

Mobility. Environment. Community. Economy. Technology

I-710 Corridor Project EIR/EIS




metro.net

# Alternatives Screening Recommendation

Presented to  
I-710 Project Committee  
April 30, 2009

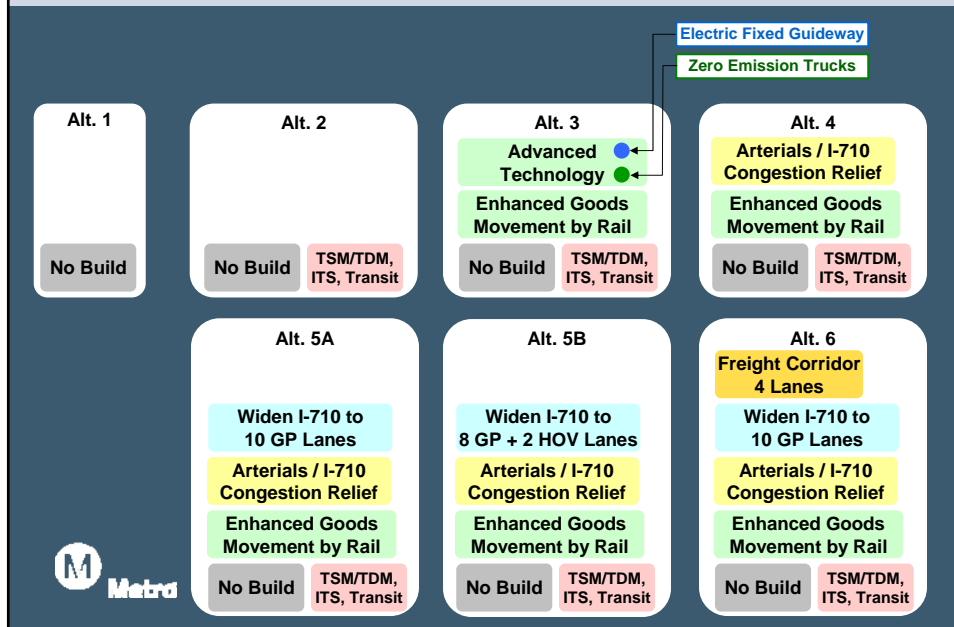


# Alternatives Screening



2

## Initial Set of Alternatives



## Screening Objectives

- Air Quality
- Mobility
- Traffic Safety
- Right of Way Impacts
- Environmental Impacts
- Cost

## Mobility Screening Findings

- Substantial need for new capacity in corridor demonstrated by Year 2035 traffic congestion
- Volume-to-capacity ratios help measure improvements in traffic congestion:
  - Only Alternative 6 provides sufficient capacity to reduce peak period volume-to-capacity ratios below 1.0 on I-710
  - Alternative 6 is also projected to result in more congestion relief for the arterial system as compared to other alternatives
- Top performing alternatives for mobility:
  - Alternative 6 [1<sup>st</sup>]; Alternative 5A [2<sup>nd</sup>]; Alternative 5B [3<sup>rd</sup>]



11

## Air Quality Screening Findings

- In 2035, all alternatives may show emission decreases compared to 2008 baseline (new standards/controls vs. increases in vehicle miles traveled)
- Compared to the 2035 No Build Alternative:
  - Alternative 3 shows the greatest reductions in nitrogen oxides (NOx) and diesel particulate matter (DPM)
    - 22,400 daily truck trips (~20% of Port trucks) eliminated by clean energy powered container transport technology
  - Alternatives 5A, 5B, and 6 show appreciable reductions in NOx with slight increases in DPM
    - DPM emissions could be reduced with alternative (zero-emission) technologies



12

## Traffic Safety Screening Findings

- Proposed design improvements and reductions of heavy duty trucks should substantially reduce accident rates
- Alternative 6 has the lowest percentage of heavy duty trucks on the I-710 general purpose lanes as it separates cars and trucks
- Alternative 6 and Alternative 3 are best for traffic safety
- Alternatives 5A and 5B also provide safety benefits



13

## Right of Way Screening Findings

- All alternatives are consistent with the project objective of minimizing right of way impacts, notably residential acquisitions
- Mobility and traffic safety benefits are trade-offs to residential impacts
- Alternatives 3, 5 and 6 have a substantially greater impact to regional transmission utilities
- Alternatives 1, 2 and 4 have the least impacts



14

## Environmental Impact Screening Findings

- Alternative 6 has the greatest direct environmental impacts due to its larger “footprint,” but it also has the greatest benefits in terms of mobility and safety.



15

## Capital Cost Screening Findings

- Alternatives 3 and 6 have the highest cost
  - Alternative 6 and Alternative 3 provide the greatest benefits



16

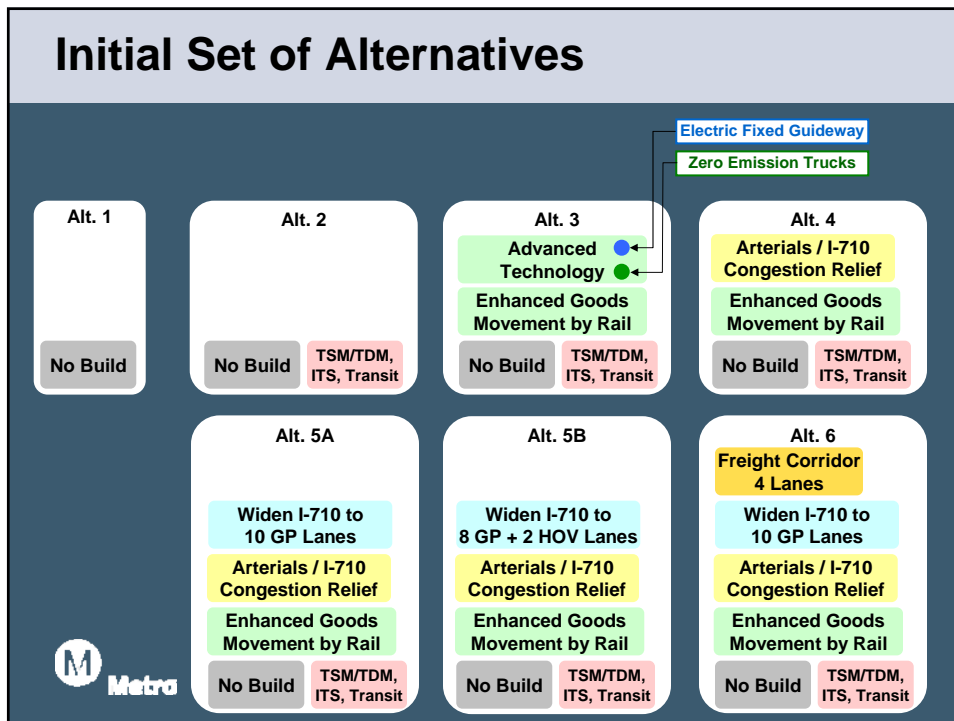
## Screening Results Summary

- Alternative 6 is only one to meet mobility element of Purpose and Need
- Alternative 6 is best performer on Traffic Safety
- Alternative 6 reduces NOx but slightly increases freeway daytime DPM compared to No Build
  - Additional emission reductions could be achieved by combining with alternative (zero-emission) technologies
- Alternative 6 impacts (affected properties, waters of the US, cost) are highest compared to other alternatives
  - Directly related to mobility and safety improvement features
- Alternative 3 has highest capital cost followed by Alternative 6



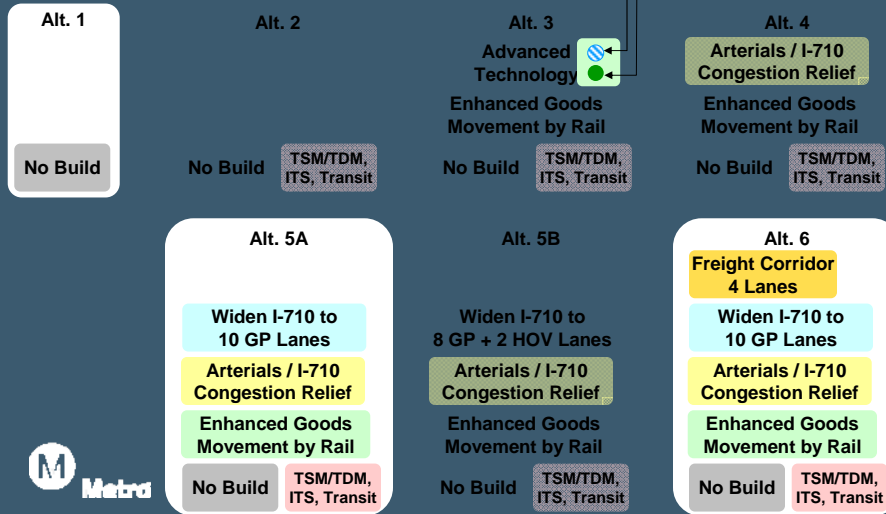
17

## Initial Set of Alternatives



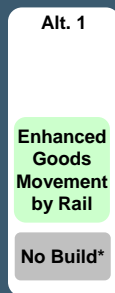
# Screening Recommendations

Drawn From the Initial Set of Alternatives:



# Recommended Screened Alternatives

## Alternative 1 (No Build)

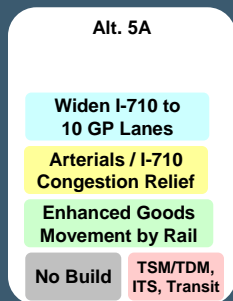


- ☑ Required under CEQA and NEPA
- ☑ Represents the Future (2035) Baseline Condition
- \* Consists of Planned and Committed Projects, such as:
  - Enhanced Goods Movement by Rail Projects
  - Clean Trucks Program
  - Expanded Night Gate Operations at Ports
  - I-710 Pavement Rehabilitation Project
  - Added Lanes to I-5 between the Orange County Line and I-605
  - Traffic Signal Coordination Projects on Key Arterials throughout the I-710 Corridor Study Area



## Recommended Screened Alternatives

### Alternative 5A (Widen to 10 General Purpose Lanes, No Freight Corridor)



- ☑ Includes Alternative 1, Alternative 2, and Alternative 4.
- ☑ Less impact than Alternative 6 and provides measurable benefits.
- ☑ Provides a basis for comparison of the benefits, cost and impacts of the freight corridor in Alternative 6.
- ☑ Can reevaluate and adjust the number of lanes based upon refined traffic forecasting.



21

## Recommended Screened Alternatives

### Alternative 6A (Widen to 10 General Purpose Lanes, Plus 4 Freight Movement Lanes [Conventional Trucks])



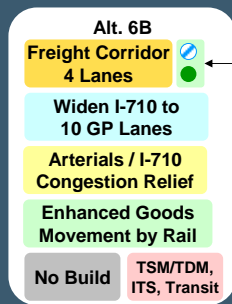
- ☑ Includes Alternative 1, Alternative 2, Alternative 4, and Alternative 5A.
- ☑ Consistent with the Major Corridor Study Locally Preferred Strategy.
- ☑ Assumes mix of conventionally powered trucks per new AQ regulations would use the freight corridor.
- ☑ Can reevaluate and adjust the number of lanes based upon refined traffic forecasting.



22

## Recommended Screened Alternatives

### Alternative 6B (Widen to 10 General Purpose Lanes, Plus 4 Freight Movement Lanes [Zero Emission Trucks])



Includes Alternative 1, Alternative 2, the advanced technology components of Alternative 3, Alternative 4, and Alternative 5A.

Assumes zero emission trucks will use the freight corridor. Zero emission trucks may be externally or internally powered. [Zero Emission Trucks](#)

The freight corridor will follow highway design alignment and loading standards.

The freight corridor will be designed to allow for possible future conversion to a fixed guideway, zero emission system. [Electric Fixed Guideway](#)

Consistent with the Major Corridor Study Locally Preferred Strategy.



Metra

Can reevaluate and adjust the number of lanes based upon<sub>23</sub> refined traffic forecasting.

## Not Recommended as Stand Alone Alternatives

- Alternative 2 (Transportation Systems Management [TSM] / Transportation Demand Management [TDM] & Transit & Intelligent Transportation Systems [ITS])
- Alternative 4 (Arterial Highway/Freeway Congestion Relief)
- Alternatives 2 and 4:
  - Do not provide adequate improvements by themselves to address the purpose and need for the project.
  - Will be included as part of recommended screened Alternatives 5A, 6A and 6B.



Metra

## Not Recommended as Stand Alone Alternatives

- Alternative 3 (Goods Movement Enhancement by Rail and/or Advanced Technology)
  - Does not provide adequate improvements by itself to address the purpose and need for the project.
  - Goods Movement Enhancement by Rail is included in all screened alternatives, beginning with Alternative 1.
  - Advanced Technology component will be included as part of recommended screened Alternative 6B.
- Alternative 5B (Widen I-710 to 8 General Purpose Lanes and 2 High Occupancy Vehicle Lanes)
  - Results in lower mobility performance and yet the same costs and impacts as its counterpart – Alternative 5A



## Screening Recommendations

### Recommended Screened Alternatives:

