ROAM®

ROAM Transport Systems, Fort Worth, Texas

Light Rail & Monorail Problems

Major guideway, cost, & schedule problems

- **Long and disruptive installation**
- **Loss of traffic lanes**
- **Noise & visual impacts**
- **High cost**
- **Long-term traffic disruption for LRT**

Serious LRT Guideway Problems

Not light weight – Must support 149,000-lb cars

- **Heavy-duty bridge structures needed for elevated track**

LRT Guideway – Railroad-type grade, ballast, rails & cross-ties

Right of way – Dedicated ROW often needed – 44-ft for dual track

- **LRT – 25-ft on city streets** (Typical) **Plus side trolley wire posts**
- **LRT – On-street lines often take two traffic lanes**

Heavy-duty & costly structures

Massive support columns

Multiple traffic lanes lost by LRT

Major LRT Station Problems

Typical characteristics

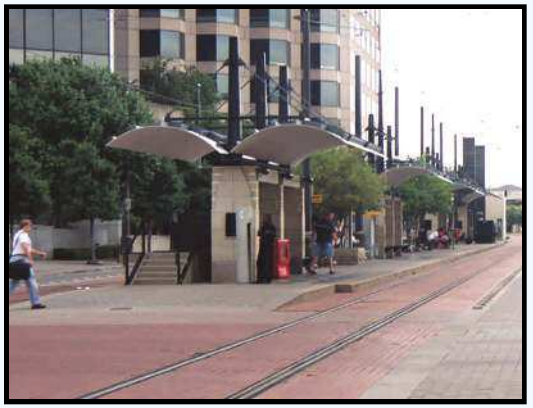
- **200-ft platforms** (Handle 2-car, 200-ft trains)
- **Open platforms** (No passenger protection from trains)
- **Need additional right of way**

Elevated stations – Usually large and expensive

Street stations – <u>Take two to three traffic lanes</u>

Large & costly structures

Open Passenger Platforms



Stations can block traffic lanes

Heavy Monorail Guideway Problems

Heavy piers & beams – Must support 100,000-lb cars

- **Massive concrete piers to support monorail beams**

Guideway – Necessary escape walkways now block sky

Right of way – ROW for piers & trains needed

- **25-ft over city streets** (Typical)
- **On-street support piers - Typically 6-ft x 4-ft**

Heavy-duty & costly structures

Massive support columns

Large amount of sky blockage

Monorail Station Problems

Typical characteristics

- **200-ft platforms** (Handle 4-car, 190-ft trains)
- **Often need additional right of way**

Elevated stations – Usually large and expensive

Large & costly structures

Critical Cost & Time Impacts

Elevated LRT & Mononrail problems

High initial cost – $130 to $190 M / mile (USD)

Las Vegas Monorail - 3.9-mi ($650M) ($166M/mi)

Next 2.4-mi est. $454M ($189M/mi)

High O&M costs – 15 - 25% from fare box - Positive ROI impossible

Long wait time – Often 6 to 12 years

- **Heavy construction required**
- **Major traffic disruptions**

Installation & Traffic Impacts
Elevated LRT & monorail problems

Streets – Serious traffic disruption

- **Streets torn up for months**
  - **Traffic rerouted**
  - **Business failures during construction – Street blockage impact**
- **Long-term traffic disruption – Lost traffic lanes impede flow**

Right-of-way

- **May require tearing down homes and businesses**
- **May require extensive utility relocations**
- **Environment damage**
- **Noise, visual & drainage impacts**

Solution AVAILABLE NOW
to Mass Transit Problems

***MegaWay*™ Very High-Capacity**
Elevated Mass Transit

Better mass transit in less time and at less cost!

MegaWay Very-high-capacity Mass Transit is Available

Very-high-capacity elevated mass transit

- **Dedicated elevated guideway**
  (10.5-feet wide - 36-inch high)
- **50-foot turn radius**

24,300 people / hr / direction

- **With 200-foot (LRT-typical length) platforms**
- **Manual train operation – Upgradable to automatic**

(At-grade LRT capacity = 5,220 pphpd)

30-passenger cars - 53% of passengers seated

10-car trains - Capacity increases with longer trains

Superior Performance

Performance

- **65-mph speed – For short trip times!**
- **Exceptional passenger capacity**
  - **Up to 25,500 pphpd (300-ft stations & 15-car trains) – More with longer stations**
- **Short wait times – As short as 42 seconds**

(Typical time for conventional mass transit is much longer)

Go-anywhere (Including up hills) – Cars use rubber tires

MegaWay Mass Transit is Available NOW!

SuperWay™ installation

- ***SuperWay*** **engineering – Immediate start**
- **First production *SuperWay* sections deliver in 12 months**

Train production

- **Start within 12 months**
- **Deliveries within 18 months**

First service within 42 months – (Initial manual control)

No waiting for extensive new development!

MegaWay

Mass Transit

Advanced Design

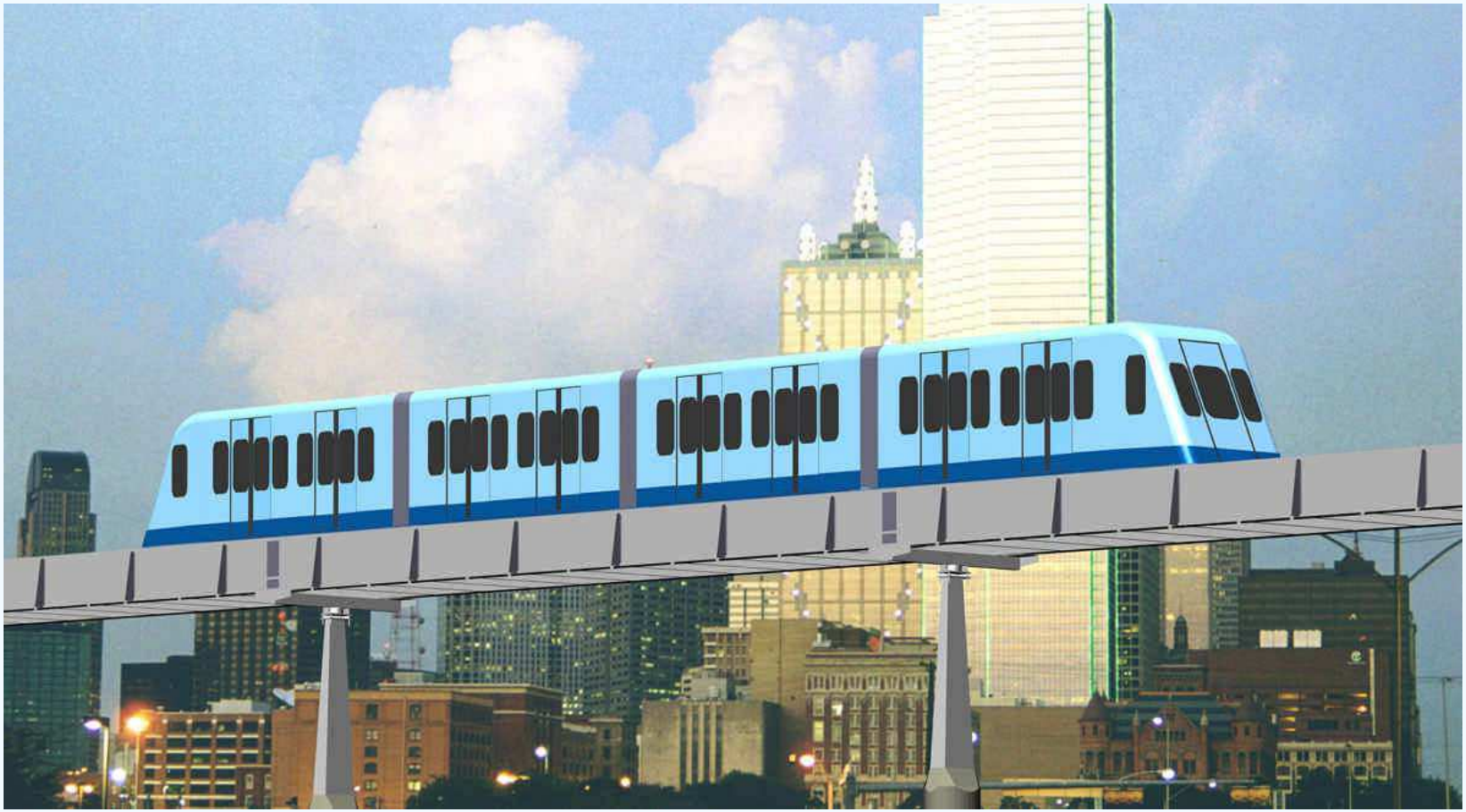
with

Off-the-shelf Technology

for Low Risk

MegaWay Mass Transit *SkyCoach*

Superior performance to heavy elevated transit in less space & at low cost

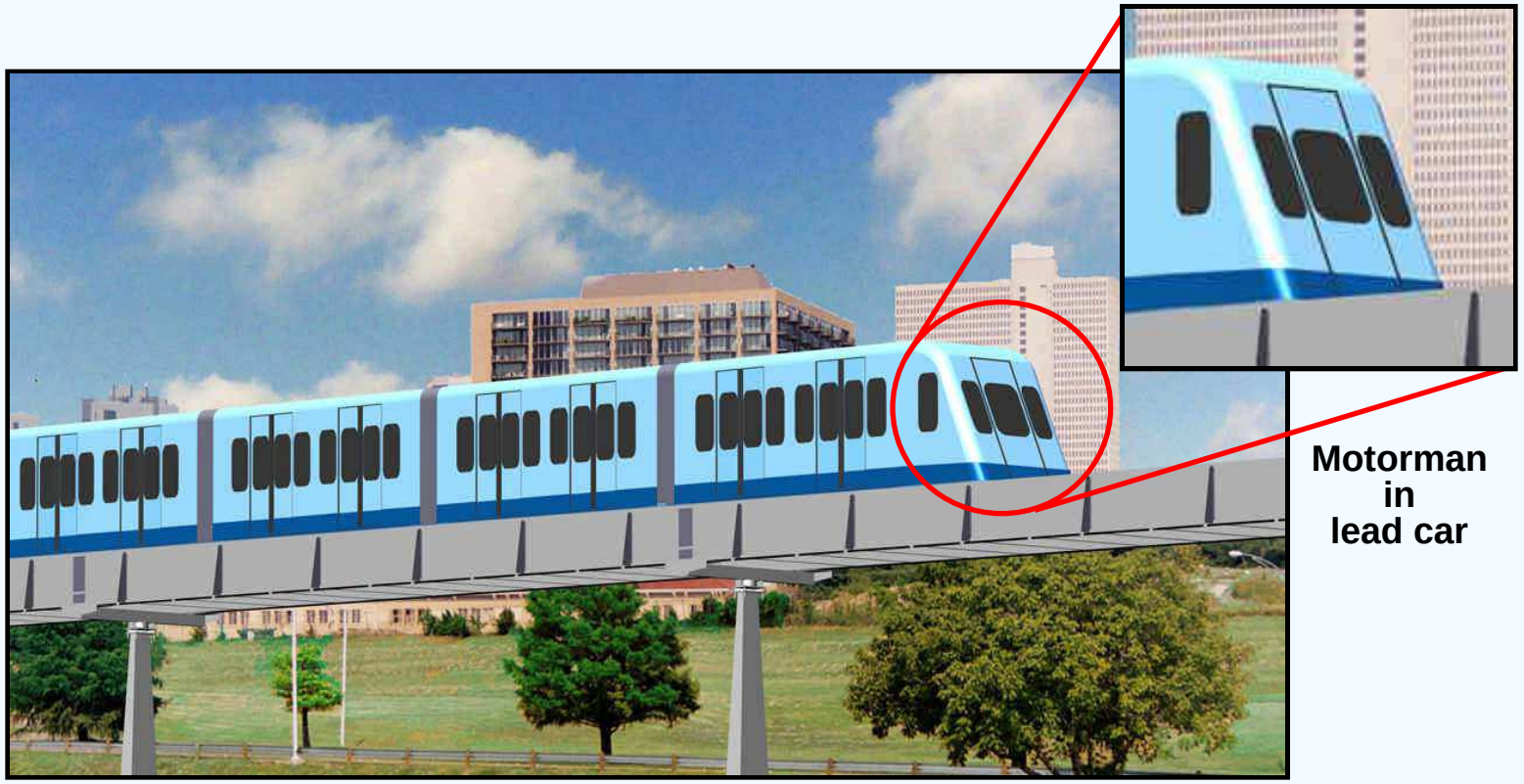


Ultralight *MegaWay SkyCoach* mass transit train on elevated *SuperWay*

(Mechanically-coupled train operated by on-board motorman)

Conventional off-the-shelf Train Control

Used on light rail systems for over a century



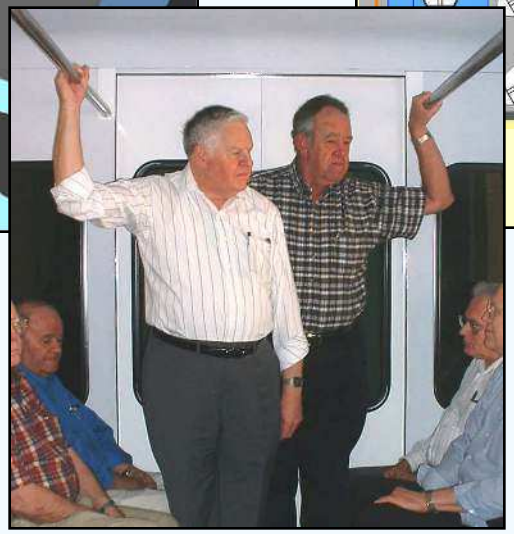
- Initial manual speed and brake controls
- Precise in-cab signaling for close train spacing

MegaWay SkyCoach™ Mass Transit

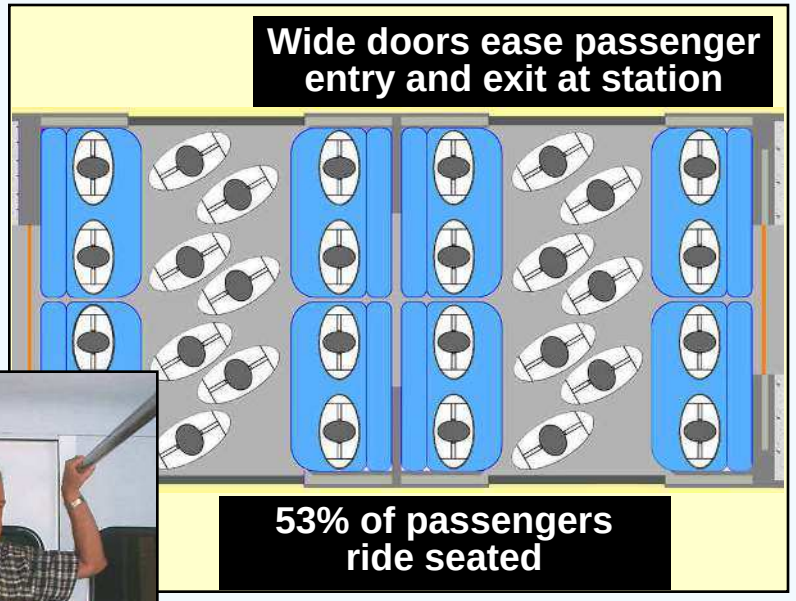
Trains of small & lightweight, mechanically-coupled cars

30-passenger cars

- 15-ft long cabin
- 18-ft total length



Cars allow standing passengers



25-sec dwell times

- 11 to 16-car trains
- 330 to 480 passengers per train

SkyCoach™ Step in and Sit Entry & Exit

- **No center aisles!**
  - **Fast entry & exit**
  - **Short station dwell times**
- **53% passengers seated**
- **Ample leg room**

All cars are wheelchair-compatible

SkyCoaches offer Safe Escape

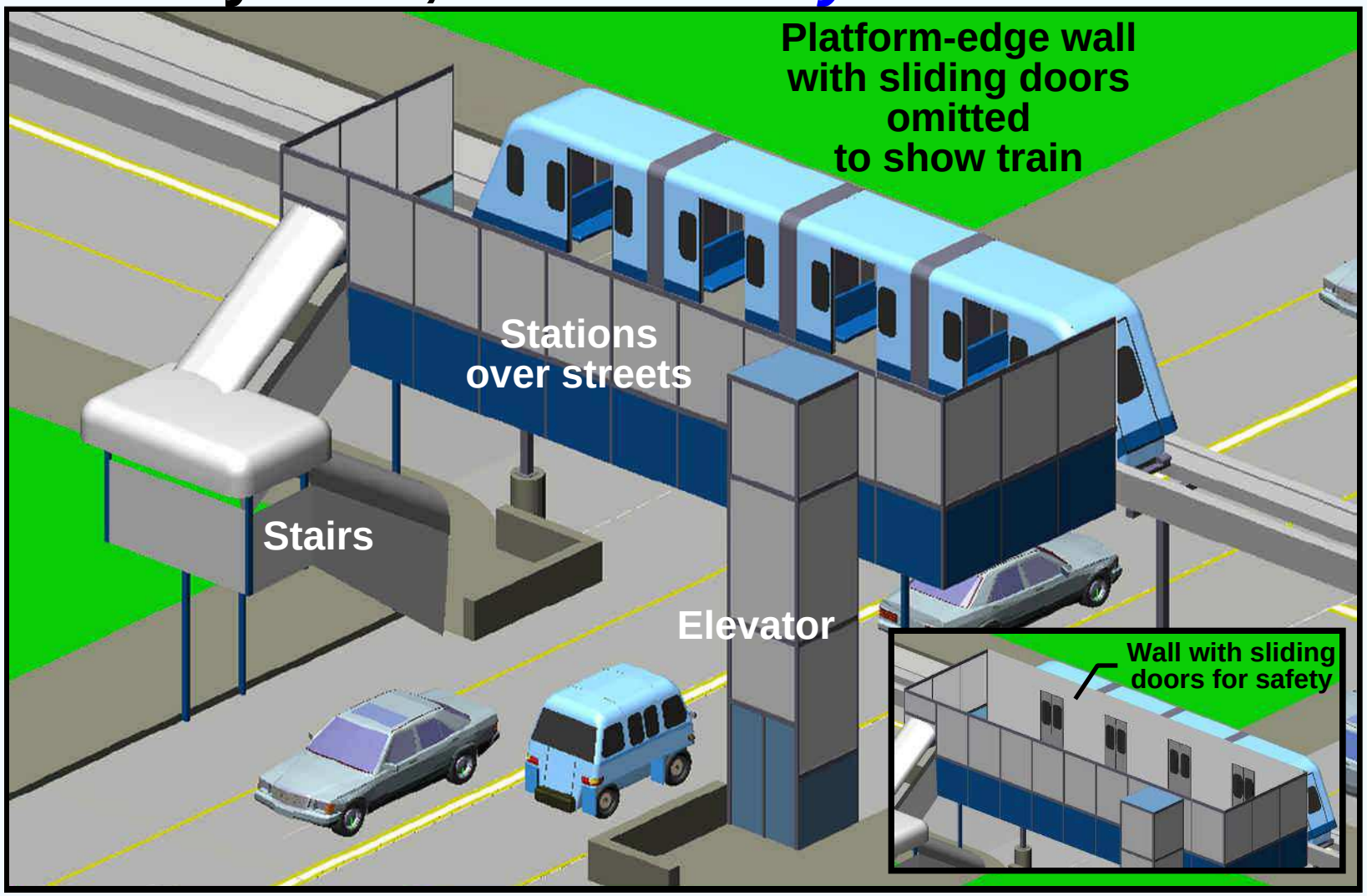
Unaided escape for all (including wheelchairs) without rescue personnel

U.S. Patent 6,837,167

- **Full-height escape doors in ends of coaches**
- **Open-mesh escape walkway between rails**
- **Covered electric bars**

Upward view through walkway

Factory-built, Modular *SkyCoach* Stations



MicrWay™ **mass transit train at elevated, over-street *SkyCoach* station**

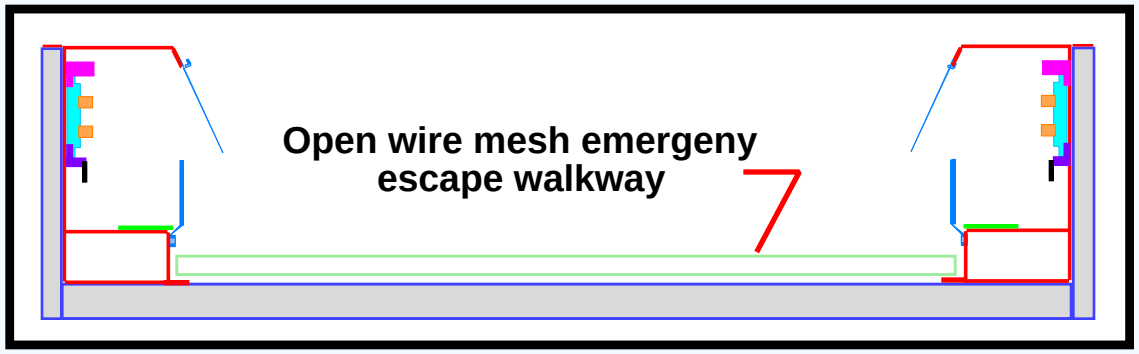
- **Low-maintenance stainless-steel**
- **Low cost**
- **Minimum street impact**

MegaWay – “Last Mile” Problem Solution

Automated *CarFerry* provides personal conventional automobile service

Small, *Low Cost*, Factory-built *SuperWay*

Fast, bolt in place installation



10.5-ft wide by 40-inch high *MegaWay Superway*

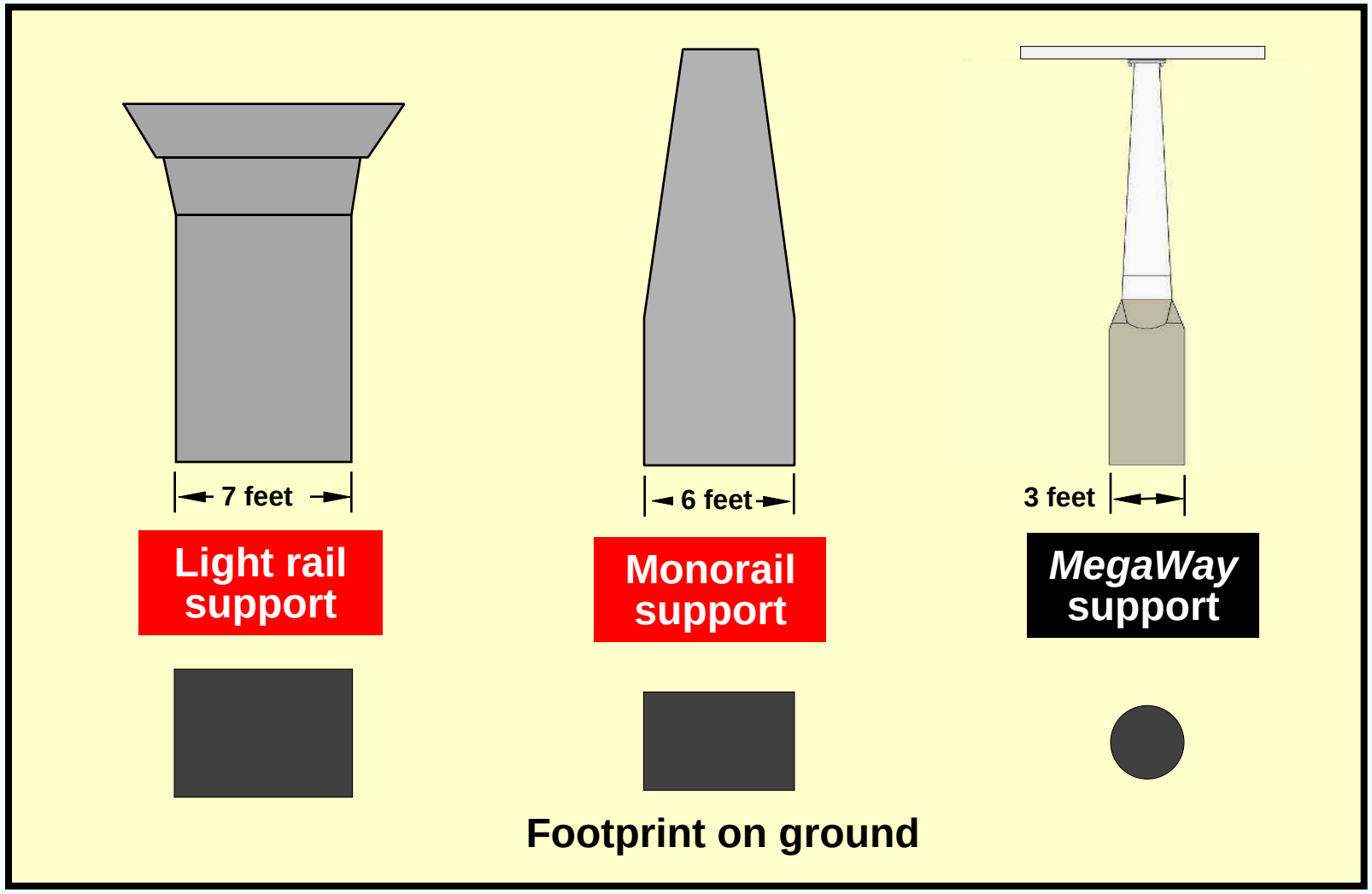
Ultralight *SuperWay* cross-section

Cost – 20% of elevated railway or freeway lane

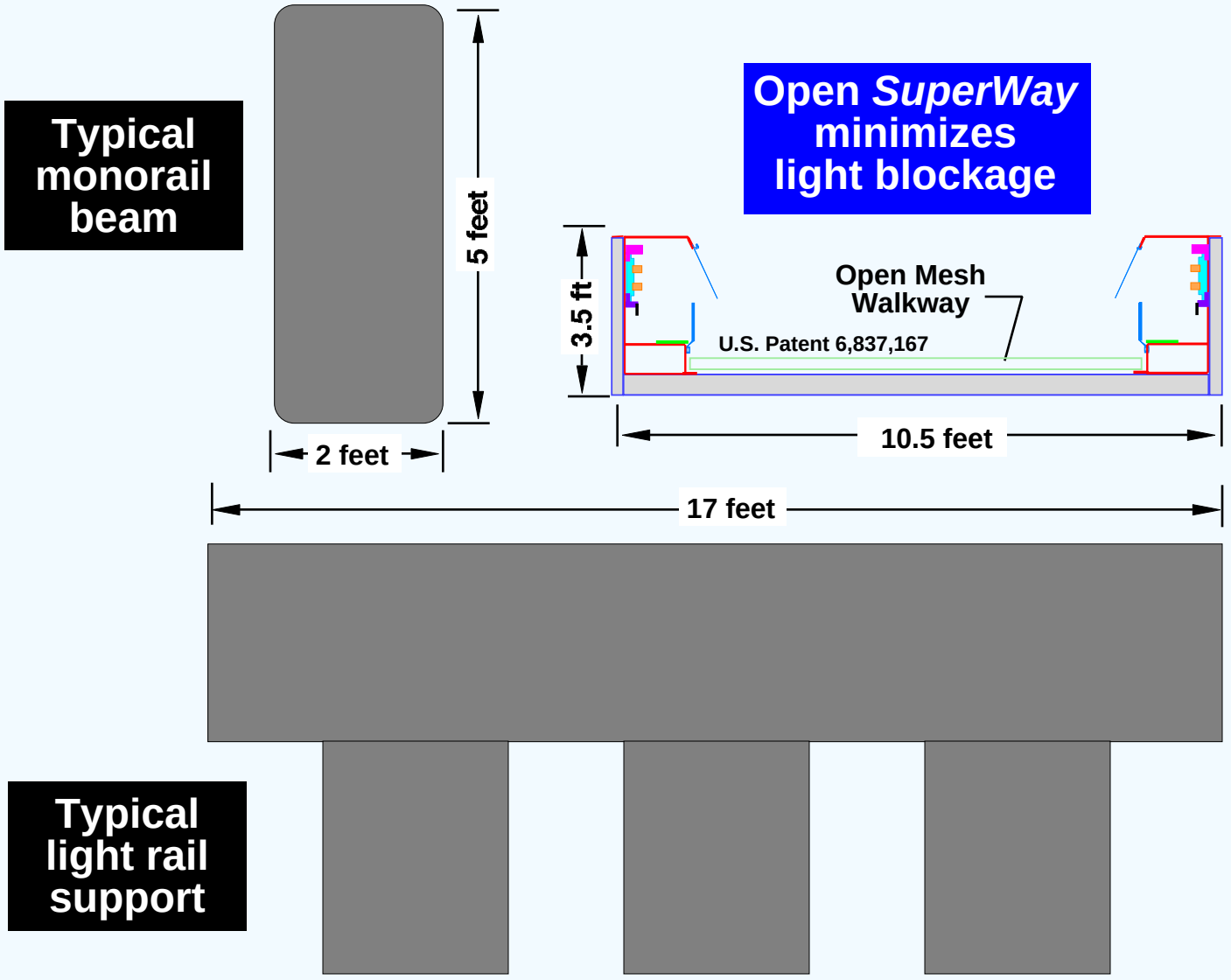
- **Uses highway/street right-of-way**
- **Mass-produced, factory-built sections – Fast on-site assembly**
- **No more land used & earth moving projects**
- **Light weight – Vehicles only 5% of typical railcar or truck weight**

Smaller *SuperWay* Support Columns

Smaller footprint for less street impact



MegaWay uses Small, Ultralight *SuperWay*



Attractive, *Low Profile* Stainless *SuperWay*

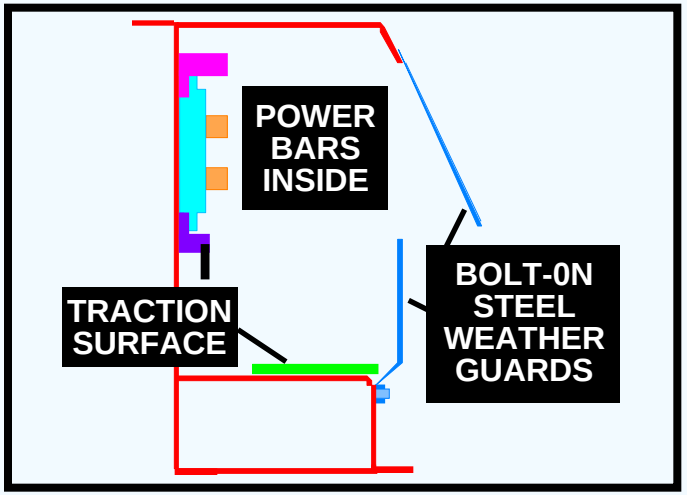
Guideways elevated above street & pedestrian traffic - *MicroWay SuperWay* photo

Minimum sky blockage – No wide elevated conventional train shadows

U.S. Patent 6,837,167

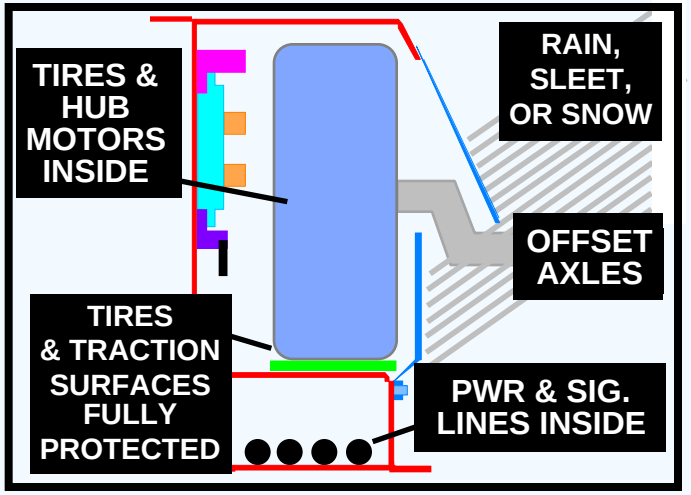
Low-cost, All-weather, Enclosed *WheelWays*

- Low-cost *WheelWays*
  - Parts cut from flat steel
  - Machine-welded construction
  - Low material & labor costs
  - Bolt-in electric power bars
  - Truck guideway sections to site



Single wheelway cross-sections

- All-weather, *WheelWays*
  - Wheels & power collectors inside
  - Protected electric power bars
  - Dry & ice-free traction surfaces
  - Safe operation in any weather
  - Whisper-quiet operation



WheelWays & cross-members form self-supporting “U” structure

Technology Summary

Unique, patented new combination of proven technology (8 patents)

Enclosed stainless-steel wheelways - US Pat. 6,039,135

- Simple welded steel factory fabrication
- Standard power rails

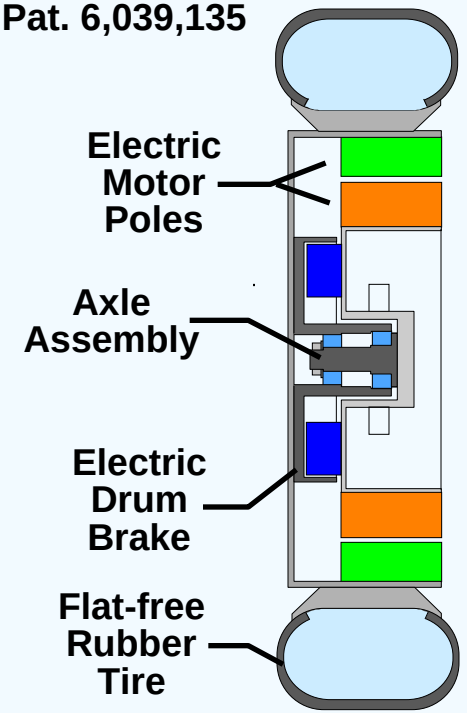
Flat-free tires – Current technology

Permanent-magnet electric motors

- Current commercial motor technology
- Electric motor wheels – Some electric cars

Car-based steering & switching

- Smooth non-contact electronic steering
- Switching – By cars as on conventional freeway!



Wheelmotor cross section

Only the combination & SuperWay are new!

MegaWay Mass Transit Summary

High-performance – Superior to current systems

- **Up to 25,500 pphpd (300-ft stations) – 24,300 pphpd (200-ft stations)**
- **Shorter passenger trip times**
- **Bus-type hill capability**

Start first service – Within 42 months!

- **Much less than typical commuter rail systems - No funding delays**

Total system cost – 20% of other elevated systems

- **Able to earn positive ROI**
- **No on-going operation subsidies**

Environment friendly – Noise free operation

- **No construction or operating impacts to business or street traffic**
- **No earth moving**
- **No added right-of-way**

MegaWay* - *The 21st Century Mass Transit Available NOW

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