



# International Lessons for Promoting Transit Connections to High-Speed Rail

Stan Feinsod, Eduardo Romo Urroz, Peter Haas, PhD, and James Griffith

MTI Project 1226

April 2016

SJSU Research Foundation  
210 N. Fourth St., 4th Fl.  
San José, CA 95112

Tel // 408.924.7560  
Fax // 408.924.7565

transweb.sjsu.edu

## Board of Trustees

### Founder

Secretary Norman Mineta

### Honorary Co-Chairs

Congressman Bill Shuster

Congressman Peter DeFazio

### Chair

Nuria Fernandez

### Vice Chair

Grace Crunican

### Executive Director

Karen Philbrick, Ph.D.

Joseph Boardman

Anne Canby

Donna DeMartino

William Dorey

Malcolm Dougherty

Mortimer Downey

Rose Guilbault

Ed Hamberger

Steve Heminger

Diane Woodend Jones

Will Kempton

Art Leahy

Jean-Pierre Loubinoux

Michael Melaniphy

Abbas Mohaddes

Jeff Morales

David Steele, Ph.D.

Beverley Swaim-Staley

Michael Townes

Bud Wright

Edward Wytkind

### Emeritus

### Executive Director

Rod Diridon, Sr.

Intercity and High Speed Rail services provide a trunk line between major cities and other important destinations.

The success of these lines is partially dependent on the quality and number

of connecting linkages established at stations with other modes of transportation. In each community with a HSR station, the ability to feed and distribute riders safely, efficiently, and quickly will help make the entire system more attractive, and may draw in the maximum number of riders. Existing data was assembled, alongside interviews with key local officials in order to:

- Review connection data at HSR stations throughout the world.
- Develop profiles of connections offered at different city sizes, by population.
- Compare three California cities with international counterparts.
- Conduct local interviews to identify plans and opportunities for future HSR stations.

**Establishing international data on HSR connections permits some comparisons and advice as California cities plan for HSR.**

## Study Methods

A detailed internet-based survey of connections available in 64 cities in 13 countries around the world was conducted, and the data was documented in a database. It was then analyzed to determine the relationships among the connection attributes and city sizes, along with other parameters.

Three California cities were chosen for comparison to similar cities from the international database to help identify attributes of areas with mature High Speed Rail systems and the local connections they feature. For each California city; interviews were conducted with local transportation officials to determine the status of efforts to change local transit systems and HSR facilities as a result of the expected introduction of HSR.

## Findings

### HSR services have a clear impact on local public transportation services.

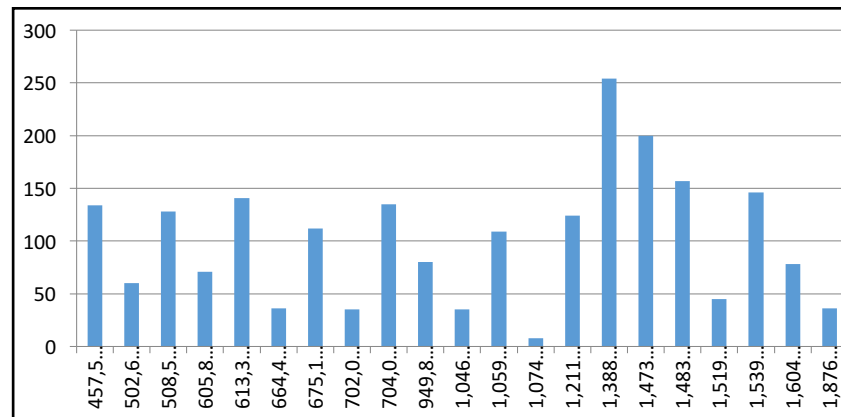
The introduction of HSR services in Europe and Asia increased public transit ridership and the number of local transit services connected to the HSR lines. In general, more transit-oriented cities have higher connection availability at HSR stations. As population increases and cities become larger and more complex, there is a shift in connection focus from bus lines (and taxis) to subways, commuter rail, and light rail lines. The longer a high speed rail station has been opened, the more connections are made available.



www.uscnpm.org

## The analysis of the data establishes a strong link between population size and connectivity attributes.

The clearest relationship between connectivity and population size is associated with the number of different types of transit modes available and the number of transit offers (the number of lines multiplied by the frequency of service). There is a correlation between connectivity parameters at a station and population size in the area. Station activity, the number of passengers per hour, is also directly related to population. This translates into a need for more transit modes with higher capacities at stations that serve cities with higher populations.



**Total Average Services Per Hour vs. Population between 400,000 and 2,000,000 / Number of HSR Stations**

## Policy Recommendations

The authors recommend that communities plan for much-improved connections for their HSR stations, by applying some of the benchmarks gathered from international data. Planning should concentrate on high quality connections that offer riders excellent information and convenient transfers.

- Trunk line HSR stations offer local officials opportunities to improve local public transport.
- Improved bus connections should be the first priority.
- For the largest cities, improved light rail, subway, and commuter rail connections will be very important.
- The quality of connection between HSR and other modes requires special attention.
- Overcoming local political and policy disagreements will be required in order to take advantage of the new HSR.

## About the Authors

Stan Feinsod is a Passenger Rail Consultant and MTI Research Assistant; Eduardo Romo Urroz chairs the board of Fundación Caminos de Hierro, an independent research center on railway technologies; Dr. Peter Haas is MTI Education Director and a faculty member at the MTI Master of Science in Transportation (MSTM) program; and James Griffith is an MTI Consulting Associate and a financial analyst at the California Department of Public Health.

## To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/project/1226.html](https://transweb.sjsu.edu/project/1226.html)

MTI is a University Transportation Center sponsored by the U.S. Department of Transportation's Office of the Assistant Secretary for Research and Technology and by Caltrans. The Institute is located within San José State University's Lucas Graduate School of Business. **WEBSITE** [transweb.sjsu.edu](https://transweb.sjsu.edu)