Problems with Building Transit in Today’s Cities

• Capital cost per unit of transit capacity is very high > $100,000+/ new passenger

• Urban transit infrastructure corridors are constrained - scarce and size limited

• It is difficult to achieve Sustainable Economic, Environmental, and Social Development - jobs and revenue
The CyberTran Solution

- ~75% reduction in capital cost per unit of capacity
- Affordable means to stimulate growth and economic development
- Low impact interconnected infrastructure
TYPICAL COST BREAKDOWN FOR PASSENGER RAIL

- Route Infrastructure: 75%
- Vehicles, Design, Power, etc.: 25%
Passenger Rail Is Heavy

- Passenger Rail
- Buses
- Automobiles and Vans

Vehicle Capacity vs. Vehicle Weight - Tons graph.
How Many Vehicles to Carry 120 Passengers?

- **Automobiles**
- **Focus**
- **Buses**
- **Trains**

Number of Vehicles vs. Vehicle Capacity graph showing the number of vehicles required to carry 120 passengers for different vehicle capacities.
Key Finding: High capital cost of rail systems is caused by heavy vehicles

Conclusion: Optimum vehicle size is 6-30 passengers
Optimal Vehicle Design

- 6 to 30 Passengers per Vehicle
- Lightweight - 10,000 Pounds
- Proven Materials and Technologies
- Steel Wheel on Steel Rail
- Electrically Powered – Solar ready
- Computer Controlled
Light Vehicles Lead to Inexpensive Infrastructure

- Easy and fast to install
- Components prefabricated offsite
- No ground clearing
- 8’ ROW per direction
Many Light Vehicles Allow Off Line Stations

- On-demand service
- Increased capacity
- Direct-to-destination travel
- Networkable lines
The Transportation Internet is Born…
First Generation

Second Generation

Next Generation
Development Status

• Previous Development
  • Built test vehicle and test track, 60 mph
  • Built 2nd test vehicle and tested in curves
  • Built test track and innovative switch and tested
  • Tested multiple drivetrain configurations
  • Built 10% grade track and successfully demonstrated
  • Built three ¼ scale vehicles and tested

• Previous studies and analyses:
  • Morrison-Knudsen – concluded 10-50% of cost of conventional
  • Parsons-Brinkerhoff – verified guideway cost estimates
  • Applied Engineering Services – verified cost estimates
  • HNTB – verified seismic resilience of guideway
  • BART – estimated ¼ the cost of BART, ½ the operating cost
Development Status (2)

• **Simulations**
  – Vehicle simulated up to 160 mph, American Association of Railroads
  – Structure simulated for earthquakes, PGH Wong Engineering
  – Performance simulated at airport, Kimley-Horn

• **Current development**
  – Vehicle Management System
  – Vehicle/station control interface
  – Advanced Switching

• **Future Development**
  – Advanced Control system
  – Full Scale Integration and Test
  – Solar-powered Transit Micro Grid
  – Rapid ULRT Test Track
  – PPP Pilot Project
Proposed UC Berkeley-LBNL Demonstration and Test Track