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Caltrans Division of Research, Innovation and System Information

Research Notes

High Speed Rail Station Development into Multi-use Facilities

Identifying best practices from selected case studies of European railway stations in order to inform the development of proposed California High Speed Rail facilities.

Modal

DECEMBER 2015

Project Title:
A Comparative Analysis of High Speed Rail Station Development into Destination and/or Multi-use Facilities

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WHAT IS THE NEED?

In July 2014, the City of San Jose adopted the Diridon Station Area Plan, a 300+-page document that sets out a 30-year vision for the future planning of the Diridon station area, which is likely to undergo significant transformations in the next decades due to the planned arrival of high-speed and commuter rail, as well as the city's plans to further develop the area. The plan documents a significant planning effort aimed at creating a unique multi-modal facility surrounded by new, state-of-the-art development. Nevertheless, given the uncertainty of future infrastructure and policy development, the plan needs to be flexible and open to multiple adjustments.

Good station-area planning is a very important prerequisite for the eventual successful operation of a high-speed rail (HSR) station; it can also trigger opportunities for economic development in the station area and the station-city. A developing literature and experience from international examples of HSR stations can provide valuable lessons for the California HSR system in general, and the San Jose Diridon station in particular.

The building of major infrastructural projects such as HSR stations often encounters several specific challenges. In the case of San Jose Diridon, some of the challenges that should be addressed are modal integration (high-speed, conventional, commuter, light rail, bus, taxi, shuttle and other modes all have to be accommodated), car dependency, bicycle and pedestrian access, proximity to San Jose Mineta Airport, and finding the right land use mix.

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WHAT ARE WE DOING?

The research team will begin with background research and a systematic review of the planning, transportation engineering, and public policy literature about the planning and design of successful intermodal railway facilities. They will draw on available literature to examine issues such as HSR station design and layout, intermodality, station access, way-finding, parking, car- and bike-sharing, ticketing, passenger services, etc. Additionally, the team will develop a list of key comparative criteria of European cities/stations that are similar in size, location, station-area plan and scope to San Jose, and compile a "long list" of possible case studies. They will prepare a short overview for each station on this list, which will then help them to narrow down a "short list" of 3-5 "best fit" comparisons for which they will conduct more detailed case studies in order to identify lessons for San Jose Diridon.

The research team will then undertake an exhaustive evaluation of the station-area plans, environmental impact reports, and other planning documents detailing the goals, vision, and anticipated challenges for the development of the Diridon HSR station and its vicinity. This review and analysis of plans and texts will be complemented by 1) fieldwork "on the ground" with visits to San Jose to map and evaluate the area's urban form characteristics, surrounding land uses, spatial connectivity, available parking, and intermodal connections; and 2) interviews with San Jose planners and urban designers.

The findings from the literature review, European case studies, site analysis, and interviews with local and international professionals will be compiled to identify lessons and best practices and, ultimately, recommendations for the planning and design of the Diridon HSR station. While the immediate focus will be the Diridon station, the team will also summarize more general recommendations that may be applicable to other stations on the California HSR corridor.

WHAT IS OUR GOAL?

The goal of this study is to review existing literature and data on international multi-modal facilities and also draw lessons and best practices from selected case studies of European railway stations in order to inform the development of proposed California HSR facilities, in particular the San Jose Diridon Station. The performance tests or criteria which demonstrate that the goal is achieved are: 1) the selection of best practices from successful European examples and their compilation into an accessible and easy to use report; and 2) dissemination of this report through publications, conference presentations, webinars, and the internet.

WHAT IS THE BENEFIT?

This study will compile timely recommendations for the successful planning of the Diridon station and other stations along the California HSR corridor. The information and guidelines compiled will offer useful information and best practices for municipal, Caltrans, and California High Speed Rail Authority (CHSRA) transportation planners and station area-urban designers.

WHAT IS THE PROGRESS TO DATE?

This Task Order was given Notice to Proceed on November 5, 2015, and has thus just recently begun. The researchers are embarking on the first task, which is the examination of relevant scholarly and professional sources on the planning and design of successful intermodal railway stations.