Mobility. Environment. Community. Economy. Technology

I-710 Corridor Project EIR/EIS

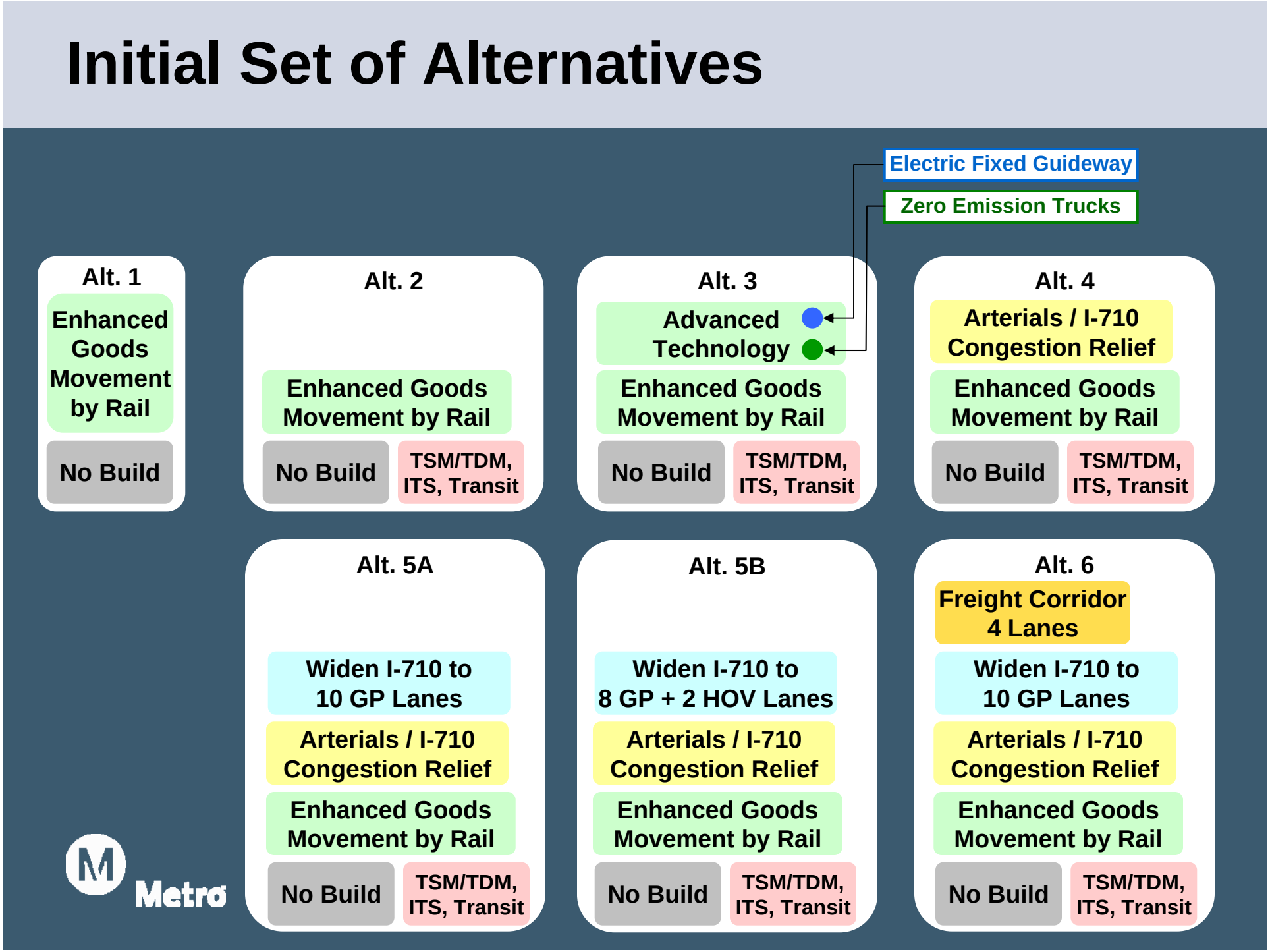
metro.net

I-710 Corridor Advisory Committee

April 16, 2009

Alternatives Screening

Initial Set of Alternatives



Screening Objectives

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

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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 [1st]; Alternative 5A [2nd]; Alternative 5B [3rd]

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

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

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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

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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.

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Capital Cost Screening Findings

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

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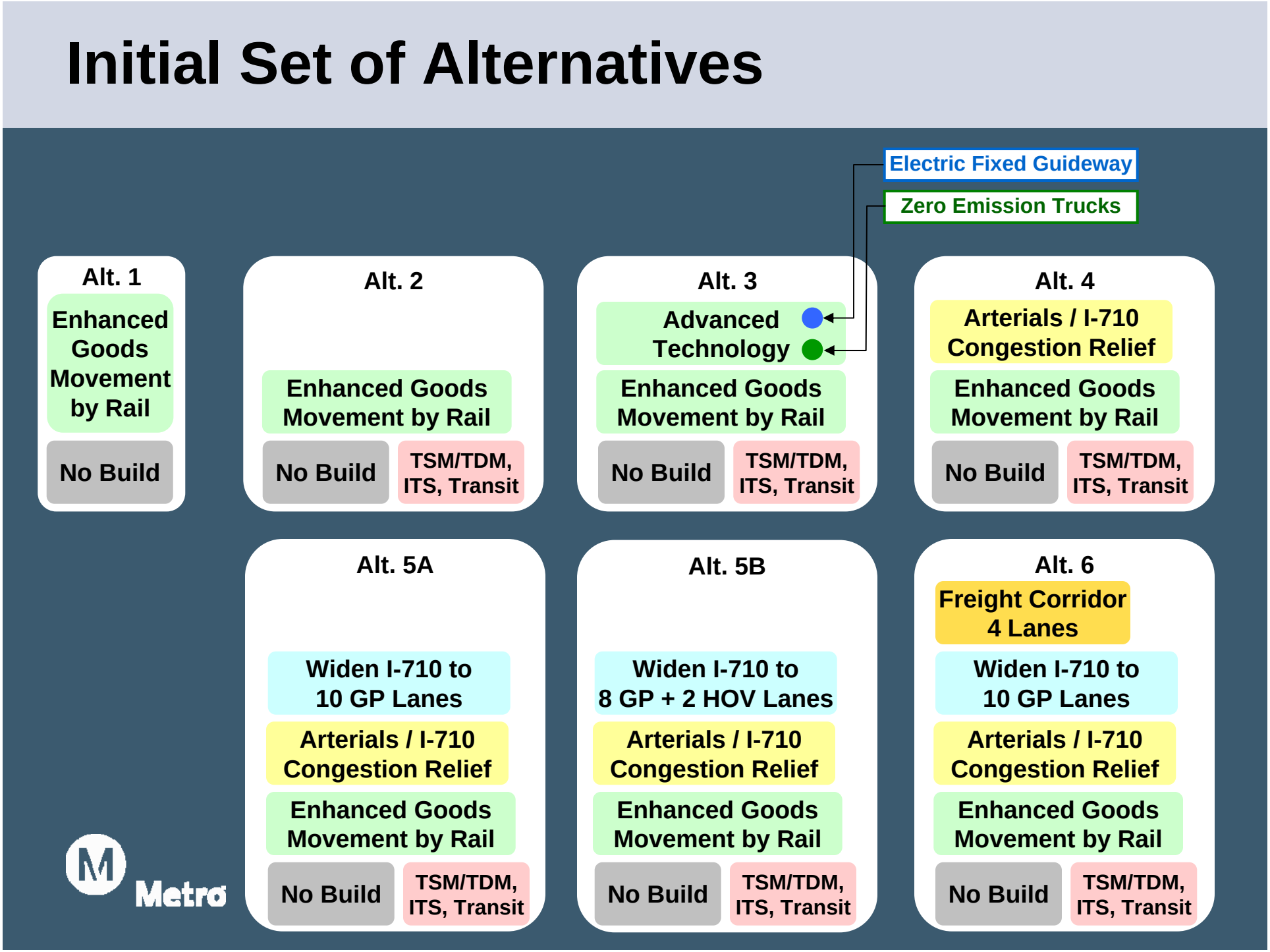
Screening Results Summary

- 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

Initial Set of Alternatives



Screening Recommendations

Drawn From the Initial Set of Alternatives:

Electric Fixed Guideway

Zero Emission Trucks

Alt. 1
- Enhanced Goods Movement by Rail
- No Build

Alt. 2
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

Alt. 3
- Advanced Technology
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

Alt. 4
- Arterials / I-710 Congestion Relief
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

Alt. 5A
- Widen I-710 to 10 GP Lanes
- Arterials / I-710 Congestion Relief
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

Alt. 5B
- Widen I-710 to 8 GP + 2 HOV Lanes
- Arterials / I-710 Congestion Relief
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

Alt. 6
- Freight Corridor 4 Lanes
- Widen I-710 to 10 GP Lanes
- Arterials / I-710 Congestion Relief
- Enhanced Goods Movement by Rail
- No Build
- TSM/TDM, ITS, Transit

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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

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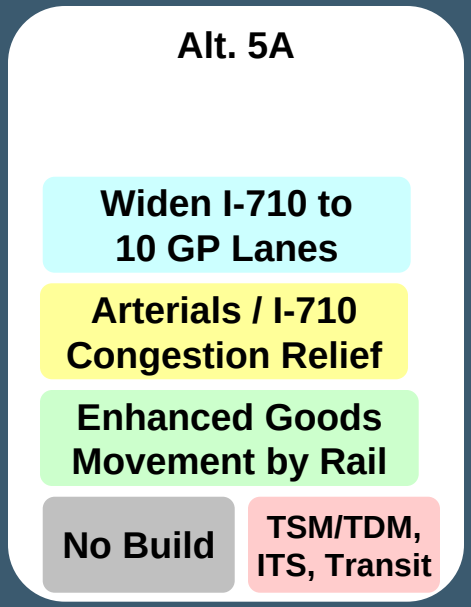
Recommended Screened Alternatives

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.

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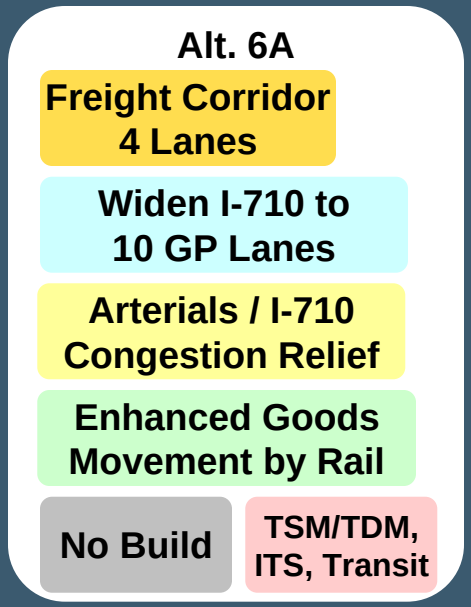
Recommended Screened Alternatives

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.

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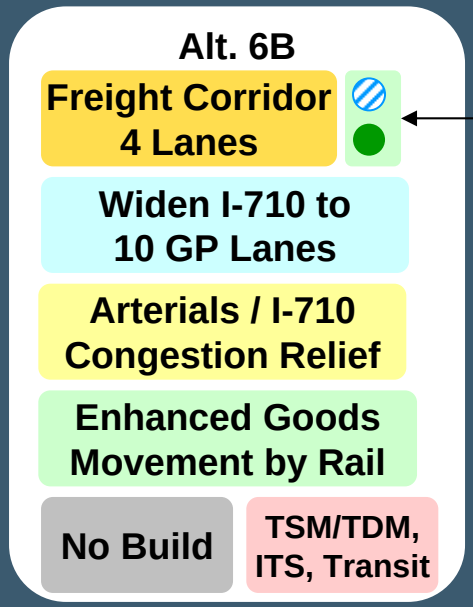
Recommended Screened Alternatives

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.
- ☑ Can reevaluate and adjust the number of lanes based upon refined traffic forecasting.

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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.

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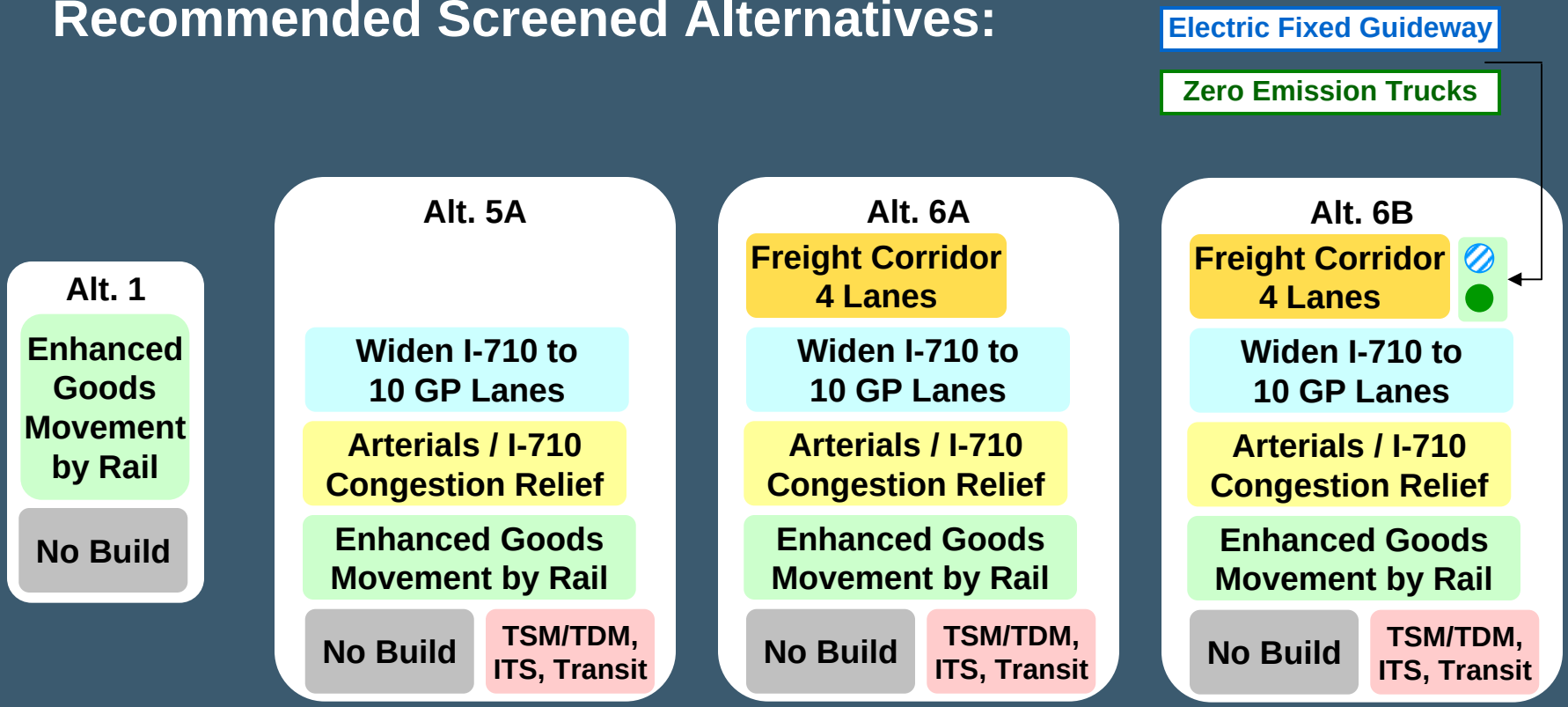
Not Recommended as Stand Alone Alternatives

- 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:



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