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I-710 Project Committee Meeting

January 29, 2009

Meeting Expectations

- Review I-710 planning context
- Concur on a port cargo forecast scenario to use in the EIR/EIS as recommended by the TAC
- Concur on proposed alternatives screening methodology as recommended by the TAC

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Status Report on I-710 Corridor Project EIR/EIS

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Status Report

- Technical Work
- Schedule
- Community Participation

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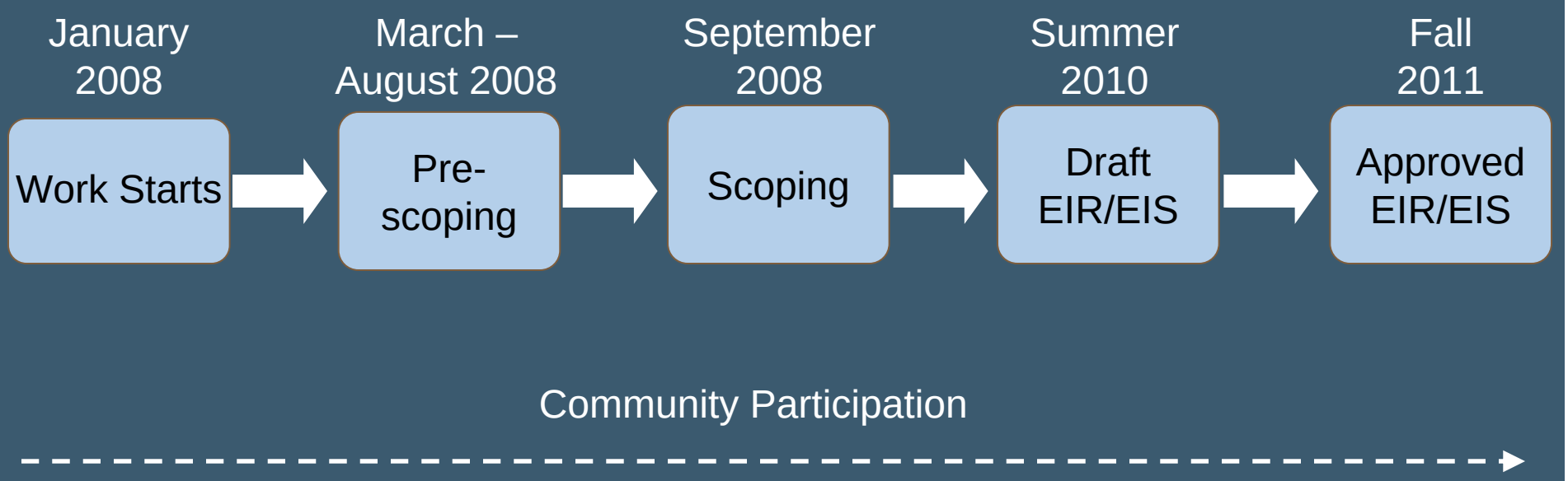
Project Schedule



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Project Status

- **Technical Work**
  - Updated Hybrid LPS Design Concept
  - Developed Alternatives 1 - 6
  - Completed Planning Context Studies
  - Initiated Environmental Process (NEPA/CEQA)
  - Initiated Alternatives Screening Process
  - Supporting Community Participation Process

Key Information Presented to Date

- **Technical Advisory Committee (TAC)**
  - 3 Cargo Forecast Scenarios
  - Alternatives Screening / Initial Feasibility Analysis
  - Updated LPS Concept Design
  - AQ/HRA Protocol Overview

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Community Participation

Key Information Presented to Date

- **Local Advisory Committees (LACs)**
  - Updated LPS Concept Design
- **Subject Working Groups (SWGs)**
  - 3 Cargo Forecast Scenarios
  - Initial Feasibility Analysis
  - AQ/HRA Protocol Overview
- **Corridor Advisory Committee (CAC)**
  - 3 Cargo Forecast Scenarios
  - Initial Feasibility Analysis
  - AQ/HRA Protocol Overview

Purpose of this Meeting

- **Concur on Port Cargo Growth Scenario**
  - Considerations:
    - Railroad Goods Movement
    - Alternative Goods Movement Technology
    - Multimodal Review
    - Initial Feasibility Analysis
- **Concur on Alternatives Screening Methodology**

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Initial Feasibility Study Results

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Purpose and Need of I-710 EIR/EIS

- Improve air quality and public health
- Improve traffic safety
- Address design deficiencies
- Address projected traffic volume
- Address projected growth in population, employment and economic activity related to goods movement

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Initial Set of Alternatives to be Analyzed

1. No Build
2. Transportation System Management/Transportation Demand Management/Transit
3. Goods Movement Enhancement by Railroad and/or Advanced Technology
4. Arterial Highways and I-710 Congestion Relief Improvements (includes Alternatives 2 and 3(Rail))
5. Mainline I-710 Improvements (includes Alternatives 2, 3(Rail) and 4)
   A. 10 General Purpose Lanes or,
   B. 8 General Purpose Lanes w/ 1 carpool lane in each direction (total of 10)
6. Alternative 6 (includes Alternative 5 + freight corridor of 4 lanes)

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I-710 Railroad Goods Movement Study Review

Railroad Goods Movement Study

Purpose:

Assess possible Class I Railroad mainline and intermodal facility capacity constraints

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Scenarios Analyzed

(Per Concurrence of the Project Committee)

- Scenario 1: High Cargo Demand Forecast, High On-Dock Rail Capacity, No New Near-Dock Rail Facilities.
  - 40% of Port TEUs go by rail. Port TEUs = 43M
  - Significant on-dock expansion to nearly 7M lifts/year capacity
  - ICTF limited to existing capacity of 760,000 lifts/year (No ICTF Expansion or SCIG)
  - 300 containers per International train
- Scenario 2: High Cargo Demand Forecast, High On-Dock Rail Capacity, Both ICTF and SCIG Constructed/Expanded.
  - 40% of Port TEUs go by rail. Port TEUs = 43M
  - Significant on-dock expansion to nearly 7M lifts/year capacity
  - Expanded ICTF and construction of SCIG (1.5M lift/year capacity each)
  - 300 containers per International train
- Scenario 3: Low Cargo Demand Forecast, Low On-Dock Rail Capacity, No New Near-Dock Rail Facilities.
  - 40% of Port TEUs go by rail. Port TEUs = 28.5M
  - ICTF limited to existing capacity of 760,000 lifts/year (No ICTF Expansion or SCIG)
  - 240 containers per International train

Conclusions – Railroad Goods Movement Study

- **Freight railroads nearing efficient capacity in LA Basin**
- **On-dock expansion likely but level of yard efficiency assumed may not be fully realized**
  - More containers traveling on area roadways without on-dock expansion
- **Implementation of all near-dock expansion and construction assumed in Scenario 2 will be a great challenge**
  - More containers traveling to off-dock facilities on area roadways without near-dock expansion

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Conclusions – Railroad Goods Movement Study
(Continued)

- **Assumed on-dock and near-dock expansion does not meet International and Domestic intermodal needs - 1.3M TEU shortfall**
  - Additional intermodal facilities needed or existing yards expanded
  - If intermodal need not met trips will be made via truck on area roadways
- **Scenarios 1 and 2 provide highest utilization of railroad mainline capacity - do not account for growth in passenger trains**
  - Additional mainline tracks will be needed
  - ROW constraints may limit addition of these tracks

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The Challenge – Railroad Goods Movement

- **What is the "Ideal Balance" between containers and investment in LA Basin for maximizing goods movement by rail?**
  - Community Acceptance?
  - Economic Growth?
  - Air Quality?
  - Port TEU Growth?
  - Intermodal Facility Expansion?
  - Uncertainty of Railroad mainline expansion?
  - Passenger Rail?

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Alternative Goods Movement Technology Study Review

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Purpose of Alternative Technology Study

- Support EIS evaluation of environmental impacts and benefits attributable to a range of technologies.
- Identify potential alignments for an alternative technology.
- Define the attributes of a generalized alternative technology application.
- Provide a technology-neutral definition of requirements.

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Background

Zero Emission Container Movement System (ZECMS) Study - 2007

- 14 technologies were reviewed for responsiveness to Ports' near-dock intermodal service scenarios
- Proponents of 2 technology 'families' emerged as responsive:
  - Magnetic Levitation (Maglev) Systems
    - Electric Cargo Conveyor System – General Atomics
    - Environmental Mitigation and Mobility Initiative Logistics Solution – American Maglev Technology
  - Exclusive Contact Guideway Systems (Steel wheel, Rubber tire)
    - Automated Shuttle Car System – Automated Terminal Systems, Inc.
    - CargoRail/Cargo Tram – MegaRail Transportation Systems
- The general category Automated Fixed Guideway encompasses common aspects of both technology families

Background

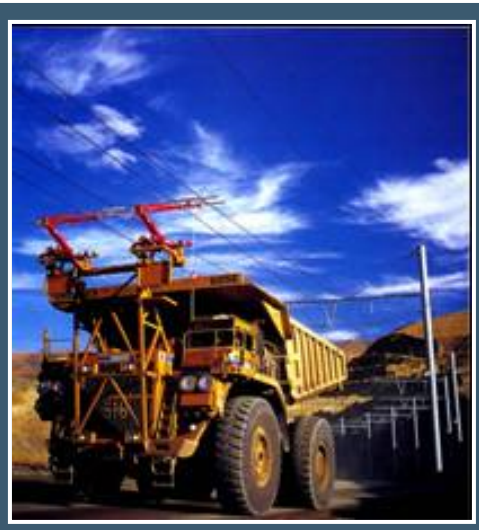
Potential Technologies

Magnetic Levitation

Exclusive Contact Guideway

Automated Load Unload Station

Zero Emission Trucks



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Alignments and Terminal Interfaces

New Facilities for Automated Fixed Guideway Technology

Ports:

- 31-37 “station” tracks

Intermodal Rail Facilities:

- 31-37 “station” tracks

Zero Emission Trucks would interface just as conventional trucks do today.

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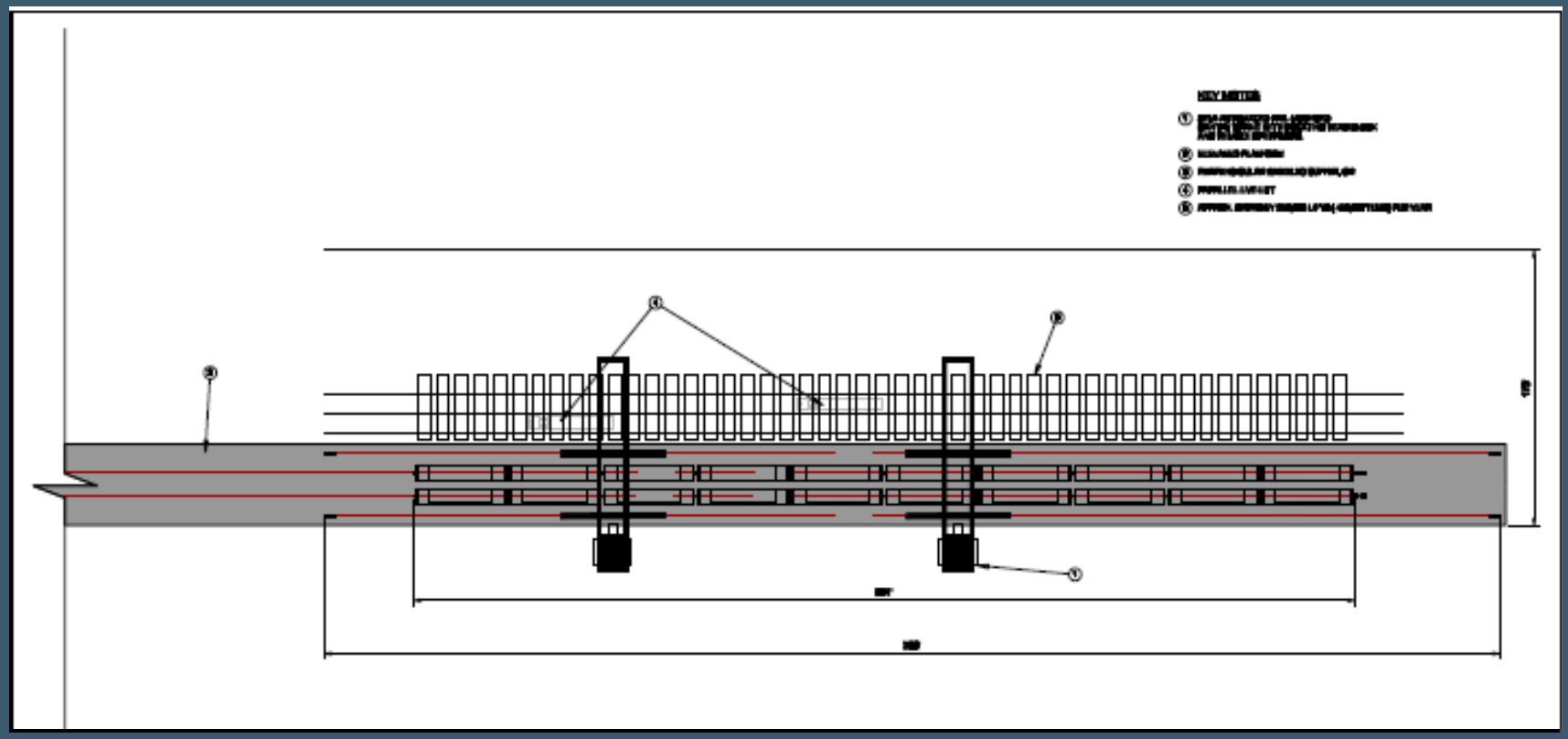
Terminal Interfaces

Automated Fixed Guideway

Conceptual Plan View of a Two-Guideway "Station"



- Schematic from Moffatt & Nichol
- Approximately 2.9 acre footprint

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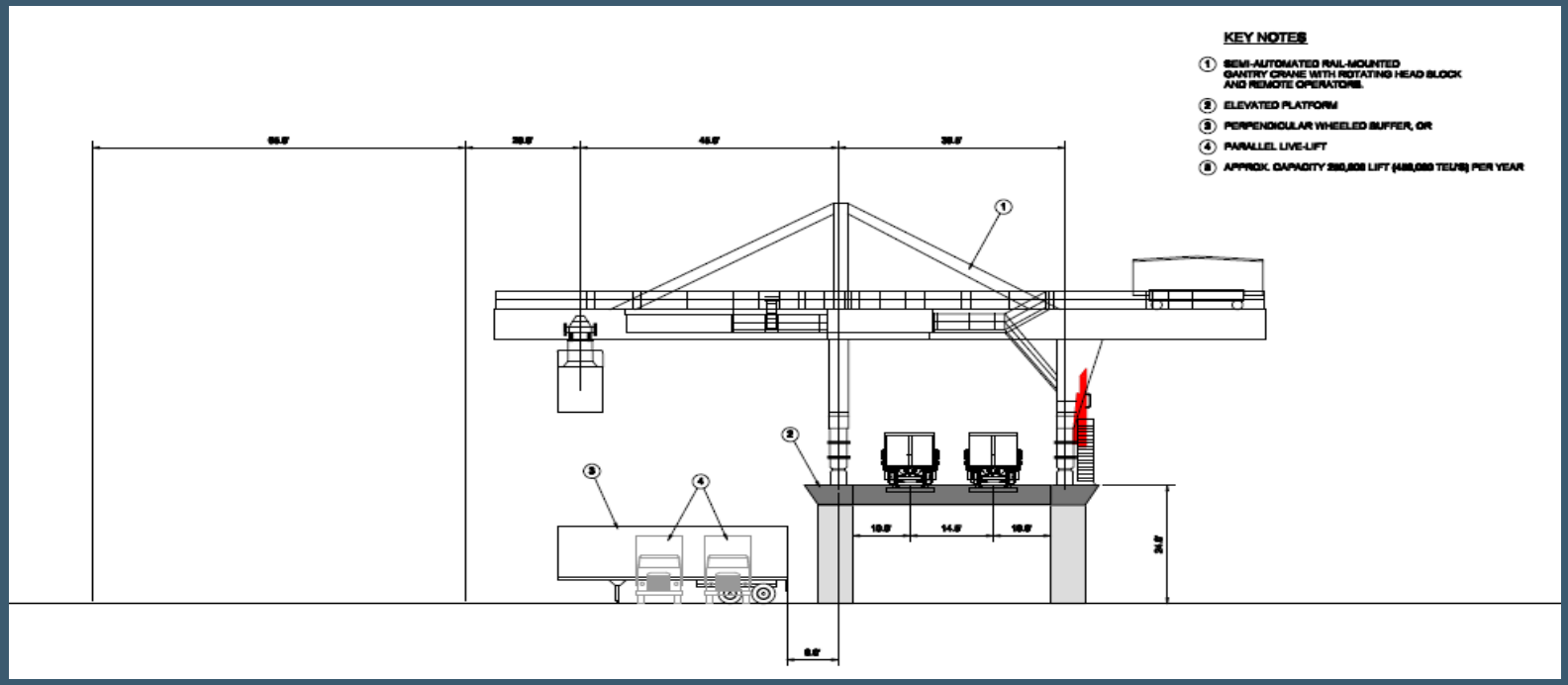
Terminal Interfaces

Automated Fixed Guideway

Conceptual Cross Section of a Two-Guideway "Station"



- Schematic from Moffatt & Nichol

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Overall System Capacity

Automated Fixed Guideway

System Capacity determined by both station capacity and line haul capacity

Can provide sufficient system capacity to handle off-dock intermodal demand and estimated new inland warehouse demand (approx. 16,000 containers per day)

- 37 "station" tracks
- 10 containers trained together (consist)
- 2 guideway mainline tracks minimum (4 tracks for operational redundancy)
- 90 second headways

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Overall System Capacity

Electric/Battery Truck

- 4 Lane Zero Emission Truck Transport Freight Corridor (e.g., electrified truckway)
- 67,000 or more containers per day capacity
- Automated guidance could further increase capacity

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Estimated Costs

Automated Fixed Guideway

- **Design/Construction Management** - $30-$44 million per mile
- **Capital** - $150 million to $220 million per mile, a quadruple guideway estimated at $270 to $350 million
- **Operations** - $6.6 - $9.0 million per mile for the 1st year of operations including staffing and power consumption.
- **Maintenance** - $0.9 - $1.5 million per mile for the 1st year of operations including staffing and consumables.
- **Estimate:** $ 8.2 – $11.3 billion to construct; 262 - $367 million for the 1st year to operate and maintain

Based on 102 total track miles: 64 line haul track miles (18 miles x 4 tracks), 30 miles within the port (15 miles x 2 tracks), and 8 miles for intermodal rail facilities (4 miles x 2 tracks)

Estimated Costs

Zero Emission Truck

- **Design/Construction Management** - $38-$39 million per mile
- **Capital** - $192 million to $196 million per mile (includes Vehicles)
- **Operations** – yet be determined at this time
- **Maintenance** – yet be determined at this time
- **Estimate** - $ 3.8 – $3.9 billion to construct; operational costs cannot be determined at this time.

Based on 64 total lane miles (16 miles x 4 lanes)

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Multimodal Review Summary

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Multimodal Review

Purpose:

To assess the ability of other transportation modes or approaches in the I-710 corridor to reduce auto and truck traffic on I-710

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Modes Assessed

- **Person Trips:**
  - Bus Transit
  - Rail Transit
  - Non-motorized
  - HOV (carpool)
  - Transportation Systems Management (TSM) – Intelligent Transportation Systems (ITS)
- **Freight:**
  - Demand Management (TDM)
  - TSM – ITS
  - Rail
  - Alternative Technology

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Multimodal Review Summary

- **Effects on I-710**
  - 2-3% reduction in peak period autos due to expanded transit
  - 1-12% reduction in peak period port trucks from TDM
    (1-6% reduction in peak period total PCE)
  - 0% reduction in peak period autos from non-motorized mode
  - 6% increase in capacity from ITS
- **Tested in Initial Feasibility Analysis**
  - As TSM/TDM Alternative 2
  - Along with Maximum Rail and Advanced Goods Movement Technology Alternative 3

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Multimodal Review

Conclusion:

TSM/TDM/Transit strategies can collectively produce a measurable reduction in future I-710 traffic volume

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Initial Feasibility Analysis Results Overview

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Objectives of the IFA

- **Assess feasibility of meeting mobility goals of Purpose and Need under different port cargo growth scenarios**
  - Select port cargo growth scenario for screening and final alternatives analysis
- **Assess feasibility of meeting mobility goals with TSM/TDM/Transit**
- **Assess feasibility of meeting mobility goals with Enhanced Rail and Alternative Goods Movement Technology**

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Review of Scenarios and Alternatives

- **3 Port Cargo Growth Scenarios (2035)**
  - High growth without near-dock terminal expansion
  - High growth with near-dock terminal expansion
  - Low growth
    - Sensitivity test for new warehouse locations in region
- **Alternatives**
  - Baseline (No-Build)
  - TSM/TDM
  - Alternative Goods Movement Technologies

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Criteria for Selecting Cargo Volume Scenario

- Reasonable assumptions about future demand based on economic analysis
- Incorporates improvements that are funded/programmed or based on sound commercial interests (for private investments)
- Not biased to justify higher levels of infrastructure investment

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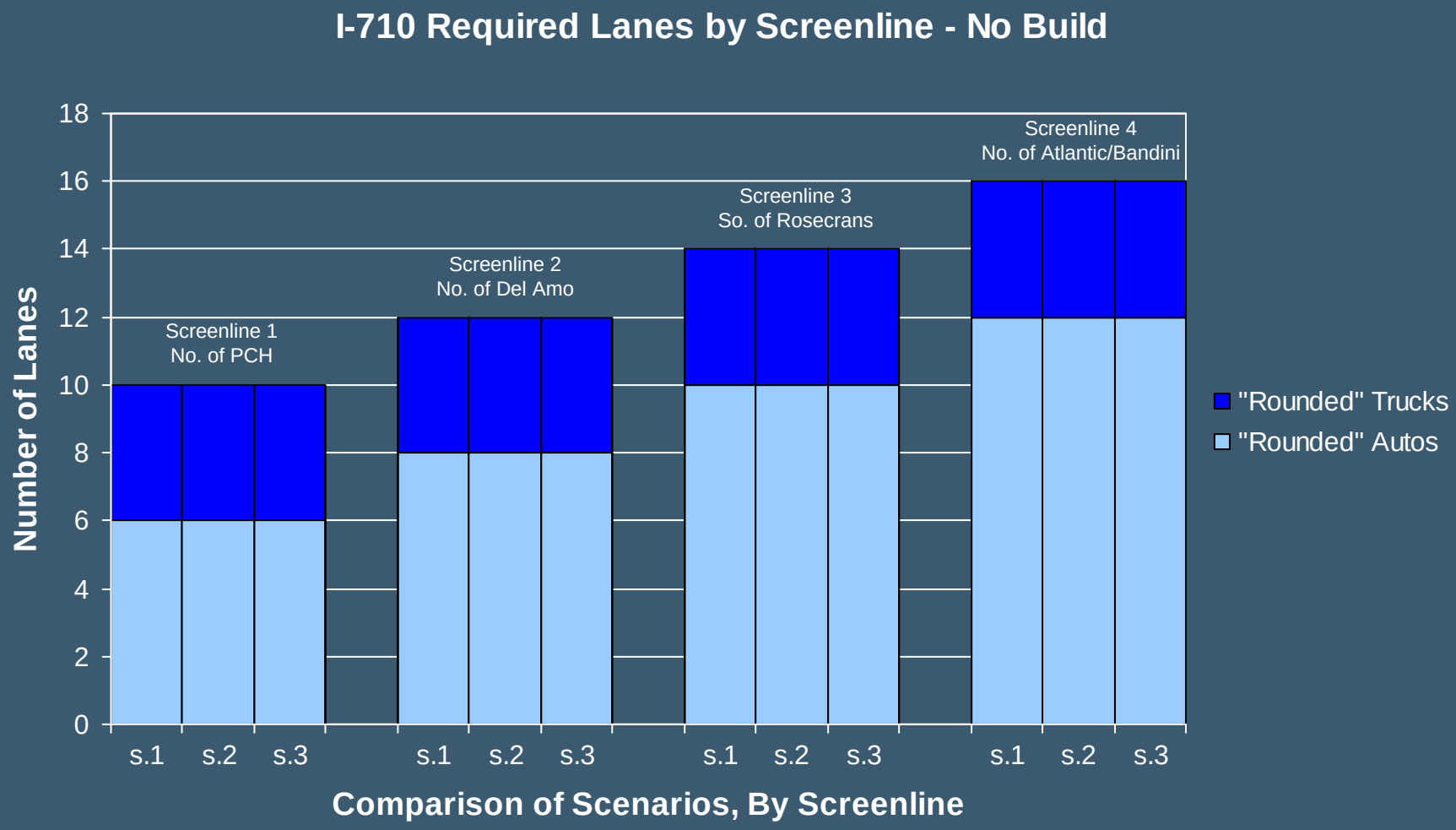
Criteria for Selecting Cargo Volume Scenario
(Continued)

- Reasonable probability of developing a project to mitigate impacts
- Consistent with a conforming RTP
- The scenario is an expectation of likely future demand
  - The selection of the scenario should not be viewed as picking a "solution" to solve growth related problems

Lane Requirements

Results



Scenarios: S.1: Port High Growth, no SCIG S.3: Port Low Growth
S.2: Port High Growth, with SCIG

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Cargo Growth Scenario Recommendation

High Growth Scenario w/o Expanded Near-Dock

- Reflects reasonable assumptions about future demand
  - Options for addressing rail constraints with new intermodal terminals and "trucking around" mainline constraints
- Only includes marine terminal expansion projects assumed in SCAG RTP
- Almost no difference in capacity requirements
  - Conservative with respect to impact mitigation
- TAC has reviewed this material and is recommending this scenario to the Project Committee for concurrence

Initial Feasibility Analysis

Assess Ability of TSM/TDM/Transit and Alternative Technology to Meet Mobility Objectives

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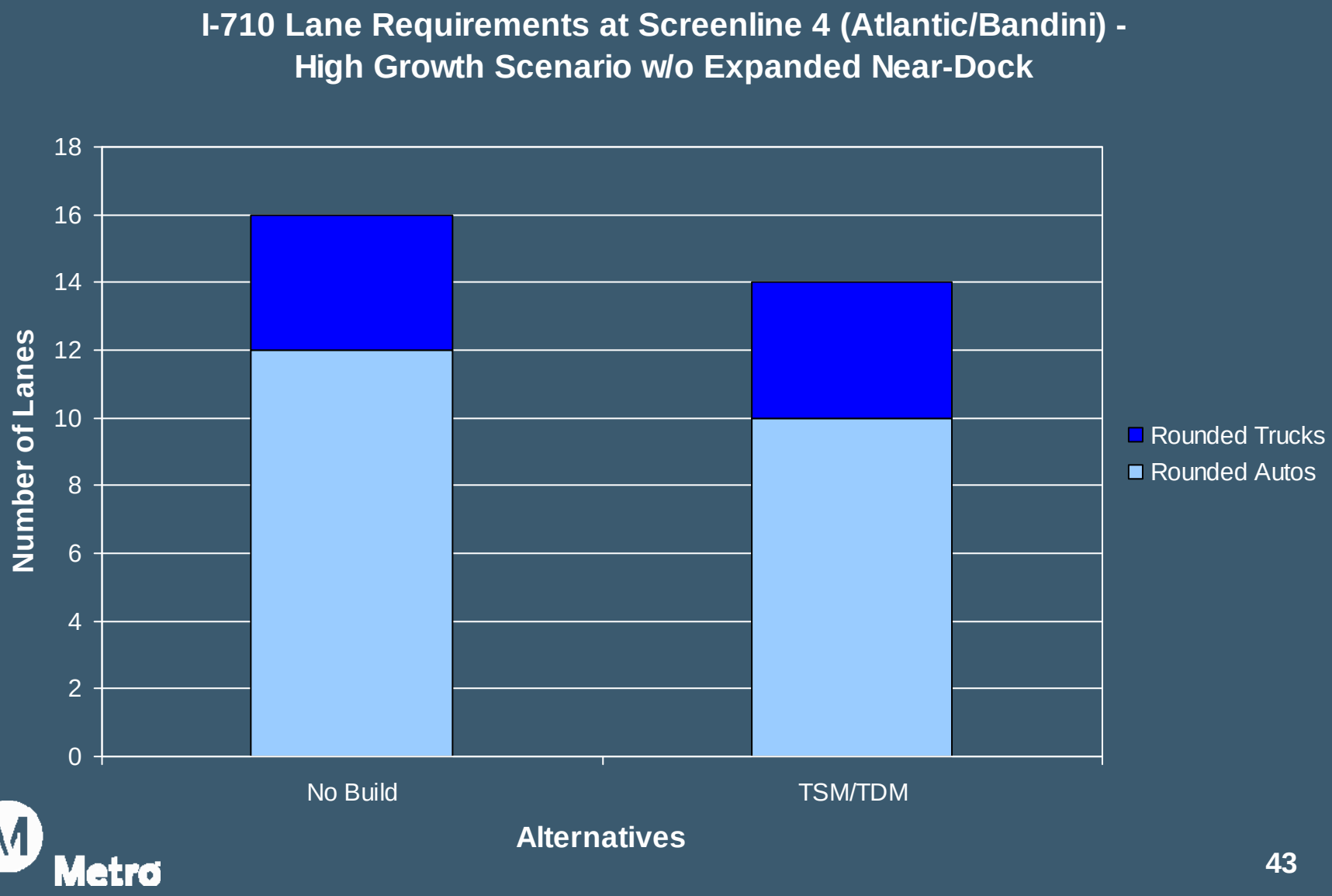
TSM/TDM/Transit



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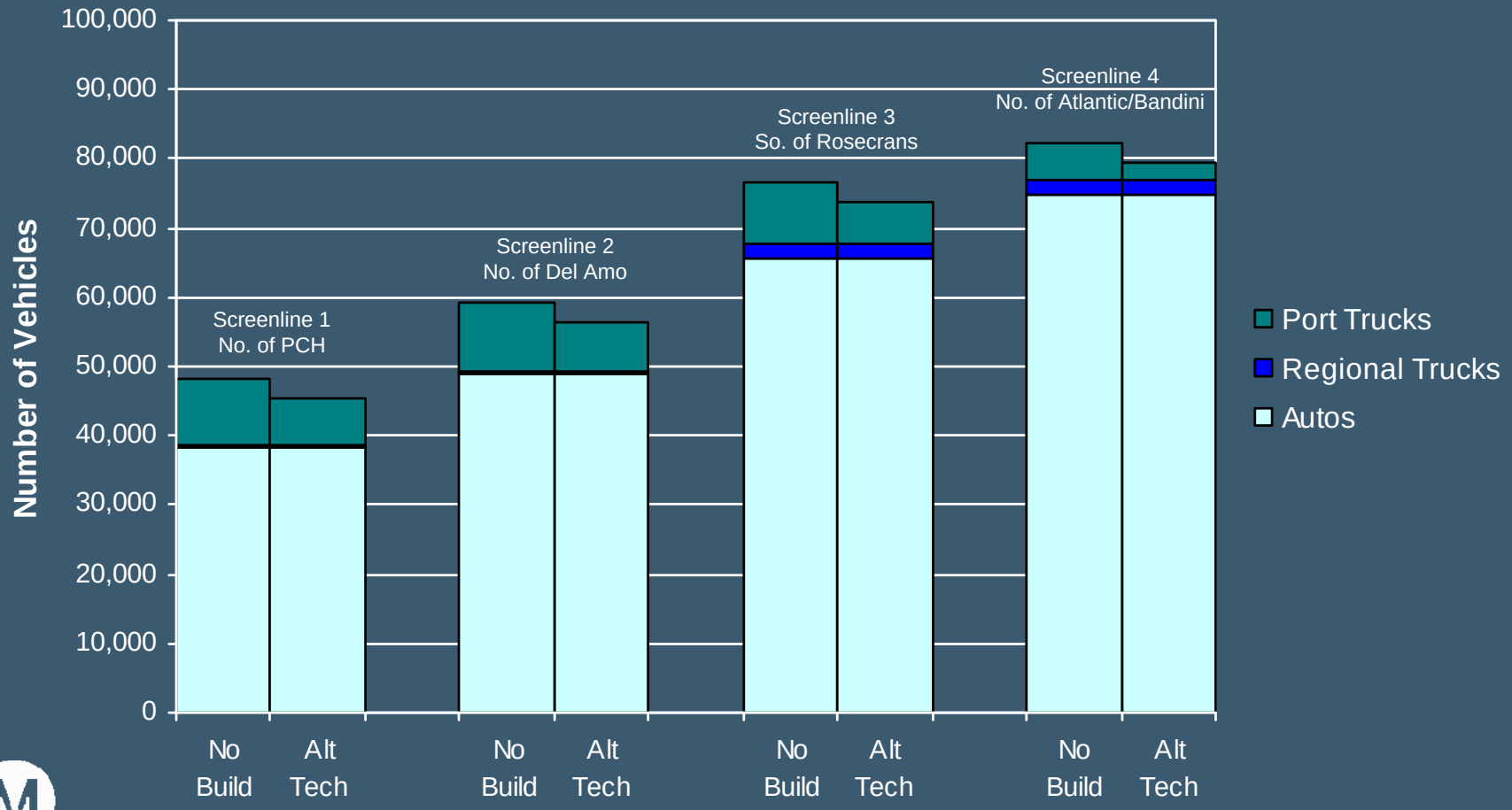
Alternative Technology Traffic Impacts

(Fixed Guideway)

I-710 PM Peak Period Traffic by Screenline

(Cargo Scenario 1)



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Alternatives Screening Methodology Overview

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Alternatives Screening

Purpose:

To identify the alternatives to be analyzed in detail in the EIR/EIS

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Initial Set of EIR/EIS Alternatives

1. No Build
2. Transportation System Management/Transportation Demand Management/Transit
3. Goods Movement Enhancement by Railroad and/or Advanced Technology
4. Arterial Highways and I-710 Congestion Relief Improvements (includes Alternatives 2 and 3(Rail))
5. Mainline I-710 Improvements (includes Alternatives 2, 3(Rail) and 4)
   A. 10 General Purpose Lanes or,
   B. 8 General Purpose Lanes w/ 1 carpool lane in each direction (total of 10)
6. Alternative 6 (includes Alternative 5 + freight corridor of 4 lanes)

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Screening Methodology

- **Will focus on addressing 10 key goals**
- **Both qualitative and quantitative screening measures to:**
  - Highlight major differences among alternatives
  - Weigh relative benefits, costs and impacts
  - Determine varying levels of performance

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Screening Criteria

- Improve air quality and public health
- Improve traffic safety
- Minimize design deficiencies
- Address projected traffic volumes
- Address projected corridor growth

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Screening Criteria (Continued)

- Minimize Right of Way Impacts
- Minimize Section 4(f) Impacts
- Reduce Energy Consumption
- Ensure Environmental Justice
- Promote Cost Effectiveness

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Screening Methodology

- Sketch level of analysis
- Traffic forecasting screenline tool
- Quantitative and qualitative measures
- Results summarized in a screening matrix
- Compare alternatives

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Next Steps

- TAC is recommending screening criteria to Project Committee for concurrence
- Screening results to be presented for Project Committee concurrence at April meeting

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