

# CyberTran International Inc.

## Automated Direct Transportation System

California Energy Commission January 28, 2009

**DOCKET**

**08-OIR-1**

DATE JAN 28 2009

RECD. FEB 04 2009



Neil Garcia-Sinclair, Chairman and CEO

Richard Lyon, Chief Development Officer



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**CyberTran International Inc.**

**Thank You**  
**California Energy Commission**  
**California Energy Commission Advisers**

**Donald Coe**  
**Erik Stokes**  
**Jared Babula**  
**Jim McKinney**  
**Diana Schwyzer**  
**Kelly Birkinshaw**

**Aleecia Macias**  
**Jonah Margolis**  
**Peter Ward**  
**Tim Olson**  
**Susan Brown**





Video Clip



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Video Clip



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# Management



# CyberTran Executive Management

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- Neil Garcia-Sinclair, CEO
  - Advanced transportation systems technology business management since 1990
- Eugene Nishinaga, Senior VP Engineering
  - Mass transit control systems engineer since 1976
- Harry Burt, COO
  - Rail vehicle and system engineering management since 1969
- Paul Dewey, Vehicle Design Section Chief
  - Product design, development and technology deployment since 1979
- Richard Lyon, CDO
  - Developing and introducing high technology products to the market place for over thirty (30) years: white paper to market dominance



# Consultants and Partners

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## Consultants

- Powers Design International
- Deterministic Systems Inc
- PGH Wong Engineering
- FMG
- Earth Tech
- Interfleet
- Kirsan Technologies

Vehicle Design  
Control and Power  
Civil and Electrical  
Architecture  
Systems Integration  
Rail Systems  
Security and Control

## Strategic Partners

- University of California
- Lawrence Berkeley Laboratory
- Lawrence Livermore/Sandia Natl. Lab
- BART
- LACMTA

Advanced Control  
Control  
Safety, Vehicle  
Transit Systems Operation  
Corridor Study



# The CyberTran Product



# Idaho National Laboratory

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- Technology developed by the US Department of Energy's Idaho National Laboratory from 1989 to 1997
- High-speed rail system developed to move 10,000 people from Idaho Falls to lab site
- Research indicated high cost of passenger rail and catalyzed system engineering project
- System Engineering Goals
  - Reduced Cost
  - Improved Service
  - Increased Safety



# Conventional rail transit technology is expensive - many systems are costing over \$100 M/mile

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System	Type	Construction Complete	Gross Cost	Track miles	Cost / Mile
EBART	Diesel Multiple Unit	Future	\$1.3B	21	<b>\$61M</b>
SFO AirTrain	Airport Circulator	2003	\$430M	6	<b>\$71M</b>
Nanjing Metro	Light Rail	2005	\$1B	13.5	<b>\$74M</b>
BART to Livermore	BART	Future	\$1.2B	11	<b>\$109M</b>
Shenzhen Metro	Light Rail	2004	\$1.5B	13.5	<b>\$115M</b>
LA Gold Line	Light Rail	Future	\$899M	6	<b>\$150M</b>
OAC	Airport Circulator	Future	\$469M	3.1	<b>\$151M</b>
Linimo	Low-speed Maglev	2005	\$955M	5.5	<b>\$174M</b>
Las Vegas Monorail	Monorail	2005	\$730M	4	<b>\$182M</b>
JFK AirTrain	Airport Circulator	2003	\$1.9B	8.1	<b>\$234M</b>
BART to San Jose	BART	Future	\$4.7B	16.7	<b>\$281M</b>



# High Speed Rail System Engineering Analysis

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- Studied costs of existing passenger rail systems
- Found disproportionately high capital cost associated with heavy vehicles
- Concluded optimal vehicle size for capital cost reduction was 10-20 passengers per vehicle





# The Right Product at the Right Time at the Right Cost

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- **Disruptive “Green” transportation technology that enables:**
  - **Direct to Destination at the push of a button. Every vehicle is “Express”**
  - **Low construction Cost enables public private partnership or private ownership of a transit system**
    - **Urban Revitalization: “Location-Location-Location”**
      - **Bring the masses to the City that otherwise would not be possible**
      - **Reestablish “The City” as the Business Hub**
    - **A total solution for high Density housing: management of traffic in and out of a development**
    - **High return on investment from “Transit Village” revenue streams**
    - **System Sales for less than 1/3<sup>th</sup> to 1/6<sup>th</sup> of current offerings with 100% margin**
    - **Farebox becomes a revenue stream**
    - **Electric, steel wheel on steel rail: proven, simple and reliable**



# The Right Product at the Right Time at the Right Cost

product sustainability markets product development implementation strategy management financials appendices

- **Disruptive “Green” transportation technology that enables:**
  - **Lowest permanent impact to environment due to construction**
    - Existing freeway medians or rail beds can be used
    - Prefabricated proprietary elevated guideways enable ½ mile bi-directional build out per day
    - Stations at grade eliminates elevators and escalators reducing cost and construction cycle time



# Lightweight Guideway

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markets

product development

implementation strategy

management

financials

appendices

Easy and quick to install:

**1/2 mile/day bi-directional construction**

No ground clearing

Pileless foundations

Components prefabricated offsite

Can be built off the end of itself

Grade separated for safety



# Off Line Stations

product

sustainability

markets

product development

implementation strategy

management

financials

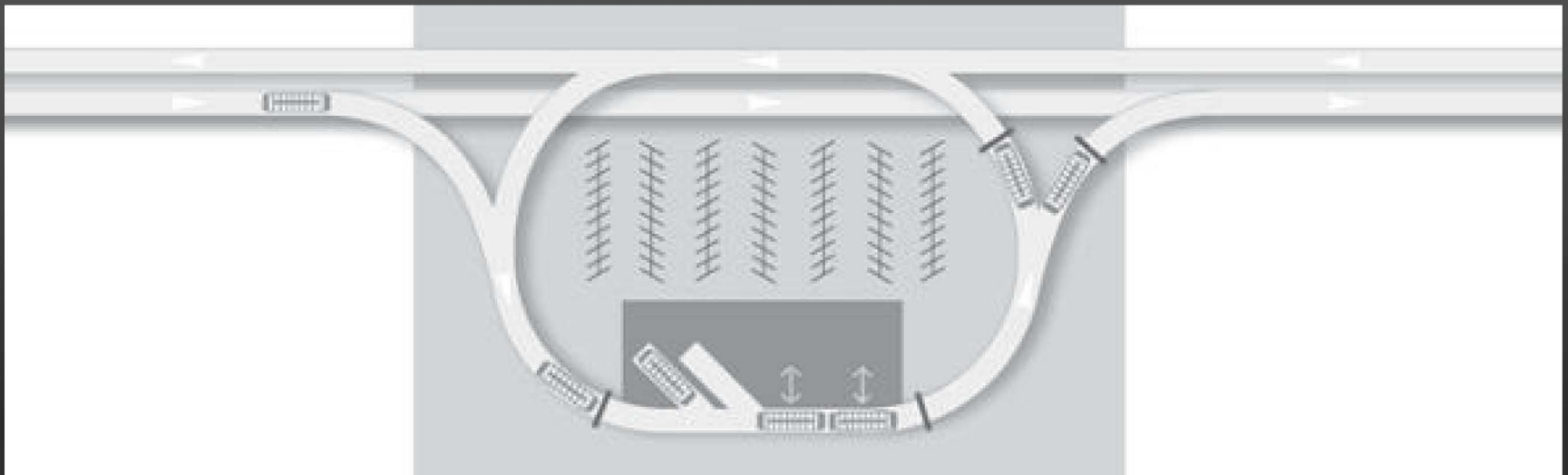
appendices

Increased line capacity

Network capable

On-demand service

Direct-to-destination travel



# Development at INL – Cost Analyses

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markets

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implementation strategy

management

financials

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- Morrison-Knudsen, 1991  
\$5.8 M/mile
- Parsons, Brinckerhoff, Quade, and Douglas, 1995,  
\$2.8 M/mile (guideway only)
- Applied Engineering Services,  
1995, \$5M/mile
- Independent Study, 2007
  - all-inclusive cost, \$25 M/mile



# Development at INL – Testing

**product** sustainability markets product development implementation strategy management financials appendices

- Prototype vehicle and 2-mile track built and tested at 60 mph, 1991
- 2<sup>nd</sup> prototype vehicle built and tested in curves, 1993
- High-speed simulation, American Assn. of Railroads, 1993
- Further system design and testing, 1994-1997
- The technology was transferred in 1998 from U.S. DOE to CyberTran International





# Further development at the former Alameda Naval Air Station has been financed by US DOT and the private sector

product

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markets

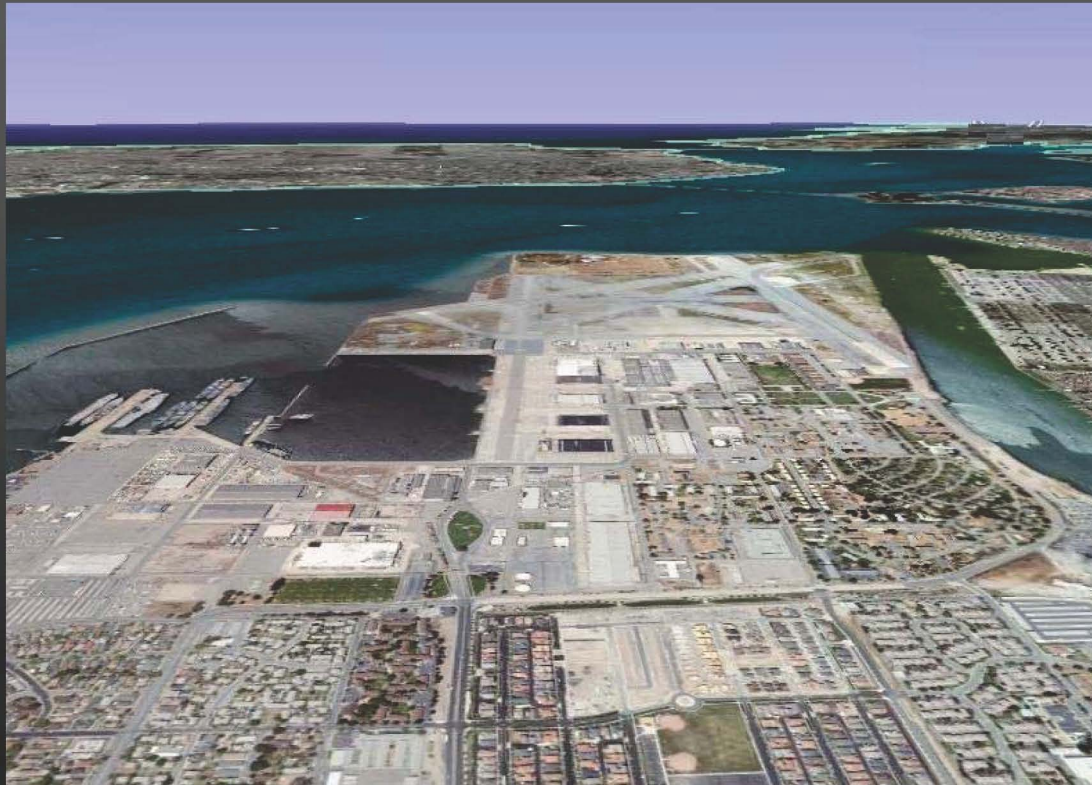
product development

implementation strategy

management

financials

appendices





# Development at Alameda NAS – Testing

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- Development and testing of track switch
- Propulsion system development
- 10% gradability testing and demonstration
- Control system design, development, and quarter-scale testing
- HNTB seismic analysis



# Markets



# Low-Speed Lines – Airports

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- Sacramento International Airport to Downtown
- Oakland Airport
- San Jose
- LAX to Green Line
- John Wayne Airport to Santa Ana



CITY OF OAKLAND



CITY HALL • 1 FRANK H. OGAWA PLAZA • OAKLAND, CALIFORNIA 94612

NANCY J. NADEL  
Councilmember  
District 3

December 24, 2007

Neil Garcia-Sinclair  
Chairman, CEO  
CyberTran International  
1800 Orion St., #111  
Alameda, CA 94501

Mr. Garcia-Sinclair,

Subject: Letter of Interest

The purpose of this letter is to inform you of the interest of the City of Oakland, the University of California, Sandia National Lab, and of California Infrastructure (CNCI), project and Ultra-Light Rail Train useful in addressing the implementation of reducing our energy and carbon footprint. CyberTran offers a unique

Assuming that your ADTS project is interested in the possibility of a demonstration and commercial use of this technology, CyberTran offers a unique

Based on our discussions thus far, we believe that there is a strong probability of commercialization, can alleviate issues with the adoption of transit. It addresses the long term subsidies usually required for service. I look forward to working

Sincerely,

Nancy J. Nadel  
Councilmember, District 3  
City of Oakland



June 29, 2007

Mr. J. Patrick Sweeney, CEO  
Central Transit & Development Corp  
P.O. Box 27691  
Fresno, CA 93729

Dear Mr. Sweeney:

Subject: Letter Of Interest And Support For Exploring The Concept Of CTDC's Proposed Phase One CyberTran Within The SR 41 Corridor

In response to your June 13 correspondence, this nonbinding letter of interest is being provided to you. Our support of the concept is also subject to receiving additional information as soon as possible.

Specifically, the Council of Fresno County Governments Policy Board is expressing its interest and support for exploring the concept of Central Transit & Development Corp's (CTDC) proposed Phase One CyberTran within the 12 mile urban SR 41 Corridor. The letter of interest is based upon the information provided to date from CTDC (attached). It is also subject to receiving the business plan and further details so we can analyze the potential impacts and determine whether they advance, augment, or complement our regional transportation system goals. This information is needed in particular because CTDC's initial proposal is for the new infrastructure to be within the current SR 41 median.

The Council of Fresno County Governments desires to see enhanced public transit services within Fresno County and especially within the urbanized area, so we look forward to continued exploration of the concept that you have proposed.

Sincerely,

Mayor Trinidad M. Rodriguez, Chairman  
Council of Fresno County Governments

**Member Agencies:** The cities of Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, Selma & Fresno County

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Fresno, California 93721

Telephone (559) 233-4148 • FAX: (559) 233-9645  
Website Address: www.fresnocog.org



PORT OF OAKLAND

STEVEN J. GROSSMAN  
Director of Aviation

Phone (510) 627-1100  
Fax (510) 627-0178  
E-mail: sgrossman@portofoakland.com

April 4, 2005

Dr. John Dearien  
Chairman, CEO  
CyberTran Intl.  
1800 Orion St., # 111  
Alameda, CA 94501

Dear Dr. Dearien,

I trust all is well with you in your past, the Oakland International. We have participated in a study of economic analysis, as to the feasibility of a demonstration project.

We are interested in receiving a demonstration project from our public and employee perspective. In particular, the possibility of a demonstration project at the University of California would be a great asset to the region.

Please keep me informed of your progress. There may well be other alternatives. I look forward to hearing from you.

Sincerely,

Steven Grossman  
Director of Aviation

530 Water Street ■ Jack London Square  
Telephone: (510) 627-1100 ■ Fax: (510) 627-0178



There is a high degree of interest and need throughout California



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## State's hitting red lights on emissions law

By Isaac Kasher and Jim Downing  
HIS-STAT WRITER

If state officials have their way, new motor vehicles sold in California will come equipped with engine accessories like variable fuel injectors and dual cam phasers, designed to reduce global warming.

The improvements are supposed to begin late next year, with the arrival of the 2009 models and the implementation of Assembly Bill 1493, a state law requiring automakers to curb emissions of carbon dioxide and other greenhouse gases. The law rolls out gradually, with emissions to be slashed 30 percent by 2016.

But don't hold your breath. AB 1493, adopted in 2005, was vetoed by Gov. Arnold Schwarzenegger.

EMISSESS, Page A17

## Pleasanton Doesn't Like High Speed Rail Plans

The Pleasanton City Council was less than enthusiastic about the possibility of more trains coming through Pleasanton, particularly high speed trains.

The council did support studying further the extension of BART to Isabel Station and to Greenville Road and beyond.

However, when it came to high speed rail, the council had several objections. These included the high speed trains and an increased number of ACV trains going through the downtown and Bernal park, and the need to build rail structures to accommodate both rail services. They also

three schools, raising safety concerns.

Mayor Jennifer Hosterman stated, "I think the Altamont alignment for high speed rail is a decision at best. I don't think the Tri-Valley will support it. However, it is important to support additional studies."

Councilmember Cheryl Cook Kallio commented, "I don't get my head around trains traveling 90 mph through Pleasanton."

Councilmember Cindy McGovern did not like the idea of the train going through the Bernal projects, "where we are working to achieve serenity."

It was estimated there would be 6 to 12 high speed trains each

## Union Pacific rides profits

Largest freight railroad's 3rd quarter earnings up 32 percent.

Union Pacific Corp. reported third quarter earnings of \$1.1 billion, up from \$834 million a year earlier.

The company's revenue rose 12 percent to \$11.4 billion, driven by higher freight rates and increased volume.

Union Pacific's operating income rose 32 percent to \$1.1 billion, up from \$834 million a year earlier.

The company's earnings per share rose 32 percent to \$1.10, up from \$83.40 a year earlier.

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## Widespread money woes sink BART's people-mover plan

Transit agency fails in its efforts to get a private partner to help pay for ram from Oakland

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BAY AREA NEWS GROUP

NATION • BAY AREA

## Walnut Creek retail plan renews quality-of-life debate

Residents say 107,000-square-foot Neiman Marcus store would add to city's traffic, parking problems

By Theresa Harrington  
STAFF WRITER

WALNUT CREEK — In Walnut Creek, the price of success is congestion.

As the city has grown from a bedroom community into a premiere retail destination, some residents have questioned whether the erosion of their local quality of life is worth the regional prestige.

A proposed Neiman Marcus store at Broadway Plaza is rekindling this debate, pitting longtime residents who fondly recall a less swanky (and less crowded) downtown against city leaders who rely largely on sales tax revenues to keep Walnut Creek at the top of its game.

The luxury retailer expects to serve a market stretching from Brentwood to Pleasanton and Orinda, primarily consumers with household incomes of \$150,000 or more.

But several residents told Walnut Creek planning commissioners the desire to attract shoppers from far and near is hurting the local residents by clogging Mt. Diablo

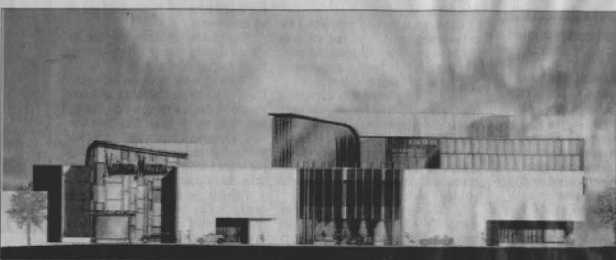
parking and pedestrian problems be enough for you to say, "Enough?" said resident Bruce Reeves.

The two camps squared off at a city Planning Commission meeting Thursday, where commissioners ultimately recommended increasing the density and height allowed on the proposed Neiman Marcus site, paving the way for a 107,000-square-foot anchor store.

"It might be a feather in the city's cap to have a Neiman Marcus, but at a cost to us," said Ken Hambrick, a 30-year resident. "Are we going to do what's good for the developer or what's good for the community?"

Commissioners unanimously agreed another anchor store at Broadway Plaza would help keep the shopping center thriving and could provide a link between the older "traditional" downtown north of Mt. Diablo Boulevard and newer retailers to the south. In addition, Neiman Marcus could boost sagging sales tax revenues, which help pay for local services, programs and projects, commissioners said.

A market study shows Neiman Marcus could generate \$50 million a year more in sales than the current four retail stores it would replace, said Chuck Davis, vice president for Macerich Co., which



Proposed Neiman Marcus store

lightly or ignore because all of us enjoy the amenities of the city and we want them to continue to grow — the library, our parks, our police — and those amenities don't pay for themselves," said Commissioner Matt Francois. "We need to continue to be looking at new sources of revenue to provide those critical services, while at the same time being true to our character and the quality of this town."

He and the other commissioners said Neiman Marcus can fit into the downtown, if it is well-designed. An environmental report showed Macerich would need to add traffic controls at both entrances to its South Broadway garage to handle the expected added

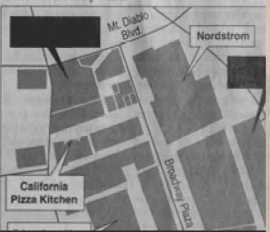
vis said Neiman Marcus and a remodeled and expanded Nordstrom, also in the works, would help cement Broadway Plaza's status as a rival to San Francisco's Union Square and the Stanford Shopping Center.

Local business leaders told commissioners change, as exemplified by the Neiman Marcus plan, is necessary to keep Walnut Creek competitive with other cities. Jay Hoyer, executive director of the Walnut Creek Chamber of Commerce, said he is impressed by Macerich's operation of Broadway Plaza and he trusts the company's judgment. He said he probably won't shop at Neiman Marcus.

The City Council will vote

## Commission endorses plans

Walnut Creek's Planning Commission unanimously recommended increasing the height and density allowed on a 1.6-acre paving the way for a new 107,000-square-foot Neiman Marcus store at Broadway Plaza.



Map showing location of proposed Neiman Marcus store

## BELLY OF THE BEAST



BART MECHANIC Gary Nichols puts a cover back on a line-switch pack Thursday while doing preventive maintenance on a train at the Hayward BART maintenance yard.

## \$11.4B needed to replace aging BART equipment

By Denis Cuff  
STAFF WRITER

BART train cars and tracks that carry 350,000 people a day are slowly wearing out.

Cables and computers that signal cars to slow down or speed up have a few more years of reliable life.

Wires and circuits that deliver electricity to power the trains are running low on time.

BART is getting old at 35.

The transit system's board Thursday

approved a 25-year road map that forecasts the need to spend \$11.4 billion on hardware and equipment but identifies funding sources for only half the money.

Finding the other half — a \$5.8 billion shortfall — will be a big but necessary task, BART managers and board members said.

"It's a big challenge," said Joe Keller, a BART board member from Alameda. "We have to reinvest in this system to keep BART service reliable."

Bob Franklin, a board member from

Oakland, called the funding gap "scary," but, he added, "we identified our situation early on. This plan gives us a road map to tackle the problem."

Franklin said he is anxious to avoid sharp fare increases to fund improvements, like the steep increases BART imposed in the mid-1990s to fund a \$1.5 billion overhaul of train stations, fare gates, escalators and elevators.

Fare increases are just one of several possible funding options in the plan.

Please see BART, News 9

California and the Nation needs a low cost rapid transit solution that has a reduced installation cycle time: CyberTran 1/2 mile per day, bi-directional build out



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# Low-Speed Lines – Universities

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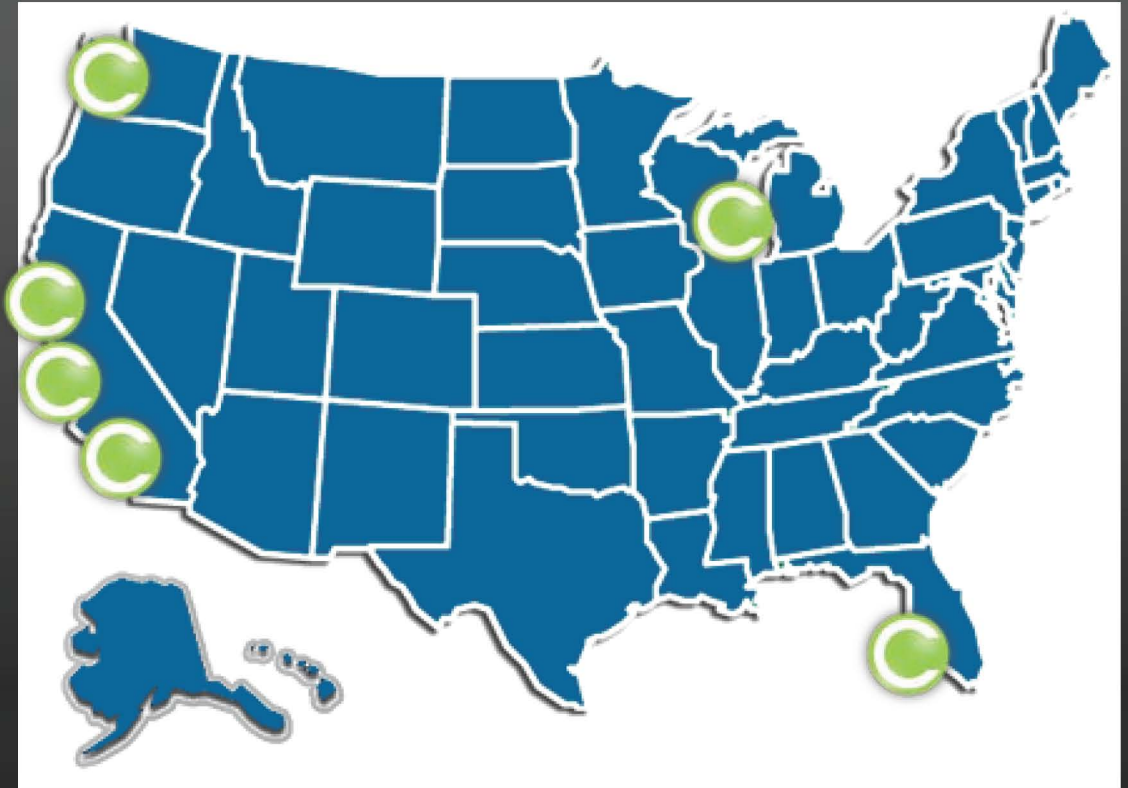
- UC Davis to Sacramento
- UC Berkeley to Berkeley Marina
- UC Santa Cruz to Santa Cruz to Watsonville
- UC Merced to Merced to Castle AFB
- UC Riverside to Riverside, Ontario, San Bernardino



# Commuter Lines

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- SMART
- Salinas-Watsonville-Monterey
- Riverside County
- Seattle
- Detroit
- Tampa Bay





# Foreign Markets

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- Colombia
- Venezuela
- China
- Japan
- Philippines
- Malaysia
- North Africa



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# Sustainability

Richard Lyon



# Reductions in Energy Consumption & Global Warming

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# Reductions in Energy Consumption & Global Warming

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High energy efficiencies

High operational efficiency

90% lower CO<sub>2</sub> than cars

Can be fully solar powered



# Reductions in Energy Consumption & Global Warming

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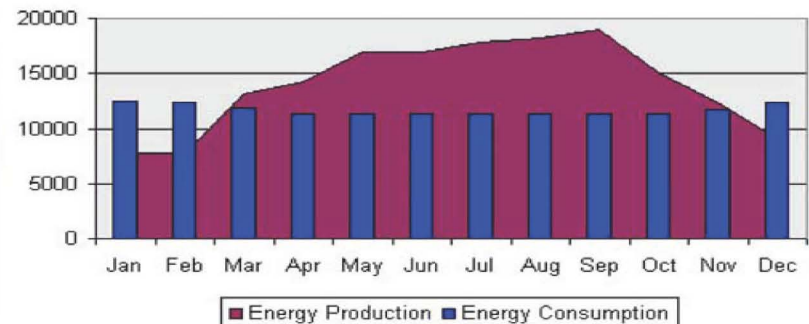
System Description: 500 modules 200kw  
Estimated Electrical Generation: 168,260kWh/yr  
Estimated Energy Consumption annually: 140,000kW per mile  
Estimated Cost of Energy: \$20,000

**Using Solar panels, the CyberTran solution has zero emissions and is energy positive**

The avg. energy used by a 4 seat, 27.5 mpg car is 1.4 kWhr/place mile. The avg. energy use of a bus is 4.06 kWhr/place mile. The avg. energy use of CyberTran is 0.106 kWhr/place Mile (1/10th of a car).



Energy Consumption vs Production



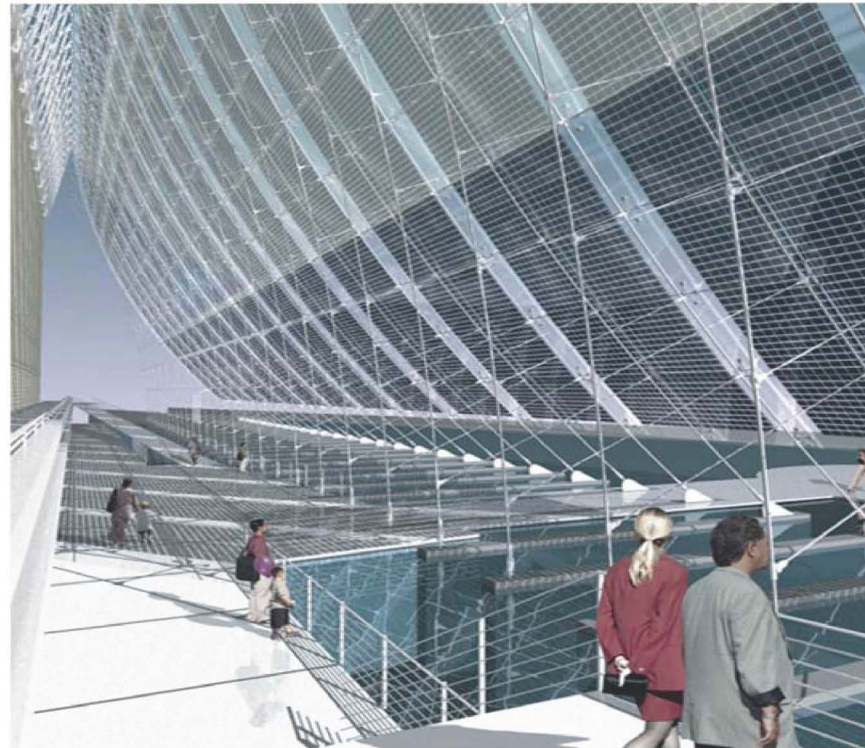


# Reductions in Energy Consumption & Global Warming

product **sustainability** markets product development implementation strategy management financials appendices



Building Integrated Design  
BIPV

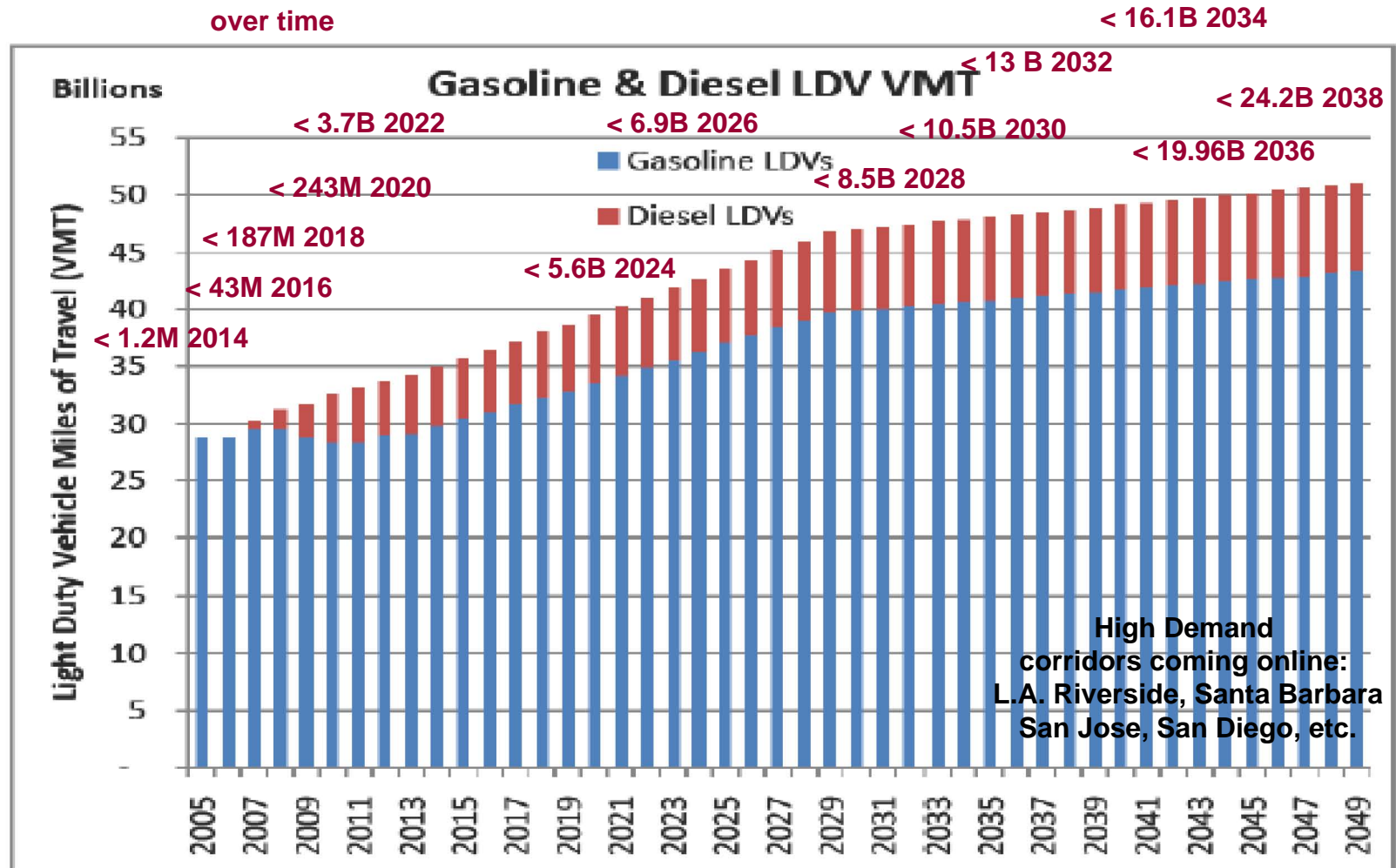


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# Reductions in Energy Consumption & Global Warming

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Reduction of VMTs  
over time



Graphic Courtesy of CEC

Calif. Dept. Transportation: AADT for corridors serviced



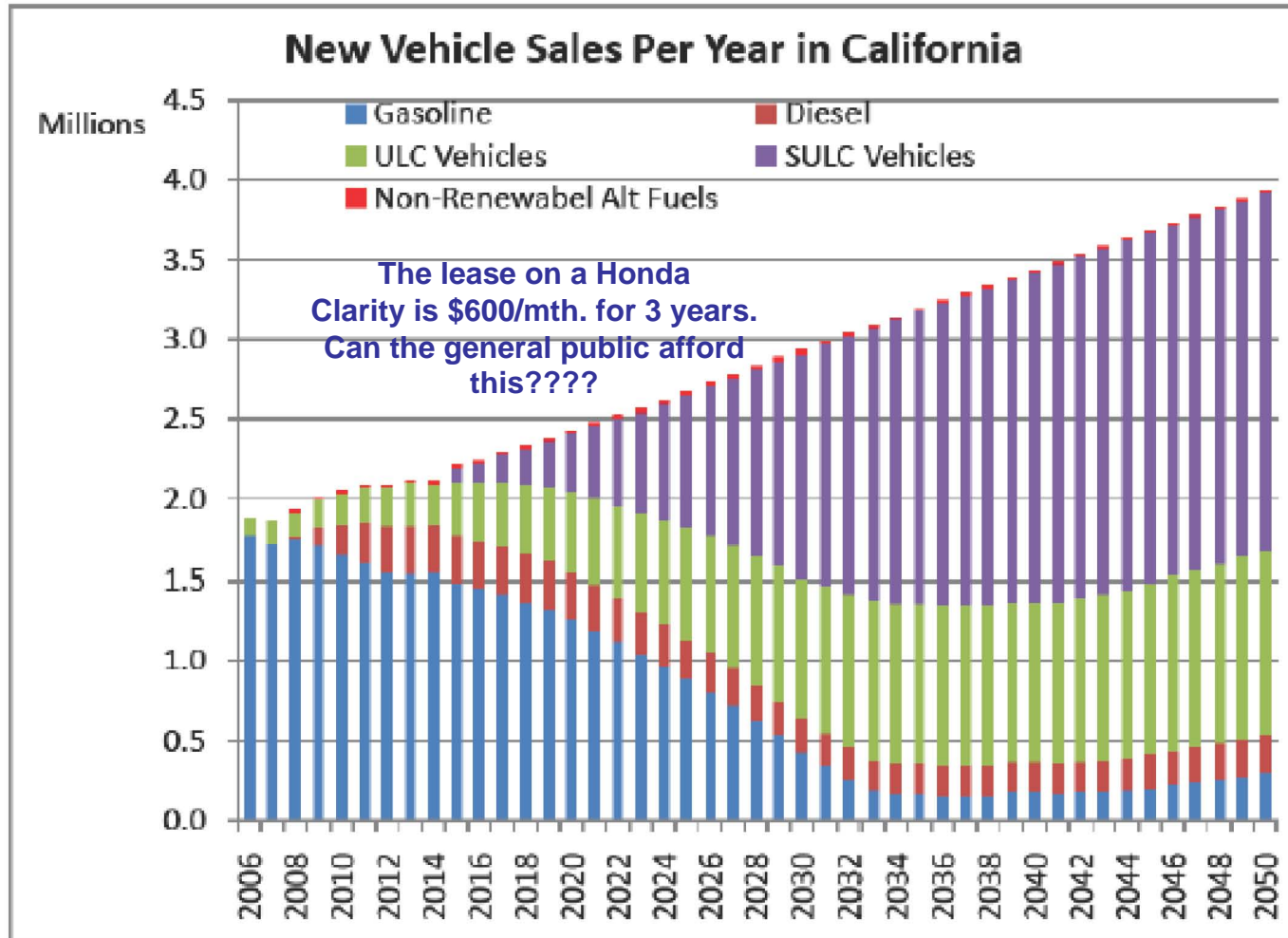
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\*\*\* Confidential and Proprietary \*\*\*



# Reductions in Energy Consumption & Global Warming

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Courtesy of CEC



# Environmental Benefits

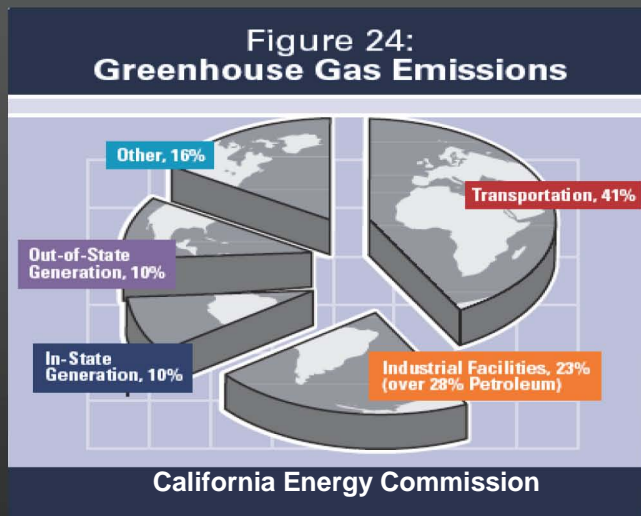
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Reduce the carbon finger print

Greatly reduced vehicle scrap

Reduced ecological impacts

Reduced land consumption



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# Social Benefits

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Discourages urban sprawl

Increases social equity

Reduces auto collisions

Improves walking and biking environment



# External Economic Benefits

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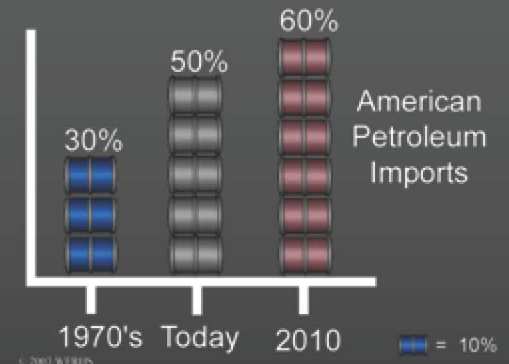
## Reduced dependence on foreign oil

- By 2020, 11.6M gallons of fuel will be displaced in the corridors serviced by CyberTran
- In 2028, 1.2B gallons of fuel will be displaced along with it's emissions

## Reduce traffic congestion

- Eliminate the necessity to build more roadway

Avoids new automobile infrastructure



# CEC funding for CyberTran will provide major benefits to California

- Environmental
  - Solar powered
  - Eliminate an estimated 70 billion annual automobile miles by 2050
- Economic
  - 1/3<sup>rd</sup> cost of conventional transit
  - Eliminate operational subsidies
- Financial
  - Leverage funds through Federal and Investor matching
  - Increase productivity



# Major benefits to California

## *Environmental Impact*

- Zero Emissions Vehicle - Solar Powered Electric Mass Transit
  - Rail: High Energy Efficiency (~90% improvement over rubber tire on pavement)
  - Rail: ADTS Provides High Operational Efficiency



# Major benefits to California

## ***Economic Development / Job Creation***

- Currently No US Supplier of Light Rail Vehicles
- Demonstrated Huge Untapped Market
- Exportable Non Auto-centric Development Model
  - Retrofits into Existing Development
  - Cost effective / self sustaining: organic network growth
  - Relieves Traffic Congestion: Improves Productivity
- CEC becomes Catalyst
  - Overcomes Private Sector Perceived Risk
  - Early Stage High Payoff – Best Bang for your Buck
  - Most GHG Reduction per \$ Investment Now





# Major benefits to California

## *Competitive Advantage*

- Creates New Paradigm
  - Enables Transit Oriented Development
  - Enables Auto-Free Zones
  - Program Not Dependent on High Cost of Oil
- No New Science Needed
  - Not dependent on new batteries, hydrogen infrastructure, maglev, carbon fiber, etc
  - Automaker Cooperation Not Required
- Previously Validated
  - Six Prototype Test Series
  - Numerous Cost and Capabilities Studies



# Environmental Benefits

product

**sustainability**

markets

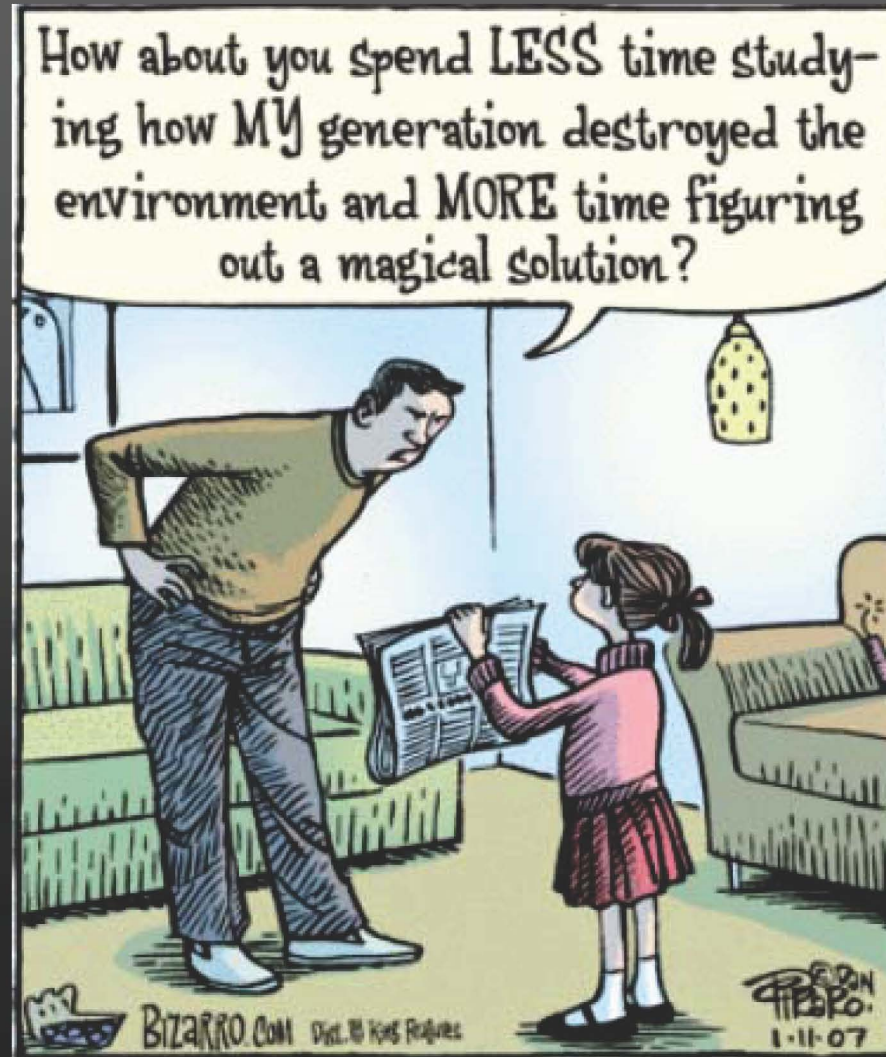
product development

implementation strategy

management

financials

appendices



# Product Development Plan



# Product Development Plan

product

sustainability

markets

**product development**

implementation strategy

management

financials

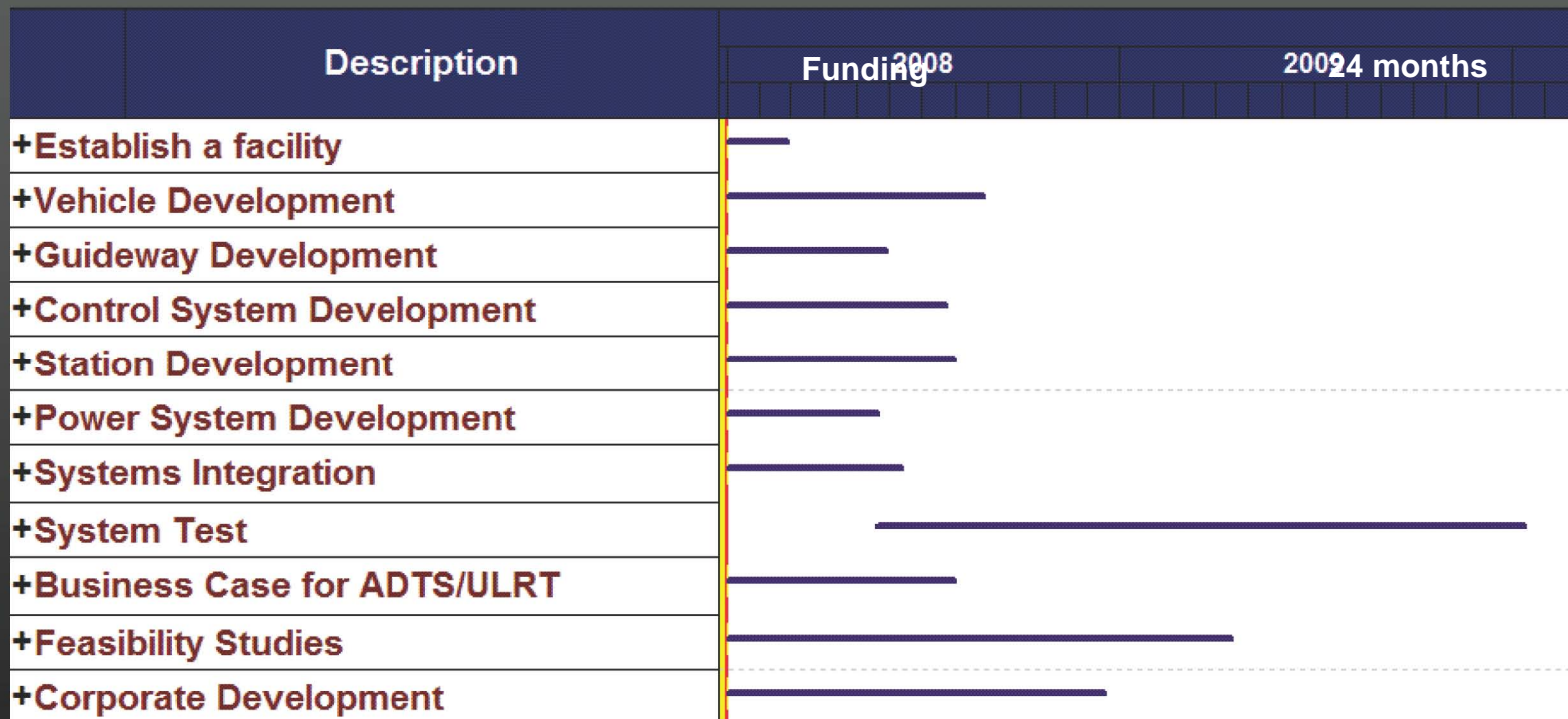
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# Final Validation and Commercialization Program (FVCP)

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# Implementation Strategy



# CyberTran as Henry Ford Mass Producing Mass Transit

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# Traditional Barriers to Entry to the Rail Transit Market

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High Capital Cost of  
Traditional System

Low Capital Cost

~~\$100M~~ → \$25M/mi

Customers have  
Insufficient Funding

High Perceived Risk  
of First Project

Zero Government  
Subsidies

Eliminate O&M  
Subsidy

~~50%~~ → 0%

Use Size Currently  
Available of  
Overhead System

Phased  
Commercialization

Transition of National  
Labor and Transit  
Agencies

Very Competent  
Project Team



# Business Model

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Component  
Mfg. and Sales

CyberTran  
International

Design - Build

Operations and  
Maintenance

Customer  
Public and/or  
Private

Transit Oriented  
Development

Station Retail

Advertising

Farebox

**Activities performed**

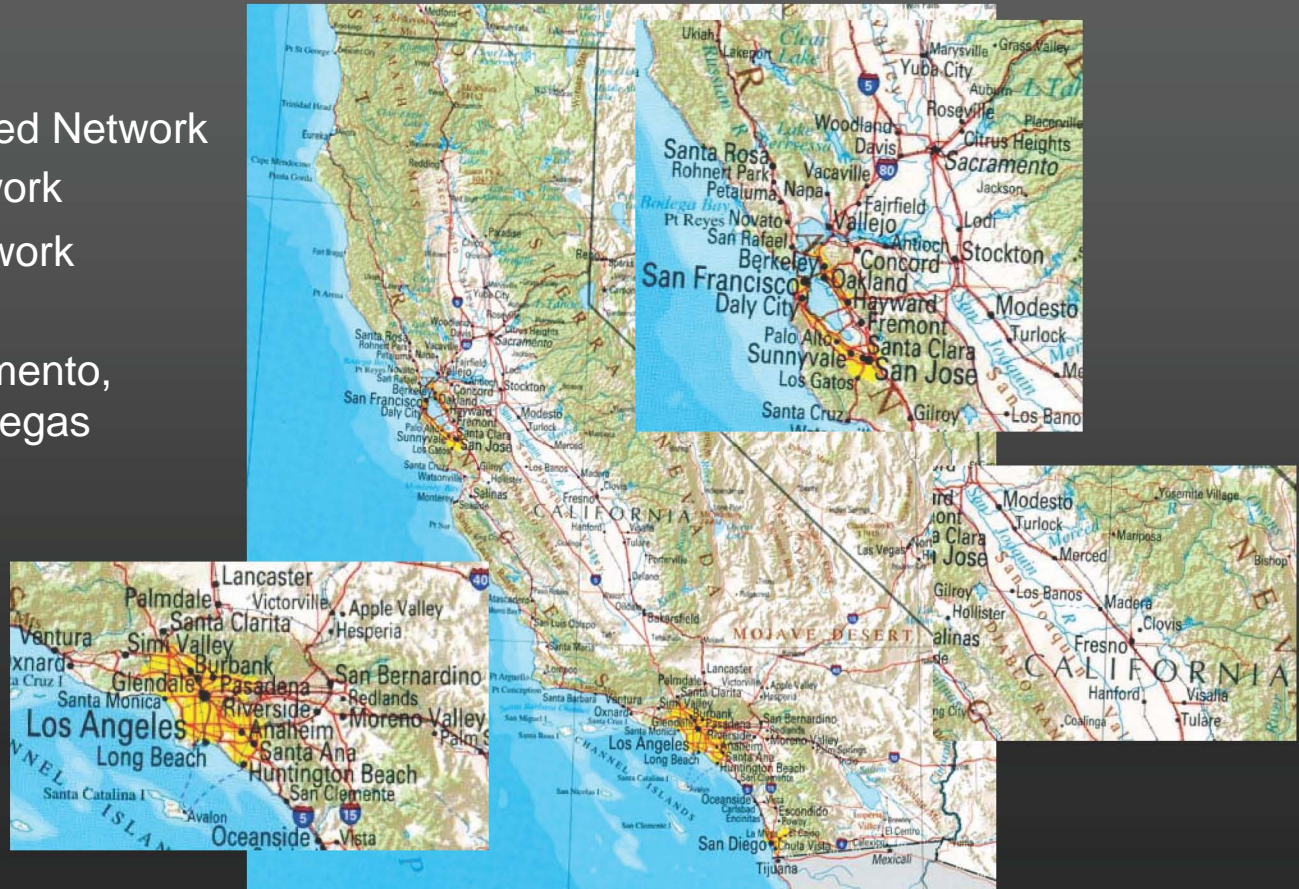
**Payments received**



# California Network Growth

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Fresno-Merced Network  
SF Bay Network  
So. Cal. Network  
99  
Reno-Sacramento,  
SD-LA, LA-Vegas  
101, I-5

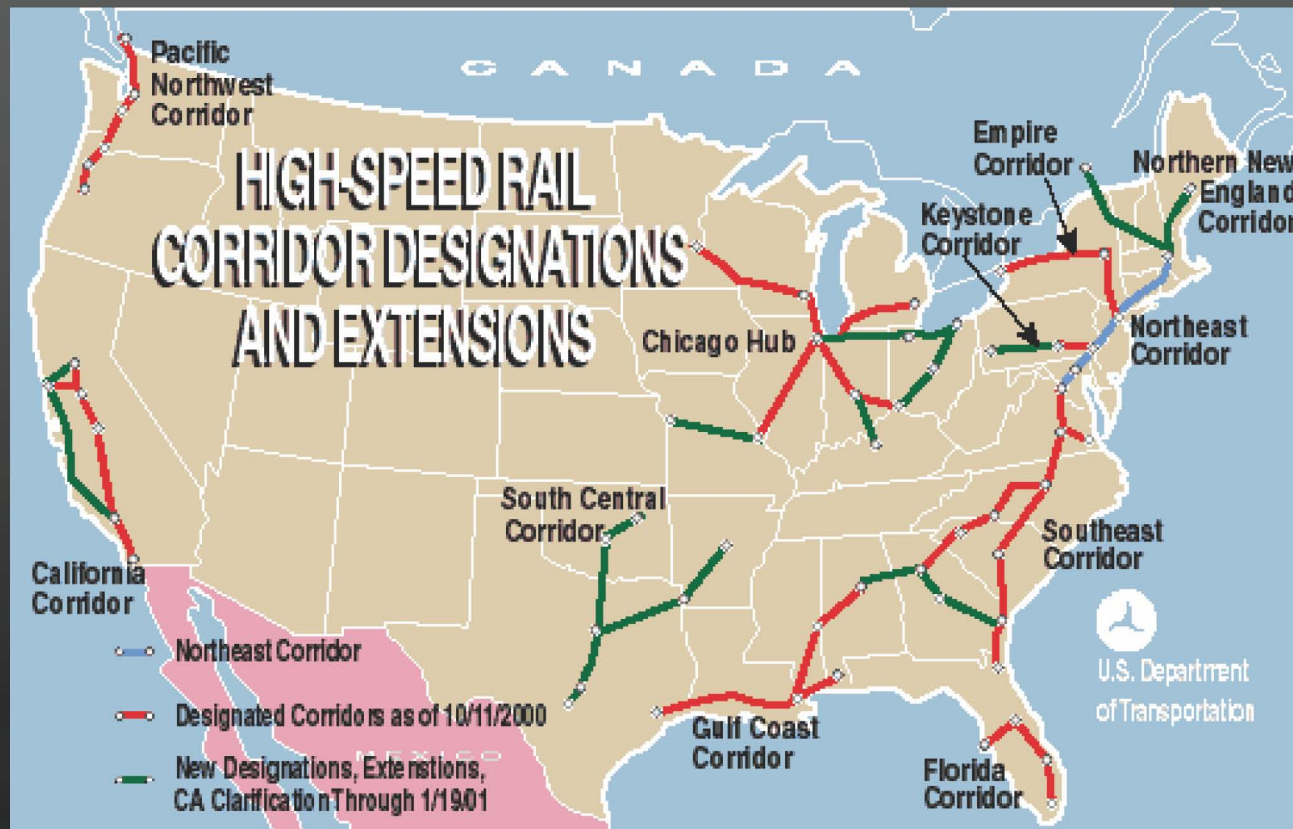


# Q and A



# US DOT Designated High Speed Corridors

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