DRISI

Caltrans Division of Research, Innovation and System Information

Research Notes

Intermodal Connectivity at California's High-Speed Rail Stations

identify appropriate types of station infrastructure and services that will improve intermodal connectivity and offer optimal travel experience for California's HSR passengers.

Planning
Policy
Programming

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

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Task Manager:
Patrick Tyner
Associate Transportation Planner
patrick.tyner@dot.ca.gov

WHAT IS THE NEED?

High-speed rail (HSR) has emerged as one of the most revolutionary and transformative transportation technologies, having a profound impact on urban-regional accessibility and inter-city travel across Europe, Japan, and more recently China and other Asian countries. One of HSR's biggest advantages over air travel is that it offers passengers a one-seat ride into the center of major cities, eliminating time-consuming airport transfers and wait times, and providing ample opportunities for intermodal transfers at these locales. Thus, HSR passengers are typically able to arrive at stations that are only a short walk away from Central Business Districts and major tourist attractions, without experiencing any of the stress that car drivers often experience in negotiating such highly congested environments.

In their 2012 Revised Business Plan, the California High-Speed Rail Authority (CAHSRA) confirmed their commitment to a better incorporation of new high-speed infrastructure with existing services. The CAHSRA expects that a blended system will be more cost-efficient. In addition, and as consultants found in previous research, a number of station-cities would favor the share-track approach, because they believe it would have less impact on their urban form and require fewer property acquisitions. On the other hand, opposition to the blended approach has come from those who believe that the train's speed would be significantly compromised. It is clear that such an approach requires a higher level of coordination and planning of the infrastructural and spatial aspects of the HSR service, which is the focus of this research effort.

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DRISI provides solutions and knowledge that improves California's transportation system

WHAT ARE WE DOING?

The consultants began with background research and a systematic review of the planning and transportation engineering literatures about intermodal connectivity and complementarity in the context of high-speed rail. The goal was to identify what these literatures tell us about the opportunities and challenges of blended service and blended systems in regards to the passengers' door-to-door travel experience, including access, station-area parking, ticketing, station wayfinding, etc.

Additionally, the consultants utilized a group of 26 international experts on HSR systems from Germany, Spain, France, UK, the Netherlands, and Italy and asked them to respond to a web-based survey about blended systems. Experts were asked to identify challenges and issues related to different blended systems and to pinpoint examples of corridors and stations where in their view the blended system works the best, and others where it does not work well.

Additionally, the consultants undertook in-depth case studies of the German and Spanish HSR system to understand how their blended systems operate, and what lessons can be extracted for California. They also examined in detail six HSR stations in Germany and six in Spain, considered as exemplary models of HSR station intermodality. The purpose of these case studies, which utilized a number of interviews with local station managers and transit officials, was to extract lessons and best practices applicable to California.

The consultants also conducted two case studies of multi-modal transit stations -- the Downtown Burbank (Metrolink) Station and Union Station in Los Angeles. The purpose was to understand current capacities, operations, and challenges that these two intermodal transit interchanges are experiencing and to compare and contrast the U.S. context with the Spanish and German contexts.

WHAT IS OUR GOAL?

The goal is to produce an accessible, employable set of guidelines with best practices for intermodality and blended service for the benefit of transit operators, high-speed rail planners, and station-cities in California.

WHAT IS THE BENEFIT?

The findings from the literature review, expert survey, and station case studies of multi-modal facilities in Germany, Spain, and the U.S. will be compiled to identify the best practices in terms of ensuring seamless intermodal connectivity and blended service. Such practices may include policy, urban design, and planning responses that may be implemented in blended HSR-conventional rail systems in California.

WHAT IS THE PROGRESS TO DATE?

As of March 2015, the consultants have completed all research with the Final Report being delivered to the DRISI Project Manager in January 2015. The Final Report is undergoing Peer Review and has been distributed to the Advisory Panel members for their comments.

Central station in Dresden, Germany