

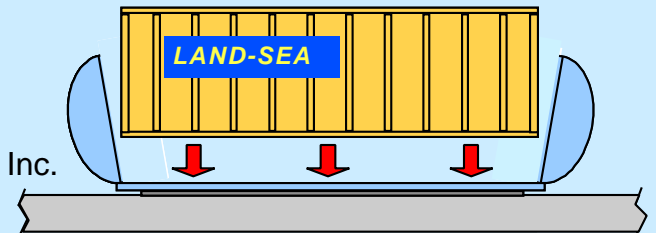
# ***CargoRail<sup>™</sup>* Heavy Cargo Container Shipment Option**

**Near-term & Affordable Solution for  
Gateway Cities CoG to the  
Cal 91/I-605 Freeway Truck Problem**



**Reduced Noise  
& Air Pollution  
at a Cost You can  
Afford**

MegaRail® Transportation Systems, Inc.  
Fort Worth, Texas

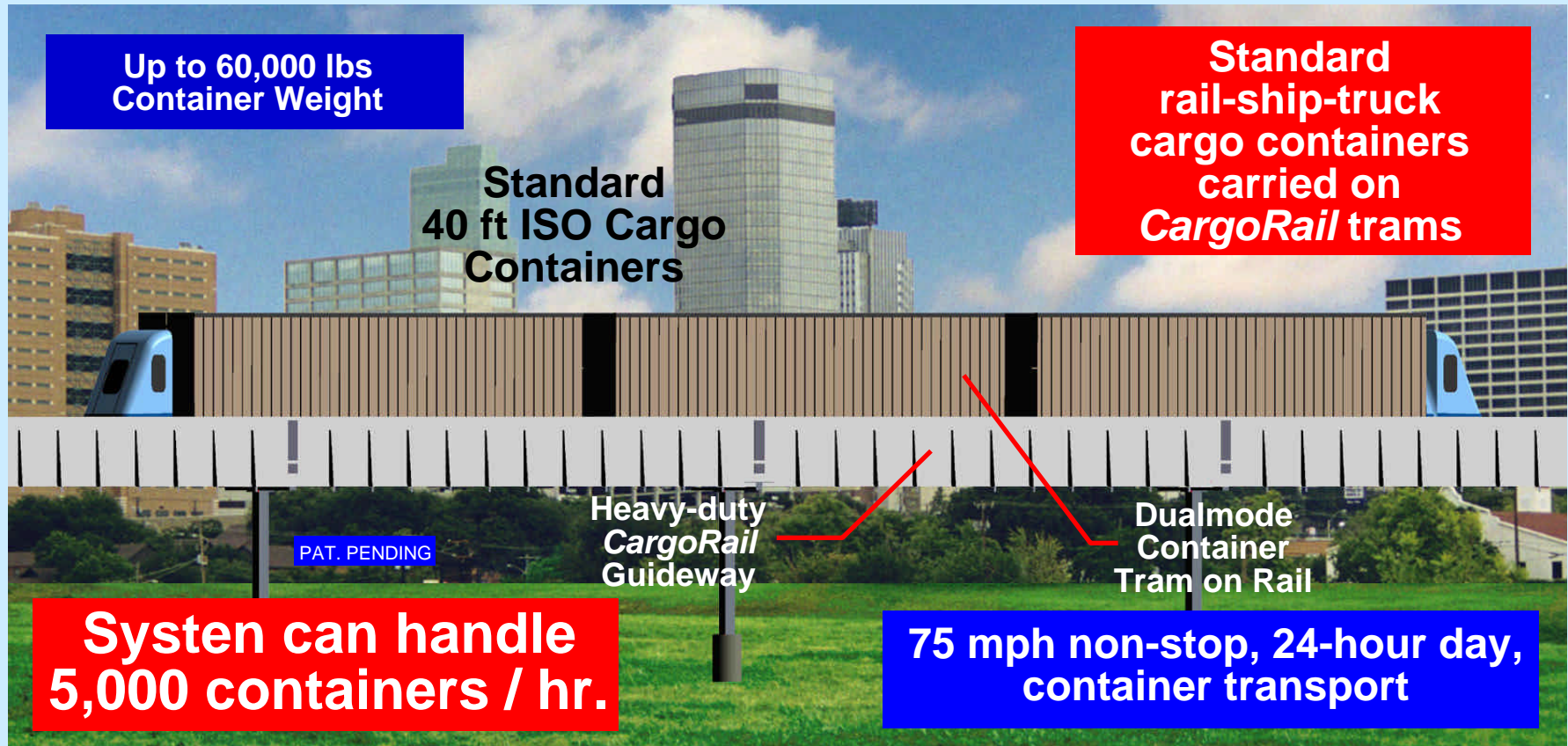


U.S. PATS. 6,039,135, 6,401,625, 6,435,100, 6,615,740, 6,742,458, 6,834,595 & 6,837,167  
OTHER U.S. & INTERNATIONAL PATENTS PENDING

© Reg. U.S. Pat. & Tm. Off.

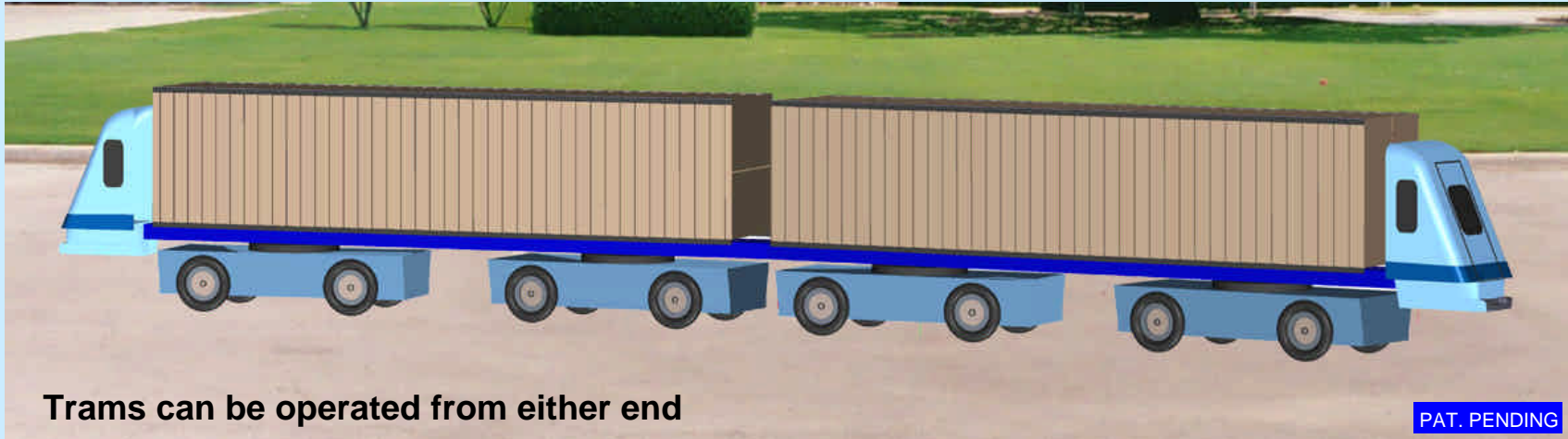
# **CargoRail™ Manual Heavy Cargo System**

Containers on electrically-powered dualmode trams



**Convertible to automated single container carriers**  
( No throw-a-way in conversion )

## ***CargoRail™*** – Dualmode Cargo Tram!



Dualmode cargo tram operates on ground as hybrid – Similar to MicoRail™ tram shown below  
Adds only ramps at port & terminal entry – (No dockside mods.) – Operates on ground as trucks



Smaller MicroRail dualmode cargo tram exits guideway & operates on street in hybrid mode

***CargoRail* dualmode tram similar to tram being prototyped**

## ***CargoRail™* System Risk is Low**

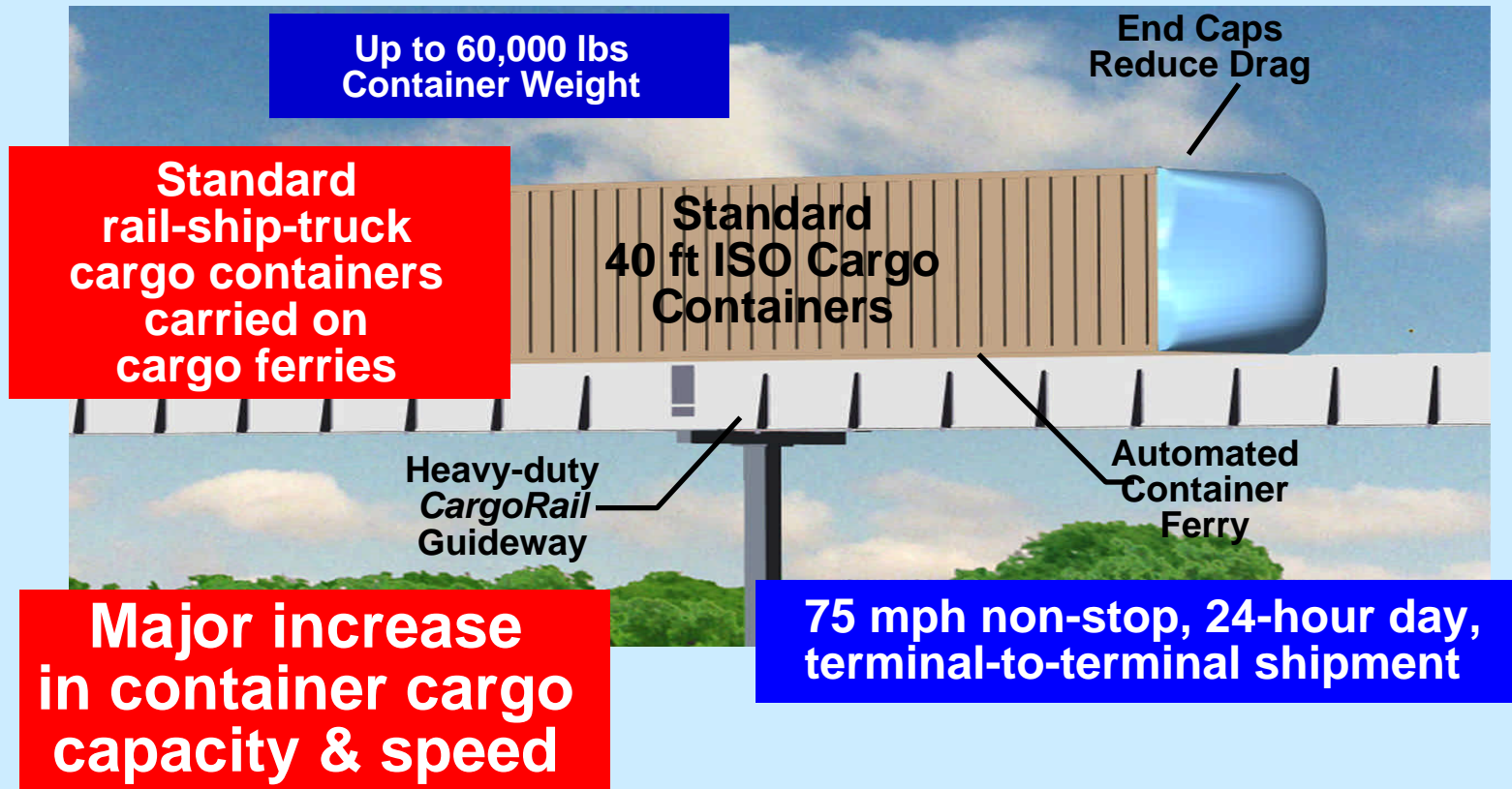
**Current operational prototype project offers full function demo**

- Full-function ***MicroRail™*** prototype **this summer**  
( Demos all technology including dualmode rail & street operation )
- ***CargoRail*** is merely a larger, heavier version
- Electric train-type side rail power delivery
- Heavy-duty electric power steering actuators
- Standard heavy-duty truck tires
- **Electric bus type permanent-magnet hub motors**

**The Low Risk, Low Cost Choice**

# **CargoRail™ Automated Heavy Cargo System**

**Heavy-duty lines for busy cargo routes**



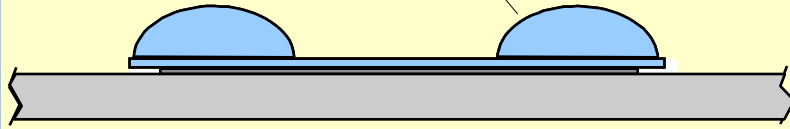
- **Over 5,000 containers/hour/direction rail capacity**



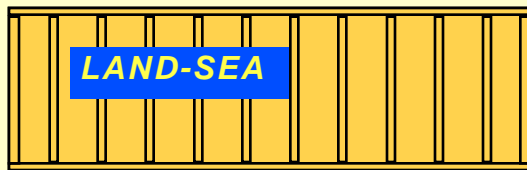
# CargoRail™ Ferry Loading

## Fast Loading of Standard Containers

Ferry End Caps Fold  
Down for Low Drag

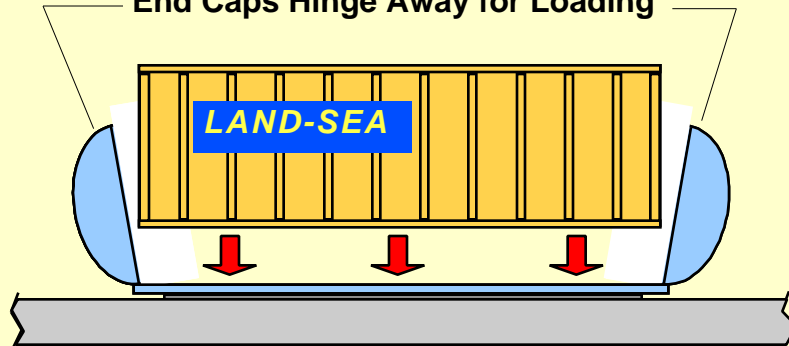


Empty Heavy Cargo Ferry



Standard Land-Sea Cargo Container

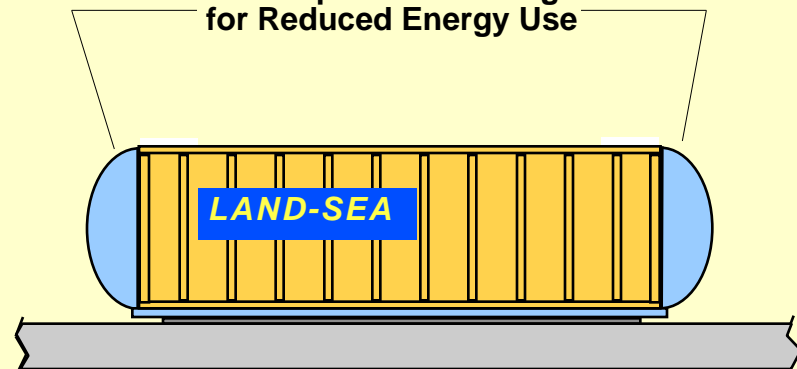
End Caps Hinge Away for Loading



Cargo Containers Loaded onto Ferry

- Empty ferry has low drag for low energy operation
- Standard land-sea cargo containers are easily loaded
- End caps streamline loaded ferry for reduced energy

End Caps Reduce Drag  
for Reduced Energy Use



Loaded Ferry on Guideway

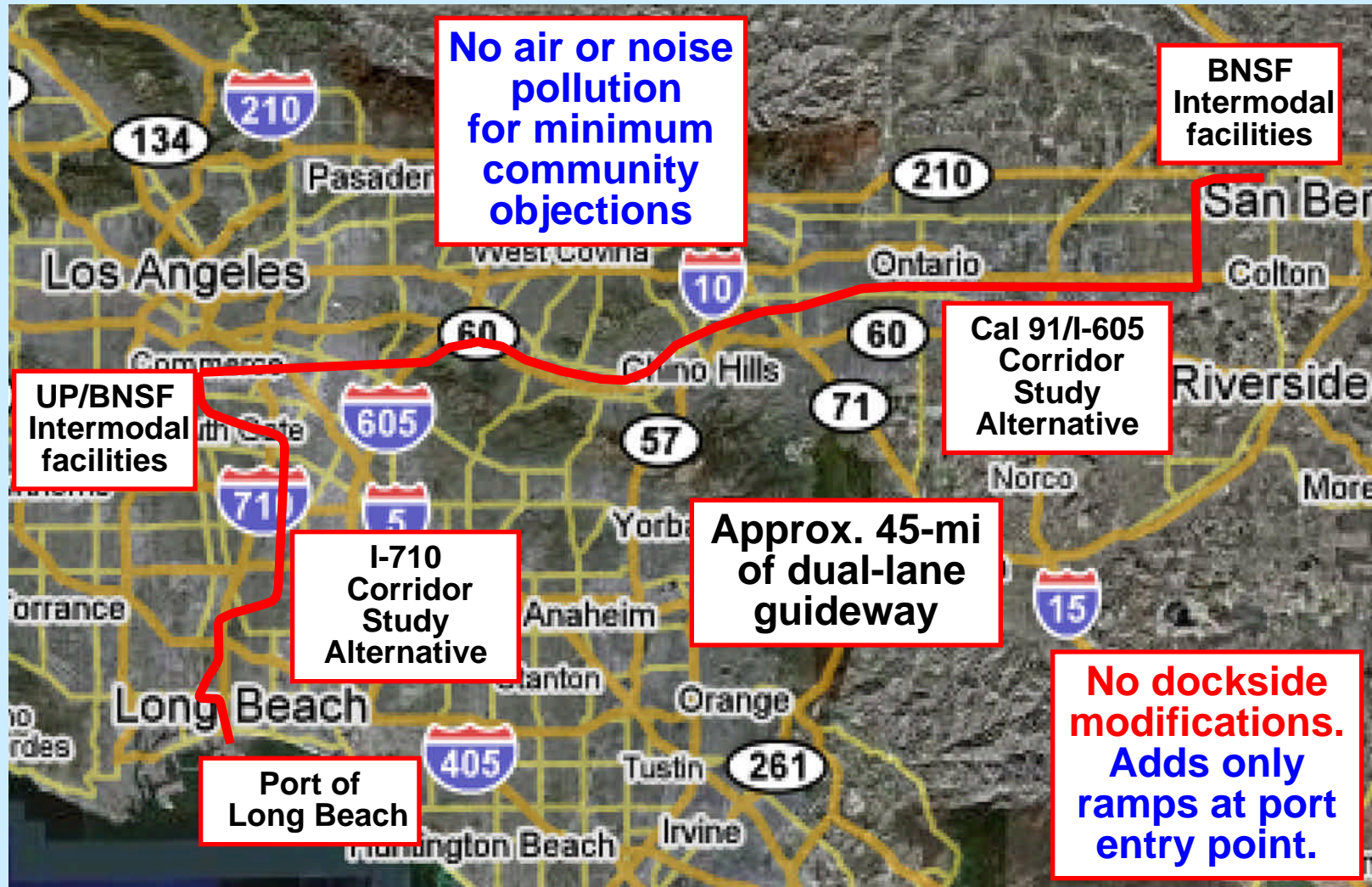
## **CargoRail™ Capability**

### **Dedicated Heavy Cargo Lines**

- **Heavy-duty Guideway** – Over either railway or public ROW
- **Electrically Powered** – No air pollution!
- **Ferries Load and Unload at Container Terminals**
- **Dualmode Hybrid Operation for Dockside Pickup & Intermodal Facility Drop Off**
- **CargoRail Capacity** – Over 5,000 containers per hour / dir.
- **Factory Built Steel Rail Tubes & Support Posts**

# Possible Long Beach Port *CargoRail*™ Line

Uses existent railroad right of way – **No impact on rail lines**

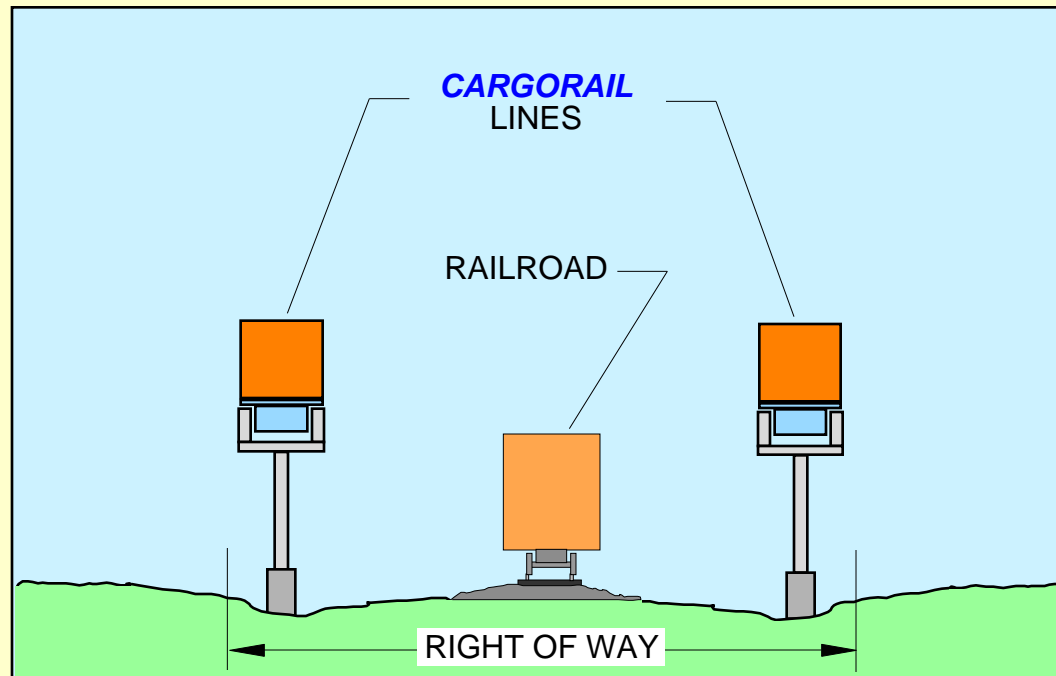


*CargoRail*™ is a trademark of MegaRail Transportation Systems



# **CargoRail™ Installed Along Railway**

**Lines beside Railway Line**



- Use current railroad right of way
- **No impact on railroad use**
- Minimum railroad disruption for installation
  - Rapid installation of factory-built parts
  - Concrete piers – **only on-site construction**

## **CargoRail™ Line**

### **Cal 91 / I-605 route**

- **Total Installed Guideway**
  - Typical 45-mi dual guideway = 90-lane-mi
  - Some special street/freeway/river spans may be required
- **Total Carriers – 2,800**
  - *CargoRail* = 75-mph – Average urban trucks = 35-mph
  - *CargoRail* carrier capacity per hour = 2.1 that for truck
  - *CargoRail* carriers to replace current 6,000 trucks = 2,800
- **CargoRail System Cost – Comparable to a railroad cost**
- **Railroads ROW Overhead Use Cost – ???**

**Lowest cost solution to Cal 91/I-605 Truck Problem**

# Potential for Self-funding

**Revenue Bonds - No State or Federal Tax Dollars**

- **State or Local Revenue Bonds Fund Construction**
- **Bond Retirement from Revenue**
- **No Federal Legislative Action Necessary**
- **Low Risk** - Shippers see lower cost and faster service
- **Operation and Maintenance from Revenue**

**Low Risk, No Cost to Taxpayer Solution!**

## **Suggested Action**

**Contract for low-cost demo project**

- **Build & Install 1/2-mile demonstration guideway**
- **Build one, three-carrier dualmode tram**
- **Use demo system to prove ground & rail operation**
- **Complete demo project within two years**

**Low Risk, Low Cost Project**



# Dualmode *CargoRail* vs Truck Performance

Major gains with low risk & cost

- **Three Times** as Many Containers per Load
- **Approx. 40% More Throughput from Speed Increase**
- **Increased Container Security**
- **60% Fewer Drivers** — Reduce Labor Shortage & Cost Problems
- **100% Cut in Container Trucks to Intermodal Facility**

## ***CargoRail™* Major Benefits Summary**

**Solve critical large truck and port capacity problems**

- **Reduce Major Air Pollution Source** – Heavy trucks
- **Increase Highway Capacity for other Traffic**
- **Increase Container Security & Decrease Labor**
- **Decrease Highway Maintenance Cost**
- **Increase Safety & Reduce Traffic Delays**
- **Increase Port Capacity without Costly Expansions**

**All this with one single step!**

## Proven Industry Team

### MegaRail Transportation Systems

- System Design & Integration
- Prime Contractor
- Owner & Operator (In some cases)

### Austin Bridge

- Site Engineering Design
- On-site Guideway Assembly
- Pier & Guideway Installation

### Clark's Precision Machine

- Vehicle Production
- Guideway Production
- Station Production

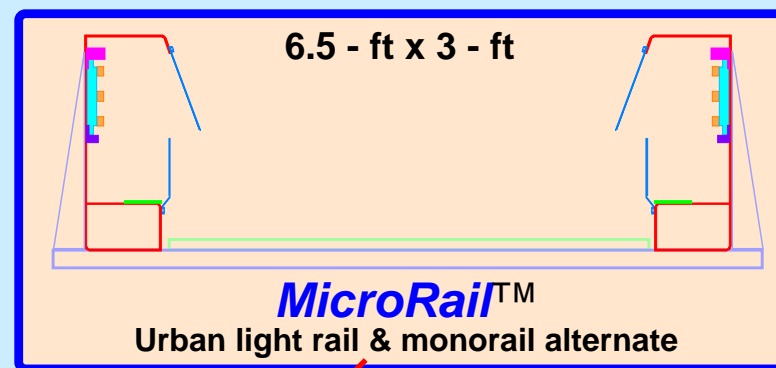
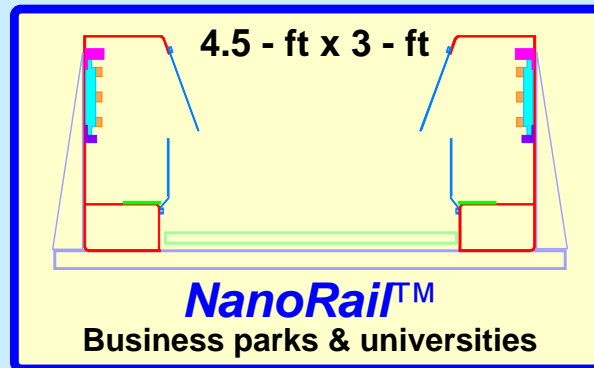
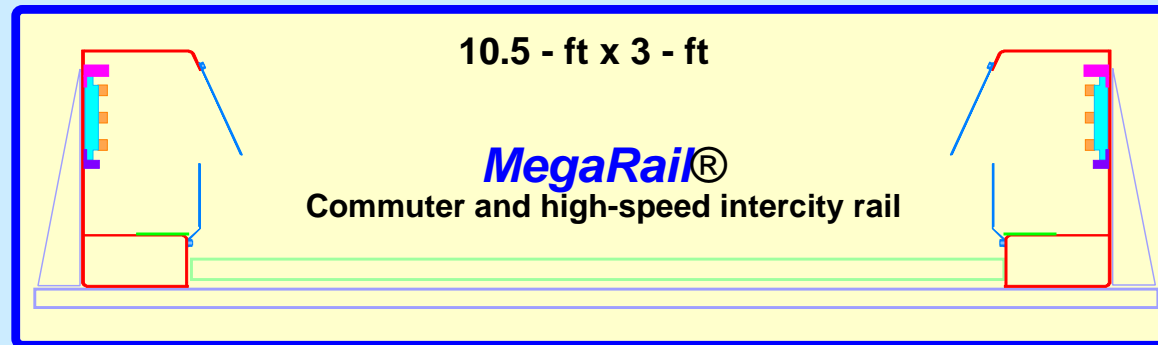
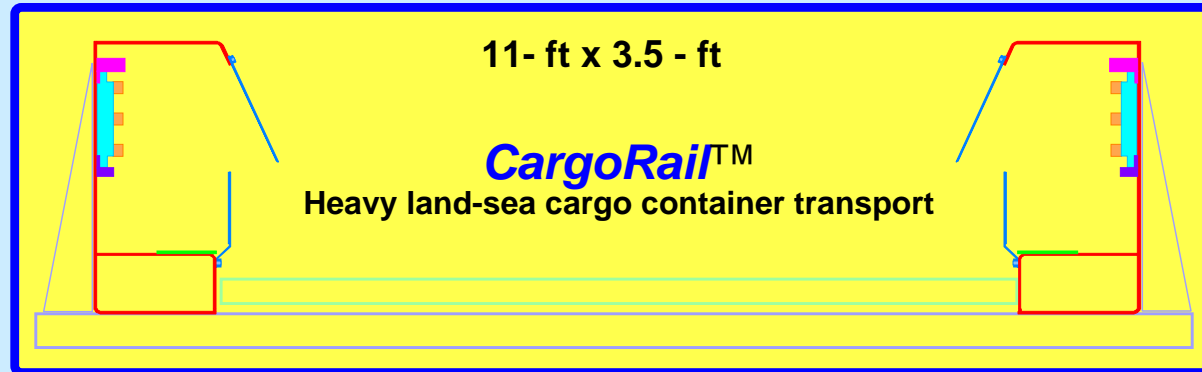
**Austin Bridge, Clark's  
& Micrin are well-  
established companies  
with proven records &  
excellent D&B ratings**

### Micrin Technologies

- Electronics Production
- Electrical Harness Production
- Sheet Metal Parts Production

**Reduced Risk to Customer**

# *CargoRail* from Family of Related Systems

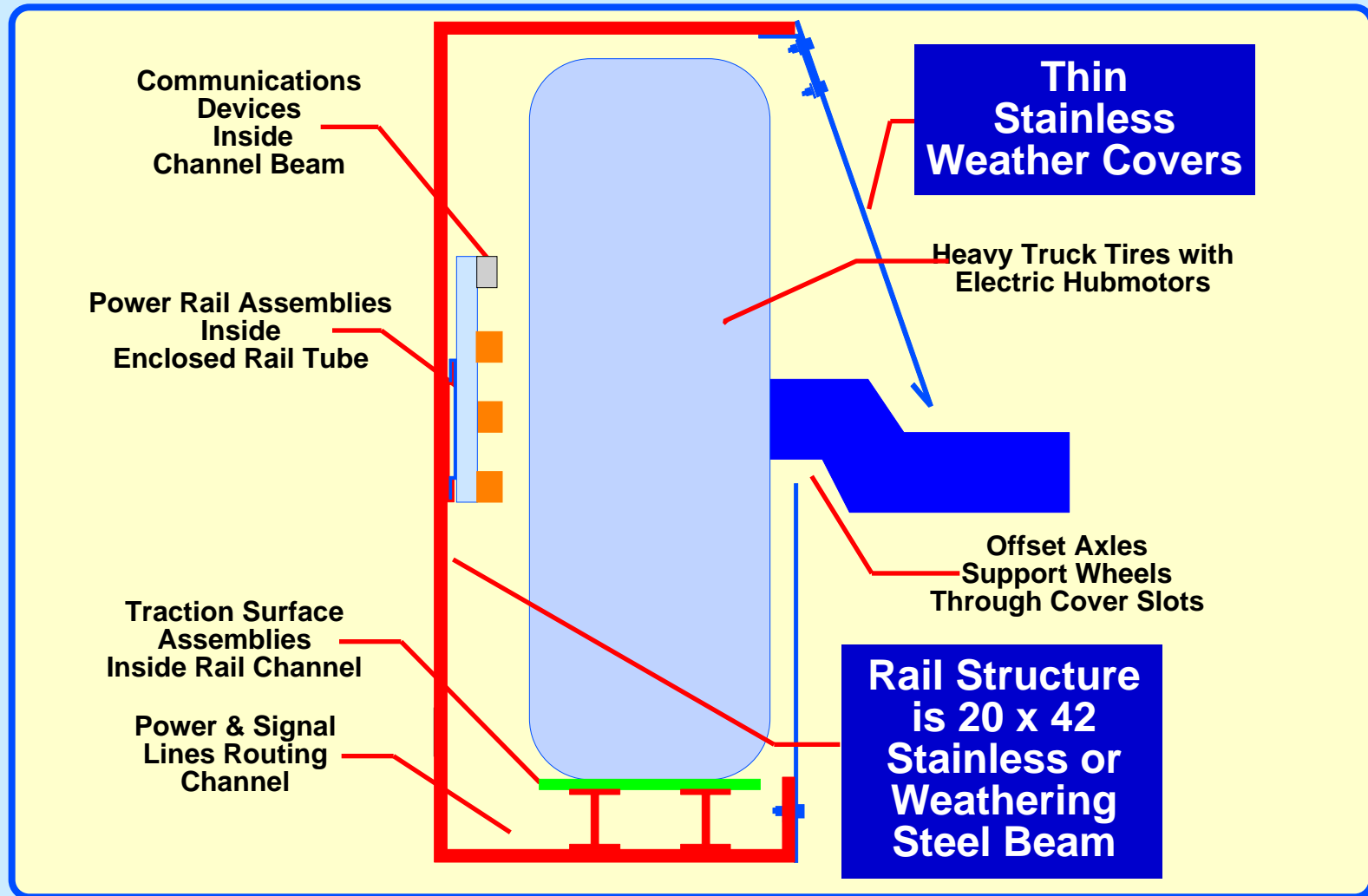


Production prototype now under construction



# Unique *CargoRail*™ Features

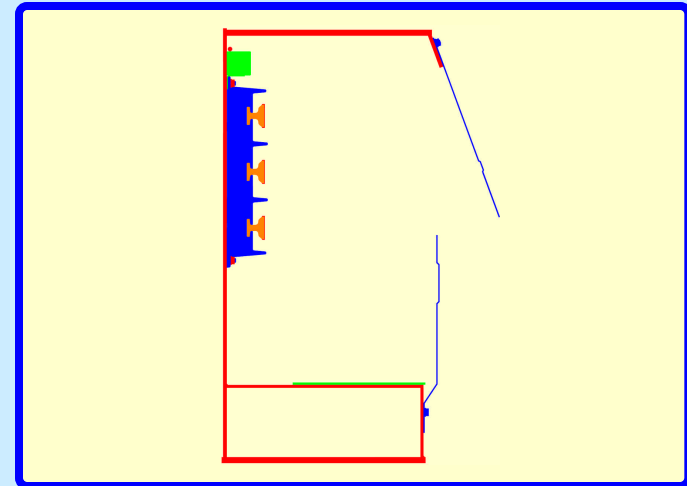
Simple, Light-weight Design Assures Low Cost



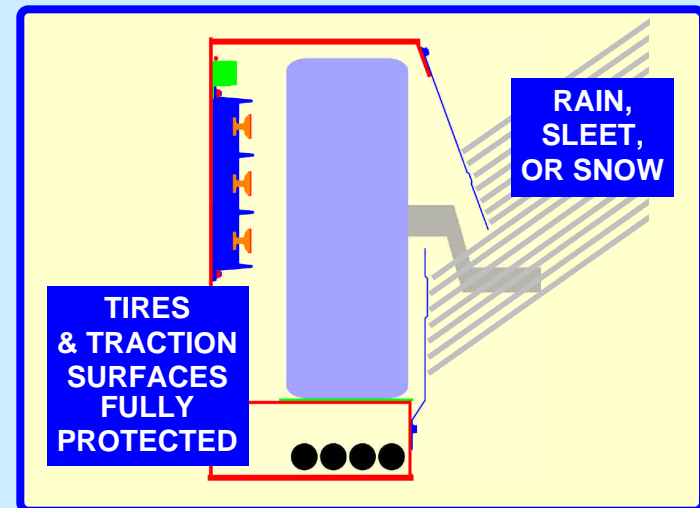
Factory-built Rail Components Enable Rapid Installation

# Low-cost, All-weather, Enclosed Rails

- **Low-cost guideway rails**
  - Formed from flat steel
  - Machine-welded construction
  - **Low material & labor costs**
  - Bolt-in electric power rails
  - Truck or rail to installation site
- **All-weather, enclosed rails**
  - **Wheels & power collectors inside**
  - **Protected electric power rails**
  - Dry & ice-free traction surfaces
  - **Safe operation in any weather**
  - **Whisper-quiet operation**



Single guideway rail cross-sections



# Technical Summary

Unique **new** combination of **off-the-shelf, proven technology**

## Enclosed steel guideway rails - US Pat. 6,039,135

- Simple welded steel factory fabrication
- Standard electrical side power rails

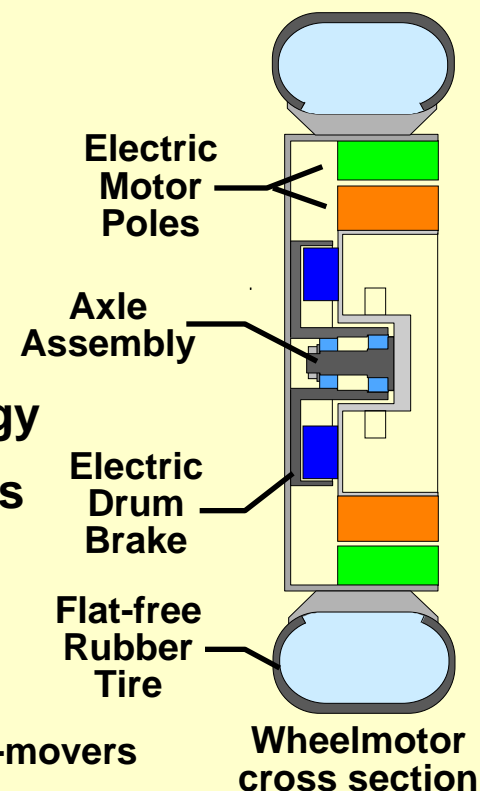
## Flat-free tires – Current tire technology

## Permanent-magnet electric motors

- Current commercial brushless-motor technology
- Electric motor wheels – current electric vehicles

## Truck-based steering & switching

- Truck-type steering with electronic control
- Switching – **No moving rails** – Used in some people-movers



***Only the combination & guideway are new!***

## **CargoRail Summary**

### **Performance – Beats heavy trucks or any other system**

- Up to 5,000 container per hour per direction rail capacity
- Shorter trip times • **Truck-type** hill capability
- **No dockside installations** – Dualmode trams operate as trucks

### **First service – Within 30 months! – ( Train-type manual control )**

- Local & State Funding – **No Federal funding delays**

### **Total system cost – 20 – 30% of other system cost**

- Local funding and control • **No on-going operation subsidies**

### **Environment friendly – Zero emissions**

- No building or operating impacts to business or street traffic
- No earth moving • No added right-of-way • **Noise free**

**Heavy truck alternate – Available NOW**

• **Low Cost**  
• **Low Tech**  
• **Low Risk**





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