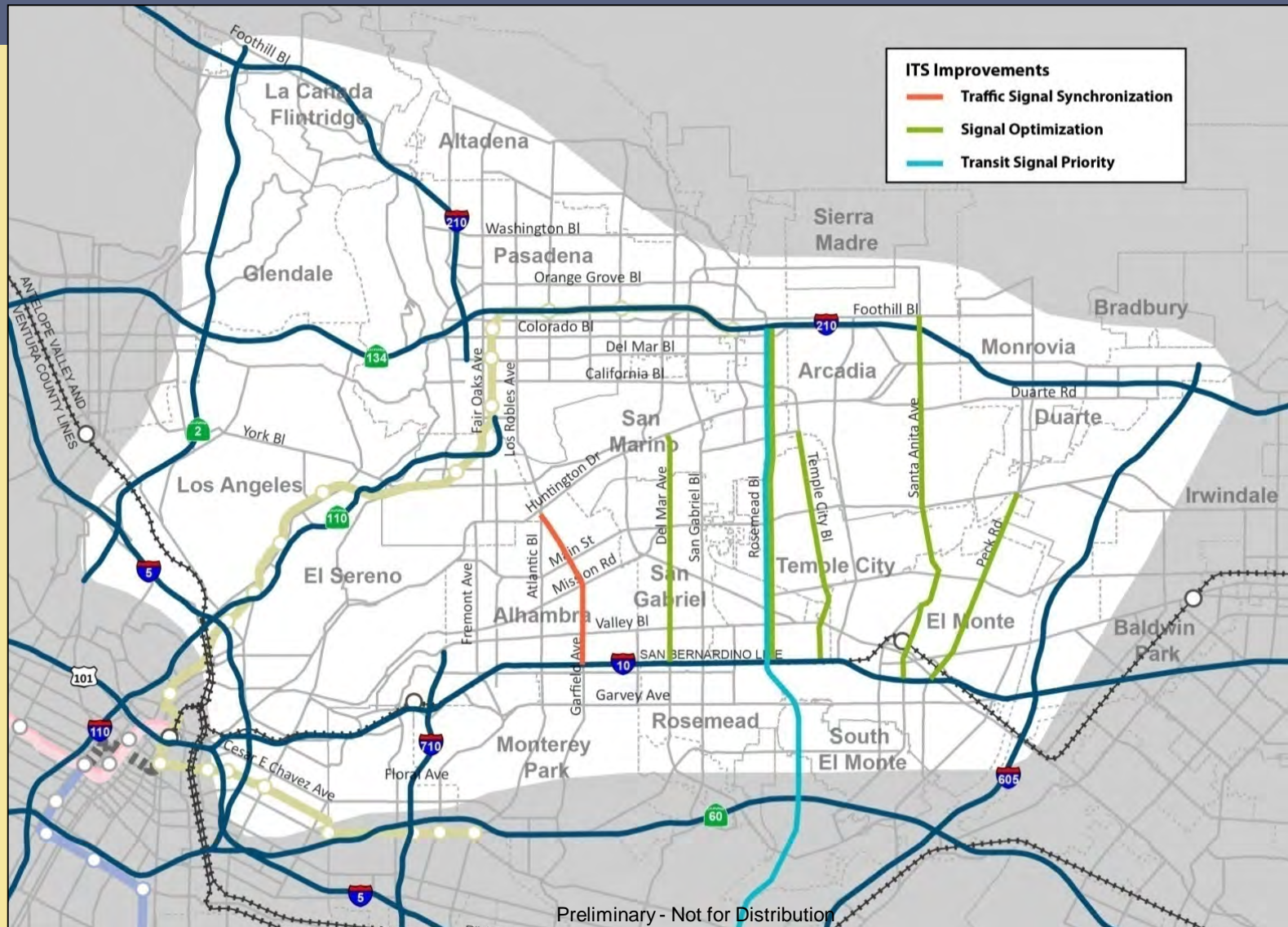


# TSM/TDM Alternative – Active Transportation





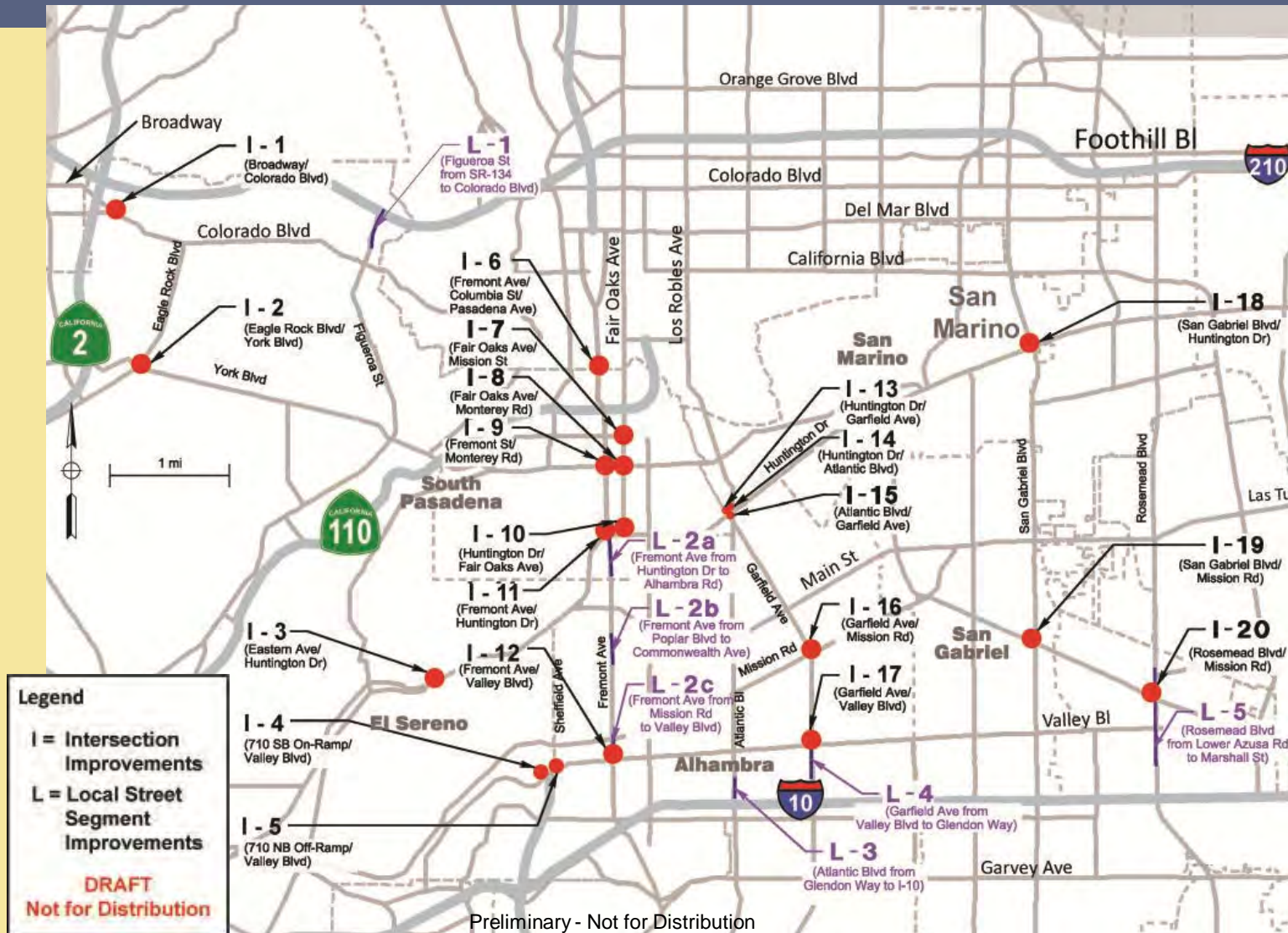
# TSM/TDM Alternative – ITS Improvements



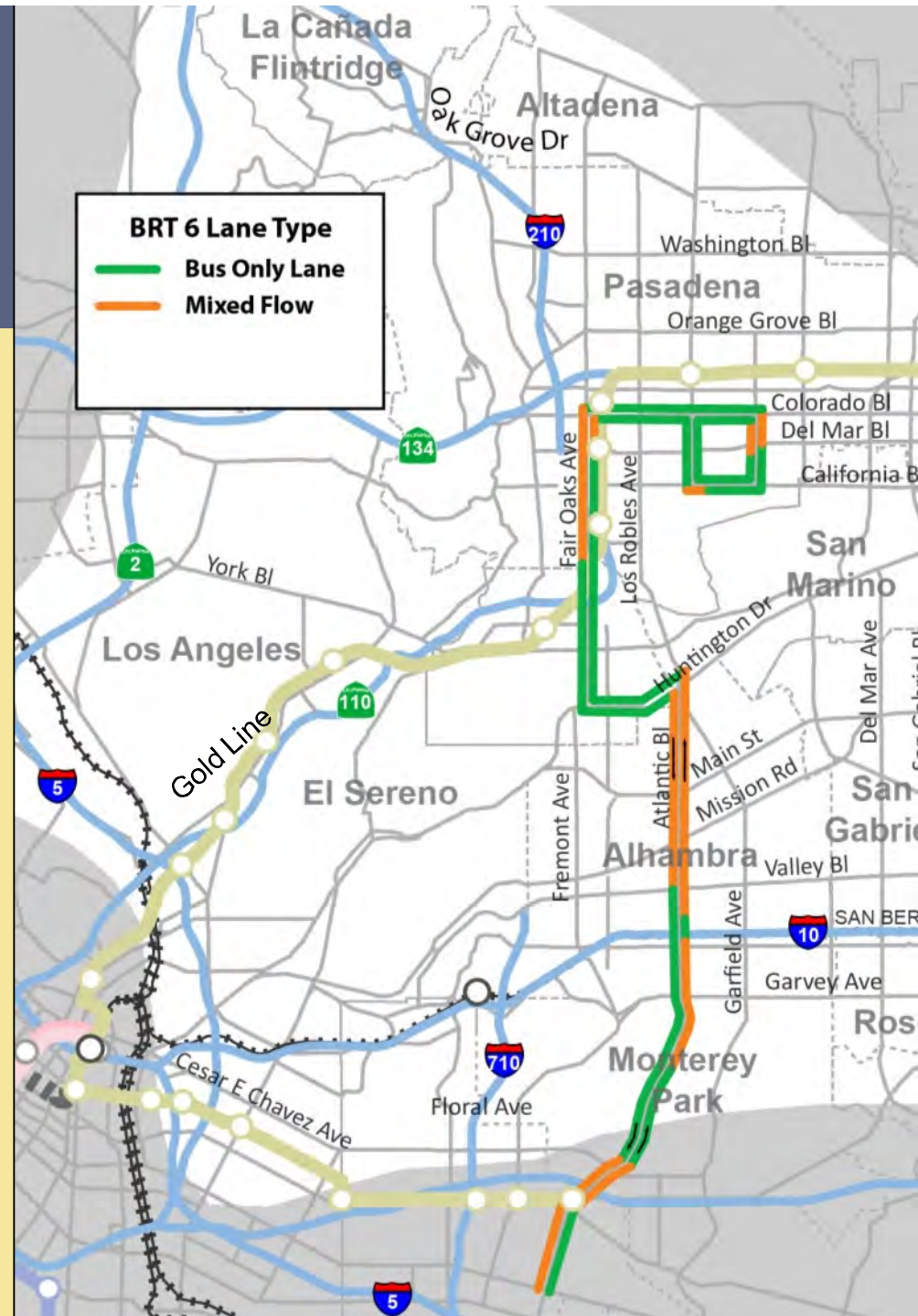
# TSM/TDM Alternative – ITS Elements

- > Vehicle Detection Systems (VDS)
  - > Shared through San Gabriel Valley Information Exchange Network (IEN)
- > Arterial Changeable Message Signs

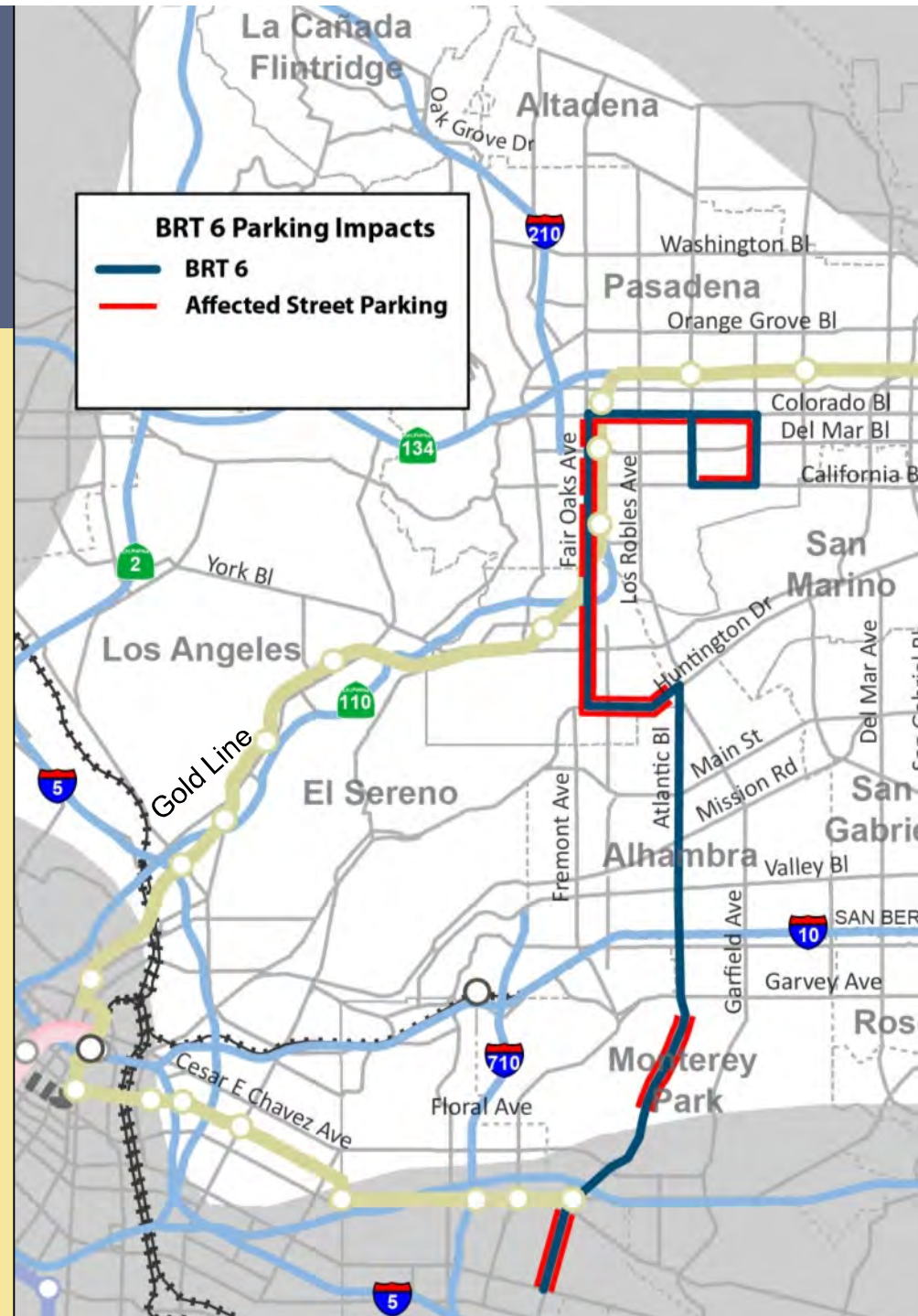
# TSM/TDM Alternative – Intersection & Local Street Improvements



# Conceptual Engineering – BRT-6



# Conceptual Engineering – BRT-6



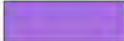





# Conceptual Engineering—BRT-6

## Atlantic near Monterey Park Hospital

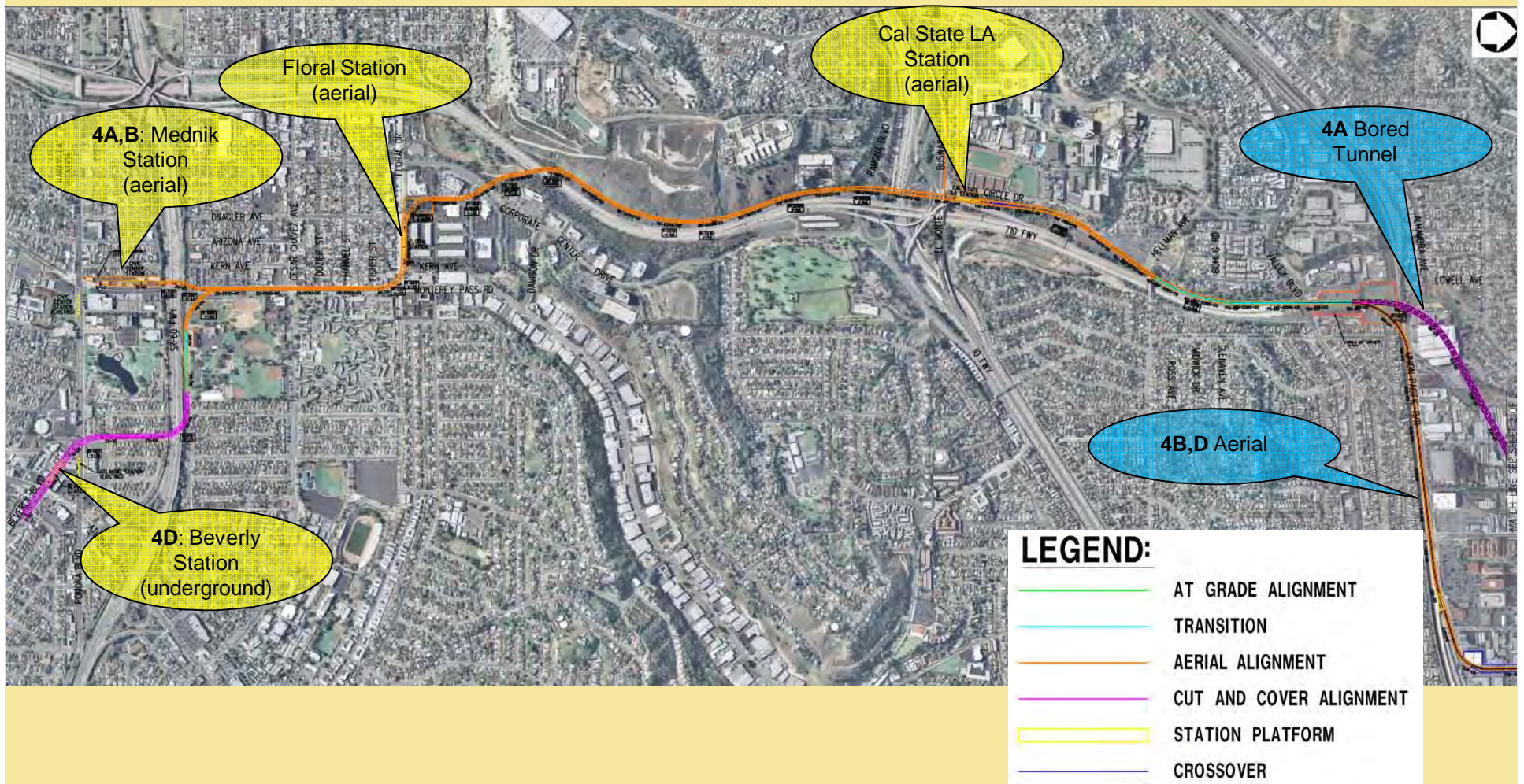


### LEGEND

-  BRT LANE
-  BIKE LANE
-  PROPOSED ROW ACQUISITION
-  SHARED BRT LANE WITH THROUGH TRAFFIC AND RIGHT TURN MOVEMENTS
-  PROPOSED BRT STOP LOCATION
-  DISTURBANCE LIMIT LINE

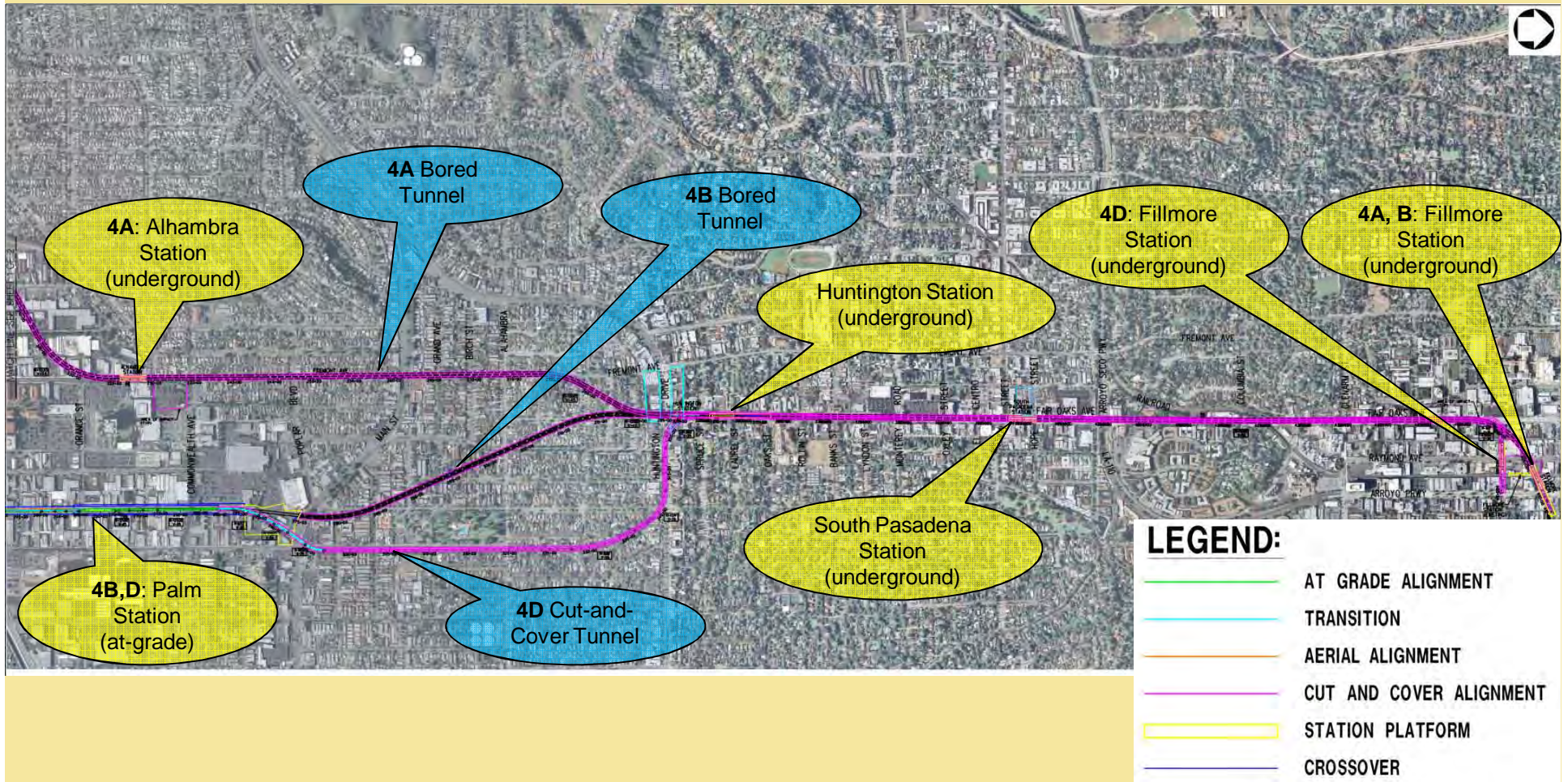
# Conceptual Engineering

## LRT-4 Overview



# Conceptual Engineering

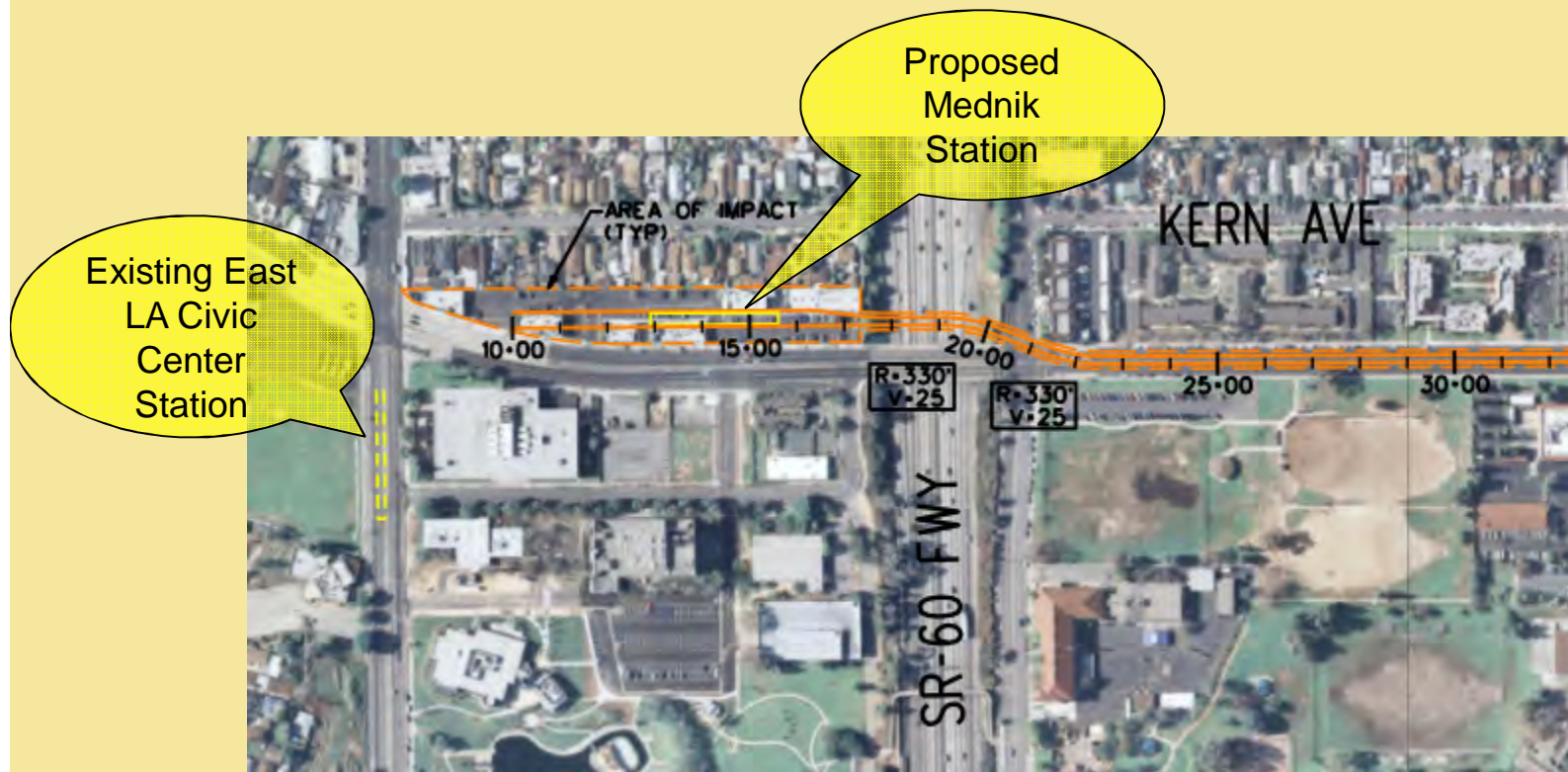
## LRT-4 Overview



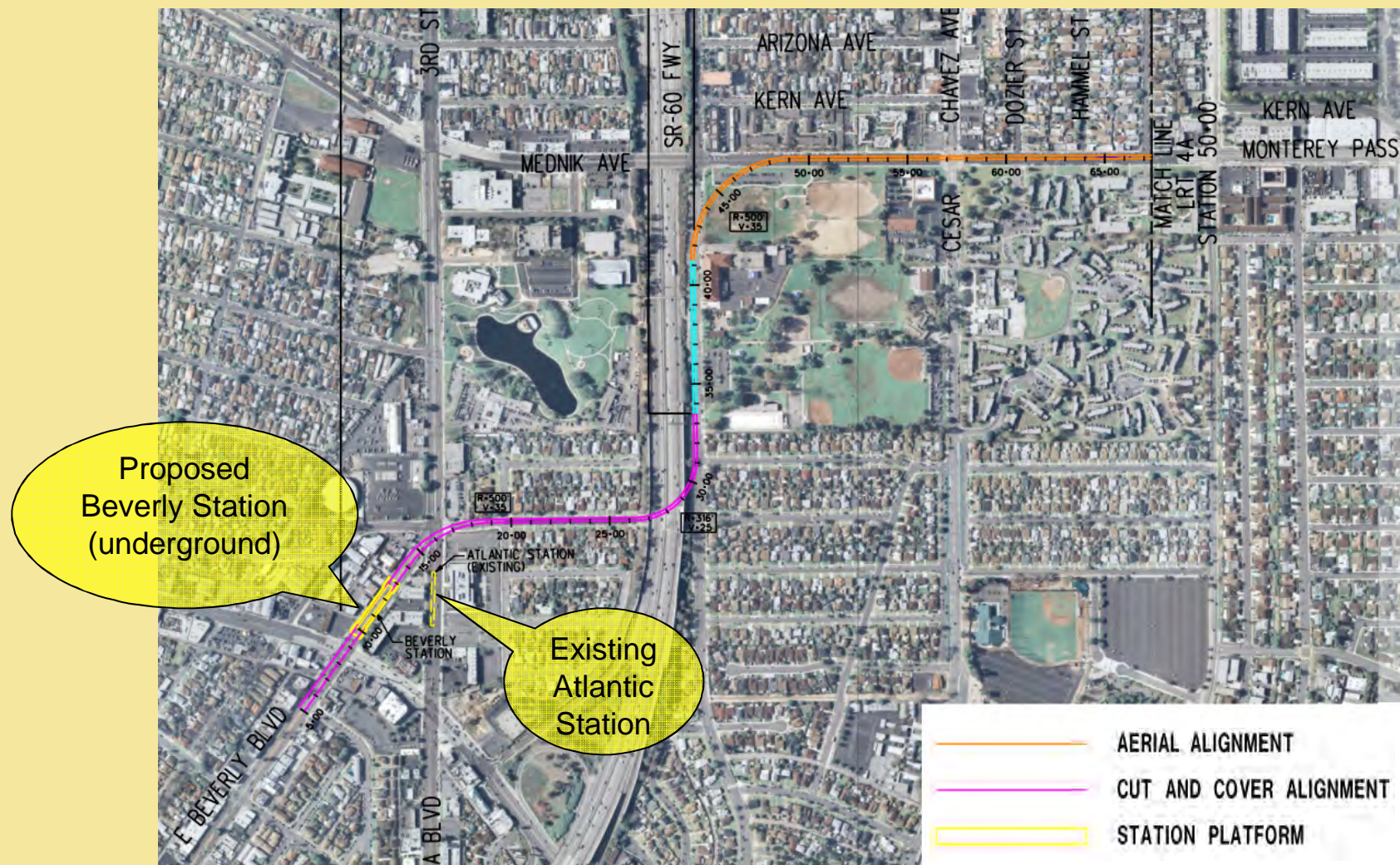


# Conceptual Engineering

## LRT-4A/B Southern Terminus



# Conceptual Engineering LRT-4D Southern Terminus



Preliminary - Not for Distribution

# Conceptual Engineering

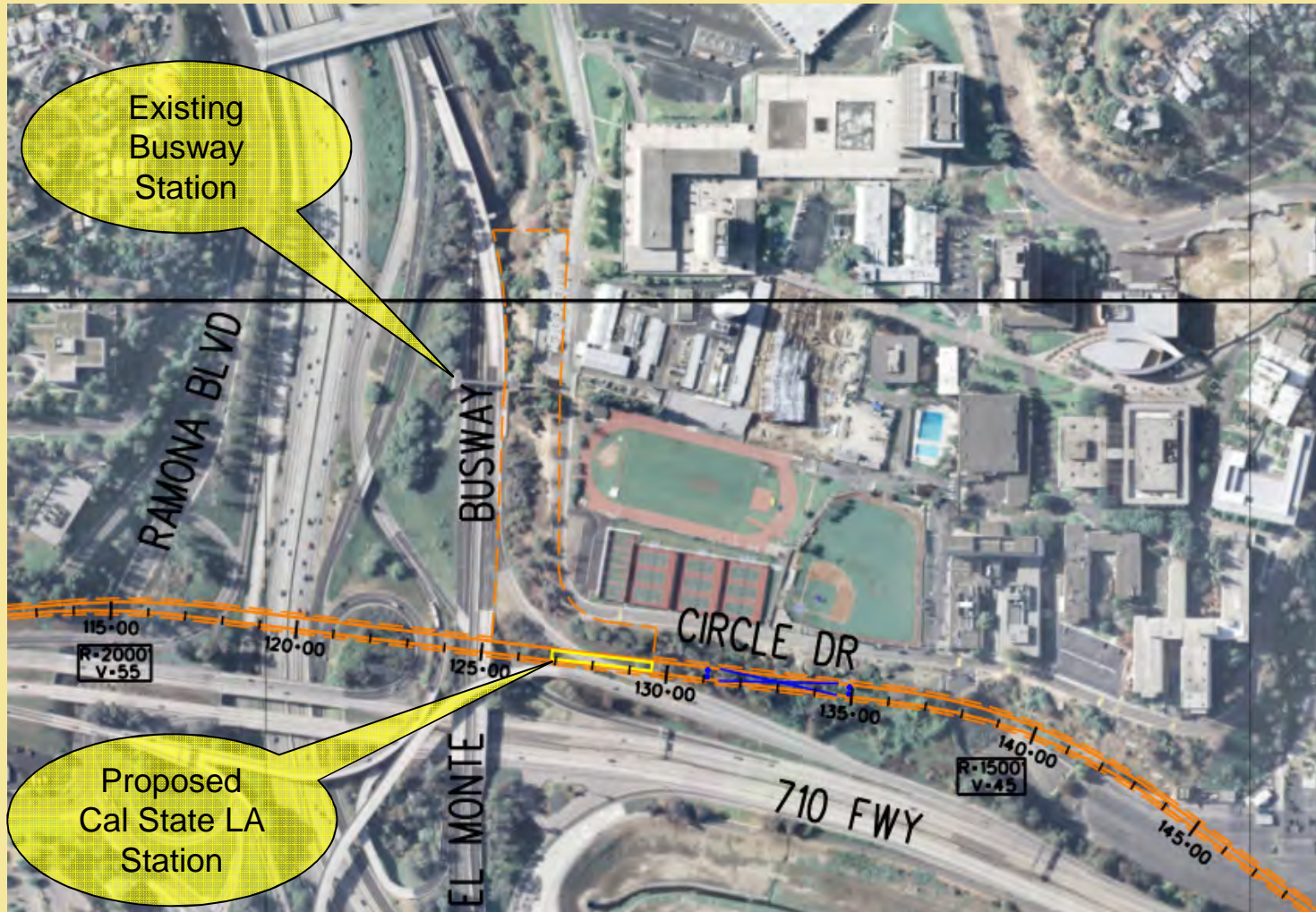
## LRT-4 Northern Terminus



Preliminary - Not for Distribution

# Conceptual Engineering

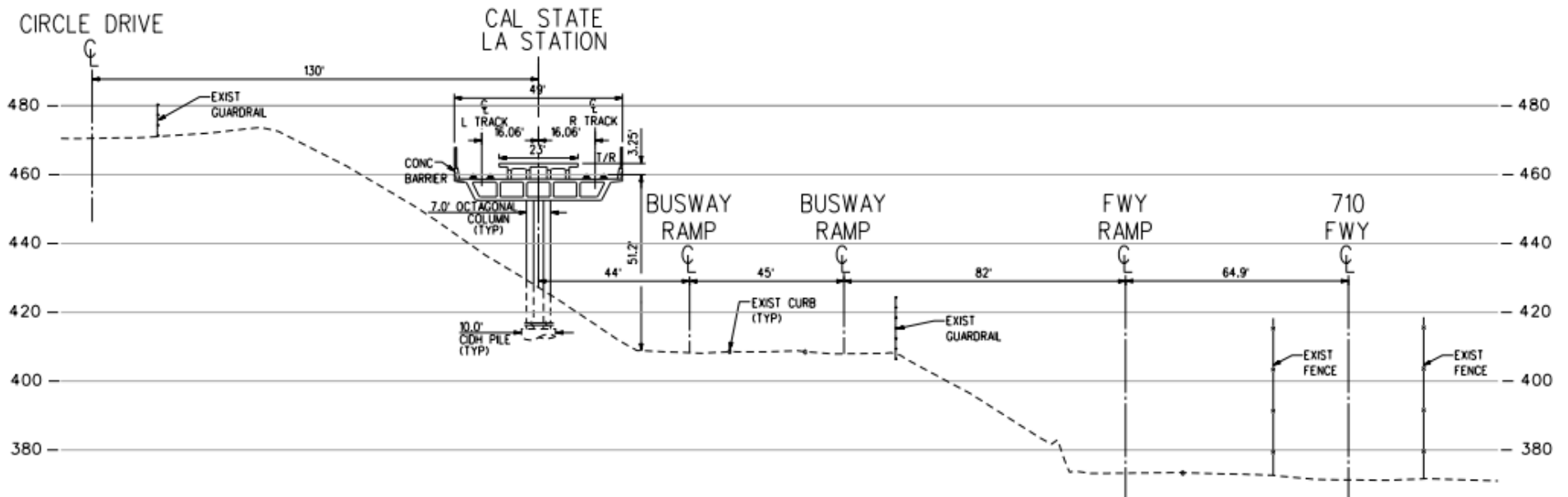
## LRT-4 Cal State LA Station



Preliminary - Not for Distribution

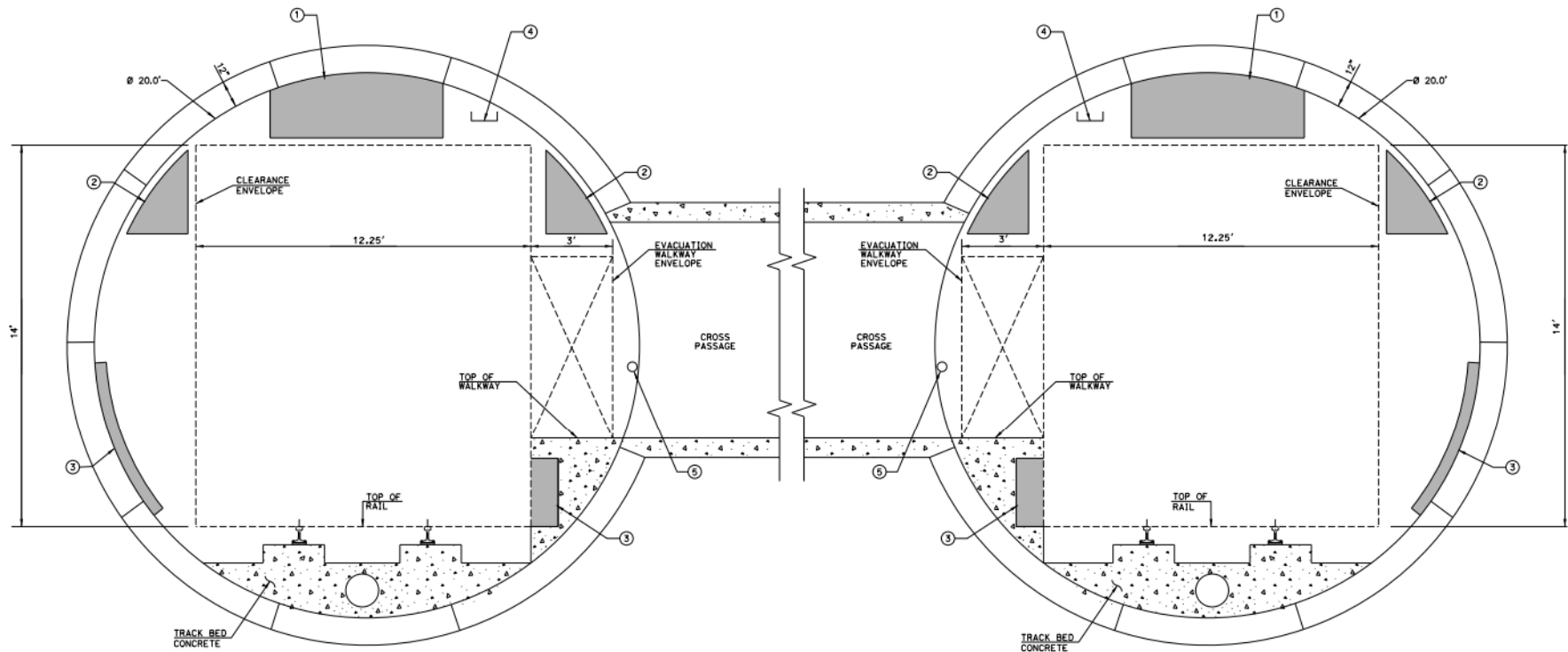
# Conceptual Engineering

## LRT-4 Cal State LA Station



# Conceptual Engineering

## LRT-4A/B Tunnel Sections

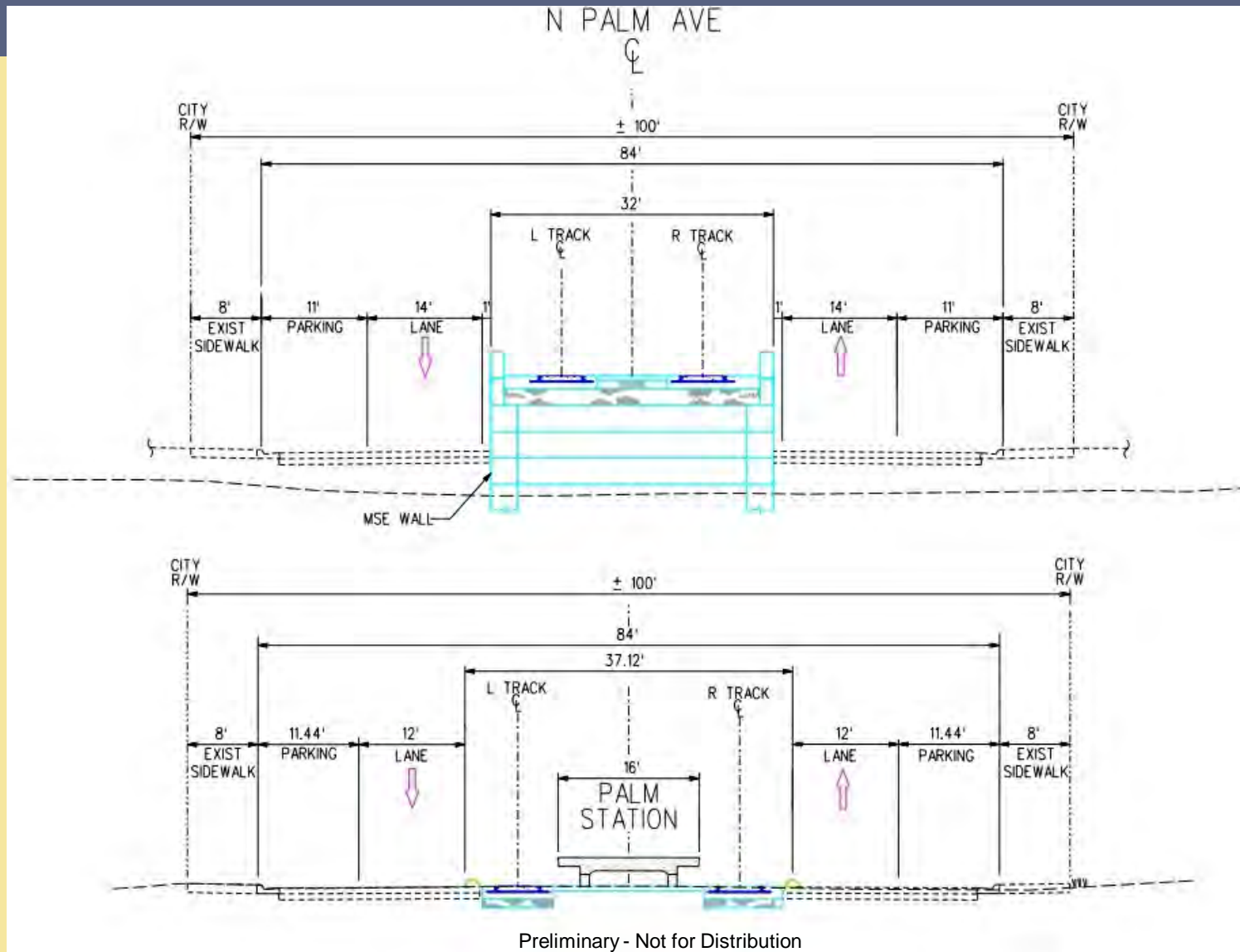


- NOTES
- ① AREA FOR CATENARY SYSTEM.
  - ② AREA FOR SIGNALING (DEPENDS ON RAILWAY COMPANY REQUIREMENTS).
  - ③ AREA FOR CABELING.
  - ④ CABLE TRAY
  - ⑤ HANDRAIL (DEPENDS ON RAILWAY COMPANY).

DRAFT - IN PROGRESS

# Conceptual Engineering

## LRT-4B/D—Palm Avenue



Preliminary - Not for Distribution

# Conceptual Engineering

## LRT-6

Conceptual Engineering on LRT-6 on Atlantic Boulevard is also proceeding. Several engineering challenges remain to be resolved:

- Crossing of Interstate 10 & Metrolink
- Constrained right-of-way north of Valley Boulevard

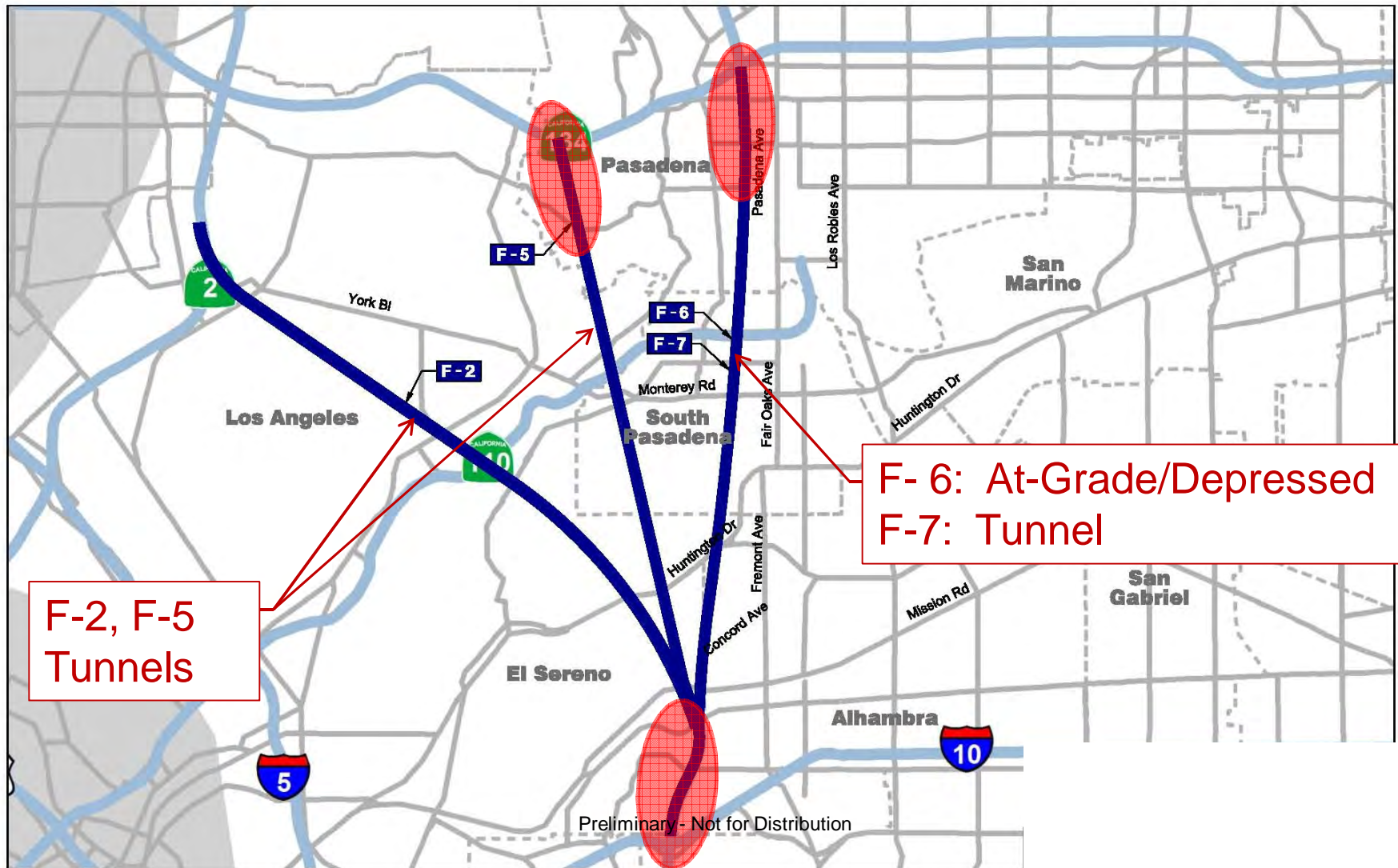


# Conceptual Design

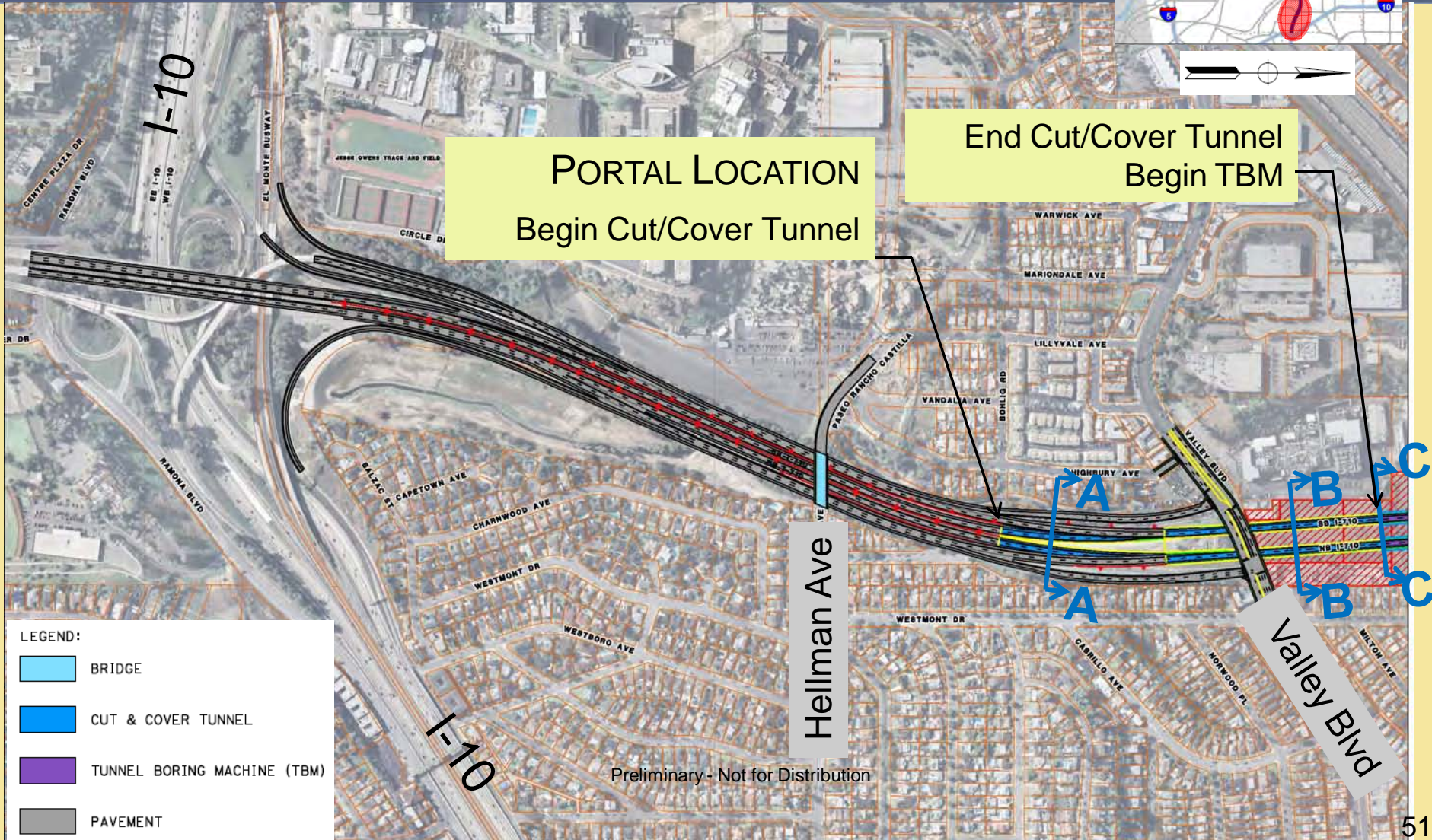
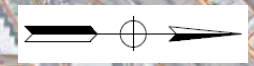
## Freeway and Highway Alternatives



# Freeway Alternatives



# F-2,5,7 South Portal



**PORTAL LOCATION**  
Begin Cut/Cover Tunnel

End Cut/Cover Tunnel  
Begin TBM

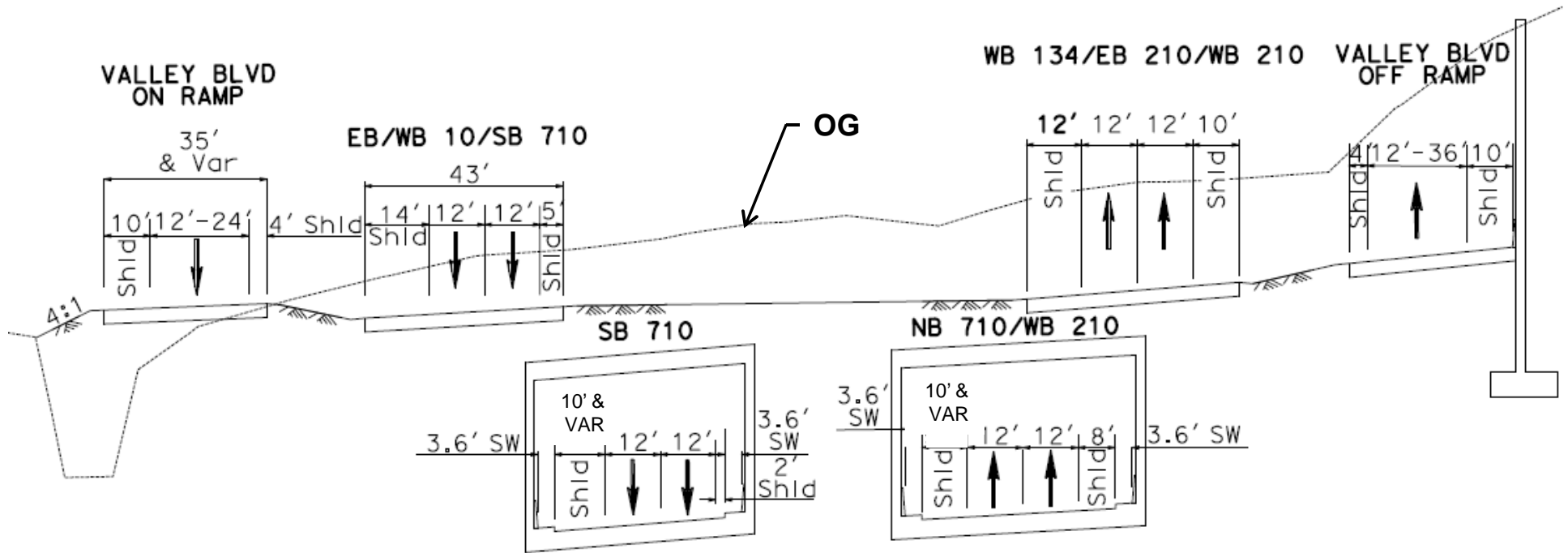
Hellman Ave

Valley Blvd

- LEGEND:
- BRIDGE
  - CUT & COVER TUNNEL
  - TUNNEL BORING MACHINE (TBM)
  - PAVEMENT

Preliminary - Not for Distribution

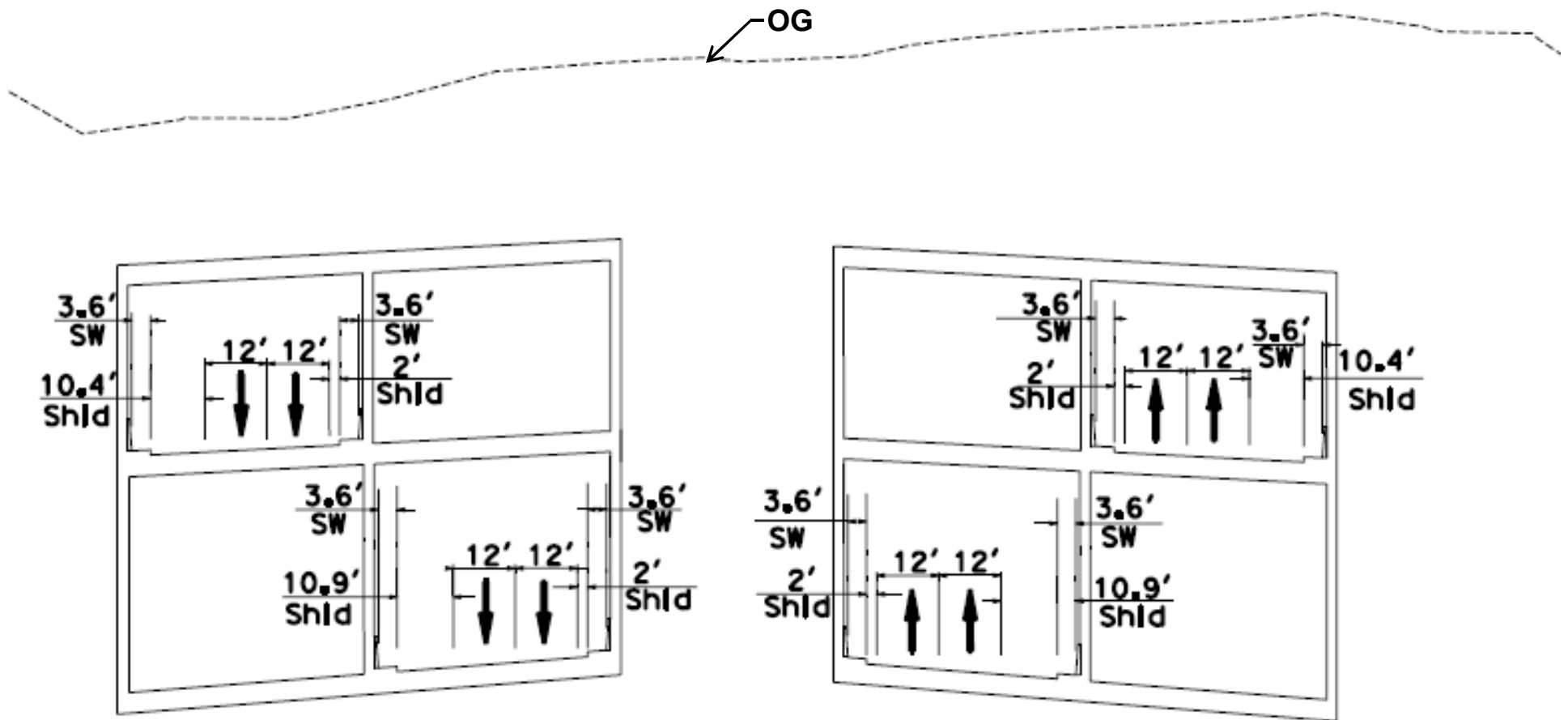
# Cut and Cover Tunnel Section



## Section A-A

Preliminary - Not for Distribution

# Cut and Cover Tunnel Section



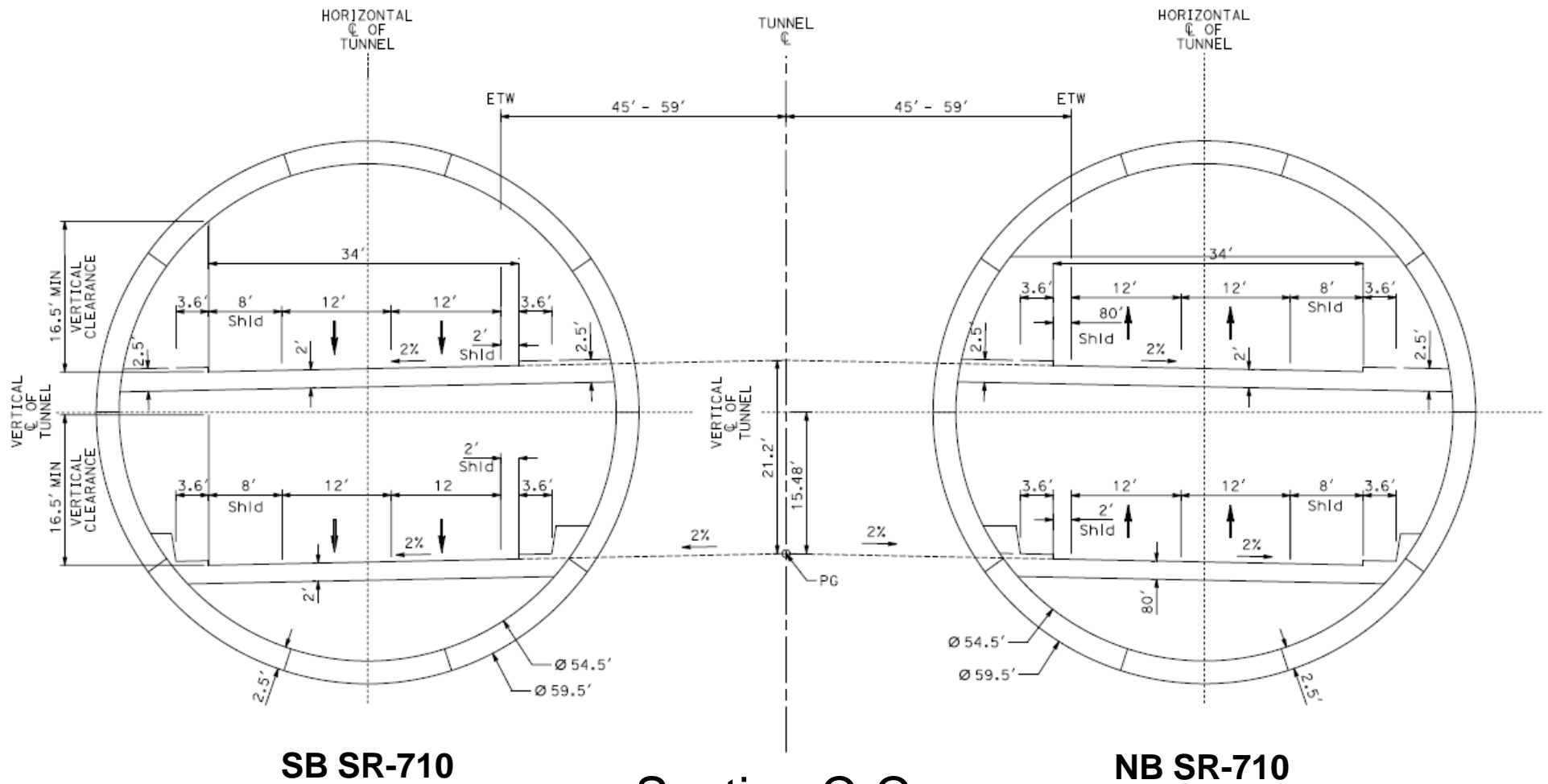
SB SR-710

Section B-B  
Preliminary - Not for Distribution

NB SR-710

# TBM Tunnel Section

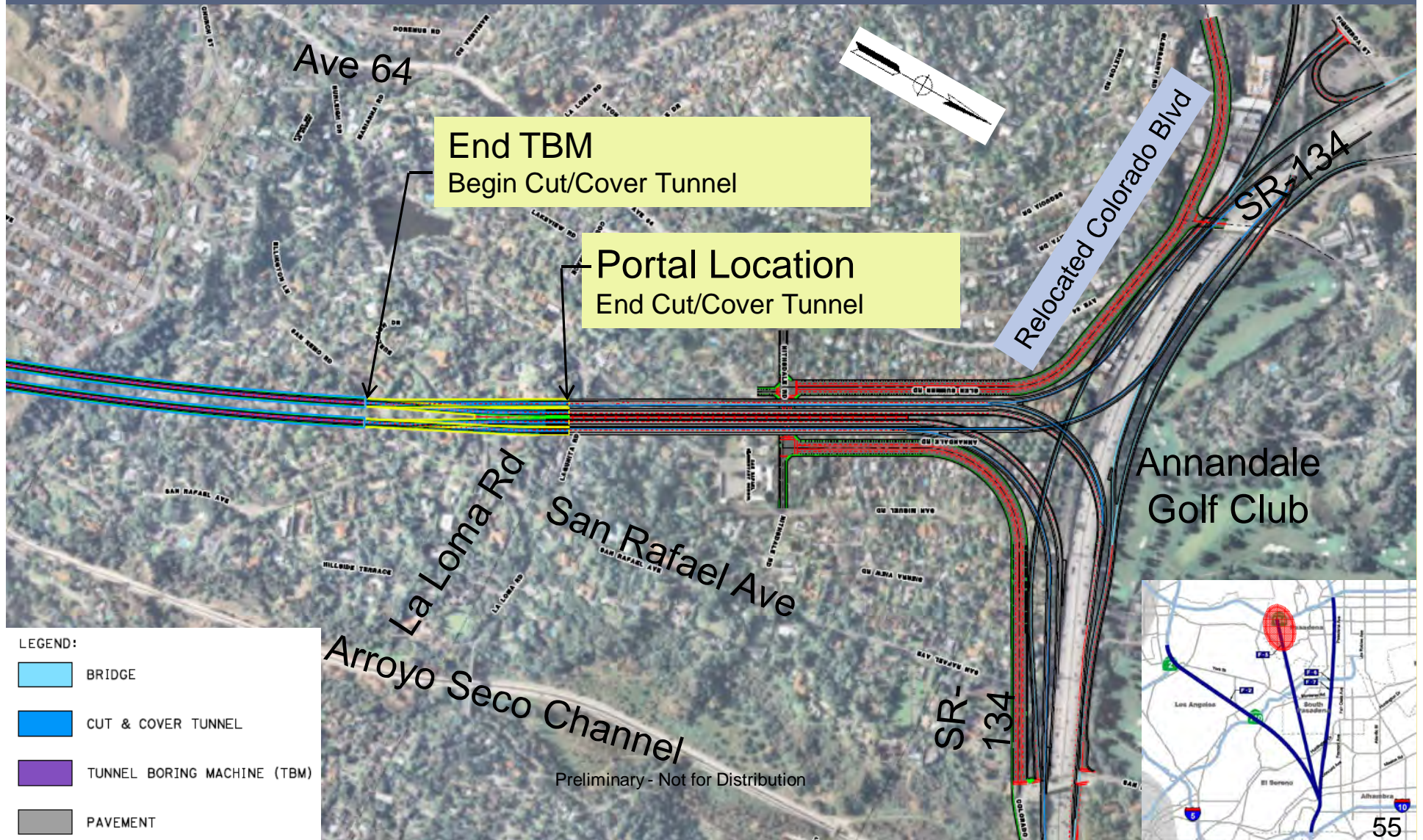
TBM = Tunnel Boring Machine



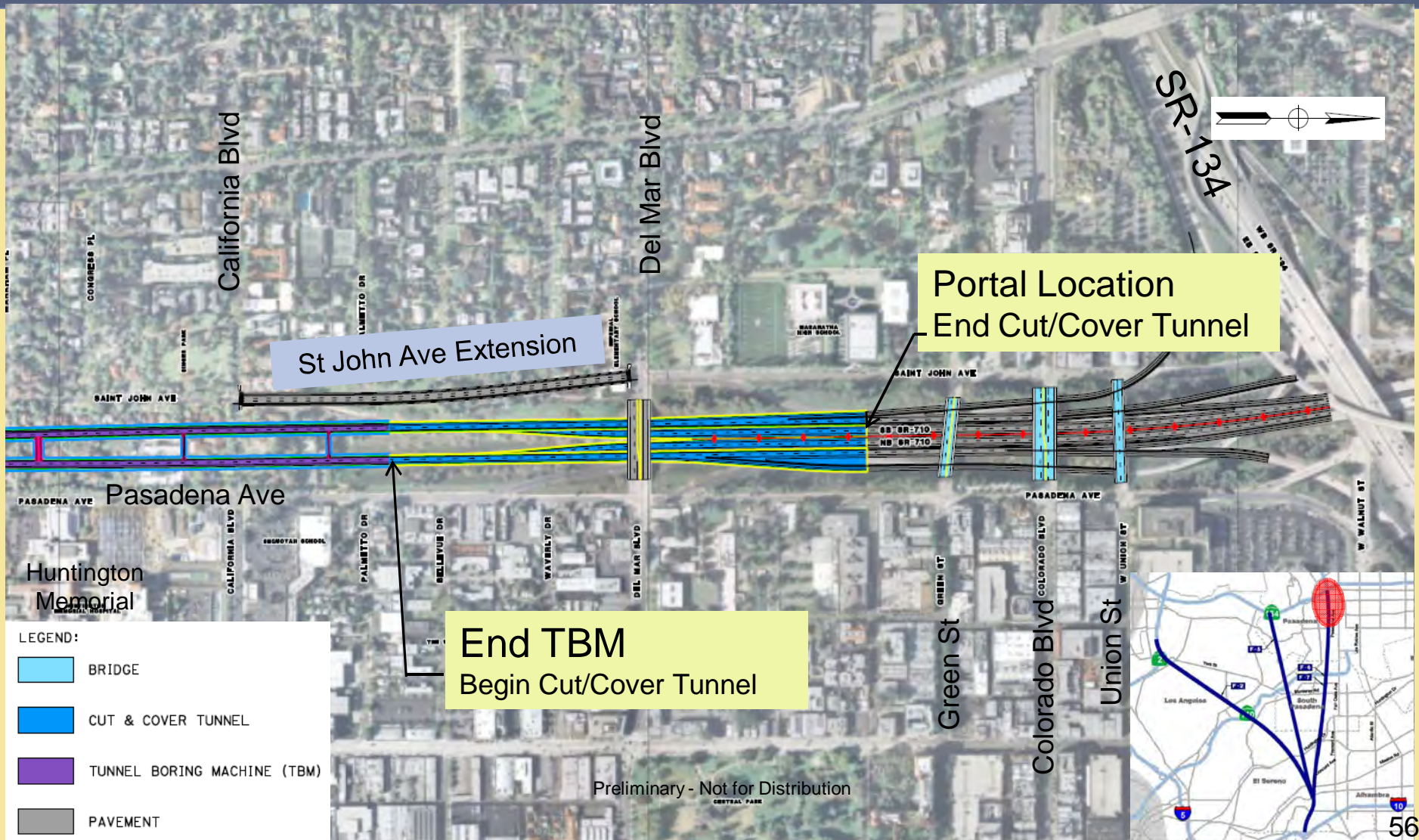
## Section C-C

Preliminary - Not for Distribution

# F-5 North Portal



# F-7 North Portal



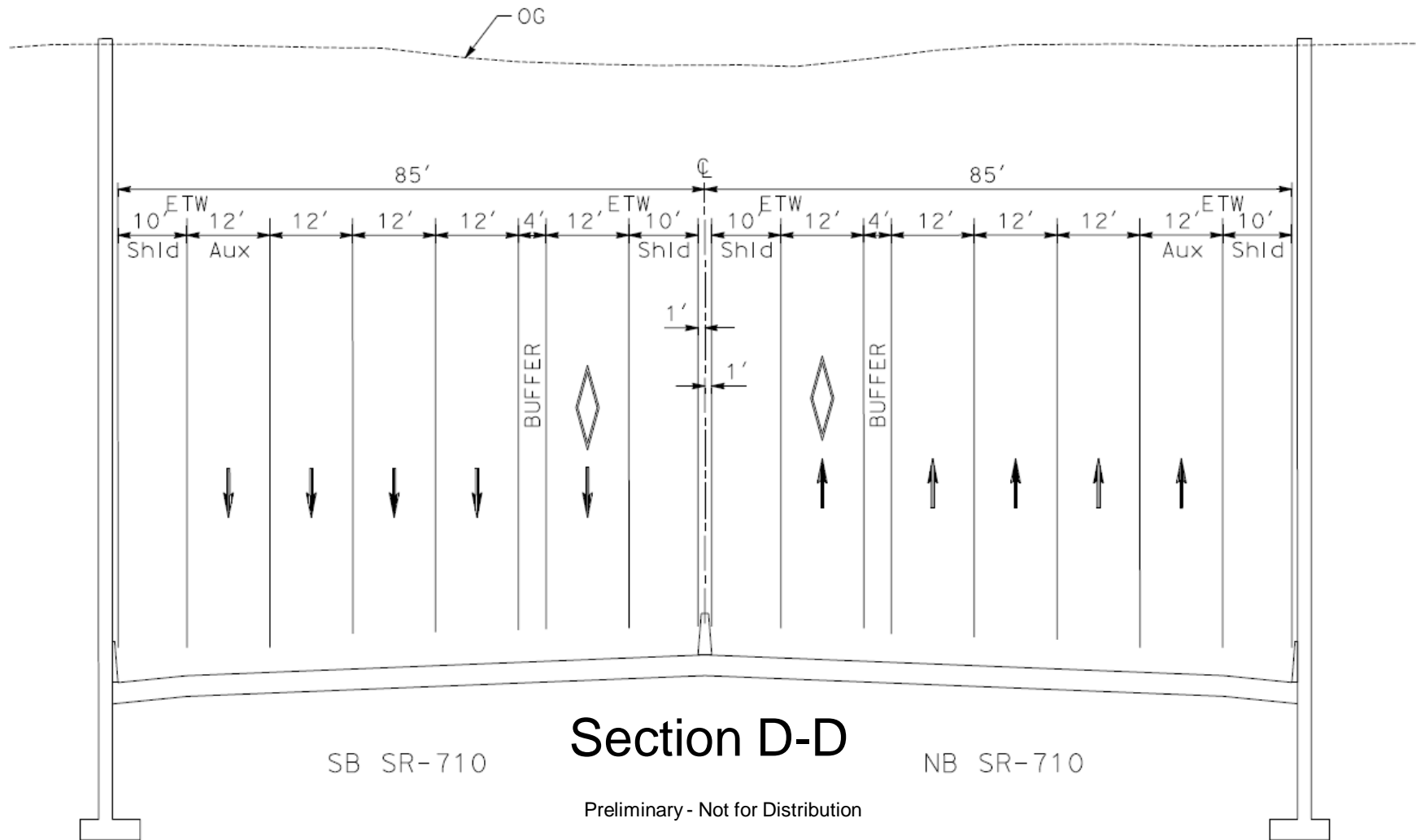


# F-6 Plan

Depressed/At-Grade Freeway



# F-6 Section



## Section D-D

SB SR-710

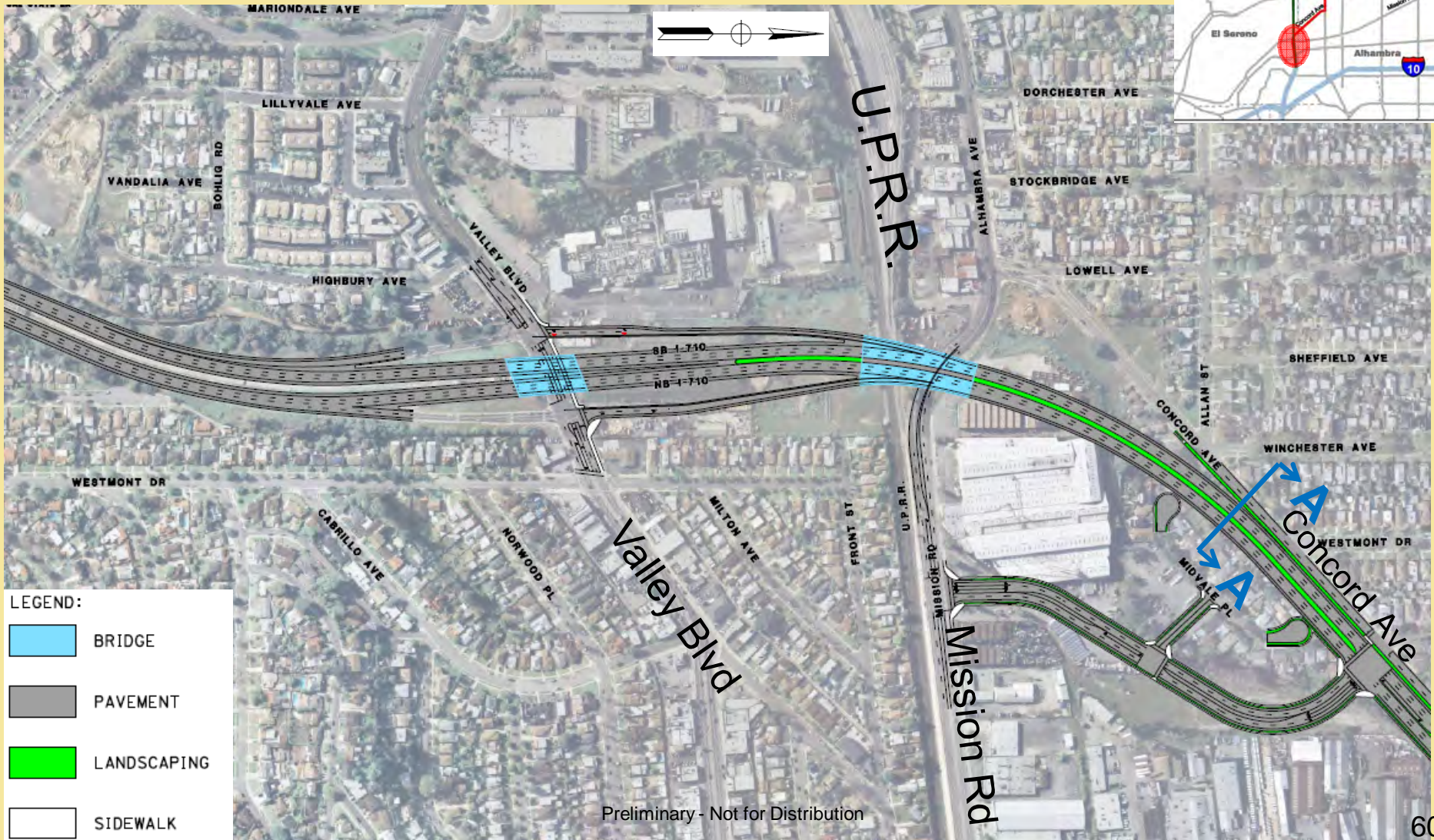
NB SR-710

Preliminary - Not for Distribution

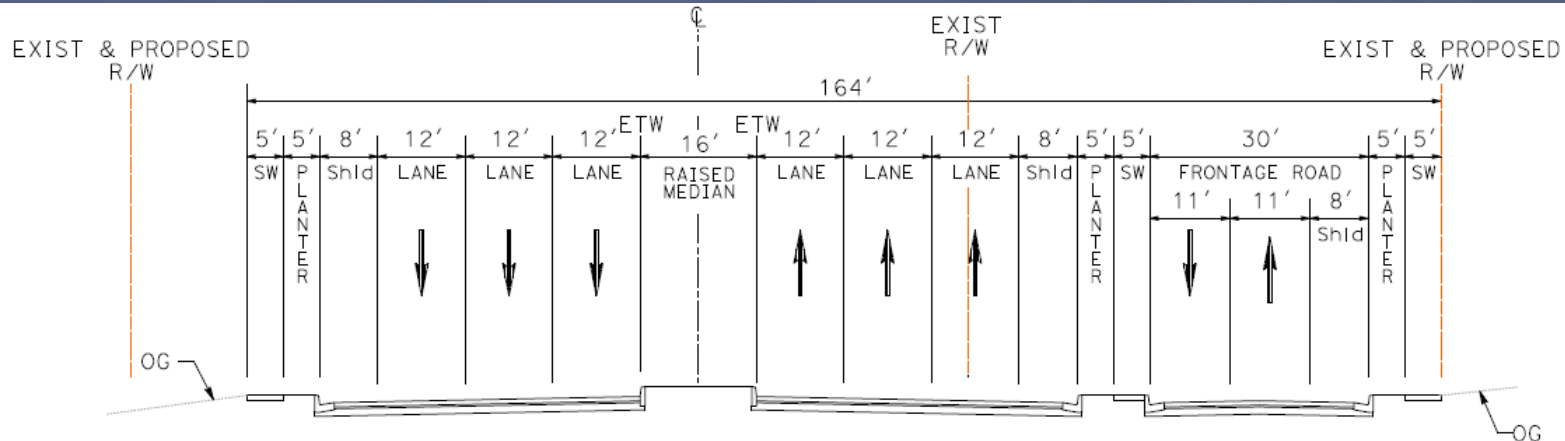
# Highway/Arterial Alternatives



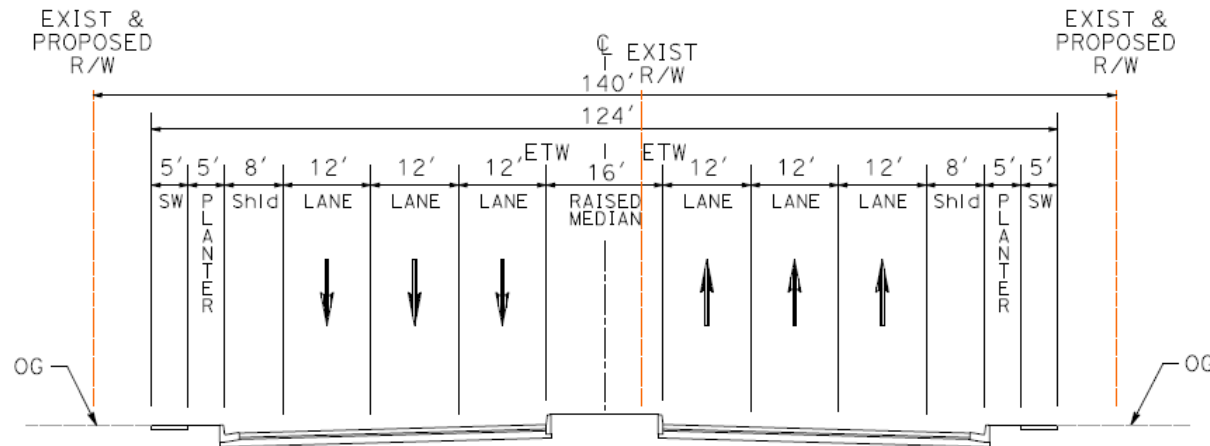
# H-2 Plan



# Highway Sections



**Section A-A: Highway with Frontage Road**



**Section B-B: 3 Lane Highway**

# H-2 Plan Along Ave 64



Preliminary - Not for Distribution

# H-6 Plan



- LEGEND:
- BRIDGE
  - PAVEMENT
  - LANDSCAPING
  - SIDEWALK

# Transportation System Analysis for Build Alternatives





# Multimodal Model Analysis

## Highway Alternatives

## Transit Alternatives

### Highway Performance Measures

SCAG model with transit trip table adjustments from Metro model

SCAG no-build model coded with updated details for transit alternatives

### Transit Performance Measures

Metro model coded with updated details for highway alternatives

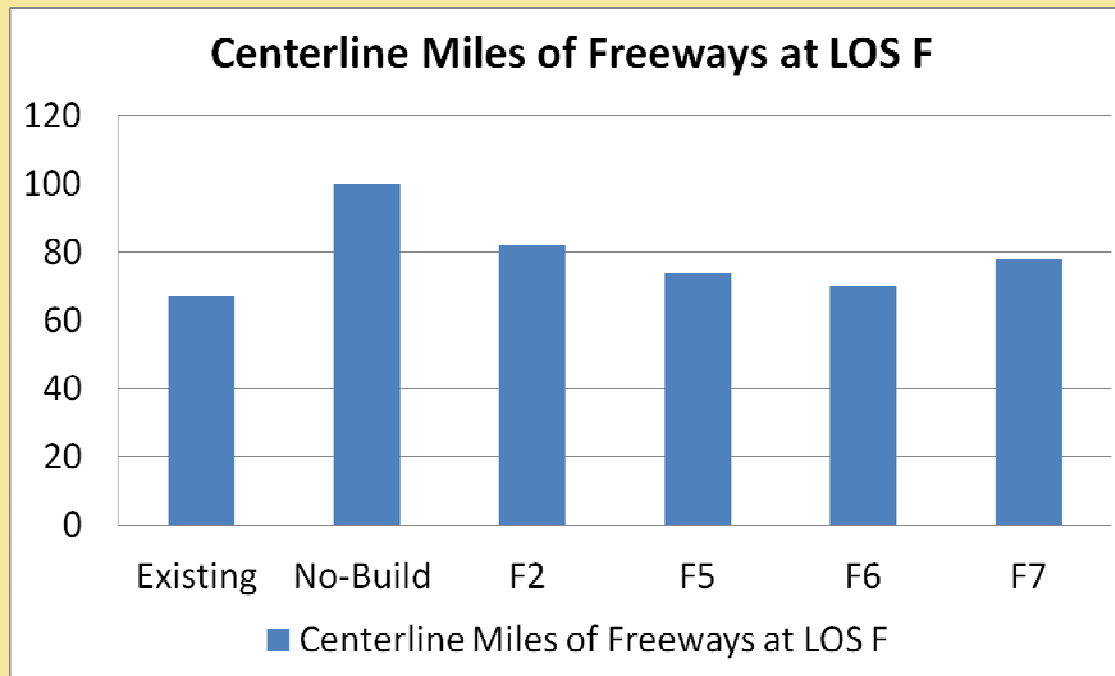
Metro model with TSM/TDM alternative as base, and layered build alternatives

*Blending*

# Freeway Alternatives



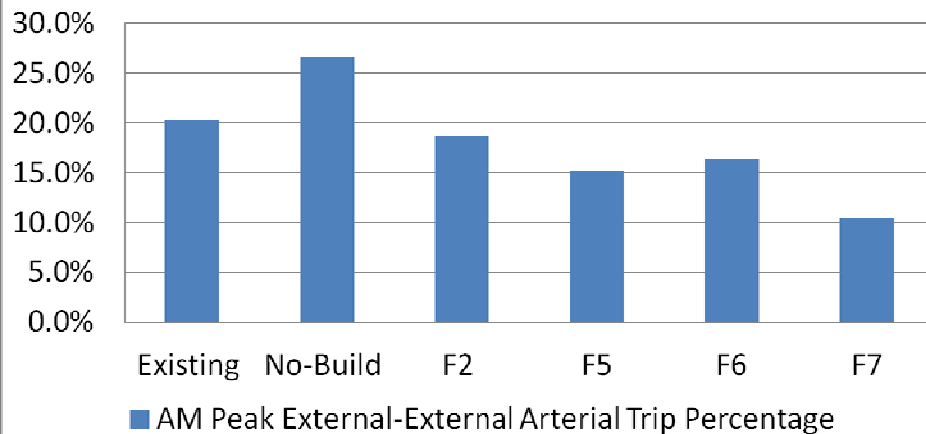
# Freeway Alternatives



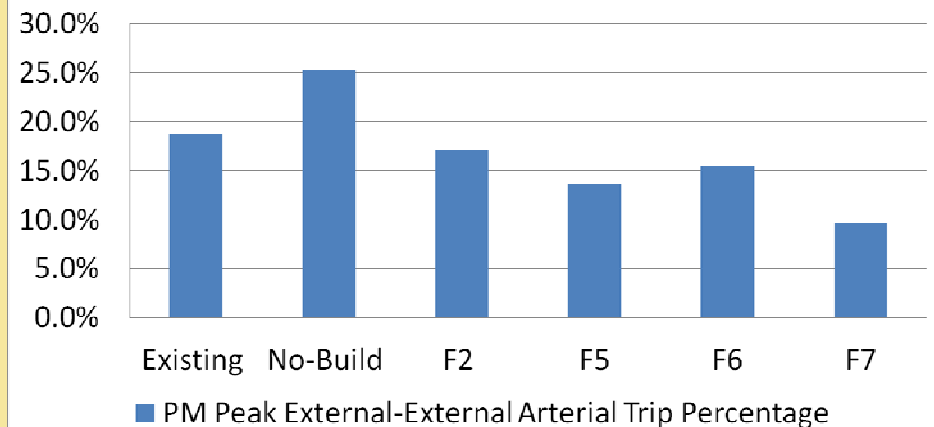
**\*Total Centerline Miles of Freeways in the Study Area with Congestion Equivalent to LOS F**

# Freeway Alternatives

### AM Peak External-External Arterial Trip Percentage



### PM Peak External-External Arterial Trip Percentage



Arterial trips with O-D outside study area

Local arterial cut-through travel is determined using 4 representative arterials in the study area

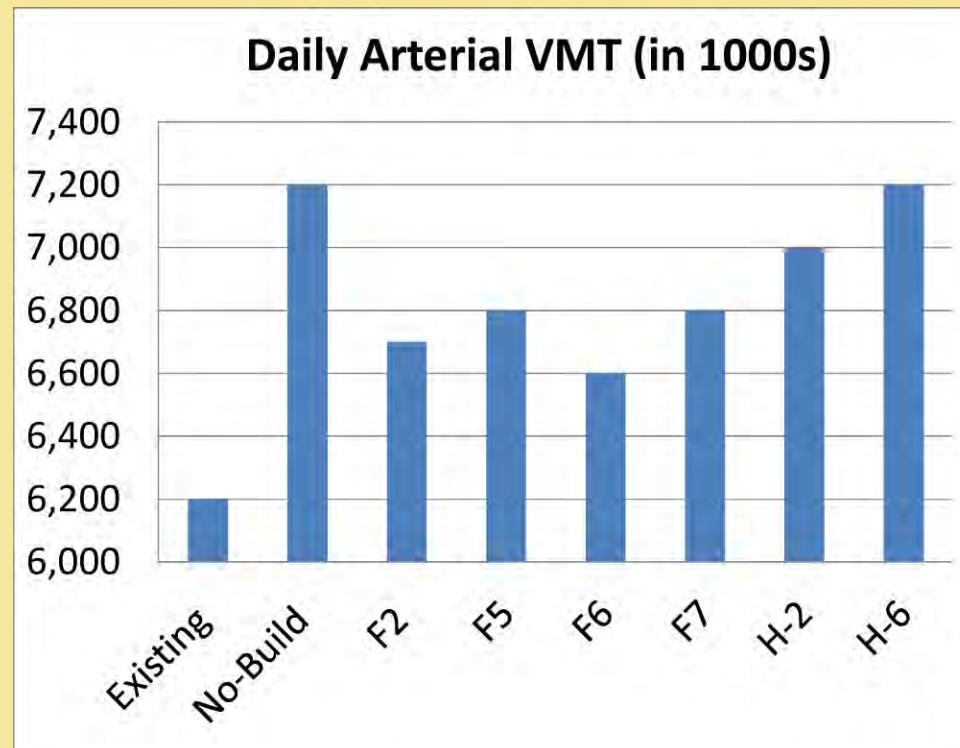
# Highway/Arterial Alternatives



**DRAFT** APRIL 3, 2012  
HIGHWAY/ARTERIAL ALTERNATIVES  
INITIAL EVALUATION RECOMMENDATION

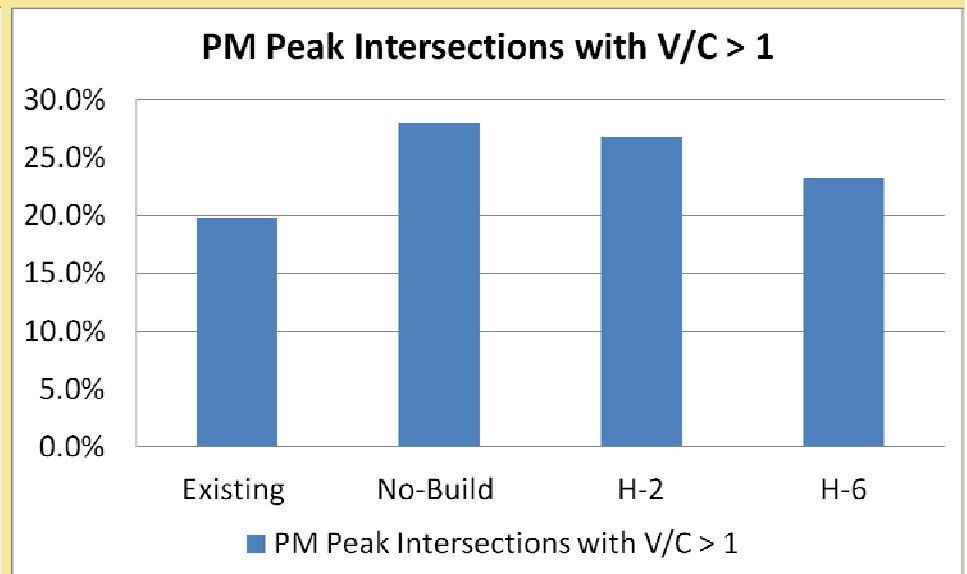
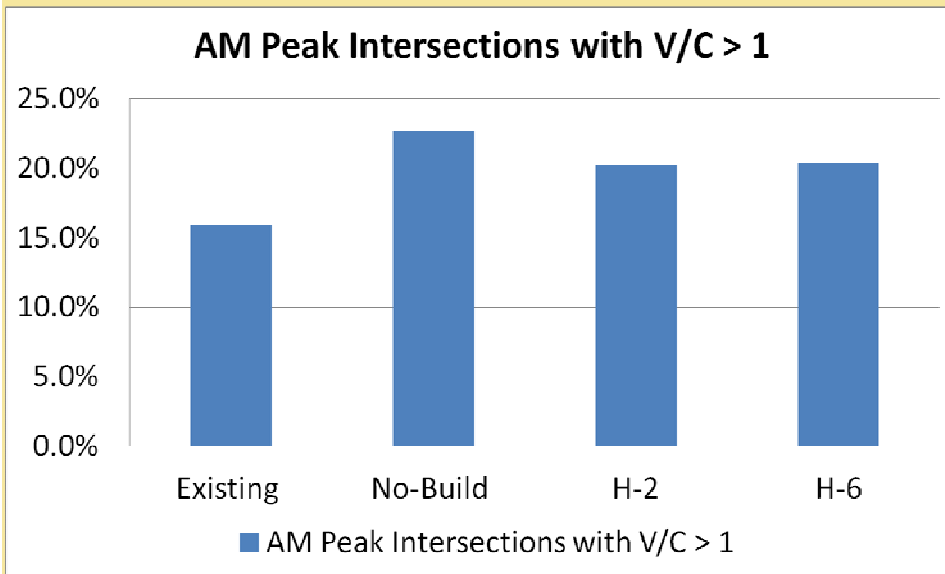
Preliminary - Not for Distribution

# Highway/Arterial Alternatives



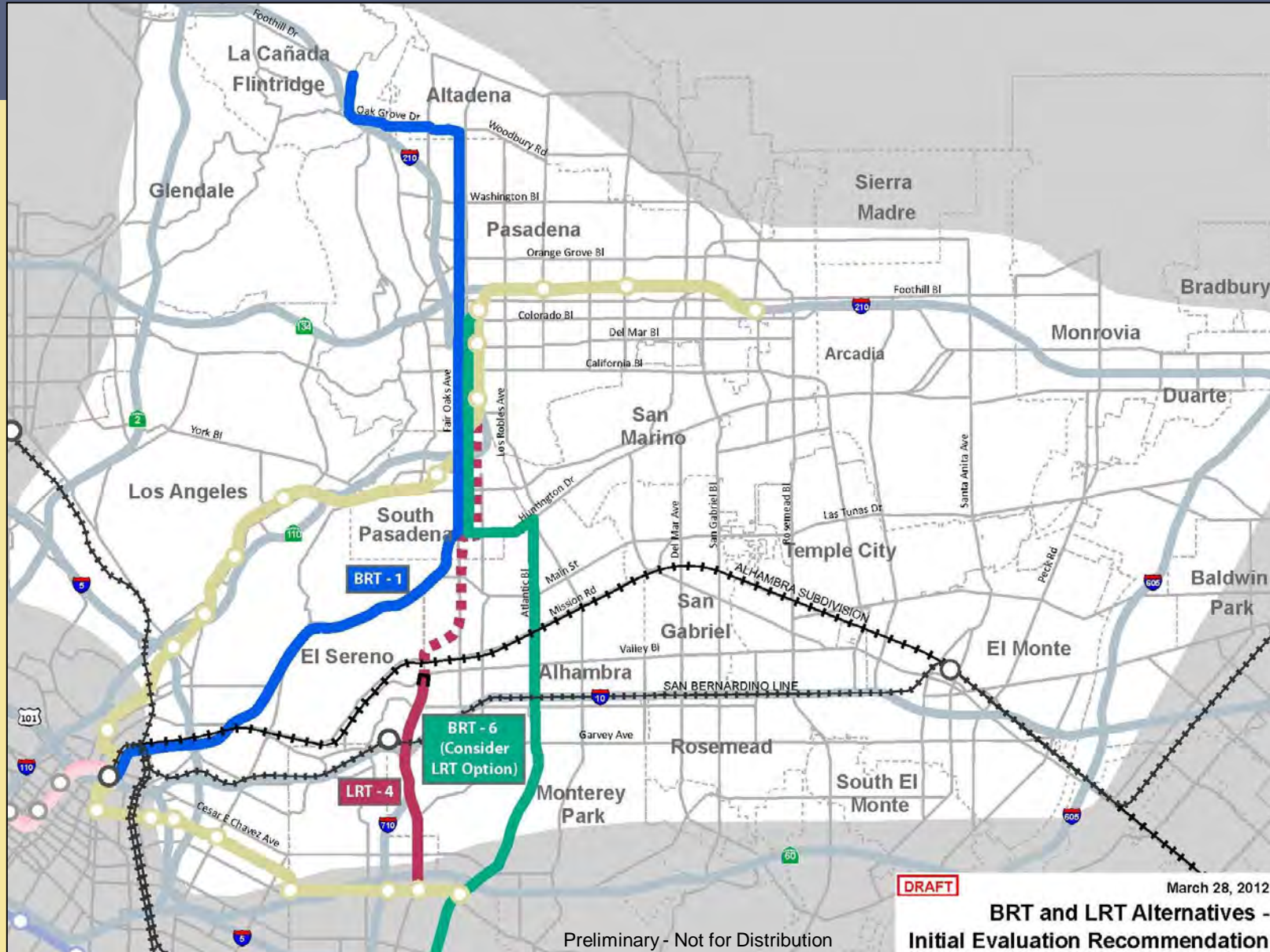
\*Daily Vehicle Miles of Travel in the Study Area on Arterials and Collectors

# Highway/Arterial Alternatives



Percentage of peak period intersection approaches with a V/C greater than 1.0. 50 intersections were selected for analysis.

# Transit Alternatives





# BRT Alternatives



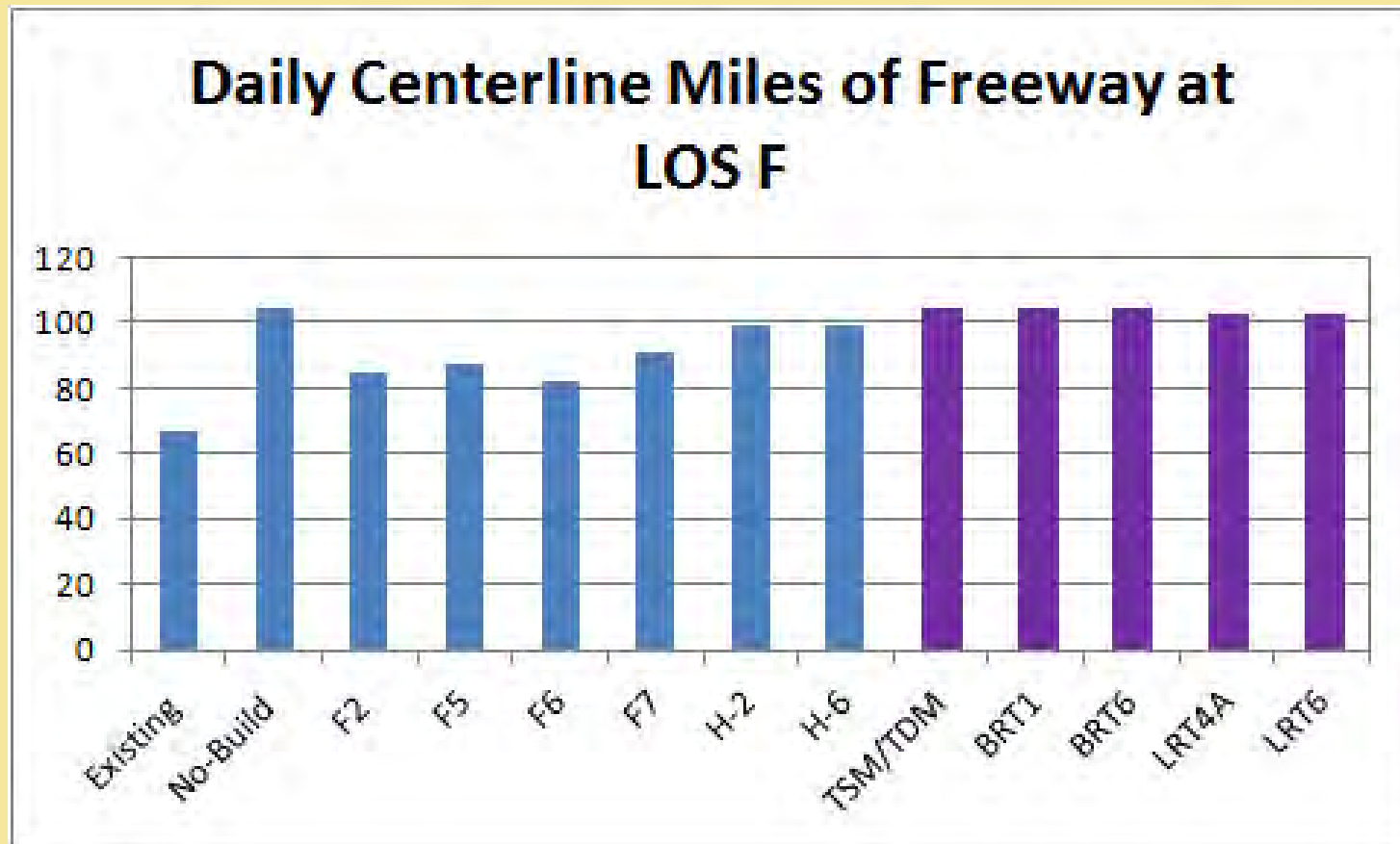
	Total Boardings	New Riders
BRT-1	12,500	2,400
BRT-6	16,300	2,700

# LRT Alternatives

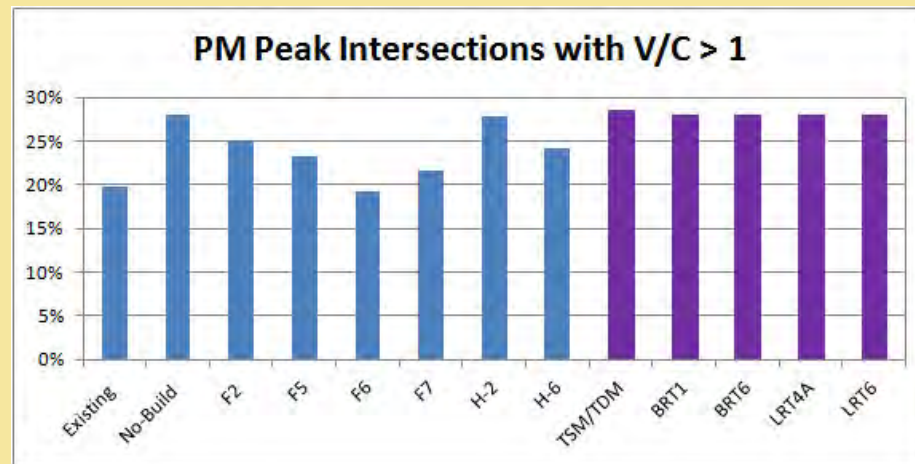
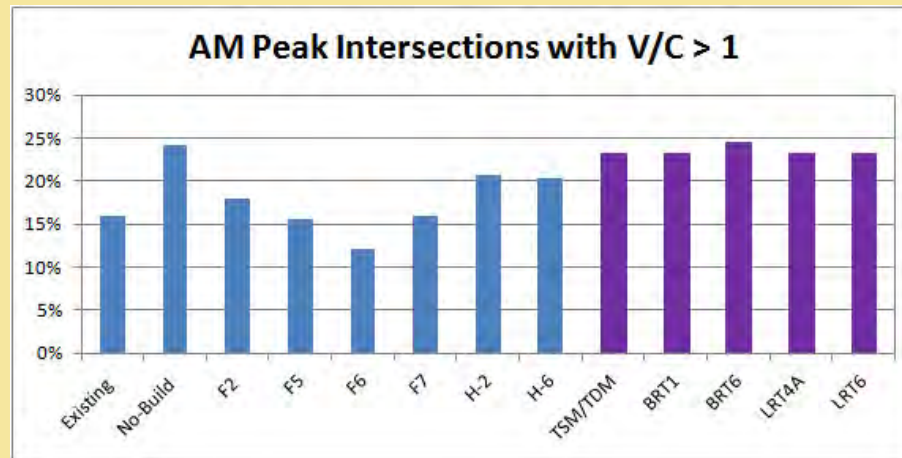


	Total Boardings	New Riders
LRT-4A	10,900	3,800
LRT-6	12,300	3,400

# Freeway Performance



# Intersection Performance



# Next Steps

- > Continue with the conceptual engineering
- > Update the information on performance measures matrix
- > Screening of alternatives
- > Identify alternatives for environmental documentation

# Open Discussion

