Zero Emissions Container Mover System Evaluation

Status Update

presented to
The Port of Los Angeles Public Meeting

September 6, 2007
Project Goals

- Evaluate Zero-Emission Cargo Conveyance Technologies for Possible Applications at the Ports of Los Angeles and Long Beach
  - Analyze systems for short-haul applicability (Ports to ICTF / proposed SCIG)
  - Capacity of ≥ 5,000 containers per day

- Identify Technologies That Are Market Ready and Technically Appropriate for Fully-Functioning Service Demonstration
Project Scope of Work

- Task 1: Conduct Technology Overview
- Task 2: Establish Detailed Scenarios
- Task 3: Define Performance Specifications and Evaluate Systems in Comparison to Baseline Technologies
- Task 4: Evaluate Implementation Tools and Issues
- Task 5: Optional - Development of RFP for Demonstration
Baseline Technologies

- Conventional drayage with cleaner 2007 Diesel Emissions Trucks
- Conventional drayage with LNG trucks
- Conventional drayage with electric trucks
Task 1: Conduct Technology Overview

Candidate Technologies

- Identify available Technologies
  - Industry Knowledge
  - Vendors Identifying Themselves to Ports or Consultants.

- Information Compiled via Research and Interviews
Task 1: Conduct Technology Overview

14 Alternative Technology Proponents

- Electric Cargo Conveyor System- General Atomics
- Environmental Mitigation & Mobility Initiative- American Maglev Technology
- Magnetic Levitation- Transrapid
- Safe Freight Shuttle- Freight Shuttle Dev. Corp.
- Air Rail- SkyTech Corporation
- Southern California Guideway- Whelan & Assoc.
- Cargo Rail- MegaRail Transportation Systems
- Rail Motor- Launch Point Technologies
- LIM-Rail and MagRail- Innovative Transportation Systems
- Automated Shuttle Car System- Automated Shuttle Car System
- Container Port Skid- Tubular Rail
- Container-Express- CitiCar
- AirHeLo- Teeco International
- Aeroscraft- Worldwide Aeros Corporation
Task 1: Conduct Technology Overview

Two Categories of Criteria

Firm Capabilities

• Has developed a marine container transportation system that can reach prototype in 5 years

• Proponent has built “proof of concept” prototype

• Proponent has identified strategic partners

• Has developed other commercially viable transportation products

• Has a marine terminal transportation business plan

• Can provide at least 2 years of financial statements

Feasibility of Technology

• Using commercially proven systems or components

• Status of technology concept:
  (a) conceptual idea or
  (b) conceptual design, existing design, existing components and/or existing system:
    - Propulsion system
    - Command and control
    - Loading and unloading
    - Vehicles
    - Guideway switching
    - Sorting and storage

• Operating plan

• Zero emission technology
Task 1: Conduct Technology Overview

Preliminary Evaluation

Feasibility of Technology vs. Market Readiness

- Container-Express
- RailMotor
- Transrapid
- Southern California Guideway
- Safe Freight Shuttle
- LIM-Rail and MagRail
- CargoRail
- Automated Shuttle Car
- Electric Cargo Conveyor
- American Maglev
- AirHelo
- Aeroscaft

MORE FEASIBLE
MORE READY
LESS FEASIBLE
LESS READY

The Port of Los Angeles

The Port of Long Beach
Next Steps

- Develop Performance Specification to Guide Detailed Analysis and Comparison of Technologies to Baseline Technologies

- Further Task 1 Analysis to Assess Application-Specific Engineering and Costs

- Compare Alternative Technologies with Conventional / Clean Truck Drayage Technologies
  - Costs
  - Emissions
  - Congestion