



ORANGELINE DEVELOPMENT AUTHORITY



A Public Private Partnership



Orangeline High Speed Maglev



* Santa Ana has voted to join the Authority

Supporting Agencies

- Federal Government (\$280K)
- Gateway Cities Council of Governments
- Southern California Association of Governments
- City of Los Angeles (\$10K)
- City of Garden Grove
- City of Huntington Beach
- City of Long Beach
- City of Stanton
- City of Santa Ana*

Orangeline High Speed Maglev

Environment-friendly

Privately Funded



Purpose of Presentation

- OCTA is preparing comments on the Draft 2008 RTP
- A number of issues must be resolved
 - In particular, the assumption that OCTA will provide right-of-way at little or no cost.
- We hope to address all of your issues today and gain your support for keeping the Orangeline High Speed Maglev in the 2008 RTP

We are Deeply Concerned

- Absent new information, I would expect that the OCTA Board will recommend the Southern California Association of Governments remove the Orangeline project from the financially constrained 2008 RTP and place it in the strategic plan, pending further study and consensus building.

Carolyn V. Cavecche, Chairman

January 11, 2008

A Major Set-back

- You gain nothing by taking project out of RTP
- Keeping it in enables consensus building
- Six years of planning, millions of dollars spent to date, and hundreds of millions of dollars in benefits would be put at risk
- OCTA has been informed and has participated in study process – let's continue, not destroy
- Private partners have invested over \$1 million dollars; government credibility is at stake
- Your action will affect cities throughout the SCAG region, not just Orange County; the entire maglev program could be affected

Questions

- July 26, 2007 staff report
- January 18, 2008 staff request
- Other issues relating to RTP discussions

OCTA Staff Questions

July 26, 2007

- OCTA has not committed right-of-way
- Financial plan appears extremely optimistic
- \$18 average fare is assumed for 20-mile trip
- Investor Concerns: row, approvals, ridership
- Redundancy with other services
- Lack of Local Support
- Maglev is assumed to be best technology

OCTA Staff Questions 7/26/07

- Neither Metro nor OCTA has committed to making the P.E. Railroad ROW available
 - Making it available would put the ROW to productive use and for its intended use for transportation – the value is being lost now
 - OCTA LRTP does not commit funding to a project along the P.E. ROW
 - Metro staff has indicated their Board “would likely” make their ROW available

OCTA Staff Questions 7/26/07

- Financial plan appears extremely optimistic; no other lines of such scale
 - Project could be first maglev project in the U.S.; maglev is new technology
 - Private transit systems do exist in U.S. and elsewhere; scale (\$19B is equal to the demand)
 - Project construction will be phased and extend over 8 years
 - Scale = recently approved bond measures

OCTA Staff Questions 7/26/07

- \$18 average fare is assumed for 20-mile trip
 - Financial plans were tested for a range of fares
 - Fare comparable to other maglev studies
 - Toll lane use cost is up to \$1 per mile + auto costs (Over \$2 per mile vs. \$.90 for maglev)
 - \$3,000 to \$18,000 savings from maglev use

OCTA Staff Questions 7/26/07

- Investor Concerns: right-of-way, approvals and ridership
 - ROW issue must be addressed early
 - EIR and other approvals must be obtained
 - Ridership is comparable to other maglev studies based upon SCAG models
 - Ridership risks must be addressed (along with cost, schedule, etc.) and must be shared between public and private partners

OCTA Staff Questions 7/26/07

- Redundancy with other services
- What is redundancy?
 - An excess or superfluous amount (of services)
 - That would be bad
 - Duplication of critical components to increase reliability
 - That would be good

OCTA Staff Questions 7/26/07

- Redundancy with other services (excess?)
 - Demand within the corridor exceeds the capacity of combined projects
 - With all proposed transit, mode split is still heavily weighted to auto use; congestion
 - Project provides a different type of service
 - Project brings high-speed service to additional communities not otherwise served and complements other services

OCTA Staff Questions 7/26/07

- Redundancy with other services (excess?)

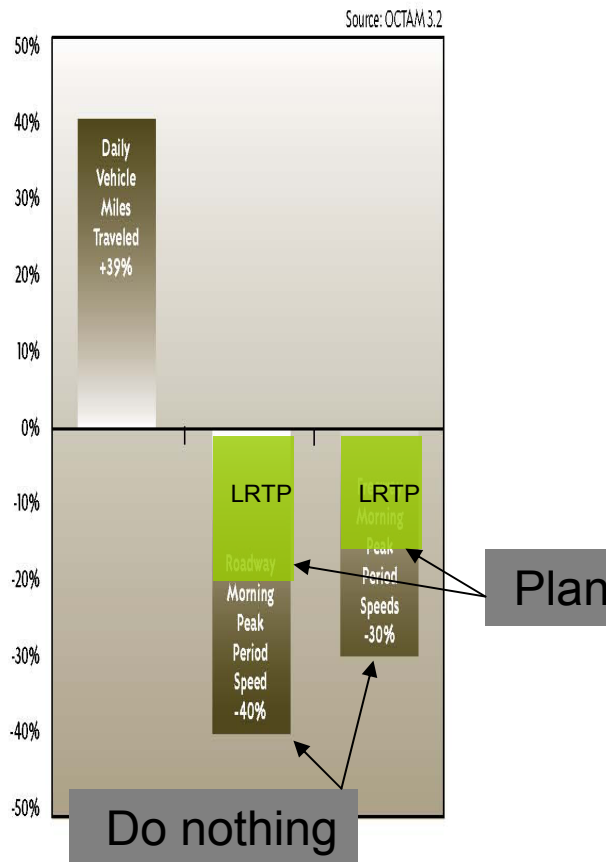


The Balanced Plan is projected to reduce delay due to congestion by 37 percent, compared to the Baseline, and improve morning peak freeway speeds by 22 percent. Morning peak arterial street speeds are projected to improve by 27 percent over the Baseline. Transit trips are expected to increase by 26 percent, compared to the Baseline, with a moderate expansion of transit systems in the County.

OCTA Long Range Transportation Plan

"By 2030, roadway speed will drop by 40 percent and freeway speed will drop by 30 percent."

Figure 12: traffic congestion 2000-2030



The Plan is not able to improve travel speeds or overcome roadway congestion

- Speeds will drop 15-20%
- Travel congestion, delays will increase

The Orangeline High Speed Maglev will offer 70-90 mph service, every 5 minutes with stations spaced an average of 6 miles apart for easy access.

OCTA Long Range Transportation Plan

Figure 46: Long Range-Transportation Plan alternative costs (in millions)

	Constrained Alternative	Balanced Plan
Freeways	\$6,409	\$11,580
Roadways	\$8,758	\$13,004
Transit	\$13,297	\$16,129
Environmental Cleanup	—	\$237
Total	\$28,464	\$40,950

Note: costs from the constrained alternative to the balanced plan are cumulative. Includes \$921 million of non-Measure M funds (91 Express Lanes revenues and city maintenance of efforts).

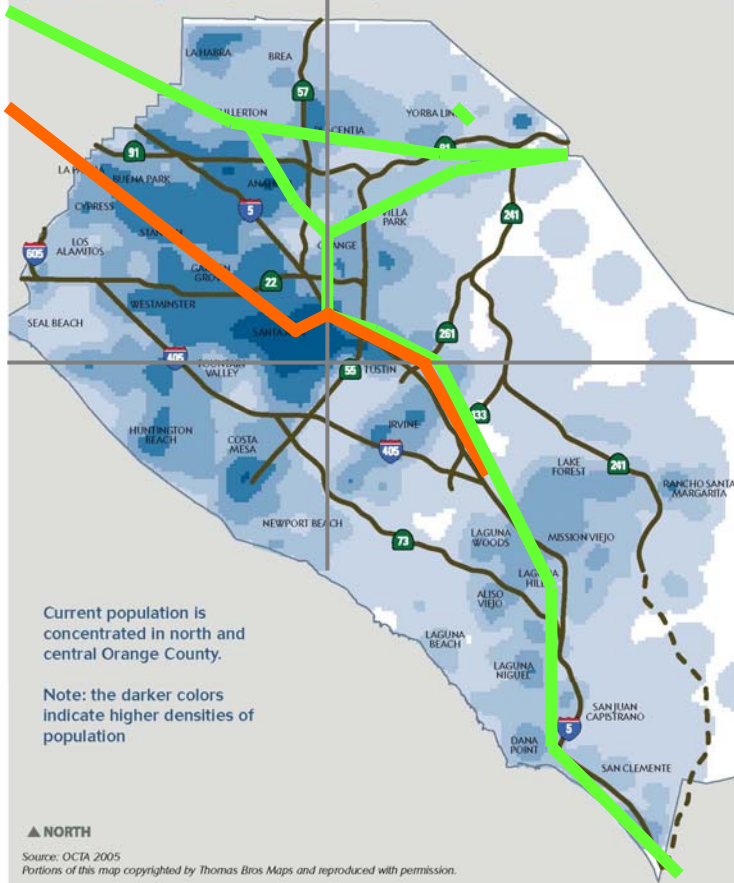
The Plan spends little (7.8%) for new transit programs and less for new transit infrastructure.

- \$11.6 billion – Freeway Construction
- \$13.0 billion – Local Streets and Roads
- \$16.1 billion – Transit
 - \$13.0 billion – passenger subsidies
 - \$ 2.8 billion – new programs/services
- \$ 0.2 billion – Environmental cleanup

The Orangeline High Speed Maglev would add \$5 billion in new transit construction using private funding.

Not Redundant - Not Superfluous

Figure 5: 2000 Orange County population density

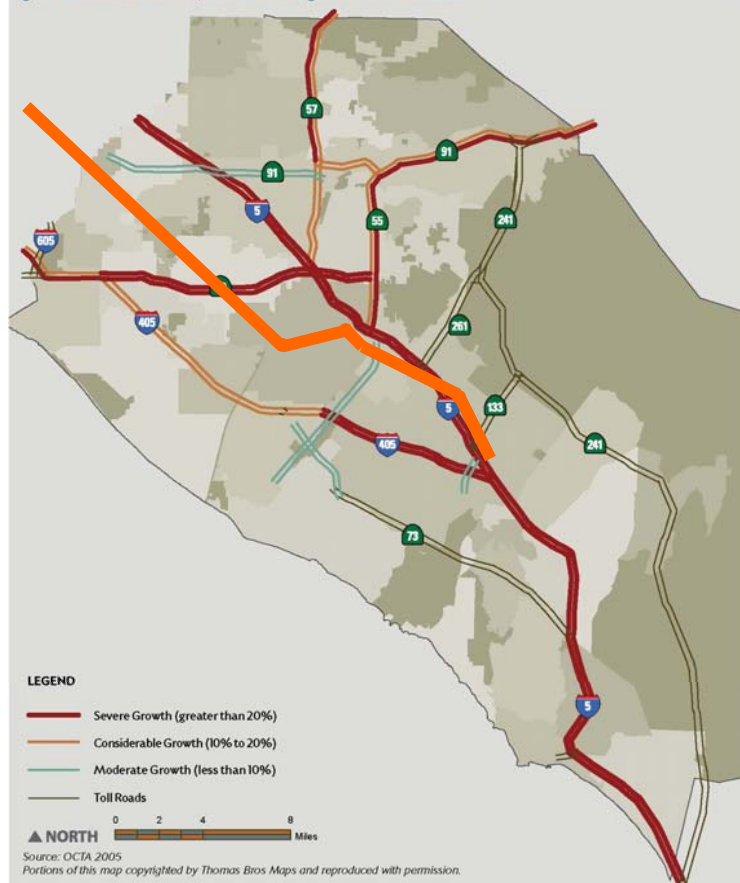


The Orangeline High Speed Maglev would serve the highly concentrated population in central and western Orange County and connect to Metrolink

A Valuable Alternative

Trends

Figure 17: Increase in AM peak hour congestion 2000 to 2030



The Orangeline High Speed Maglev provides an alternative to freeways that will experience 10-20% growth in traffic and increased congestion, even with the Plan improvements in place.

The Orangeline High Speed Maglev will offer the capacity of an 8-lane freeway on a much smaller foot print within the P.E. right-of-way and along other existing railroad tracks.

OCTA Staff Questions 7/26/07

- Political and community support is uncertain
 - Over half of cities have joined Authority
 - Additional cities are considering joining
 - Additional cities/agencies have passed prior resolutions supporting (Garden Grove, etc.)
 - Public reaction has generally been positive
 - State and federal support also demonstrated
 - SAFETEA-LU, AB2882, State PBI Initiative

OCTA Staff Questions 7/26/07

- Maglev is assumed to be best technology (to achieve the objectives)
 - Value for system users (recover capex and o&m costs)
 - Value for Orangeline High Speed Maglev Cities
 - Distribution of Economic Benefits
 - Airport Access
 - Traffic Congestion and Air Quality
 - Intra-regional Connections
 - Freight and Container Cargo

OCTA Staff Questions 7/26/07

- Maglev is judged to be best technology
 - Performance of maglev is superior to other technologies
 - Faster, faster acceleration, lower overall cost, higher capacity, quieter, lower energy consumption, lower maintenance costs
 - Other technologies do not achieve goals
 - Bus, BRT, Light Rail, Heavy Rail, Commuter Rail, Inter-city High Speed Rail
 - Selection not based on “assumption” but on comparative analysis

Alternatives Have Been Studied

Table 3-5: Initial Technology Screening

Evaluation Criteria	Bus/ HOV	High-Speed Bus	Light Rail	Comm. Rail	Heavy Rail	High-Speed Rail	Maglev
Performance Criteria							
Capacity	Poor	Poor	Fair	Good	Good	Good	Good
Trip Time	Poor	Poor	Fair	Fair	Fair	Good	Good
Trip Time Reliability	Poor	Poor	Fair	Fair	Fair	Good	Good
Headway	Fair	Fair	Good	Fair	Good	Good	Good
Speed/Accel/Decel	Poor	Poor	Fair	Poor	Fair	Good	Good
Safety	Poor	Poor	Fair	Fair	Fair	Good	Good
Passenger Comfort/Accessibility	Fair	Fair	Fair	Fair	Fair	Good	Good
Availability / Reliability	Fair	Fair	Fair	Fair	Fair	Good	Good
Image	Poor	Poor	Fair	Fair	Fair	Good	Good
Geometric Configuration Constraints	Good	Good	Fair	Fair	Fair	Poor	Poor
Expandability	Fair	Fair	Good	Good	Good	Good	Good
Energy Type & Use	Diesel/CNG	Diesel/CNG	Electric	Diesel	Electric	Electric/ Diesel	Electric
Capital Cost	Good	Good	Fair	Fair	Fair	Fair	Fair
O & M Cost	Good	Good	Fair	Fair	Fair	Poor	Poor
Technology Criteria							
Tech. Maturity	Good	Good	Good	Good	Good	Fair	Poor
Tech. Stability	Good	Good	Good	Good	Good	Fair	Poor
Competition	Good	Good	Good	Good	Good	Fair	Poor
Cal. PUC Requirements	Good	Good	Good	Good	Good	Poor	Poor
US Code/Standards	Good	Good	Good	Good	Good	Fair	Poor
Project Criteria							
Exclusive ROW	No	No	Yes	Yes - Shared	Yes	Yes	Yes
Integrated Baggage Handling	No - By passengers	No - By passengers	Possible	Possible	Possible	Yes	Yes
Cargo/Freight	Yes - limited	Yes - limited	No	No	No	Yes	Yes
Community Acceptance	Good	Good	Good	Good	Good	Unknown	Unknown
Acceptance by Related Providers	Good	Good	Good	Good	Good	Fair	Good
Fits Area/Developments	Good	Good	Good	Good	Good	Fair	Fair
Noise Impacts	Fair	Fair	Fair	Fair	Fair	Good	Good
Visual Impacts	Good	Good	Good	Good	Good	Poor	Poor
Other Impacts (Including air quality)	Fair	Fair	Good	Fair	Good	Good	Good

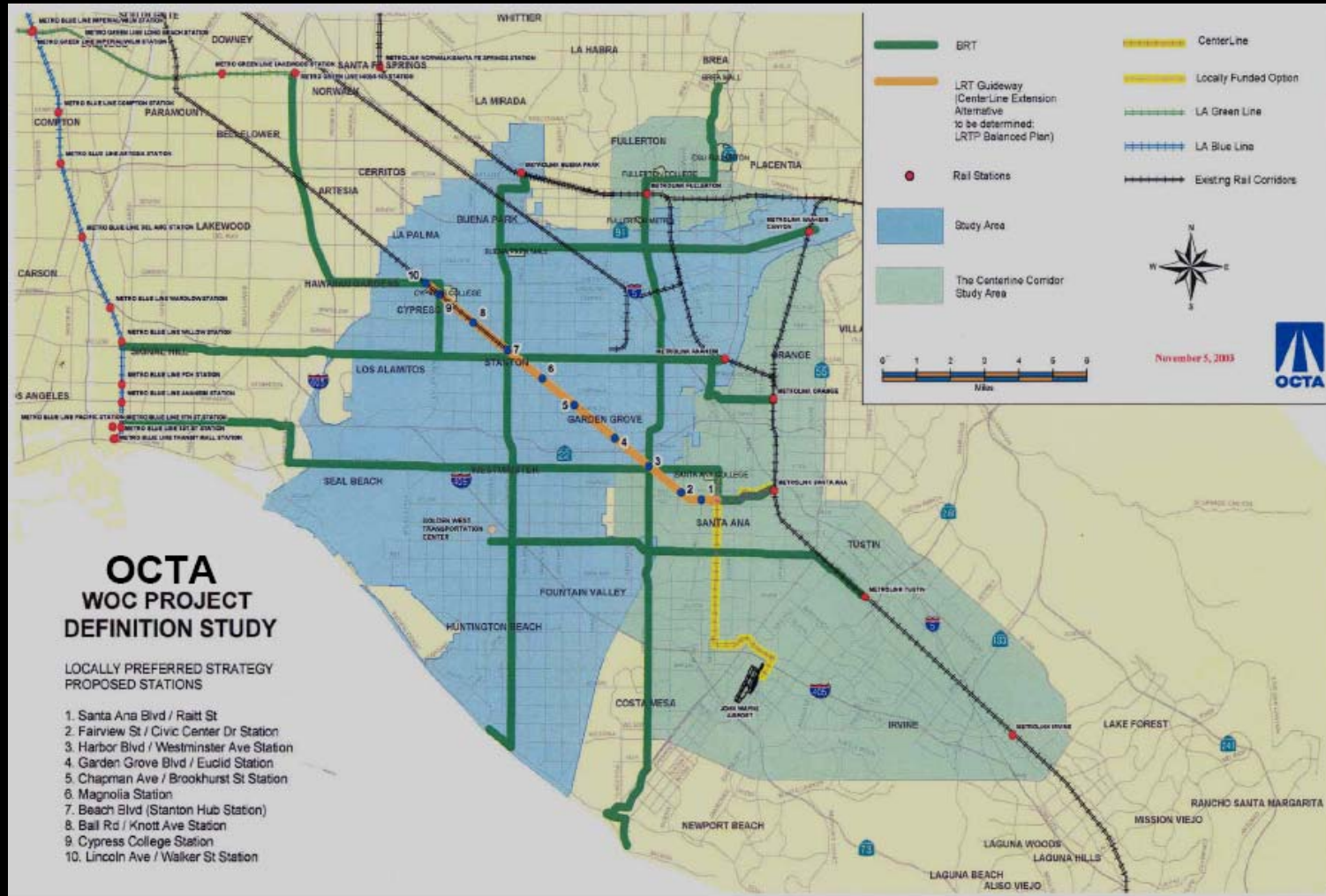
Source: URS Corp., September 2001

Alternatives Have Been Studied

Table 3-6: Technology Screening/Applicability			
Technology	Appropriate for Incremental Improvements	Appropriate for Major Investment	Comments
<i>Bus</i>			
Conventional Bus	No	No	Could be used as support for major investment
Bus/HOV Lanes	Yes	No	Used as support for major investment
High-speed Express	Yes	No	Used as support for major investment
<i>Fixed Guideway</i>			
Light Rail	No	No	Non-exclusive guideway
Commuter Rail	No	No	Non-exclusive guideway
Heavy Rail	No	No	Guideway cannot be converted
AGT/People Mover	No	No	Not enough capacity
Monorail	No	No	Not enough capacity
High-Speed Rail	No	Yes	Long-term investment only
<i>High-Tech</i>			
Low-Speed Maglev	No	No	Cannot meet system roles
High-Speed Maglev	No	Yes	Long-term investment only

Source: URS Corp., September 2001

OCTA Locally Preferred Strategy



Light Rail or Maglev or Both?

End to End Travel Time
(35 miles Santa Ana to downtown LA)

Station Spacing	Average Speed (mph)	Average Wait Time	Travel Time (end to end)
1 *	30	12-40	91-119
4 **	70-90	3	26-35

* OCTA Locally Preferred Strategy

Centerline: Santa Ana to Cypress

- BRT: Cypress to Green Line
- Green Line: to Blue Line
- Blue Line: to downtown L.A.

** Orangeline High Speed Maglev

Maglev: Santa Ana to downtown L.A.



High Speed Maglev *Operating in Shanghai*





Proven Performance

Long Yang Road



Shanghai

19 miles

267 mph

Since 2003

99.9% Reliable

Pudong Airport



12 million passengers

100-mile extension



Built in 3
years





Maglev – Coming to Japan

- To launch its High Speed Maglev in 2025
- Will replace the Shinkansen High Speed Rail from Tokyo to Osaka and Nagoya
“reached its technology and capacity limits”



High Speed Rail



High Speed Maglev



Maglev – Coming to Munich

Central Station – Airport

Route length	approx. 38 km
Stations	2
Travel time	10 minutes
Vehicles	5, each 3 sections



OCTA Staff Questions

January 18, 2008

- Ridership assumptions
- Right-of-way assumptions
- Financial Plan
- Project schedule
- Fare schedule
- Community support
- Interface with other transit systems
 - Bus, Metrolink, CAHSR
- Station locations in O.C.

OCTA Staff Questions 1/18/08

- Ridership assumptions
 - Ridership estimate: 255,000 per day in 2027
 - Ridership modeling assumptions are similar to other maglev studies; we used SCAG model
 - Recognize value people put on time and cost;
 - avoiding stress, gaining comfort and safety
 - Reflect that traffic conditions will get worse, not better, under the RTP and LRTPs

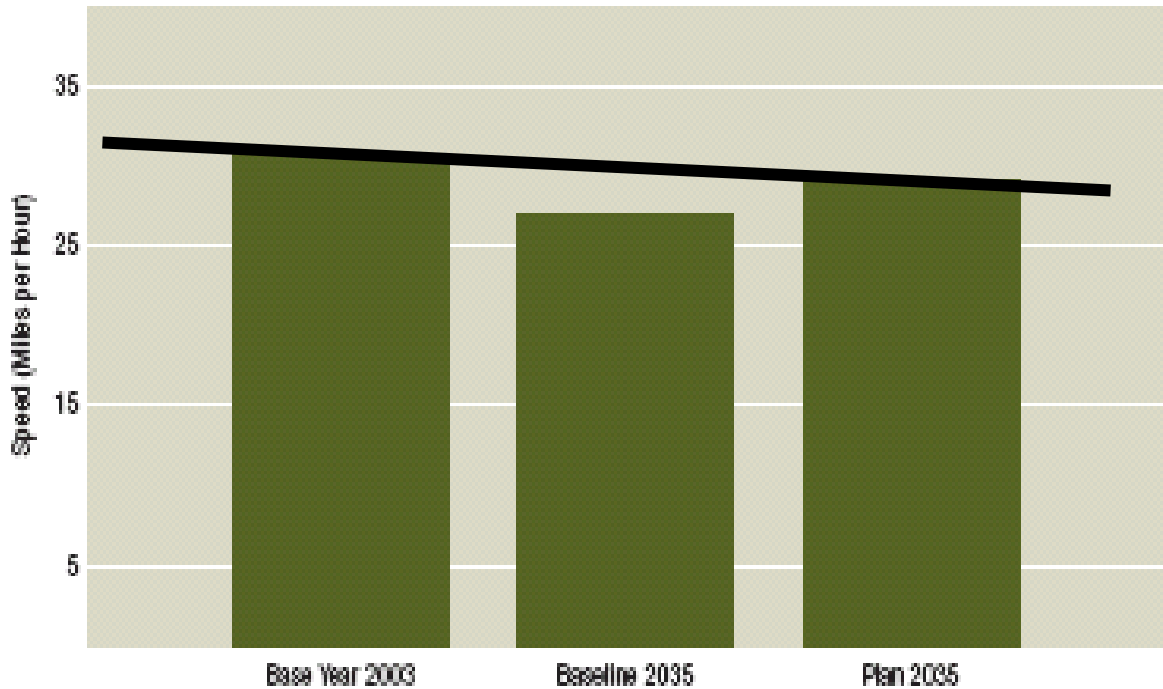
Draft Regional Transportation Plan

Large Investment (\$569 Billion) Unable to Meet Growing Demand



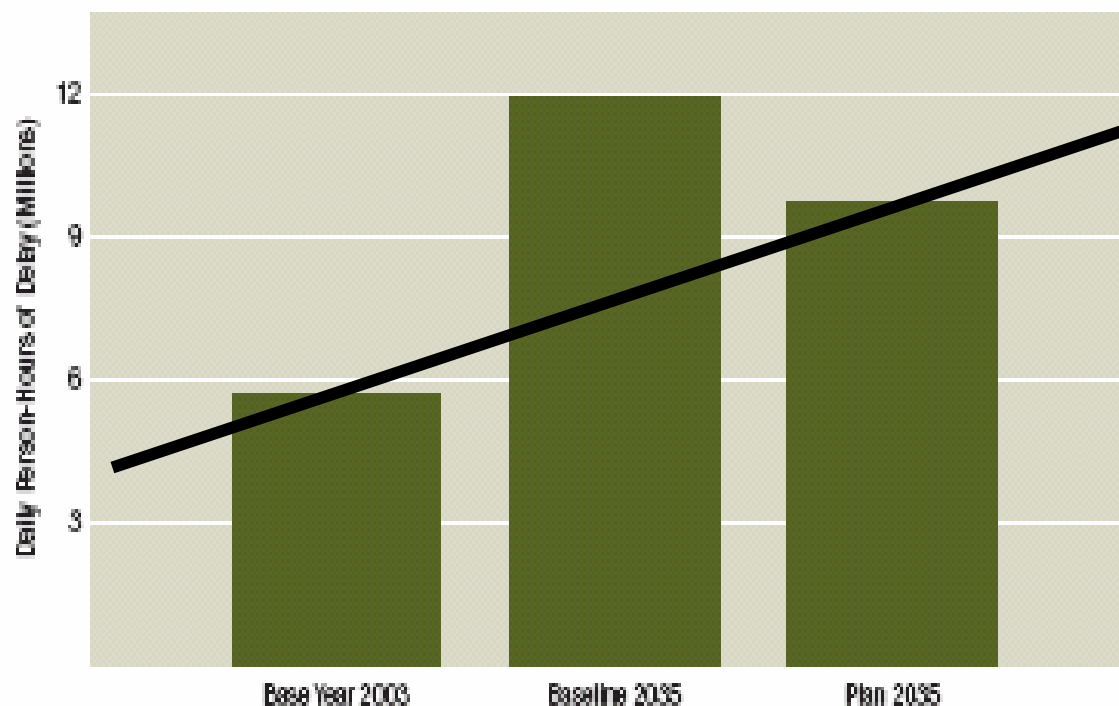
More Congestion - Slower Speeds

FIGURE 5.1 AVERAGE DAILY SPEED



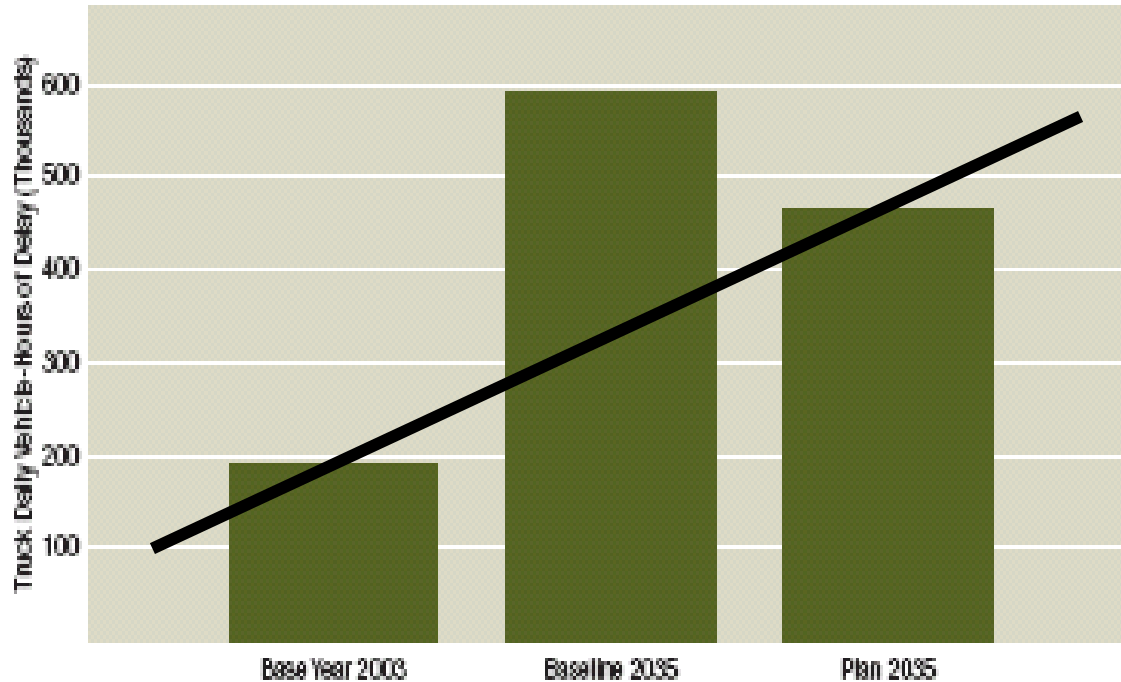
More Congestion – More Delays

FIGURE 5.2 DAILY PERSON HOURS OF DELAY



More Congestion – More Trucks

FIGURE 5.4 AVERAGE DAILY HEAVY DUTY TRUCK DELAY



OCTA Staff Questions

Growth and Latent Demand – If you build it they will come.

Alternative	Growth Rates	
	Northbound	Southbound
No Build	1.21 – 1.85	1.06 – 1.45
4 Mixed Flow + 1 HOV	1.85 – 2.30	1.46 – 1.85
4 Mixed Flow + 2 HOV	1.57 – 2.34	1.46 – 1.88
5 Mixed Flow + 1 HOV	1.65 – 2.46	1.55 – 1.97

More hours of delay and congestion (Level of Service F)

Year	No Build		4 + 1		4 + 2		5 + 1	
	NB	SB	NB	SB	NB	SB	NB	SB
2013	7	13	1	0	1	0	0	0
2030	17	16	7.5	13.5	7.5	13.5	4	4.5

Source: I-5 Corridor Improvement Project Traffic and Transportation Study Technical Addendum, August, 2006

OCTA Staff Questions 1/18/08

- Competition and interaction with other auto and transit options
- All planned and programmed improvements in most recent RTP
- Most recent SCAG regional travel models
- 3,217 TAZs – more detailed analysis
- Modified for proper modeling of maglev
- 2025 socio-economic forecasts

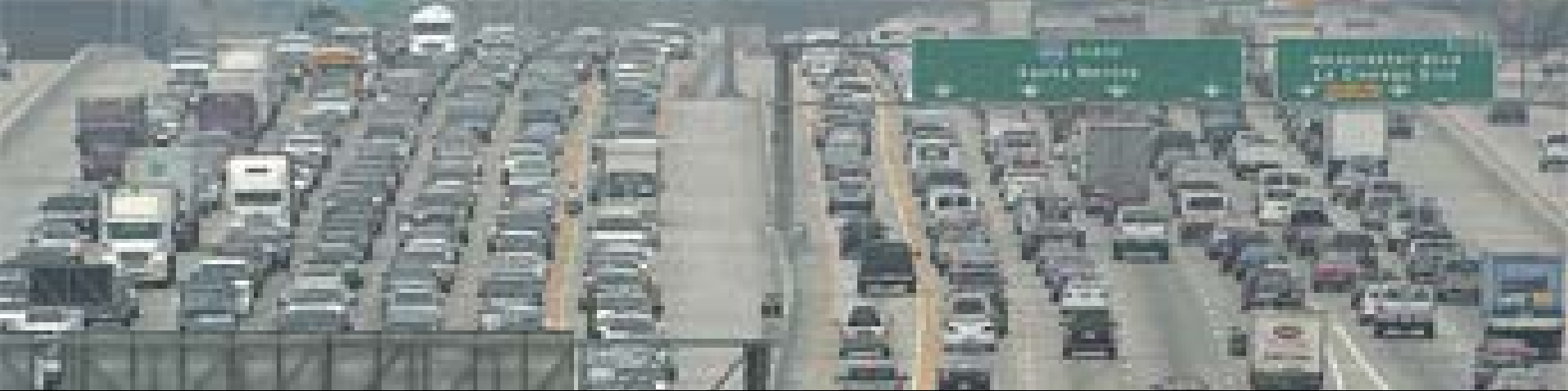
OCTA Staff Questions

LAX-Irvine Maglev Study

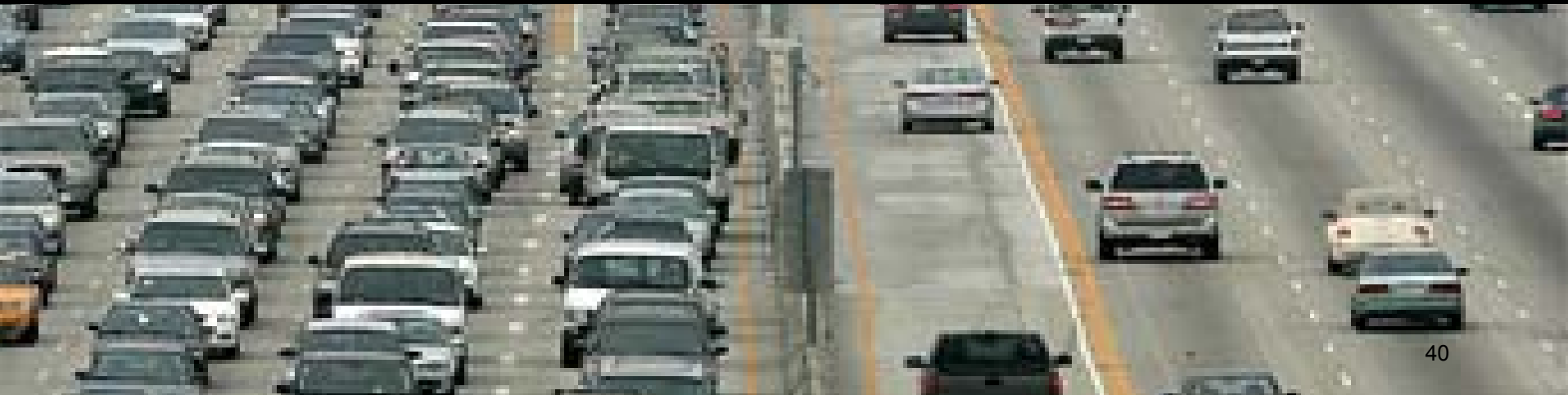
People were asked, “Why do you Ride Metrolink?”

Less Stressful	More Comfortable	Less Expensive	Safety
82%	37%	35%	34%

- Metrolink passengers who made the same trip prior to using Metrolink (N = 526) attribute their switch to Metrolink because Metrolink is “less stressful,” mentioned by 82 percent of participants. Other top ranking motivators for change include: “more comfortable” (37%), “less expensive” (35%), and “safety” (34%).



There is a Market for a system that is:
Faster, Safer, More Comfortable,
Less Stressful, Lower in Cost



OCTA Staff Questions 1/18/08

- Right-of-way assumptions
 - Same assumption of other maglev studies
 - Public rights-of-way provided at no cost
 - Aerial alignment (allows other at-grade uses)
 - Financial plan could absorb cost; fairness and equity is the issue
 - Some private rights-of-way required at cost

OCTA Staff Questions 1/18/08

- Financial Plan

- Project Surplus \$23B
- Reserves \$ 2B
- Station / Feeder Services \$21B
- Investor Earnings \$23B
- User Cost Savings \$ 3B
- User Delay Savings \$36B
- Total Benefits \$98B
- Project Cost \$23B

OCTA Staff Questions 1/18/08

- Financial Plan
 - Dense, heavily congested corridor
 - Fast, convenient service
 - 70-90mph; 5 minutes frequency; 6-mile station spacing
 - Affordable: less cost than auto
 - \$3,000 - \$18,000 per year savings
 - Connects three airports
 - Palmdale, Burbank, Orange County
 - Passenger and freight

OCTA Staff Questions 1/18/08

- Financial Plan
 - Project Cost (2007\$) = \$19 B
 - 255,000 riders in 2027 (5% of market)
 - SCAG ridership models
 - Average Fare: \$9.00-\$18.00
 - (91 Express Lane \$10.00 – 10 miles)
 - (Virginia toll road \$41.46 – 31 miles)
 - Revenues: Passenger Fares, Cargo Fees, Station Concessions, Advertising

OCTA Staff Questions 1/18/08


Maglev Line	Daily Riders	Riders per Mile	Riders per Station	Miles per Station
IOS (WLA-LACBD-Ontario)	65,000	1,204	16,250	18.0
IOS+LAX	115,000	1,917	23,000	15.0
IOS+LAX+Palmdale	205,000	1,627	25,625	18.0
LAX - Palmdale	102,500	1,424	20,500	18.0
LAX - LACBD - Palmdale	141,500	1,489	23,583	19.0
Orangeline (PMD-LACBD-Irvine)	255,000	2,361	14,167	6.4
LAX-Long Beach-Irvine	124,589	2,265	11,326	5.5
LAX-LACBD-Irvine	155,360	2,428	19,420	9.1
LACBD-WLA-LAX-LB-Irvine	202,400	2,933	20,240	7.7

OCTA Staff Questions 1/18/08

- Financial Plan
 - Serves area projected to grow from 13 to 17 million by 2050
 - Provides an essential service
 - Offers significant return on investment
 - Generates positive cash flow linked to inflation
 - Adds capacity to a congested corridor
 - Offers better service at lower cost

OCTA Staff Questions 1/18/08

- Project schedule

1999	2003	2009	2012	2015
				
Alternatives/ Feasibility Analysis	Phase 1 PE/E ² A	Phase 2 PE/EIR	Phase 3 Construction	Phase 4 Operation
\$8 Million		≤\$200 M	\$19 B	

OCTA Staff Questions 1/18/08

- Fare schedule
 - Has not been set
 - Likely vary by time of day, distance, etc.
 - Set to achieve ridership and financial objectives
 - Reflect public interests

OCTA Staff Questions 1/18/08

- Interface with other transit systems (e.g. Bus, Metrolink, CAHSR)
 - Seamless connections and transfers
 - Coordinated fare payment
 - Joint Marketing
 - Coordinated feeder services
 - Anticipate increased ridership on other systems

OCTA Staff Questions 1/18/08

- Community Support
 - Over half of cities have joined Authority
 - Additional cities are considering joining
 - Additional cities/agencies have passed prior resolutions supporting (Garden Grove, etc.)
 - Public reaction has generally been positive
 - State and federal support also demonstrated
 - SAFETEA-LU, AB2882, State PBI Initiative
 - Outreach will continue in next EIR phase

OCTA Staff Questions 1/18/08

- Station Locations
 - To be decided in next phase
 - Orange County Stations assumed in ridership modeling:
 - Irvine
 - Tustin
 - Santa Ana
 - Garden Grove/Anaheim
 - Stanton
 - Cypress

Orangeline High Speed Maglev Route

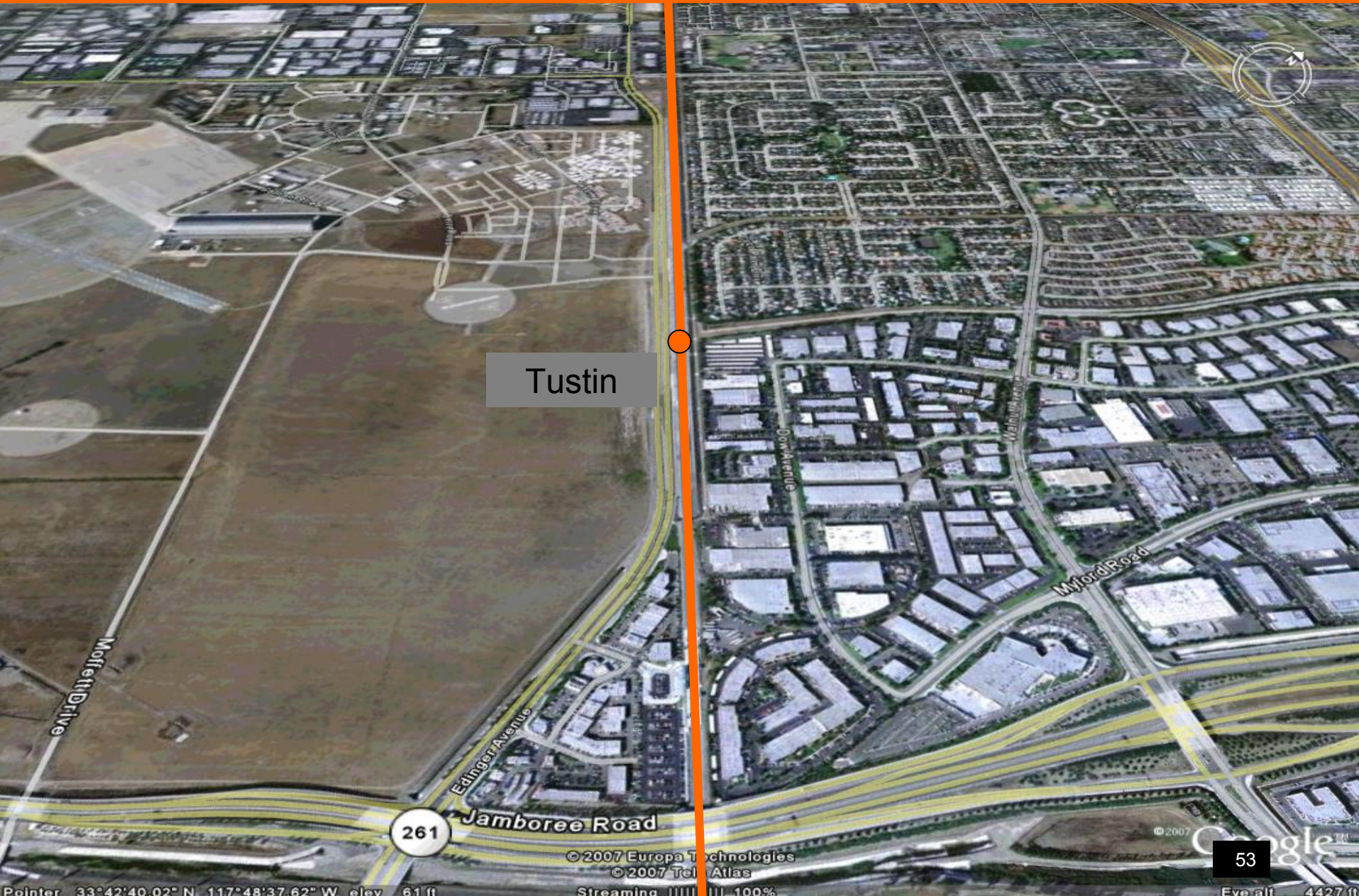


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Streaming 100%

Orangeline High Speed Maglev Route



Tustin

261

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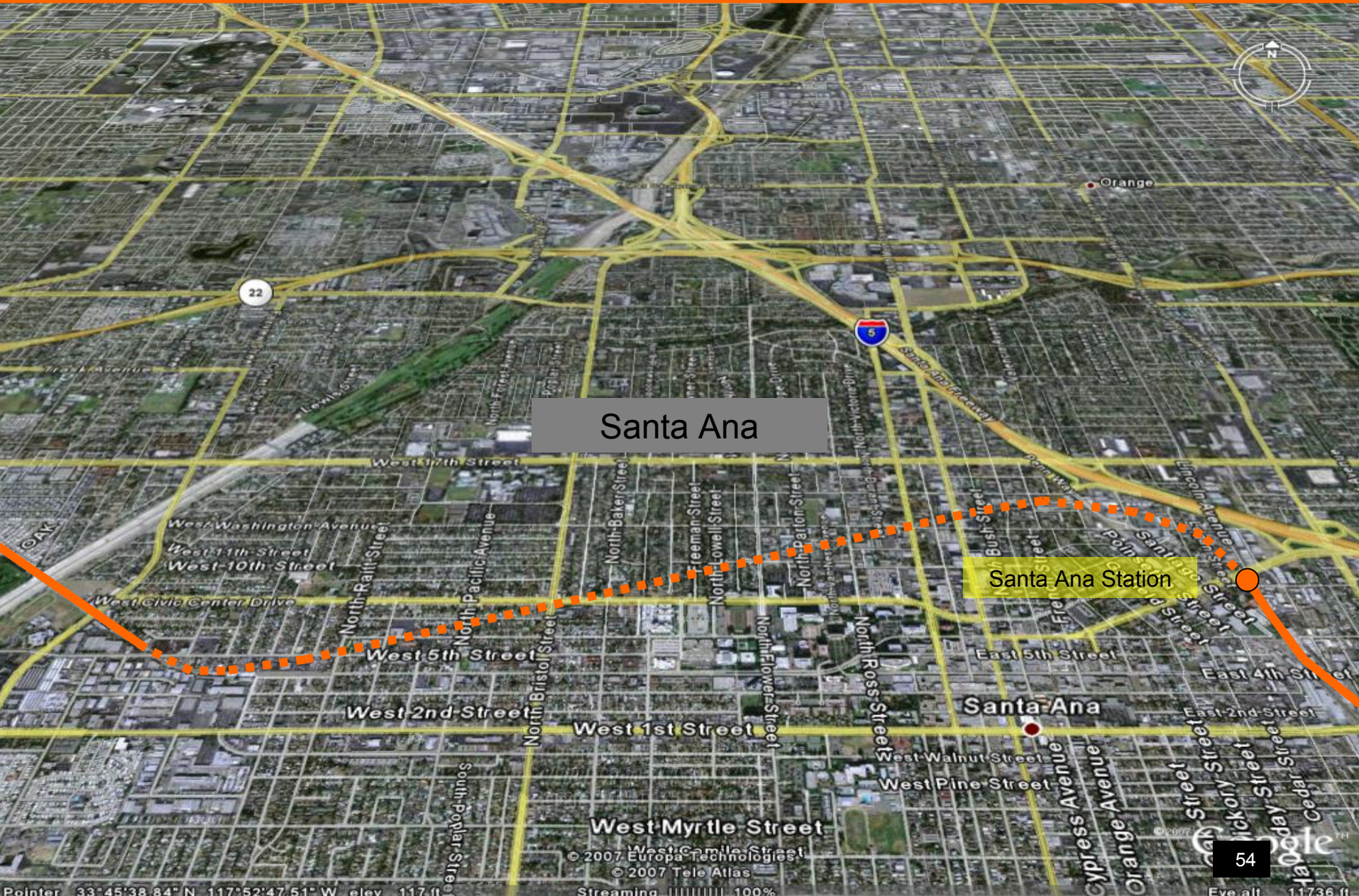
Google

53

Pointer 33°42'40.02" N 117°48'37.62" W elev. 61 ft

Eye alt. 4427 ft

Orangeline High Speed Maglev Route

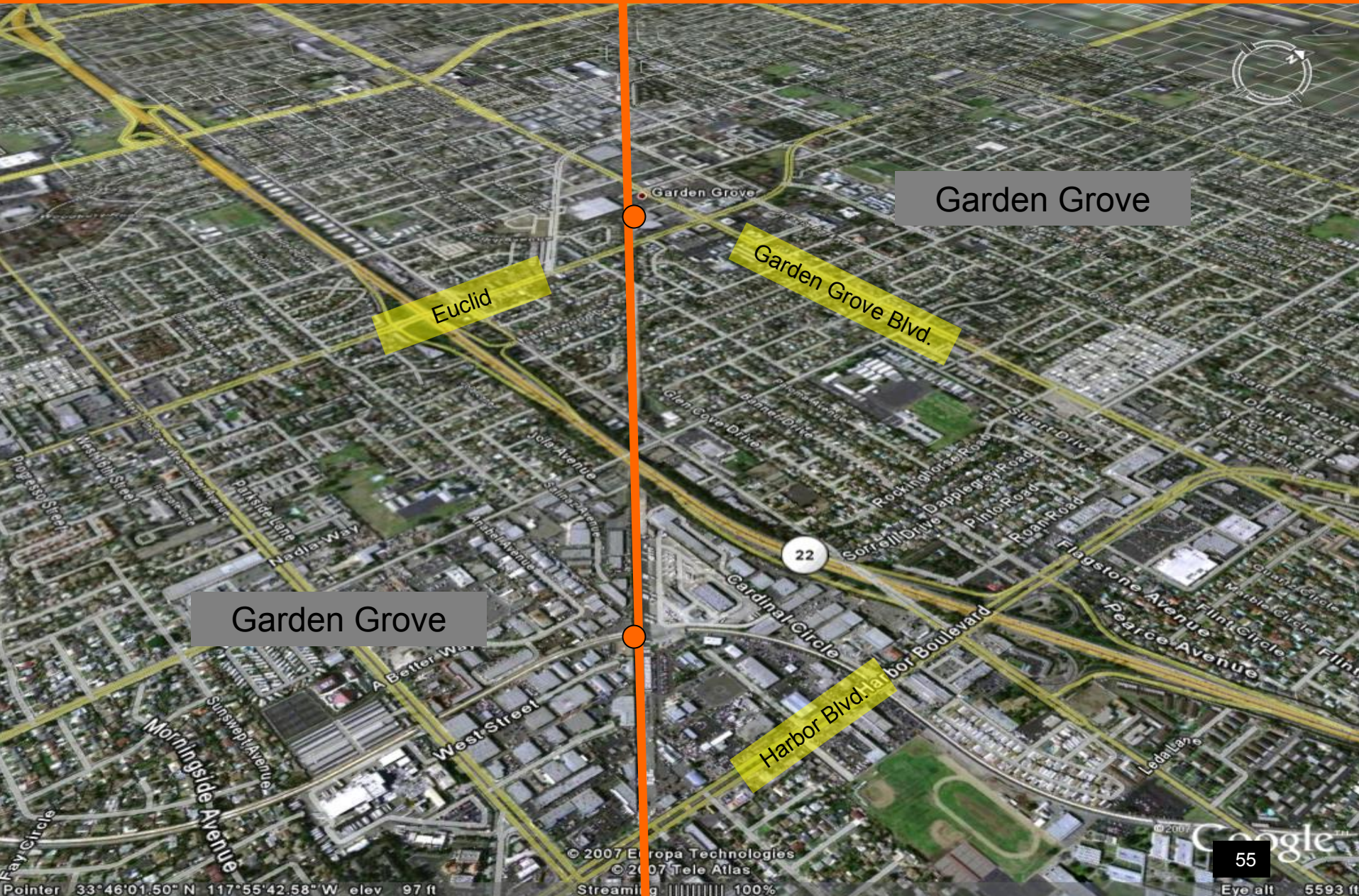


Santa Ana

Santa Ana Station

Santa Ana

Orangeline High Speed Maglev Route



Garden Grove

Euclid

Garden Grove Blvd.

Garden Grove

Harbor Blvd.

Orangeline High Speed Maglev Route



Cypress

Buena Park

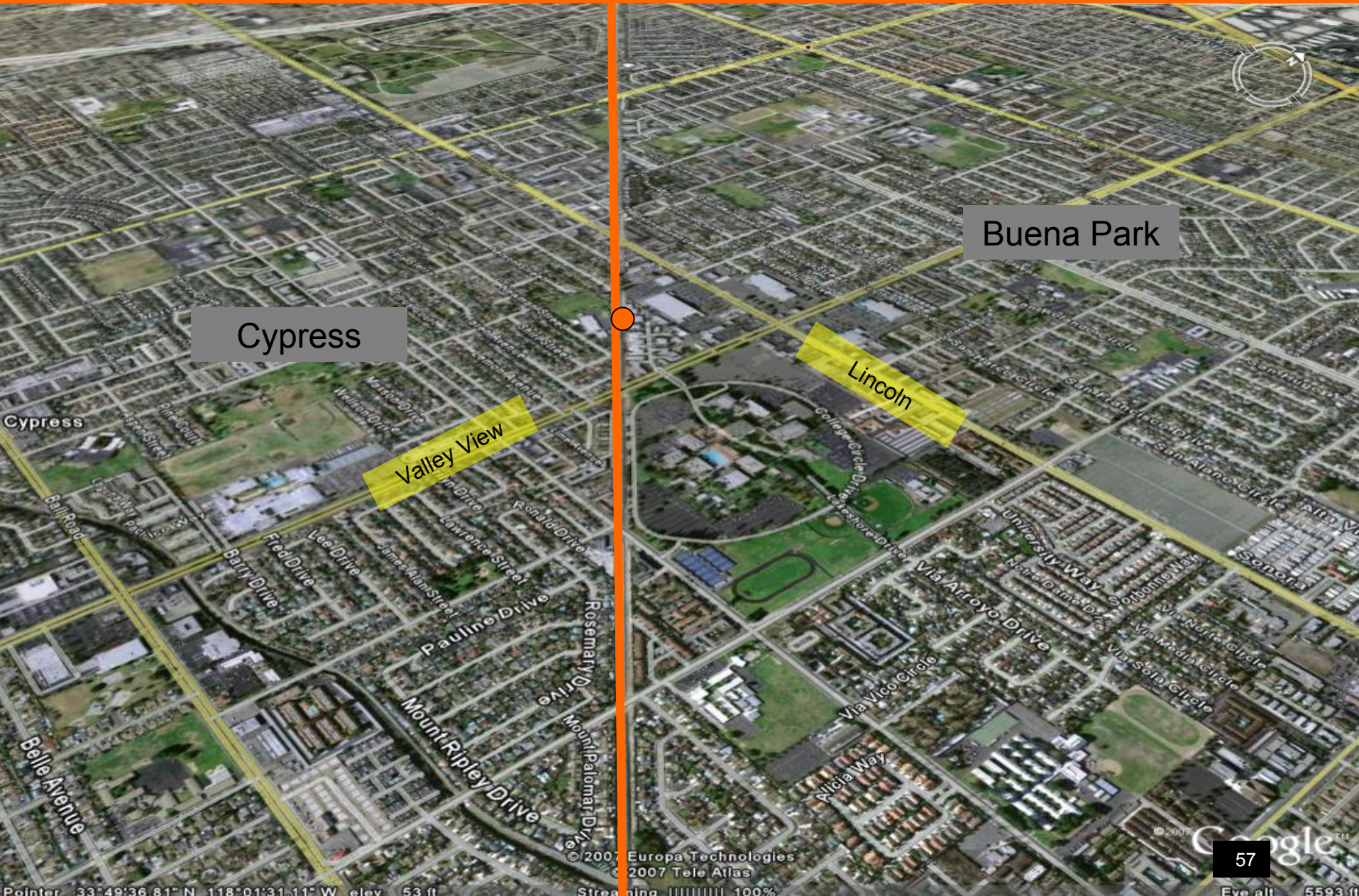
Katella

39
Beach Blvd.

Stanton

Anaheim

Orangeline High Speed Maglev Route



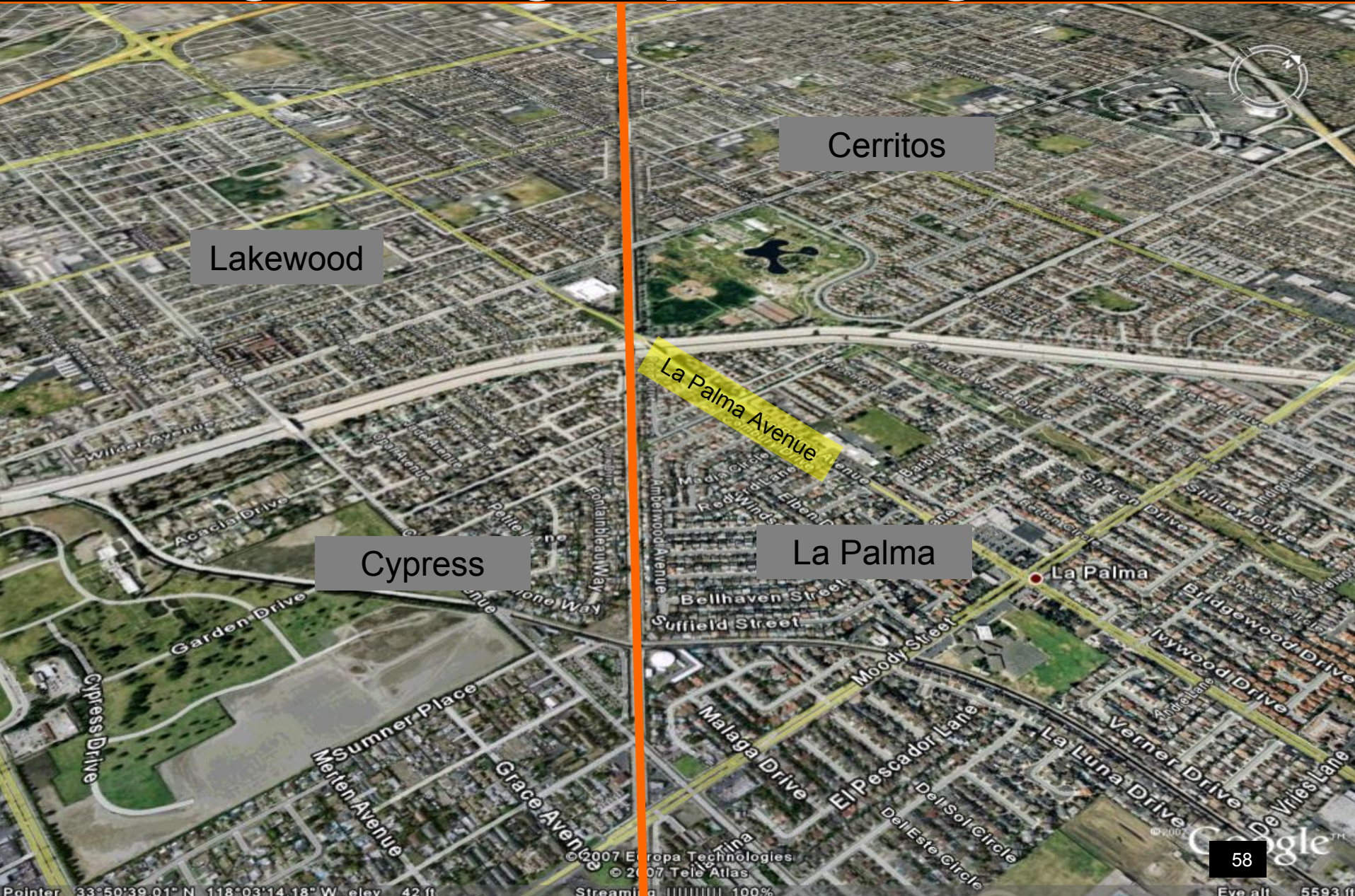
Cypress

Buena Park

Valley View

Lincoln

Orangeline High Speed Maglev Route



Lakewood

Cerritos

Cypress

La Palma Avenue

La Palma

Other Questions

- Threats to RTP Approval
 - Financial Constraint Requirements
 - No letter of Commitment
 - Meets Reasonably Available Funding
 - Air Quality Compliance
 - If Feds take project out, no longer compliant
 - Project's air quality benefits not included in RTP
 - Lack of Right-of-Way agreements
 - No different than many other projects; not a federal RTP issue
 - Delay in RTP approval; loss of all federal funds
 - SCAG is evaluating project's for compliance

Other Questions

- Information given to the SCAG Maglev Task Force and Transportation & Communications Committee was factually incorrect.

██████████ stated that the Orangeline is more of a light-rail line that will run from Union Station to Central Orange County with a proposed fourteen stops within a distance of thirty-three miles which is not conducive to a high-speed rail or Maglev system. ██████████ added that another issue is MTA and OCTA own the Pacific Electric Right-of-Way and there does not appear to be any movement to give the Orangeline that land. Both entities are planning for some sort of transit in that corridor. Therefore, it made sense to move the Orangeline into the transit matrix rather than leave it in the HSRT matrix.

Other Questions

- “Orangeline is more of a light-rail line that will run from Union Station to Central Orange County with a proposed fourteen stops within a distance of thirty-three miles which is not conducive to a high-speed rail or Maglev system.” (Report to SCAG Maglev Task Force and SCAG TC&C Committee)
- These assertions are wrong, the facts are:
 - 108 miles Palmdale to Irvine
 - 18 stations modeled; no final decision on stations
 - Speeds comparable to other maglev lines (70 to 90 mph)

Other Questions

- “After the several presentations that have been made to OCTA, the Orangeline has been eradicated and will more than likely be a conventional transit rail line.”

██████████ responded that after the several presentations that have been made to OCTA, the Orangeline has been eradicated and will more than likely be a conventional transit rail line. After some discussion ██████████ agreed to proceed with removing the Orangeline from the HSRT matrix and including it in the Transit discussion.

Concurrence was made to support staff recommendation to remove the Orangeline from the HSRT matrix and include it in the Transit discussion.

Conclusion

- We urge OCTA to support project in RTP
 - Significant benefits to Orange County
 - Delays will increase costs and result in loss of transportation and economic benefits
 - Lack of your support will hamper efforts to secure private funding
 - Project does not threaten other projects; helps make other transit projects perform better
 - Increases investment in transit
 - Makes use of an idle asset
 - Impacts extend beyond Orange County



ORANGELINE DEVELOPMENT AUTHORITY



A Public Private Partnership