ZERO EMISSION CONTAINER MOVEMENT SYSTEMS

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Transportation Solutions (or not!)

“You’ll appreciate this – it’s cutting-edge technology.”
Ports ZECMS Project

Objectives

• Develop system with technologies & creative financing plans via Private-Public Partnership (P3), utilizing Design, Build, Finance, Operate, and Maintain (DBFOM) framework

• Reduce drayage truck traffic & emissions

• Maintain or improve cargo velocity and productivity

• Provide system that interfaces with terminal operations & intermodal rail facilities
Zero Emission Container Movement Systems (ZECMS)

- Joint POLA/POLB ZECMS initiative for potential demo project of moving containers from ports to near-dock railyards
- I-710 Corridor EIR/EIS: includes evaluation of alternative technologies for moving containers from ports to Hobart/East L.A. railyards
POLA ZECMS Initiative

• RFP for Proof of concept Fall 2009

• Currently reviewing proposals
I-710 Corridor ZECMS Market Analysis

Assumptions:

• An alternative technology could serve part of the projected 2035 near-dock and off-dock intermodal container markets

• An alternative technology could also serve parts of other geographic markets

• The on-dock market will continue to be served by rail

• An alternative technology in the I-710 Corridor could be considered an initial segment of a regional network

• No intermediate stops for the Automated Fixed Guideway system
I-710 Corridor ZECMS Technologies

Zero Emission Trucks
I-710 Corridor ZECMS Technologies

Zero Emission Trucks

• Lowest Cost
• Maximum flexibility
• Utilizes a combination of existing technologies
• Utilizes existing roadway system
• Does not require additional intermodal yards
• Open to a range of propulsion technologies
  – Electrified motor
  – Linear induction
  – Hybrid
I-710 Corridor ZECMS Technologies

Zero Emission Trucks

• **Zero Emission Trucks** (Are able to operate on a truckway and on a conventional highway.)

  - Electric Motor / Wayside Power
  - Electric Motor / Battery Power
  - Electric Motor / Wayside and/or Battery Power
  - Hybrid Electric/Diesel
  - Hybrid Electric/LNG
  - Linear Induction / Diesel
  - Linear Induction / Electric Motor / Battery Power
  - Linear Induction / LNG Power
I-710 Corridor ZECMS Technologies

Automated Fixed Guideway
Magnetic Levitation

Electrified Conventional Rail
Exclusive Contact Guideway

Automated Load Unload Station
Electric Cargo Conveyor System
Many companies are promoting this technology family
   - Currently unproven

Not flexible
   - Limited markets

Requires expanded on-dock and near-dock intermodal yards

Requires extensive network of collection and distribution guideways

High cost

May become feasible as the technology advances
Potential Fatal Flaws

- Fixed Guideway Family
  - Cost
  - Serves limited market
  - Expansion limitations
  - Loading/unloading space requirements
  - Level of research and development required
I-710 Corridor ZECMS Implementation Phasing

1. Truck Lanes
2. Low Emission Diesel Trucks
3. Zero Emission Trucks
4. Fixed Guideway
I-710 Corridor ZECMS Concept Plan

Zero Emission Truck

Fits within the available I-710 freeway right-of-way
Both at-grade and elevated
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