



Promoting Intermodal Connectivity at California's High-Speed Rail Stations

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MTI Project I209

July 2015

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The competitiveness of high-speed rail (HSR) depends highly on the level of its intermodal connectivity as well as the rail authorities' ability to deliver convenient and rapid service into urban cores in a cost-efficient manner.

This study seeks to understand the operational and spatial requirements for intermodal connectivity at HSR stations in California drawing from examples and best practices of successful intermodal stations in Germany and Spain.

Study Methods

The study draws information from: 1) a review of literature on ways to measure and improve connectivity and intermodality in transit systems; 2) a survey of 26 HSR experts from six European countries; 3) a review of German and Spanish HSR systems to extract lessons from their experiences for California; 4) six detailed case studies of intermodal HSR stations in Germany and six in Spain, indicated by Spanish and German HSR operators as exemplary models of HSR station intermodality; 5) and two case studies of multimodal transit stations in Southern California—Union Station in Los Angeles and the Airport Train Station and Regional Intermodal Transportation Center (RITC) in Burbank.

Findings

Integrating HSR with conventional rail in a blended system sharing the same tracks offers the advantages of higher connectivity as well as potentially decreased capital costs and decreased adverse environmental and urban form impacts. However, a blended approach is more challenging in terms of management and operations and requires careful pre-planning to achieve a high degree of coordination in operations and passenger services. It also requires significant infrastructure planning and coordination as well as station infrastructure that accommodates smooth transitions among the different modes.

Connectivity and intermodality with other transportation modes offer seamless travel and mobility benefits. The German and Spanish case studies are exemplary in their achieved levels of intra-city and inter-city connectivity. They also have found ways to integrate local and regional railway services, buses, and even airline services in ways that complement rather than compete with one another. This entails both an operational aspect involving coordinated scheduling of different modes for easy links and short transfer times, as well as a spatial aspect—easy physical access from one mode to the other.

Policy Recommendations

Intermodal connectivity requires considering spatial and operational issues. Spatially, four zones should be considered. At the station scale, attention should be given to the spatial relationship and proximity of station platforms and the pedestrian flow between them, as well as the

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provision of passenger services (travel lounges, information kiosks, ticket booths, cafes, wayfinding signage, etc.). The possibility of integrating retail opportunities within the station building should be explored. Stations should be equipped not only with park- and kiss-and-ride lots, but also bicycle parking, bicycle stations, and bike-sharing facilities. At the station neighborhood level, emphasis should be given to minimizing the barrier created by the tracks and station infrastructure and to integrating the station to the surrounding urban fabric and street network. Easy and safe pedestrian and bicycle access to the station and vehicular linkages between the station and its neighborhood should be provided. At the municipality level, emphasis should be given to station connectivity via public transit and/or via metro with different areas in the city that represent important destination points (airports, downtown and other sub-centers, theme parks, commercial centers, etc.). At the regional level, possible complementarity of the station with the neighboring stations along the HSR line should be considered in determining the desirable land uses around the station.

Operationally, coordination and collaboration are essential among multiple parties (federal and state agencies, transit operators, municipal departments) from the beginning of the planning process. An important operational aspect is the level of connectivity and intermodality of the HSR service with other travel modes. This entails both the location of other transportation modes in close proximity and easy access from the HSR platform, as well as coordinated scheduling of different modes for easy links and short transfer times. Additional ways to improve operational connectivity of HSR services with other modes include integrated ticketing options, luggage transfer services from one mode to the other, clear and frequent wayfinding signs, and advanced information systems detailing connections with other modes.



Multimodal HSR Station in Dresden, Germany

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/project/1209.html

MTI is a University Transportation Center sponsored by the U.S. Department of Transportation's Research and Innovative Technology Administration 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)