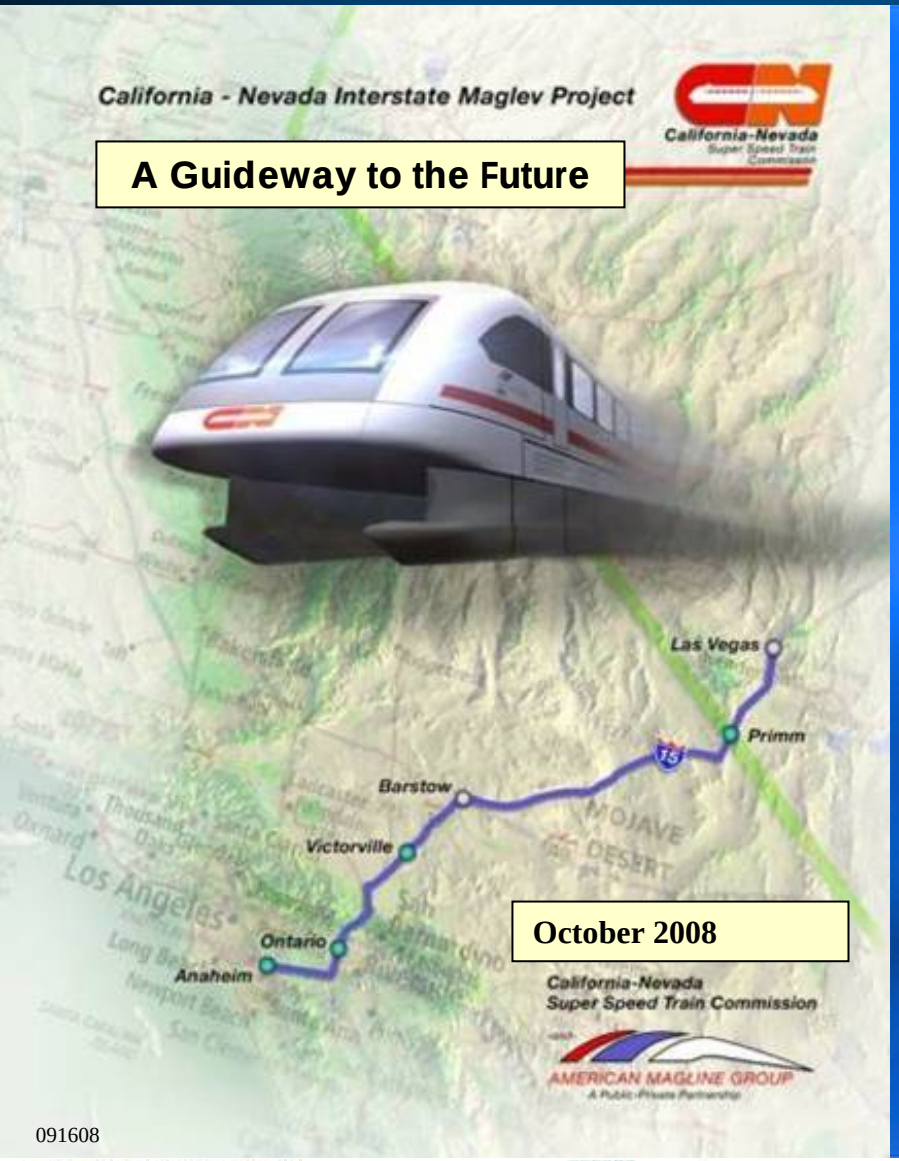
California-Nevada Interstate Maglev Project (CNIMP)



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Presented by:

California-Nevada Super Speed Train Commission (CNSSTC)

and

American Magline Group (AMG)

A Public-Private Partnership

Federal Railroad Administration | NEVADA DOT | Caltrans | Anaheim · Ontario · Victorville · California-Nevada Super Speed Train Commission · Barstow · Primm · Las Vegas | AMERICAN MAGLINE GROUP AMG

History of California-Nevada Super Speed Train Commission (CNSSTC)

- **1988 - State of NV and CA approved legislation to form CNSSTC.**
- **1988-1991 – CNSSTC initiates studies on ridership, technology assessment, socio-economic impacts, organizational and financial planning.**
- **1991 - CNSSTC formally selects the German developed 300+ mph Transrapid® Maglev technology for the California-Nevada Interstate Maglev Project (CNIMP)**
- **1996 - CNSSTC and American Magline Group (AMG) form a public-private partnership (PPP) to promote, design, finance, build, operate and maintain an "Americanized" Transrapid® maglev system for CNIMP.**
- **1998-2003 – CNSSTC/AMG awarded federal funds by USDOT (under TEA-21) to conduct preliminary environmental, design and engineering studies for CNIMP.**
- **2004 - CNSSTC enters into agreement with FRA, NDOT and Caltrans to commence Programmatic Environmental Impact Study (PEIS) for the corridor between Las Vegas and Anaheim, including the starter segment in Nevada. NDOT is designated as the lead state agency.**
- **2004-2007 - Funding for Phases I and II of the EIS is made available by Congress. NDOT selects URS as its environmental consultant.**

History of California-Nevada Super Speed Train Commission (CNSSTC) - Continued

- 2005 - Congress includes $45M in the SAFETEA-LU authorization bill to advance "deployment" of CNIMP (only maglev project named in SAFETEA-LU).
- 2008 - Congress passes the SAFETEA-LU Technical Corrections Bill correcting a drafting error made in 2005, thereby guaranteeing the previously authorized $45M for CNIMP. Another $45M is guaranteed to project(s) "East of the Mississippi" (to be named later by the USDOT).
- 2009-2011 - CNSSTC expects to complete the EIS and raise construction funding through the combination of a federal TIFIA loan, tax exempt bonds (issued by CNSSTC) and private equity investment .

California-Nevada Super Speed Train Commissioners

Nevada	California
Bruce Aguilera, CNSSTC Chairman - ***Vice President and General Counsel, Bellagio & City Center***	Ken Kevorkian, CNSSTC Vice-Chairman - ***Former California Transportation Commissioner***
James Bilbray - ***Attorney, Kummer, Kaempher, Bonner, Renshaw & Ferrario, Former U.S. Congressman***	Sarah Catz - ***Director, Center for Urban Infrastructure Institute of Transportation Studies, University of California , Irvine***
Larry Brown - ***Councilman, City of Las Vegas***	Lawrence Dale, Mayor - ***City of Barstow***
Marykaye Cashman - ***Chairman of the Board & CEO, Cashman Equipment Company***	Gary C. Ovitt - ***Supervisor, San Bernardino County***
Susan Martinovich - ***Director, Nevada Department of Transportation (NDOT)***	Angie Papadakis - ***Business Owner***
Chip Maxfield - ***Commissioner, Clark County***	Curt Pringle - ***Mayor, City of Anaheim***
Danny Thompson - ***Executive Secretary/Treasurer, Nevada State AFL-CIO***	Joe Stein - ***Former Member of Board of Directors, Niagara Frontier Transit Systems; Former President and Member of California State Board of Education***
Dina Titus - ***State Senator***	Alan Wapner - ***Councilman, City of Ontario***

TRI High Speed Maglev Selected for CNIMP

Early studies selected Transrapid for CNIMP:

- **Shorter trip time compared to wheel-on-rail systems**
- **More profitable due to large volume of passenger throughput**
- **Greatest promise for commercialization over any other high speed Maglev system.**

Shanghai Maglev Update

- 1st High Speed Maglev Commercial System
- Successful Revenue Service Since 2004
- Operational Parameters
  - Double-track: 30 km (19-Mile) Long
  - Max Speed: 450 km/hr (275 mph)
  - Travel Time: 7.5 minute
- Carried Over 10.4 Million Passengers
- Traveled Over 2.2 Million Miles
- On-Time Reliability 99.98%

Shanghai to Hangzhou Maglev Update

- **August 2008 -- Chinese Government Announced Decision To Extend High Speed Maglev From Shanghai To Hangzhou**
- **System Length 199 Km (124 Miles) Including Link Between Two Shanghai International Airports**
- **Construction Period: 2009 To 2013**
- **Max Speed: 450 km/hr (275 mph)**
- **Trip Time: 30 Minute Versus 90 Minute For Bullet Train**
- **Projected Construction Cost: $3.2B (US$)**

Shanghai Project Video
(Double-click to play)

California-Nevada Maglev Project Team

Hirschfeld Steel Company

MNC & Associates

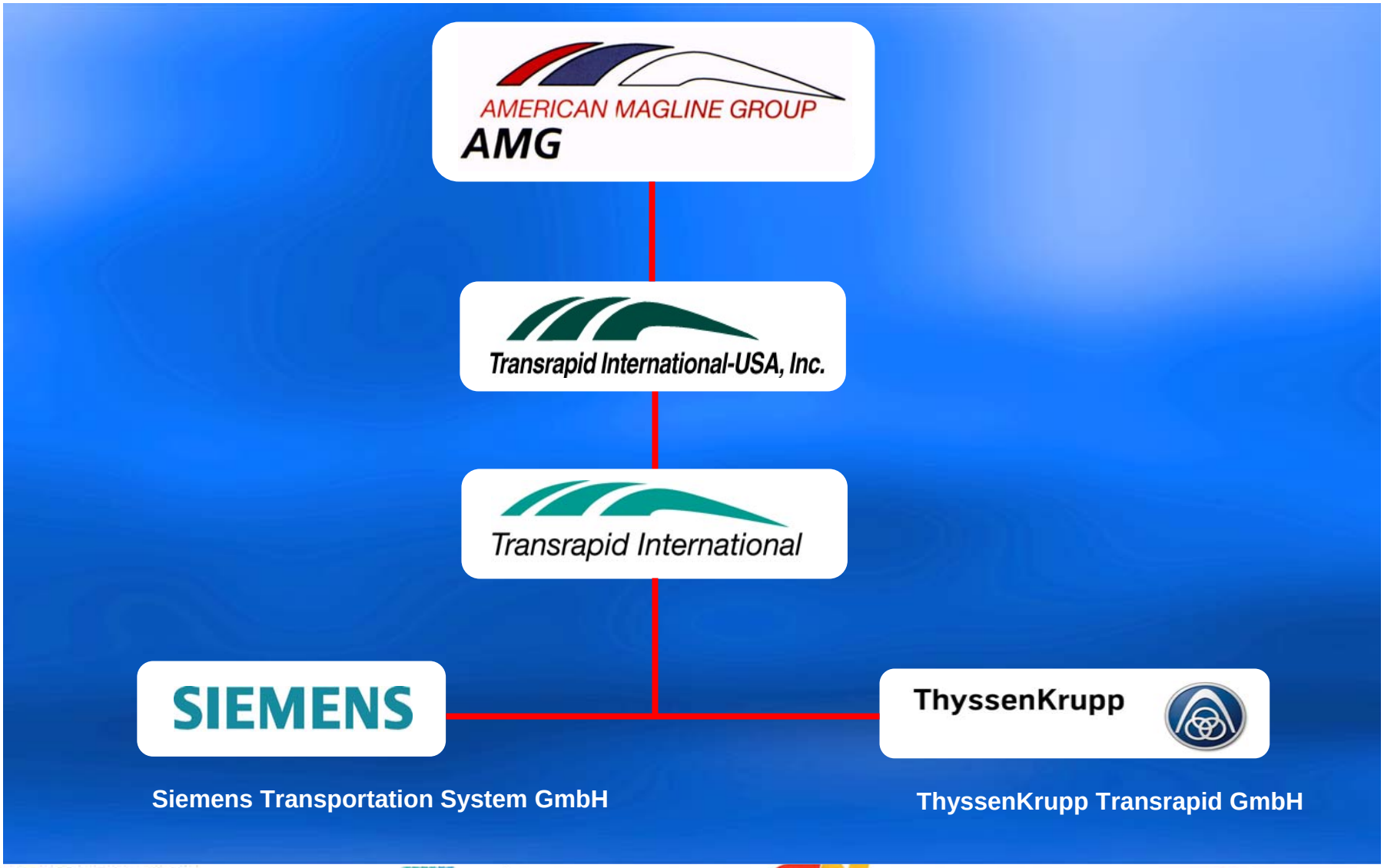
Parsons Transportation Group

General Atomics

Citigroup

Transrapid International-USA, Inc.

Project Technology Supplier



Roles & Responsibilities

Participant	Responsibilities
FRA	Administration. Sponsor for PEIS/EIS and safety certification (Rule of Particular Applicability).
NDOT	State Agency; lead agency for PEIS/EIS
CNSSTC	State Agency. Public Partner. Local coordination and public outreach.
American Magline Group	CNSSTC Private Partner. Prime contractor. Technology transferee. Project Management. Support local coordination and public outreach.
Transrapid-USA	Technology provider. Technology transferor. Systems architecture and analysis. Vehicle propulsion and control system engineering.
General Atomics	Adapt energy supply and propulsion system to U.S. electrical standards.
Hirschfeld Steel	Adapt guideway to U. S. construction standards.
Parsons	Project planning, civil engineering, and benefits analysis. Seed alignment and right-of-way. Civil structures and passenger stations.
Citigroup	Financial Plans.

Las Vegas to Anaheim System

Las Vegas to Anaheim

Route length	268.4 miles (432 km)
Trip time (est.)	80.5 minutes express
Top speed	500 km/h (311 mph)
Investment Cost	$12.1 billion (2000$)
Annual Operating Profit	$519 million (2000$)
New Jobs	50,000 (construction) 2,900 (operation)
Benefit/Cost Ratio	1.8

High Speed Maglev Passenger Transport Capacity is Huge

- **A 10-section high speed Maglev train operating on 5-minute headway transports 10,608 seated passengers per hour per direction:**

  - **Equivalent to the maximum capacity of a free flowing 8-lane freeway (4 lanes in each direction)**

  - **Equivalent to combined passenger carrying capacity of 55 fully loaded 747 aircraft landing every hour**

… and Maglev reduces dependence on foreign oil!

Las Vegas to Primm/Ivanpah Airport

Las Vegas to Primm (East Starter Segment)

Route length	40 miles (64 km)
Trip time (est.)	12 minutes express
Top speed	500 km/h (311 mph)
Investment Cost	$1.3 billion (2000$)
Annual Operating Profit	$49.2 million (2000$)
New Jobs	4,600 (construction) 500 (operation)
Benefit/Cost Ratio	1.5

Anaheim to Ontario International Airport

Anaheim to Ontario International Airport (West Starter Segment)

Route length	31.4 miles (50.5 km)
Trip time (est.)	14.5 minutes
Top speed	320 km/h (220 mph)
Investment Cost	$2.62 billion
Annual Operating Profit	$88.2 million (year 2000 dollars)
New Jobs	11,000 (construction) 500 (operation)
Benefit/Cost Ratio	1.7

Configuration & Operational Parameters

Operation *Route*	Local / Regional: *SRC – Primm*	Commuter / Regional: *Ontario - Anaheim*	Intercity: *SRC – Anaheim*
Revenue Guideway Single Track Double Track	(Initial Segment Service) 37.6 km (23.3 mi) 18.2 km (11.3 mi)	(Initial Segment Service) 0 km 51.6 km (32.0 mi)	(Full Corridor) 120 km (74.4 mi) 299.8 km (185.9 mi)
Trip Time	14.5 / 12 minutes	14.5 / 14.5 minutes	87.5 minutes express
Operating Headway	20 minutes	10 minutes	20 minutes
Operating Period	6:00 – 1:00 (19 hours)	6:00 – 1:00 (19 hours)	6:00 – 1:00 (19 hrs)
Trips per day	114 (one-way trips)	228 (one-way trips)	114 (one-way trips)
Vehicle Fleet	8-section trains 2 Trainsets + 1 Spare (initial operation)	4-section trains 5 Trainsets + 1 Spare (initial operation)	4- & 8-section trains 3 + 12 Trainsets + 3 Spares
Vehicle Capacity-Seated Seated/Standing	639 passengers 1101 passengers	305 passengers 535 passengers	305 & 639 passengers 535 & 1101 passengers
Transportation Capacity: Seated pphpd Seated/standing pphpd	 1917 3303	 1830 3210	 1917 3303
Maximum Future Capacity Seated pphpd Seated/Standing pphpd	 10608 17544	 10608 17544	 10608 17544

SRC – Denotes South Resort Corridor included in prior studies

Projected Ridership, Costs, & Benefits

Operation *Route*	Local / Regional: *SRC – Primm*	Commuter / Regional: *Ontario - Anaheim*	Intercity: *SRC – Anaheim*
Projected Annual Ridership in 2025	(Initial Segment Service) 14.3 million	(Initial Segment Service) 13.9 million	(Full Corridor) 42.9 million
Fares (2000$)	$4 to $6	$9	$55 intercity $4 - $6 local NV $9-$12 local CA
Average Annual Net Operating Revenue (2000$)	$49.2 million	$86.6 million	$517.4 million
Capital Cost (2000$)	$1.3 billion	$2.6 billion	$12.1 billion
Benefit/Cost Ratio	1.5	1.7	1.8

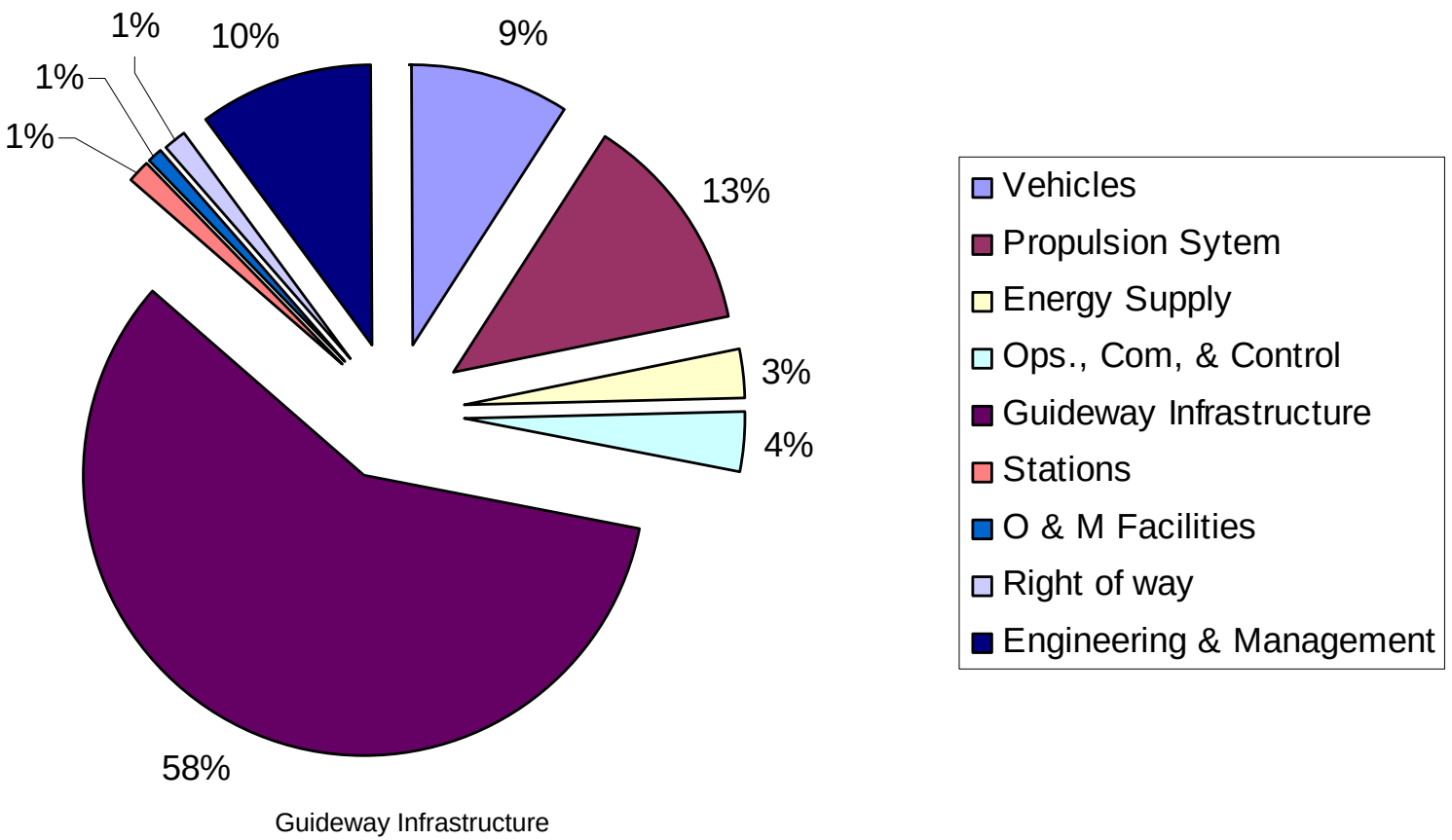
SRC – Denotes South Resort Corridor included in prior studies

100% Local Project Support

Along the entire 269-mile alignment, the Project has the strong support of the States of California (Caltrans) and Nevada (NDOT), as well as:

- Affected Cities
  - **Las Vegas**
  - **Barstow**
  - **Victorville**
  - **Ontario**
  - **Anaheim**
- Regional Transportation Organizations
  - **Clark County Regional Transportation Commission**
  - **San Bernardino Association of Governments (SANBAG)**
  - **Orange County Transportation Authority (OCTA)**
  - **Southern California Associated Governments (SCAG)**

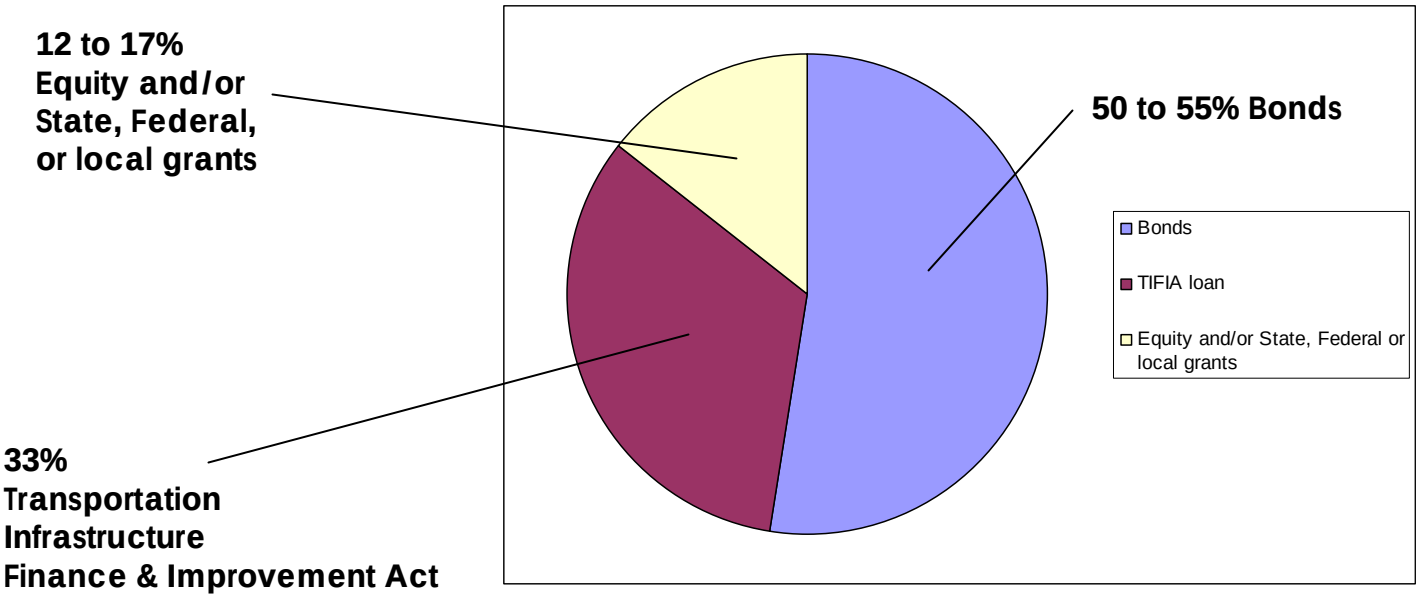
Capital Construction Costs (Full Corridor)



Total construction cost for Anaheim to Las Vegas: $12.1B (2000$);
Guideway Infrastructure is large fraction of capital cost of High Speed Maglev

Proposed 'Project' Financing

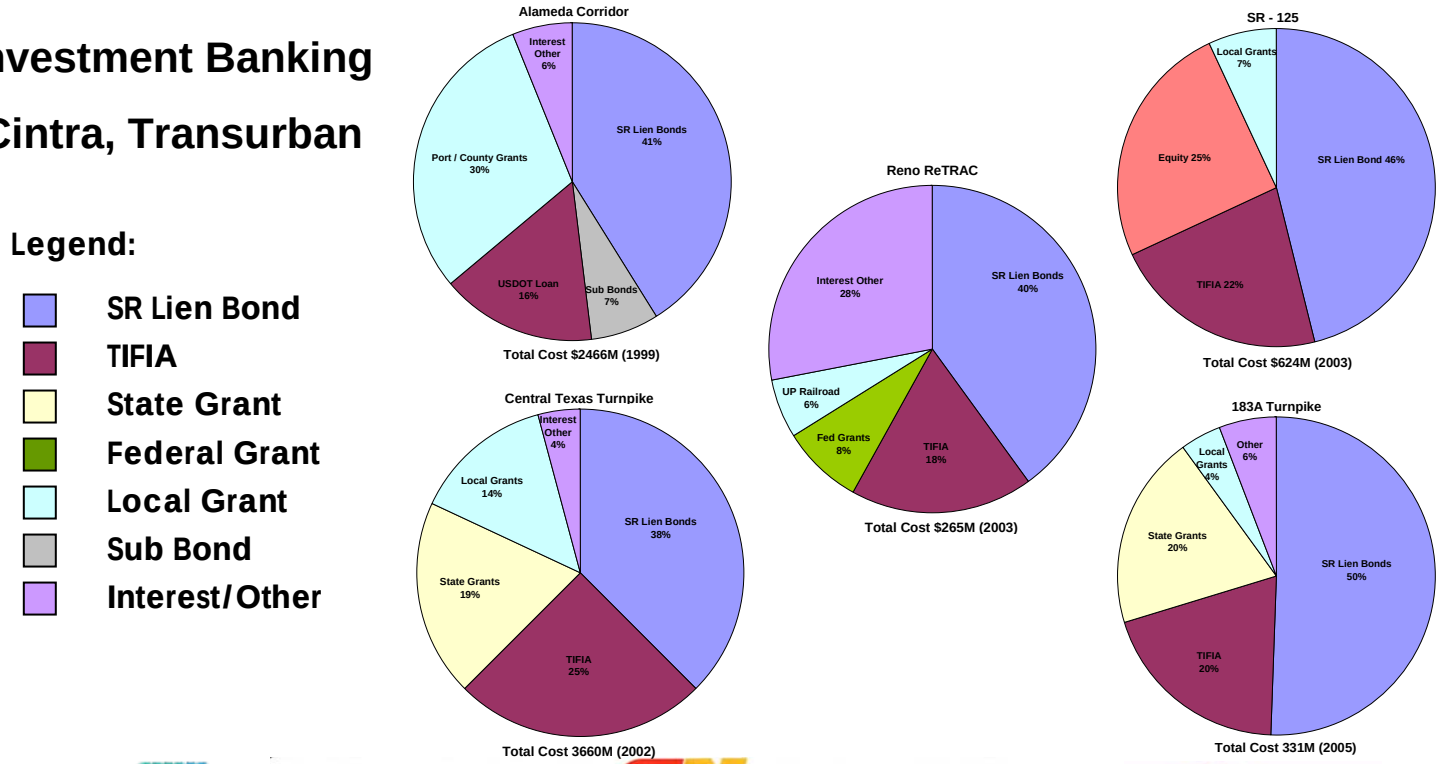
- **Anticipated funding structure:**



Recent Transportation Project Financings

Recent trends indicate that large Federal Grants are no longer necessary

- **Pie charts show funding sources for 5 recently completed major transportation projects**
- **All projects involved large fractions of bond financing.**
  - **SAFETEA-LU (section 1143) expanded exempt facility bonds**
  - **SAFETEA-LU also enhanced features of TIFIA**
- **Notable trend in investment Banking**
  - **Macquarie, Cintra, Transurban**



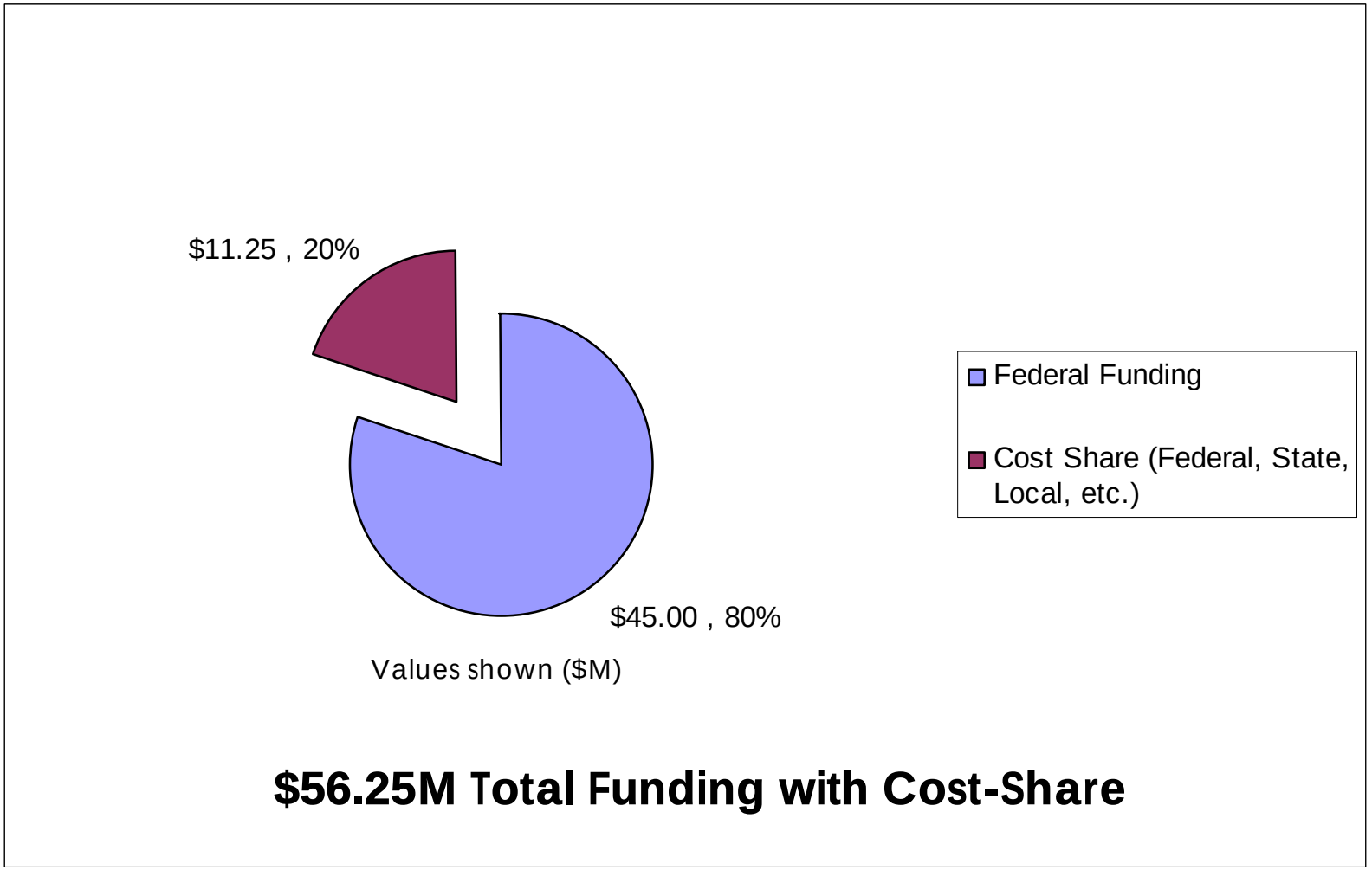
Only Maglev Project Selected for Federal Funding

CNIMP only project named and approved in SAFETEA-LU

- **Winner of 10-year competition (started in 1998 with TEA-21)**
- **Total U.S. Maglev Federal Funding $90M**
  - **$45M for maglev project between Las Vegas, Nevada and Anaheim, California**
  - **$45M for maglev projects to be selected in the future "located east of the Mississippi River using such criteria as the Secretary deems appropriate"**
- **Contract Authority:**
  - **Guaranteed funding**
  - **Federal share is 80%**
  - **Non-federal share is 20%**

Funding Guaranteed by Law: June 2008

Total Funding based on 80%/20% Cost Share



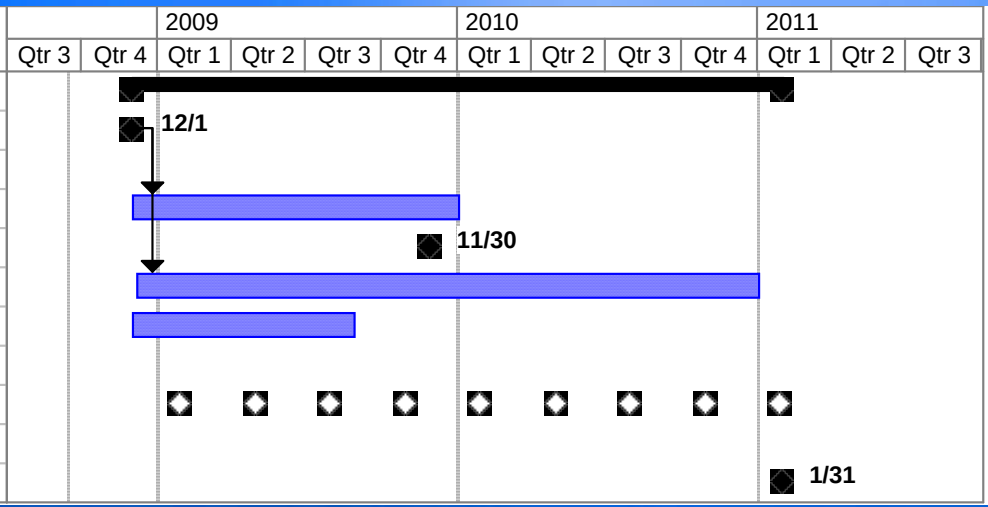
Next Steps

- **Secure cost share. (Based on 80% federal funding, the required 20% cost share is $11.25M for total project funding of $56.25M.)**
- **Complete PEIS/EIS (Draft and Final)**
- **Raise construction funding (make project "Bankable")**
  - **TIFIA loan from USDOT (33%)**
  - **Tax-exempt bonds (issued by CNSSTC) (50-55%)**
  - **Equity/grants (12-17%)**

The Road to Construction

Schedule
Leading to Financing and Construction

ID	Task Name
1	**LV-Primm as segment of LV-Anaheim**
2	**Go-ahead**
3	
4	**PEIS/EIS**
5	**Record of Decision (ROD)**
6	**Make Project Bankable [Construction Funding]**
7	**Anaheim-Ontario Project Description/EA**
8	
9	**Quarterly Reports**
19	
20	**Comprehensive Completion Report**



The New Iron Horse

Just as the West needed the Transcontinental Railroad to encourage development of the western and mid-western states, and assisted the West in meeting the challenges of the 20th century, the building of the California-Nevada Maglev system will assist the West in meeting the economic, social, quality of life, and environmental challenges of the 21st century.

Contact Information - CNIMP

California-Nevada Super Speed Train Commission

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California-Nevada Super Speed Train

The Fast Track to the Future of Transportation

Traffic Problems: It's Time for a Solution

Efficient transportation systems are one of the critical underpinnings of this nation's economic engine. While over the last half of the 20th century we have made major investments in highways, airports, conventional rail systems and urban transit systems, it is evident that in many areas of the country, traffic congestion is becoming more than an inconvenience – it is creating an obstacle to progress.

The traffic congestion that plagues the nation is perhaps nowhere better demonstrated than along the east-west corridor from Anaheim, California to Las Vegas, Nevada.

Along this 269-mile corridor, there exists some of the heaviest urban traffic in the nation. This causes traffic tie-ups for millions of frustrated travelers who are attempting to drive to five major airports and three major tourist destinations.

This growing problem presents a world-class opportunity to have a U.S. demonstration of a viable technology which can greatly ease traffic growth and give travelers and commuters a choice they've never had before: a comfortable, affordable super speed train. The technology that makes this transportation possible is called magnetic levitation, or "Maglev."

Maglev Interior

Convenience and Safety at 300 Miles Per Hour

For nearly half a century, engineers have dreamed of levitating trains on magnetic fields to eliminate friction, increase speeds, make a smoother ride and to save energy. Until relatively recently, capital costs and engineering issues held this dream at bay.

However, magnetic levitation technology – originated in the United States and refined in Germany – is now a proven reality.

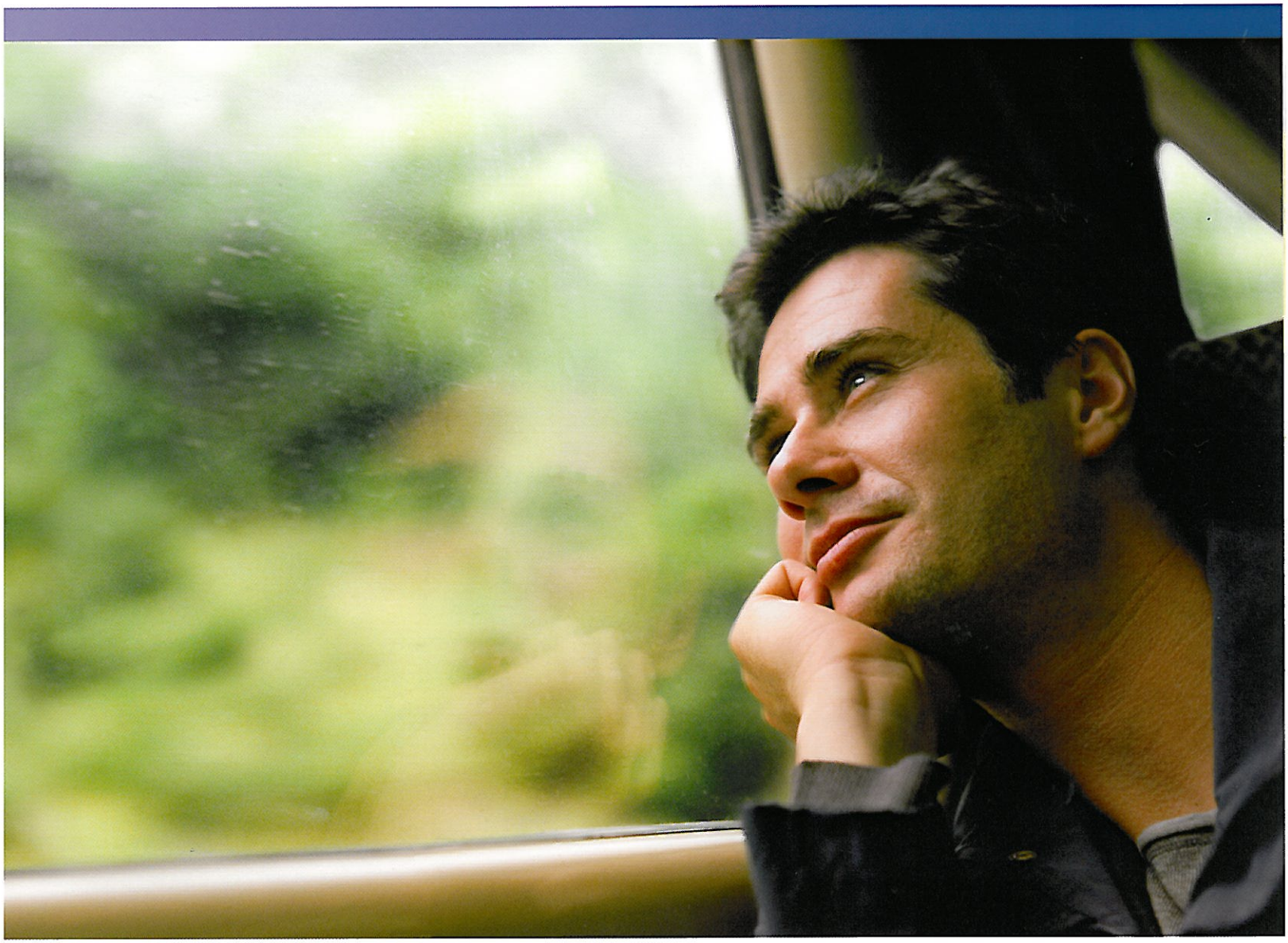
While America awaits development and operation of a high-speed transportation system, the technology already is in use in other parts of the world – and is yielding successful results. Maglev trains are now operating in China and Germany and more Maglev trains are being planned around the world.

Maglev in Shanghai ran at 92% occupancy in its first quarter of operation (Jan-March 2003).

The original Maglev in Emsland, Germany has been a visitor attraction for more than a decade.

These trains can sustain speeds in excess of 300 miles per hour and handle large numbers of passengers in comfort with a degree of safety and convenience unrivaled by any other mode of transportation.

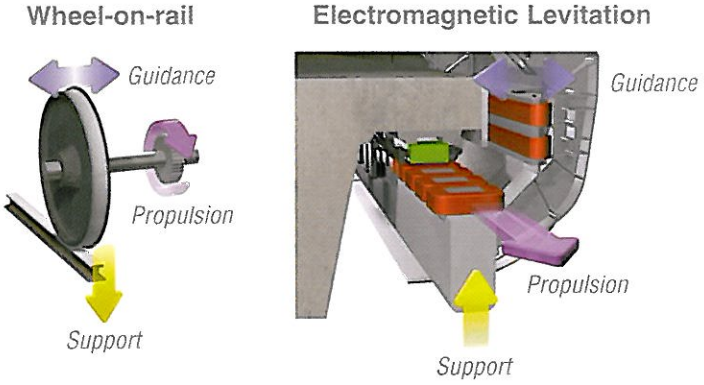
E FAST TRACK TO CLEAN, EASY & SAFE TRANSPORTATION.



What is Magnetic Levitation?

Instead of wheels and rails, Maglev trains hover above the tracks – or guideways – levitated and propelled by magnetic force. There is no physical contact between the train and the guideway, which eliminates friction and enables high speeds. The base of the train wraps around the guideway and cannot derail.

Maglev trains reach unprecedented ground transportation speeds of more than 300 mph (or twice as fast as Amtrak's fastest commuter train). In comparison, a Boeing 777 commercial airplane used for long-range flights can reach a top speed of about 490 mph.

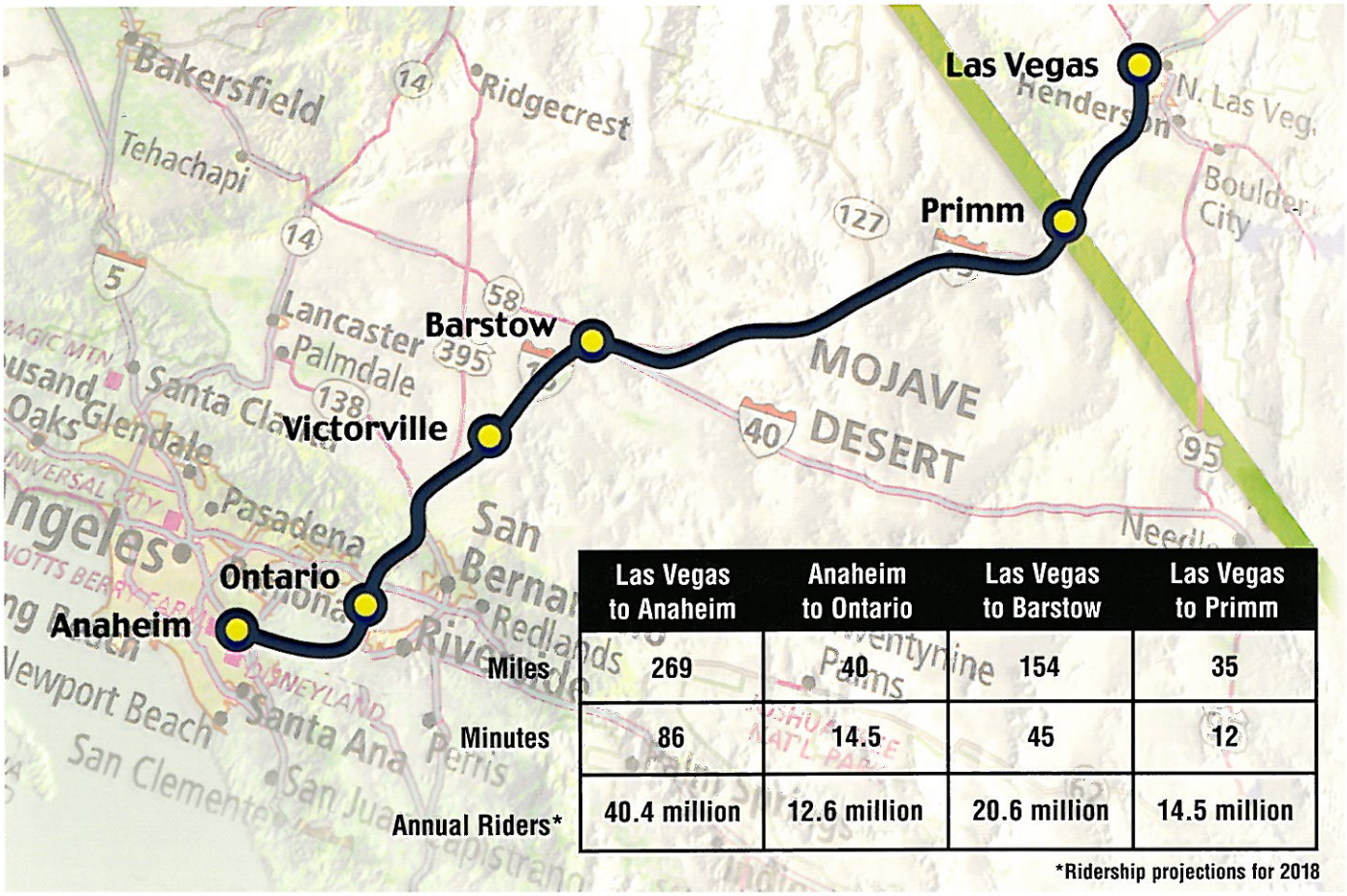


A Model for Getting the Nation On-track

Maglev – a state-of-the-art mode of transportation – has the potential to revolutionize travel between Las Vegas and Southern California and presents the most viable option to date for improving and enhancing transportation along the I-15 corridor.

The California-Nevada Maglev project offers significant advantages over all other Maglev projects currently under consideration for federal funding:

- Maximum availability and use of the I-15 right-of-way
- Minimum average cost-per-mile
- Ease and predictability of construction
- Maximum environmental benefit
- Strong ridership, revenue and economic benefits
- Relief of a heavily congested I-15 highway
- True high-speed intercity demonstration of Maglev technology

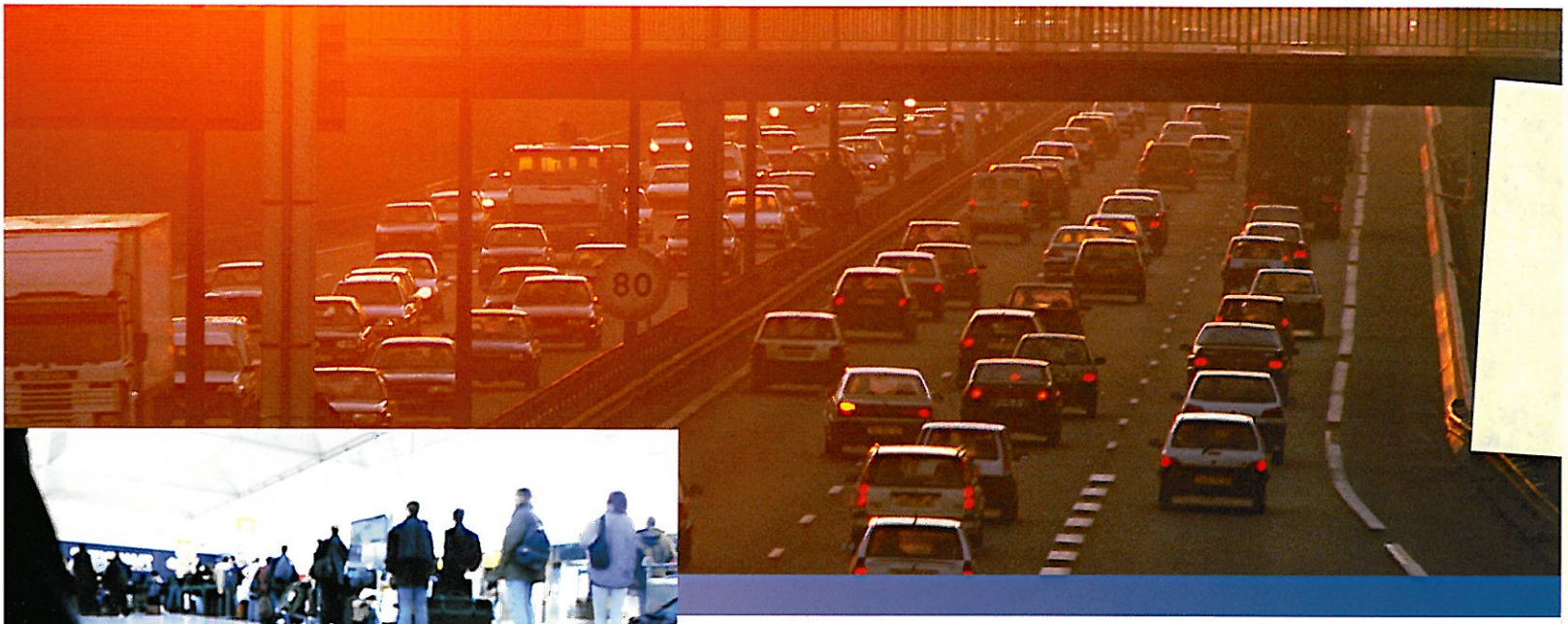


	Las Vegas to Anaheim	Anaheim to Ontario	Las Vegas to Barstow	Las Vegas to Primm
Miles	269	40	154	35
Minutes	86	14.5	45	12
Annual Riders*	40.4 million	12.6 million	20.6 million	14.5 million

*Ridership projections for 2018

Facts:

- *The population of California's Inland Empire is expected to double to 6.4 million in the next 25 years*
- *The population in the Las Vegas region is expected to increase to 2.2 million by 2025, an increase of 68% from the year 2000*
- *When completed, the California-Nevada Maglev project will link three major airports, three major tourist destinations and the largest, fastest-growing cities and counties in the United States*
- *Maglev is scheduled to begin construction in early 2006, with the first segment ready for service in 2009 … a faster timeline than any other project can deliver*



Our Airports Could Use Some Relief

Maglev is a key component of meeting Southern California's regional plan and demonstrates a futuristic intermodal transportation solution known as "airports without runways."

"Airports without runways" receive passengers, baggage or cargo in areas with high aviation demands and link them via alternative modes of transportation, such as high-speed trains, to locations with lower demands.

This would benefit Southern California by relieving pressure on the region's overcrowded airports, reducing freeway congestion and enhancing air quality, while air passengers would benefit from a truly seamless, intermodal transportation system.

Why Not Just Build More Roads?

Maglev also has many distinct advantages over freeways. It can deliver inter-city passengers in as little as 20% of the time it takes for freeway drivers. In addition, Maglev's guideway support piers require minimal land consumption; as a result, it consumes only about 16% of the land required for a freeway system.

Maglev and freeway systems of similar capacity connecting urban regions have similar capital costs in rural and undeveloped urban areas. However, Maglev is substantially less costly in dense urban regions due to the high cost of freeway right-of-way in these areas.

And since the trains are propelled by electrical energy, Maglev is an environmentally friendly option for 21st century travel as it contributes to a reduction in automobile emission, noise and air pollution.

Maglev offers significant benefits in passenger travel time, land usage and reduced pollution.

Maglev Puts America to Work

"Our roadways are overcrowded, our airports are near capacity and our bridges and transit systems require more investment ... And we desperately need to invest billions of dollars in high-speed rail corridors across the nation (and) magnetic levitation. Las Vegas has the second worst 'congestion burden' in the nation. Magnetic levitation could help ease this traffic crunch."

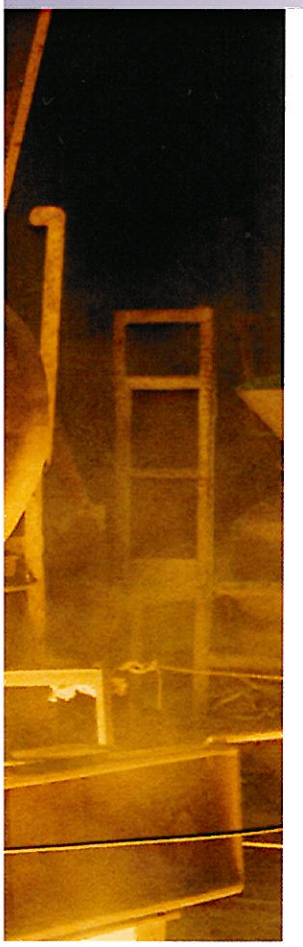
— United States Senator Harry Reid (D-Nevada),
Assistant Democratic Leader and former Chairman of the
Senate Subcommittee on Transportation, Infrastructure and Nuclear Safety

"The California-Nevada Super Speed Train Commission is taking the necessary steps to ensure the United States' first magnet driven high-speed train is built between California and Nevada. Southern California is facing severe growth and transportation problems, and smart solutions are necessary to ensure the region's future economic vitality and quality of life. The construction of the California to Nevada Maglev project will play a vital role in ushering in a new era of ultra-fast and efficient long distance mass transit."

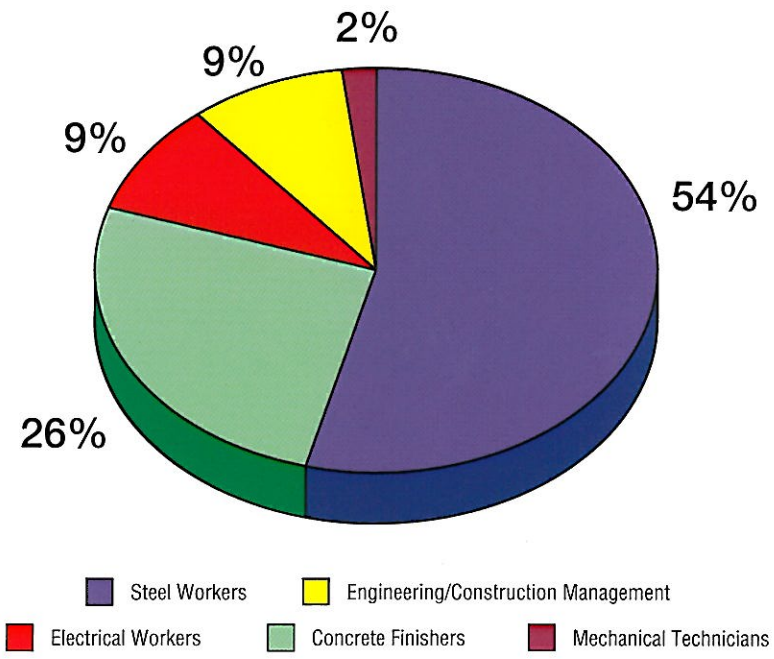
— United States Representative Gary Miller (R-California),
House Committee on Transportation and Infrastructure

"This project will play a vital role in determining conclusively the value of deploying super speed Maglev technology in the United States. The California-Nevada Maglev project can achieve up to 30% higher cruise speeds than other projects currently under consideration and can sustain those speeds over a five times greater distance. Furthermore, it can reach these speeds at a lower cost due to the characteristics of the corridor. In addition, the time to complete the planning and construction for this route is estimated to be the shortest for all projects in the country."

— United States Representative Don Young (R-Alaska),
Chairman of the House Committee on Transportation and Infrastructure



Breakdown of Construction Jobs for Maglev



Across America, investment in public transportation is paying off. For each $1 billion in federal capital funds, 47,000 jobs are created and businesses experience a $3 billion gain in sales*.

Maglev presents significant long-term opportunities for U.S. manufacturers of steel, concrete, power cables, hardware, software and electronics – providing a needed boost for these manufacturing sectors while keeping dollars spent on these products in the United States.

Maglev typifies the West's role in ushering our nation into brand new eras of prosperity. It started with the transcontinental railroad and it continues today.

*Statistic provided by U.S. Chamber of Commerce

All Aboard
the Future of Transportation

The California-Nevada Maglev project enjoys broad-based support in its region and around the country. This support reflects the confidence that leaders in both states have in Maglev and its long-range ability to provide a viable alternative means of transportation for our region.

The public-private partnership between the California-Nevada Super Speed Train Commission and American Magline Group is the entity recognized under federal law to design, build, operate and maintain this system.

Our public-private partnership has secured cooperative agreements or resolutions and statements of support from all of the cities and regional planning organizations in every jurisdiction along the route.

The Federal Railroad Administration (FRA), California Department of Transportation (Caltrans) and the Nevada Department of Transportation (NDOT) are now working together with the public-private partnership to complete a Program Environment Impact Statement (PEIS) applicable to the entire 269-mile corridor. This will enable the near term construction of "The First Forty Miles™" and, ultimately, the full corridor.

Jobs, Economic Benefits & Materials

Maglev construction will provide many American workers with employment opportunities for years to come. All along the I-15 corridor, the California-Nevada Maglev project will create nearly 97,000 total jobs. Mechanics, electricians, steel workers and concrete finishers will be involved in building the system.

Construction of the Las Vegas-Primm segment alone, known as the "first 40 miles," will create about 4,000 direct and 9,000 indirect (full time equivalent) jobs. After its completion, the Las Vegas-Primm segment will create about 100 operations and maintenance positions.

High Speed Maglev Material Summary

Item	LV-Primm	LV-Anaheim
Girder Steel		
tons	148,750	1,600,550
$ millions	446	4,802
Stator Steel		
tons	18,750	201,750
$ millions	62	666
Rebar		
tons	16,789	632,150
$ millions	15	569
Concrete		
cubic yards	173,720	6,940,200
$ millions	38	1,527
Copper Cable		
tons	6,335	72,515
$ millions	56	638
Construction Jobs (man years)		
on-site	4,000	43,040
total	9,000	96,840
Total Construction Time (yrs)	2.75	8
O&M Jobs (per year)	100	300

Maglev provides significant long-term opportunities for U.S. manufacturers of steel, concrete, power cables, hardware, software and electronics – providing a needed boost for these manufacturing sectors while keeping dollars spent on these products in the United States.

Construction of the guideways for the Las Vegas-Greater Los Angeles corridor alone will involve almost 2 million tons of prefabricated steel, 7 million cubic yards of concrete beams and support piers containing 632,000 tons of reinforcing bar and more than 8,000 miles of electrical cabling.

CALIFORNIA

The Maglev system will become a key component in California's regional planning efforts and will help to foster the state's economic growth.

In particular, Maglev will ease the air traffic burden that some airports are currently experiencing. And it will provide a fast and convenient method for individuals to access and travel between airports, which are now facing constraints against physical expansion or added flights.

- Los Angeles International Airport (LAX) is nearing its maximum capacity of 78 million annual passengers
- Santa Ana's John Wayne Airport (JWA) hosted more than 7.9 million passengers in 2002 – nearly at its projected 8 million capacity
- Ontario Airport (ONT) currently is at about 20% of capacity, meaning it is at the threshold of becoming the region's next major air hub

NEVADA

In Nevada, direct and indirect expenditures from labor and capital for building, assembling and operating the Maglev train will add $1.44 billion to the gross county product for Clark County.

The unique aspects of the Maglev train alone are expected to draw 2.3 million new visitors to the area. These visitors will require lodging, dining and other services and facilities – providing more than $1.2 billion annually in new tourism expenditures.

Based on these visitor forecasts, state and local tax revenues generated by the Maglev train would reach more than $122 million per year. These include $44 million in sales taxes revenues, $18.7 million in property taxes and $8.9 million in gaming taxes.

FEDERAL

The federal government could expect about $173 million per year in direct and indirect tax revenues. The Las Vegas to Anaheim corridor offers the lowest cost demonstration of Maglev, thus maximizing the benefits obtained from federal investments.

Safety, Ridership & Cost Benefits

High-speed Maglev can and should be an integral component of our nation's transportation system.

Its contact-free operation between the vehicle and guideway infrastructure results in lower operating and maintenance costs than for traditional steel-wheel-on-rail systems. And because Maglev can operate routinely at speeds of up to 300 mph, it has the ability to attract passengers that might never use slower alternatives.

Unlike steel-wheel-on-rail systems, Maglev's synchronous long-stator linear motor integrated into the guideway eliminates the need for an on-board propulsion motor, thus permitting lower weight vehicles which, in turn, enables enhanced energy efficiency.

Maglev offers significant safety benefits: derailment is virtually impossible as the vehicle wraps around the guideway, and collisions are virtually impossible since the guideway motor is only active as the vehicle passes.

Also, since there is no fuel on-board and non-combustible materials are used in construction, there is no fire danger, and elevated guideways eliminate the need for grade-level crossings, unlike traditional railroads.

While the average lifespan of steel-wheel-on-rail rolling stock is about seven years requiring frequent maintenance, Maglev vehicles can be in service for 30 years or more – providing further proof of its cost-efficiency.

Maglev has many distinct advantages over freeways. It can deliver inter-city passengers in as little as 20% of the time it takes for freeway drivers. In addition, Maglev's guideway support piers require minimal land consumption; as a result, it consumes only about 16% of the land required for a freeway system.

Maglev's maximum capacity of 10,608-seated passengers per hour, per direction (based on 10-section trains with 5-minute headways) is equivalent to an 8-lane freeway (4 lanes in each direction).

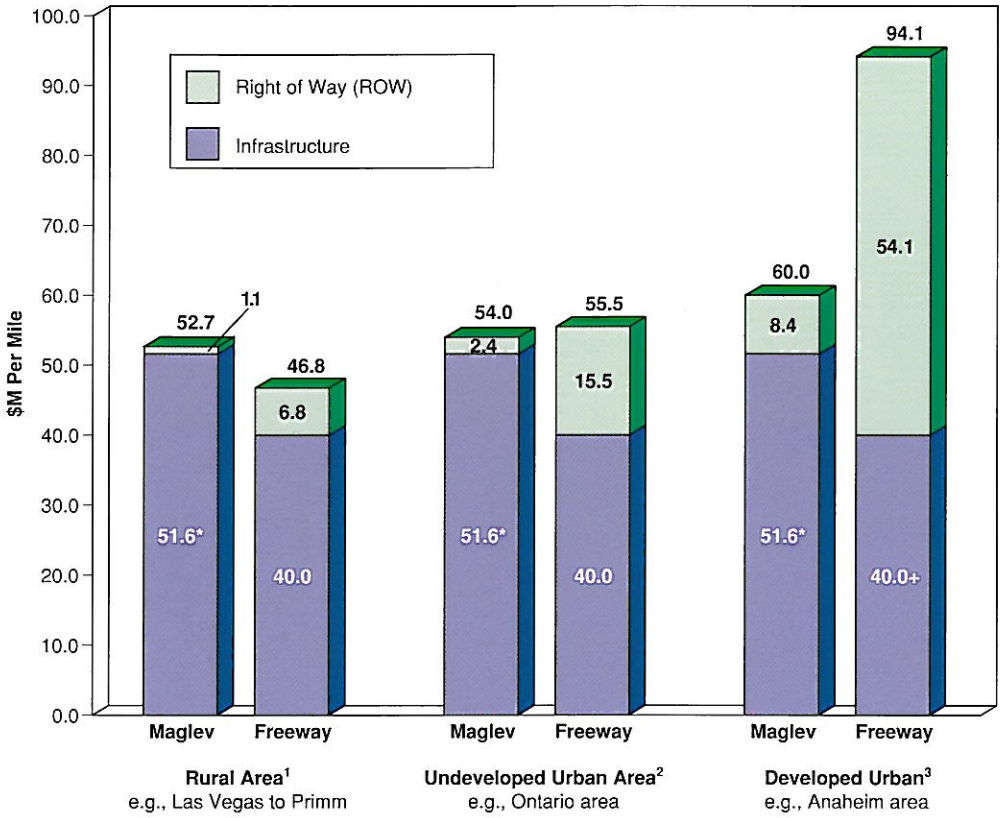
Maglev's construction costs compare favorably to freeways in carrying similar number of people.

Maglev
Dual Track
10 Section Trains
5 Minute Headway

Freeway
8 Lanes
4 Lanes Each Direction

[1]Assuming ROW Acquisition Cost of $5 per sq. ft.
[2]Assuming ROW Acquisition Cost of $11.50 per sq. ft.
[3]Assuming ROW Acquisition Cost of $40 per sq. ft.

Infrastructure Cost Comparison



*Extrapolated from the CNIMP Project Report – Las Vegas to Primm Segment (dated June 2000)

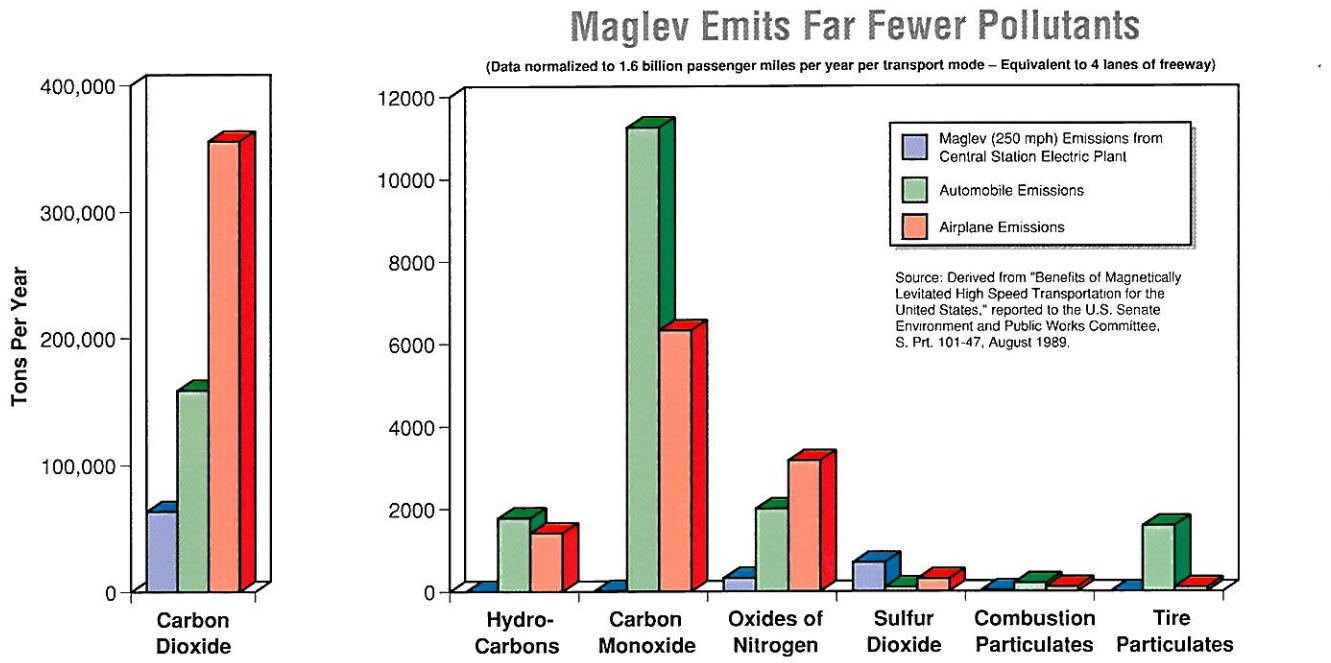
Ridership

California-Nevada Maglev officials are estimating ridership on the Maglev system between Las Vegas and Anaheim to reach about 40.4 million passengers in the year 2018. Of that total, an estimated 13.3 million will be inter-city passengers traveling between terminus cities, while 27.1 million would be "suburban" passengers riding between the intermediate destinations on the route – Las Vegas, Primm, Barstow, Victorville, Ontario and Anaheim.

The estimates do not include transfers from other high-speed rail systems, which could add an additional 3 million annual passengers to those totals.

Officials also are forecasting that the system's initial 40-mile segment connecting Las Vegas and Primm could yield 32,350 daily trips in the segment's first year of operation – an estimate expected to increase to 40,812 daily trips by 2025.

Environmental Benefits



The introduction of a new transportation system such as Maglev makes the most sense as it possesses ecological advantages and contributes to a reduction in pollution caused by other forms of transportation, including automobiles and commercial aircraft.

Maglev has numerous other positive environmental characteristics that make it a desirable alternative to traditional modes of transportation:

- Much quieter, at comparable speed, than conventional rail due to the non-contact technology
- No combustion, exhaust gases or other pollutants emitted along the route by the Maglev trains since the trains are propelled by electrical energy. Pollution may, of course, be emitted by the electrical power generation sources. However, even if the electrical power sources are all coal fired (a worst case scenario since a significant fraction of Western power supplies comes from other less polluting sources) the aggregate emissions for Maglev are less than one fifth of those from an equivalent volume of highway traffic
- Low land consumption of the elevated and at-grade guideways (a Maglev corridor is typically less than one-fifth the width of an equivalent highway corridor)
- Elevated guideways permit uninhibited movement by animals, and even at-grade guideway allows passage for amphibians and small animals
- Few embankments and cuttings result in minimal disruption of the landscape
- The grade climbing capability of Maglev permits routing through mountainous terrain with minimal need for tunneling
- Magnetic fields within the passenger compartment of the Maglev train are well within permissible standards and much less than those generated by common household products such as hair dryers, toasters, electric ovens and televisions

The time to begin building the best high-tech system for 21st century travel is now.

There is no other high-speed form of transportation that is safer, more comfortable, more reliable, more energy efficient and more environmentally friendly than Maglev.

To find out how you can help bring the California-Nevada Maglev project to reality:

Call (702) 229-6551 or (310) 914-5033
E-mail: info@maglev-train.com

www.maglev-train.com

A Public-Private Partnership

Maglev photography courtesy of Transrapid International

Disney's Magnetic Attraction

Initial funding finally comes through for a long-awaited high-speed train from Anaheim to Las Vegas. But will it ever leave the station?

by Paul Smalera

By some measures, magnetic-levitation trains are a near ideal form of transportation. They travel as fast as 360 miles per hour with zero pollution. But they're staggeringly expensive to build—a 19-mile line in Shanghai, which ferries passengers to and from the airport, cost $1.2 billion. This summer, a U.S. firm called American Magline Group received federal research money to study a potential maglev link between Las Vegas and Disneyland, in Anaheim, California, and California's government is also looking into a similar commuter network for greater Los Angeles. The plan for both initiatives is to fund construction costs—as much as $20 billion—with private-public partnerships; Vegas casino operators and Disney have already pledged support for their rail line. Money aside, the projects could take a decade to complete.

Train Versus Plane

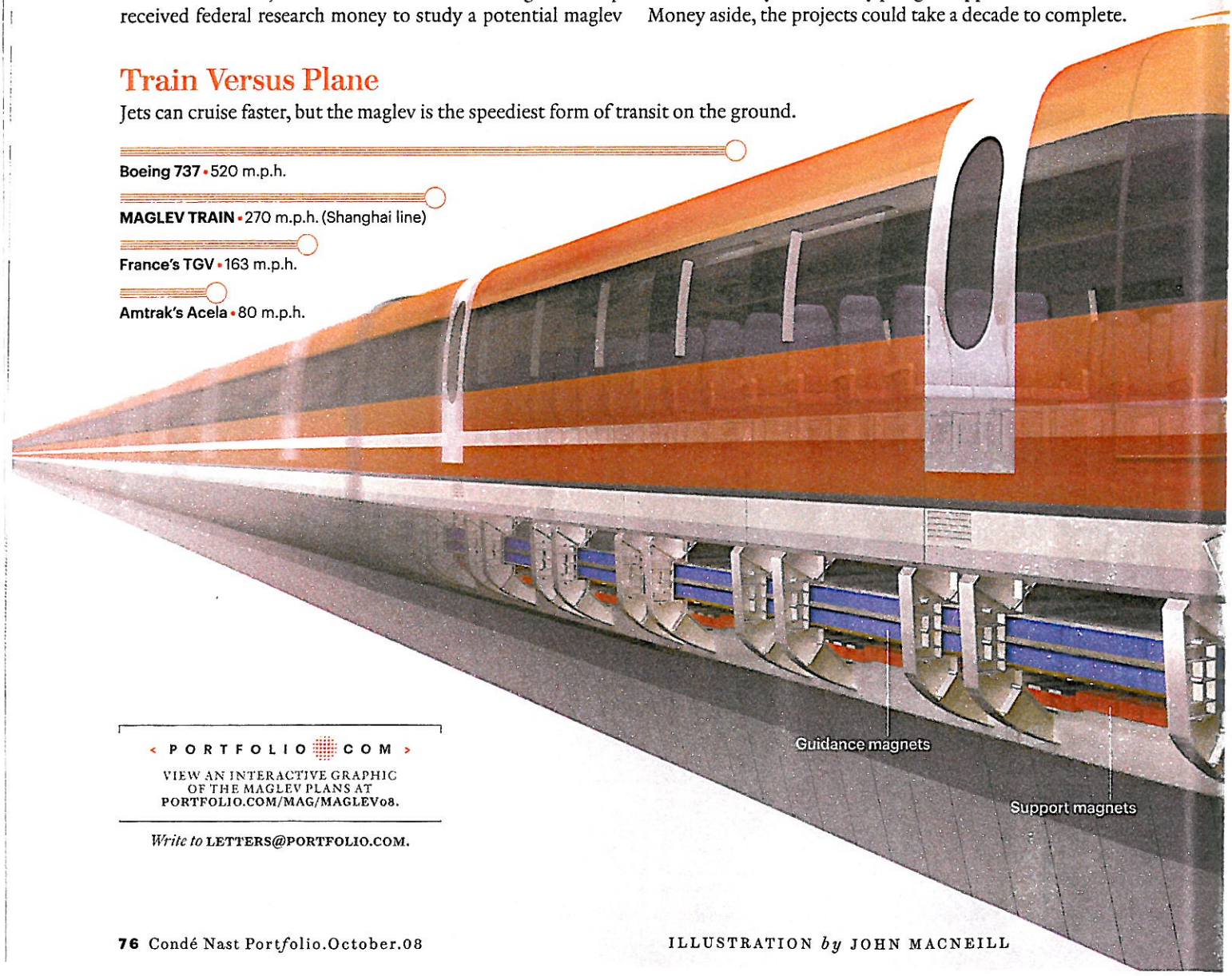
Jets can cruise faster, but the maglev is the speediest form of transit on the ground.

Boeing 737 • 520 m.p.h.

MAGLEV TRAIN • 270 m.p.h. (Shanghai line)

France's TGV • 163 m.p.h.

Amtrak's Acela • 80 m.p.h.



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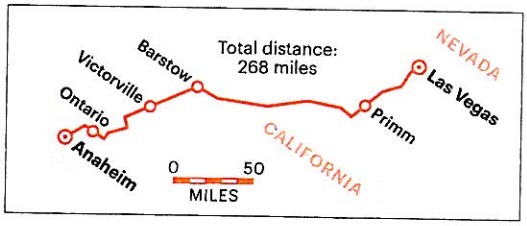
VIEW AN INTERACTIVE GRAPHIC OF THE MAGLEV PLANS AT PORTFOLIO.COM/MAG/MAGLEV08.

Write to LETTERS@PORTFOLIO.COM.

ILLUSTRATION *by* JOHN MACNEILL

Train in Vain?

The $45 million federal research grant will study the environmental impact of the proposed line—including how much any needed property rights-of-way would cost. One option is to lay the tracks parallel to an existing rail line that now connects the two cities; Amtrak suspended that service in 1997 because of a lack of passengers.



TOTAL TRAVEL TIME BY PLANE: 3 hrs. 23 mins.

Anaheim — Taxi to John Wayne Airport: 35 mins. — At airport: 1 hr. minimum — Flight: 1 hr. 8 mins. — At baggage claim: 30 mins. — Taxi to hotel: 10 mins. — Las Vegas

TOTAL TRAVEL TIME BY TRAIN: 2 hrs. 5 mins.

Anaheim — Taxi to station: 10 mins. — At station: 15 mins. — Maglev train: 1 hr. 30 mins. — Taxi to hotel: 10 mins. — Las Vegas

Magnetic Fields

The trains and track beds contain electromagnets that, when energized, lift the cars. Synchronized linear motors in the tracks fire the magnets in sequence, pulling the train forward the way letters move across an electronic ticker. The system has no mechanical friction.