

Rail Ridership and Revenue Forecast Results: Southern California to Las Vegas

High Desert Corridor Joint Powers Authority
Transportation Solutions
Steer Davies Gleave

March 2, 2017



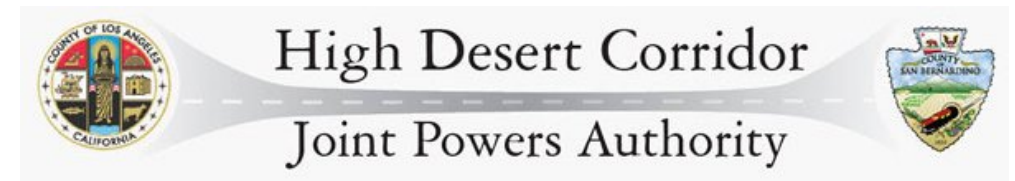
HIGH DESERT CONNECTION





Study Sponsor: High Desert Corridor Joint Powers Authority

- Formed in 2006 by San Bernardino and LA Counties
- Purpose: to develop multipurpose corridor from Palmdale to Victorville, Apple Valley and Adelanto
- Components - rail, highway, green energy
- Key Stakeholders: San Bernardino County, SBCTA, LA County, LA Metro, CHSRA, CalSTA, Caltrans, Metrolink, SCAG, XpressWest, Cities



Metro



cta
san bernardino county
transportation authority



CALIFORNIA
High-Speed Rail Authority



METROLINK.





Primary Benefits of HSR on the Corridor

- Congestion relief (with high speed rail) for one of the nation's most congested corridor (LA/Las Vegas)
- LA and LV metro areas connected by 2.5 hour HSR trip
- Two hour trip savings - with safety, reliability, convenience
- Will stimulate economic development in one of the fastest growing areas in California
- Potential for significant private investment (P3)
- Connectivity to state-wide and regional transportation networks





What does the SDG Revenue and Ridership Study tell us?

- Size of the travel market between LA and Las Vegas
 - Current and future
- Share of the market can HSR attract
- How many riders (roundtrips) does this represent
- Potential revenues based on realistic fare options
- If phased build-out -- incremental ridership and revenues for each phase





Summary of Study Results

- Proven large scale demand between California and Las Vegas
- Potential 27% market share for HSR
- Forecast annual ridership of 3 million round-trips in 2021, rising to 11 million by 2035 with full corridor open, and 14 million by 2050
- Forecast revenues based on competitive fares:
 - \$600 million in 2025 (Palmdale to Las Vegas)
 - \$800 million in 2029 (Burbank to Las Vegas)
 - \$1 billion per year in in 2035 (LA/Anaheim to Las Vegas)
 - \$1.6 billion per year in 2050





Study Consultant: Steer Davies Gleave

- One of world's largest fully independent transportation consulting firms
- Over 30 years' transportation sector experience
- Established advisor in the passenger rail sector
- Services include:
 - Project planning and development
 - Strategic and business planning
 - Economic impact assessment and cost/benefit analysis
 - Ridership and ticket revenue forecasting



Steer Davies Gleave: International Experience

Europe:

- UK: The Economic Impact of High-Speed Rail
- UK: International Rail Services on the UK's HS1 Line
- France: LGV Sud Europe Atlantique
- Italy: New High-Speed Open Access Operator
- Italy: High-Speed Rail Procurement Strategy in Italy
- Spain: AVE Madrid-Barcelona Business Plan
- Spain: Due Diligence Talgo
- Portugal: Ridership on New High-Speed Rail Lines in Portugal
- Cross-Europe: Madrid-Barcelona-France High-Speed Line Ridership
- Cross-Europe: Comparative Study of HSR for various countries
- Cross-Europe: North-West Europe Rail Capacity

Worldwide:

- Brazil: Sao Paulo - Rio HSR
- South Africa: Gautrain Ridership Forecasts Due Diligence
- Saudi Arabia: Makkah-Medina Rail Corridor Ridership Forecasting & Operational Planning
- Saudi Arabia: Haramain High-Speed Rail



Steer Davies Gleave: US High-speed Rail Experience



- SDG is a leading ridership and revenue forecasting firm for high-speed rail projects



What are “Investment Grade” Forecasts?

- Revenue forecasts that explain and quantify uncertainties
- Market recognizes as providing a sound basis for making an investment decision
 - Study provides full transparency of all assumptions, forecasting methodology, processes and final output
 - Uses recently primary observed data for all key components; and base analysis on parameters specific to the project



The Scale of the Existing Market for Travel to Las Vegas

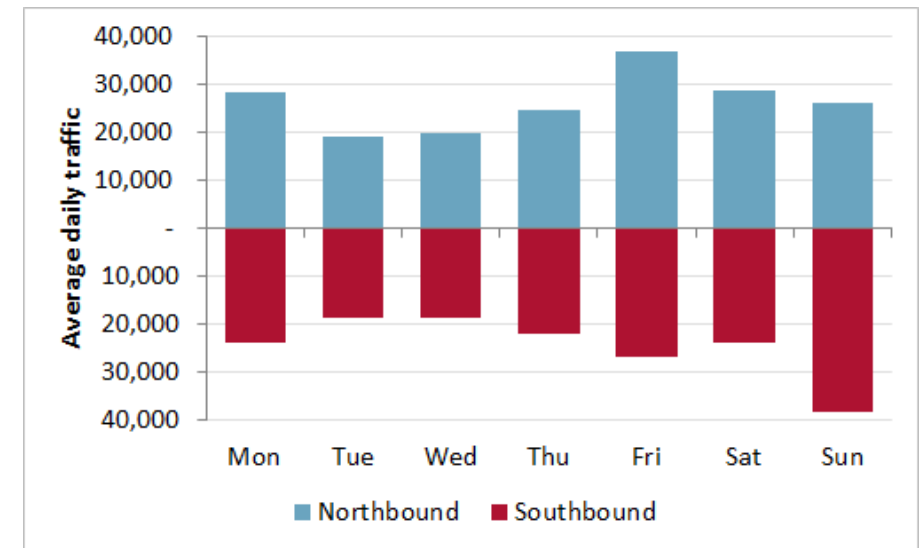
- Las Vegas attracted over 42.9 million visitors in 2016
 - Tourists
 - Convention and business visitors
 - Personal travel to visit friends and relatives
- Californian residents approximate 29% of all visitors
 - Of these, 80-85% reside in Southern California
- Many international visitors to Las Vegas also arrive via California
 - 75% of international visitors don't fly directly to Las Vegas





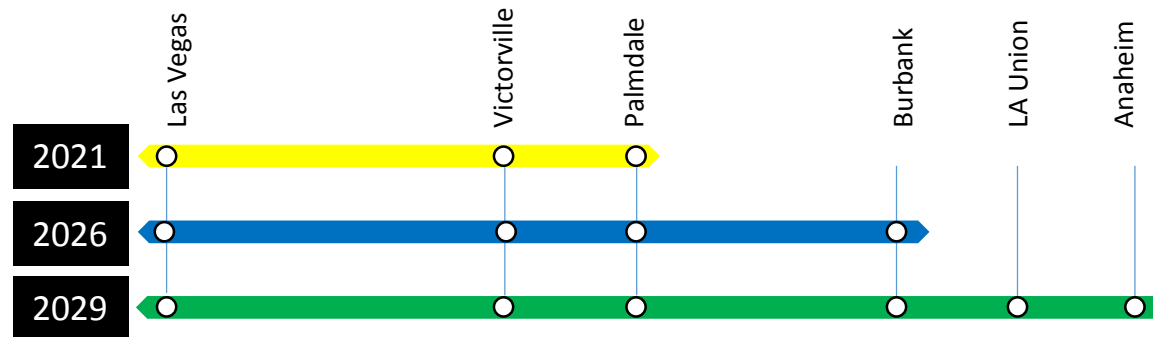
The Existing Travel Options

- 90% of visitors from Southern California travel to Las Vegas by road
 - Uncongested drive time from Southern California is 4-6 hours
 - Travel times at peak times (Friday northbound, Sunday southbound) are often significantly longer
- Main alternative is travel by plane
 - From six major airports in Southern California





Phased Implementation



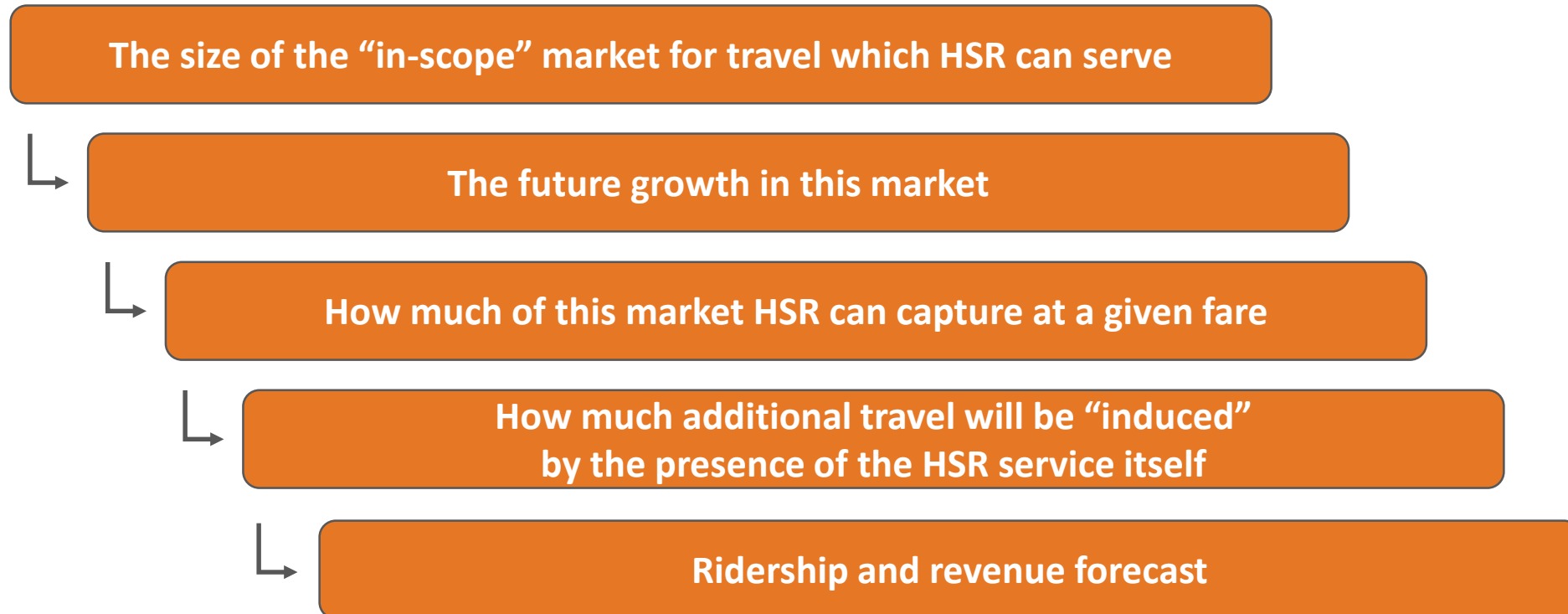
- 2021: Phase 1: Las Vegas-Palmdale
- 2026: Phase 2: Las Vegas-Burbank
- 2029: Phase 3: Las Vegas-Anaheim
- 2029: Phase 4: Connection with CaHSR services to Central Valley and Northern California





The Forecasting Approach

- Based upon a proven methodology, utilized in high-speed and intercity passenger rail studies in the US and internationally.





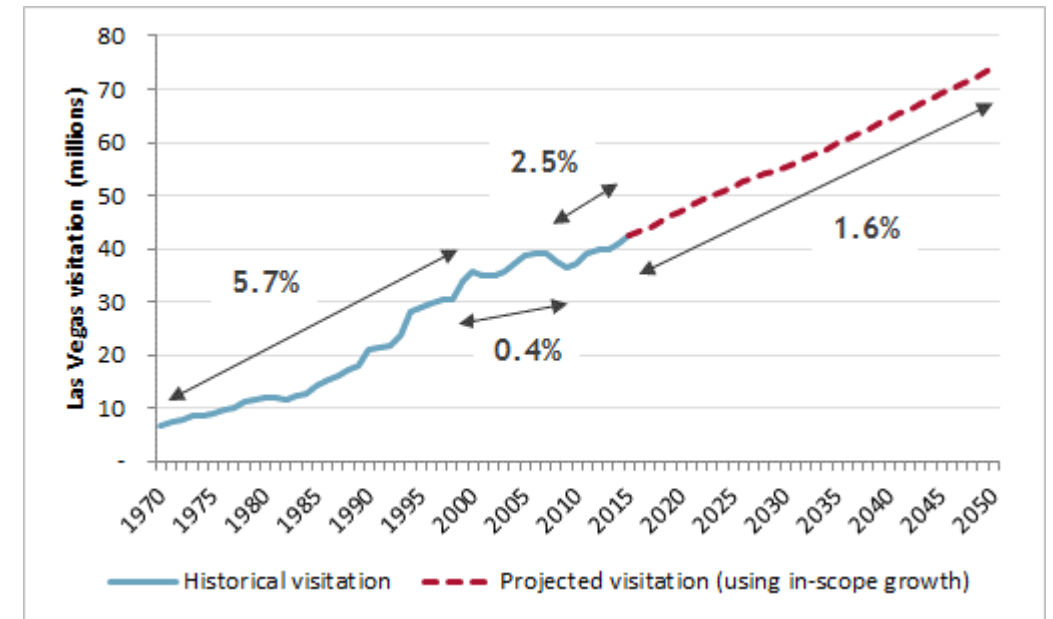
The Size of the “In-scope” Market for Travel Which HSR Can Serve

- Estimated “in-scope” market includes approximately 26 million round-trips in 2015, based on:
 - LVCVA reported adult visitors to Las Vegas
 - Estimated visitation among under 21s and those visiting friends and relatives resident in Las Vegas
 - Estimated trips made by Clark County residents traveling to California



The Future Growth in this Market

- Historically, growth of Las Vegas visitation strongly influenced by available rooms, with high occupancy levels
- Forecasts of future year growth of “in-scope” market from California also incorporate:
 - Demographic changes
 - Behavioral changes (propensity to visit Las Vegas)





Primary Research Helps us to Inform Travel Behavior

- Extensive cell-phone and GPS data used to understand where people are traveling to and from
- 10 focus groups were conducted across 5 locations throughout California to understand what is important to people when making travel choices
- Stated preference surveys were conducted in multiple locations:
 - Yermo agricultural inspection station
 - MGM properties on the Las Vegas Strip
 - Las Vegas convention center
 - Online panel





Example of Survey Stated Preference Exercise

- People's responses help to quantify the potential capture by HSR



Boarding at:

Los Angeles

Outbound
time



2 h 30 min



Return
time

2 h 45 min

Round trip
fare/person



\$115

Route:

I-15

Outbound
time



5 h 00 min



Return
time

5 h 30 min

Round trip
cost/person



\$ 70



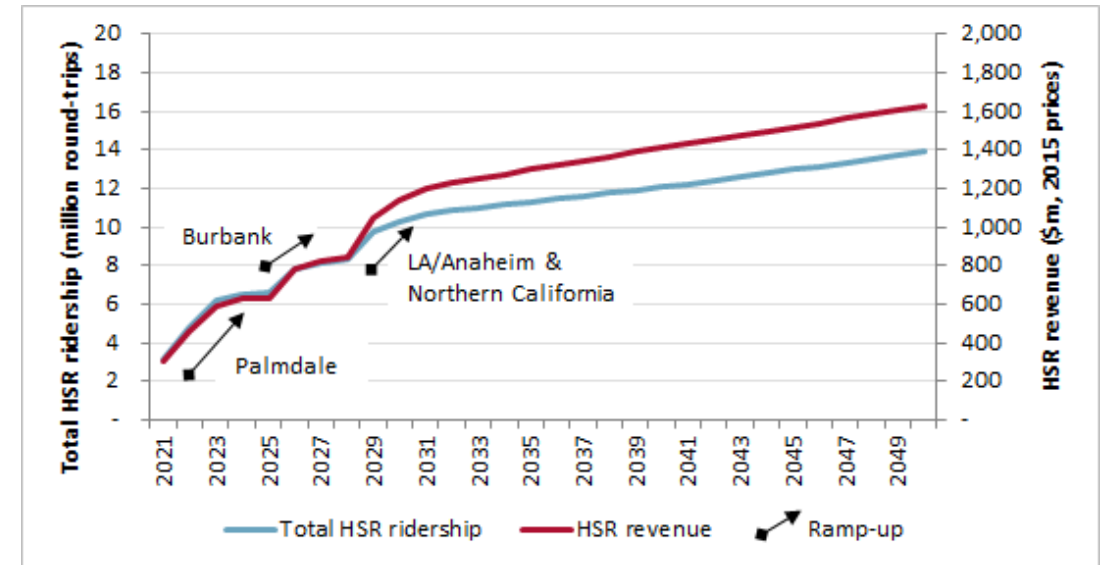
How Much of the Potential Market Can HSR Capture at a Given Fare?

- Binary choice models used to estimate likely allocation of different market segments to competing modes
- Input parameters for models derived using data from stated preference surveys (with over 4,000 participants)
- Estimates of additional travel “induced” by availability of the HSR service also developed based on survey responses



Base Case Ridership and Revenue Forecast

- Forecast initial annual ridership of 3 million round-trips in 2021 (Phase 1, 1st year)
- Demand increases to 11 million by 2035 with full corridor open, and 14 million by 2050
- Potential 27% market share for HSR
- Demand profile reflects infrastructure phasing and ramp-up
- Wide range of sensitivity tests
 - Including exogenous factors, mode characteristics and model parameters
 - Demonstrates resilience of the forecasts





Ridership and Revenue Study Summary

- Proven large scale demand between California and Las Vegas
- Forecast annual ridership of 3 million round-trips in 2021, rising to 11 million by 2035 with full corridor open, and 14 million by 2050
- Forecast annual revenue of \$300 million in 2021, rising to \$1.3 billion by 2035 with full corridor open, and \$1.6 billion by 2050
- Investment grade analysis based upon proven methodology used in the US and internationally
- Forecasts developed using significant volumes of primary data collected specifically for this project
- Forecasts subjected to a range of sensitivity tests which demonstrate the resilience of the forecasts across a range of areas of uncertainty



The Good News

- Critically important project
- Environmental work complete
- Public Sector interest at Federal, State, Regional and Local levels
- Ridership and Revenue Study completed
- Private Sector interest





For Copies of Report

- Contact: Neil Peterson
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- View the video recording of the webcast:

Tinyurl.com/HDCJPA

- Register for HDC JPA Updates:

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Questions & Answers



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