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Hub Stations as Catalysts for Regional Growth: The Case of New York Penn Station

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Research Problem

Rail stations are essential components of rail systems. While at a fundamental level they offer access points to the means of movement, rail stations truly serve as connections between the infrastructure system and the surrounding environment: the urban fabric, the political system and the economic system, among others.

The final research conducted under this project built upon in-depth research on New York Penn Station and related the importance of rail stations, especially hub stations, to high-speed rail development. Proposals throughout the world for high-speed rail, which provides rapid intercity rail travel at speeds exceeding 150 miles per hour, remain both popular and controversial. In countries where high-speed rail lines have been built, these projects are cost-intensive to develop but provide rapid intercity connections, among other potential environmental, social and economic benefits.[1] As governments and private developers continue to propose new projects in order to address societal issues including road congestion, geographic economic and social inequality, excessive air pollution and greenhouse gas emissions, economic development and globalization, it also remains important to understand in what ways rail development actually impacts these societal issues.

This research focused on the role local-level benefits, such as local land development and infrastructure beautification at or near rail stations, may play in garnering support or opposition to rail development. In evaluating two case studies—one in the United Kingdom (UK) and one in the United States (US) —this research aimed to inform research questions related to the impacts of rail development on local-scale issues.

The benefits of local station revitalization and local land development may be significant parts of the total benefits of rail development. The prospect of station revitalization and local land development also may significantly impact stakeholders' support of or opposition to rail development. Evaluating how institutions and the public value these prospects and how rail station revitalization and land development are related to high-profile rail projects, such as high-speed rail, may offer insight into the true benefits and costs of these projects. In all, this research aimed to inform how these issues relate and how best to coordinate these local physical issues within the broader infrastructure system and expanded urban scale.

This research aimed to answer the following main question: *What role do local-level station development or revitalization and land development play in the broader context of rail planning and development?*

Additionally, other related questions arose including: How do stakeholders assert their interests in this local context? Do these efforts also influence how organizations work in this and other related capacities? Are there better ways to address conflicting interests to maximize the local-scale benefits of rail development?

Approach and Methodology

These research questions were addressed through evaluating two case studies, each focusing on a major decision related to a high-speed rail development project. The first case study concerns the decision to use St. Pancras Station as the London terminus for the High-

[1] Elizabeth Deakin, "Background on High-Speed Rail," in *High-Speed Rail and Sustainability*, ed. Blas Luis Pérez Henríquez and Elizabeth Deakin (New York: Routledge, 2017).

Speed 1 (HS1) project in the United Kingdom, which brought high-speed rail to the United Kingdom for the first time and connected England with high-speed rail systems in Continental Europe. Before High-Speed 1, St. Pancras Station was a neglected and decaying station in northern London. With the decision to use the station as High-Speed 1's London terminus, the British government invested hundreds of millions of pounds into redeveloping the station, with new concourses, customs and immigration services, London Underground connections, hotels and shops. Currently, it is the most popular station in the London rail system in terms of passenger satisfaction and hosts many cultural and neighborhood amenities. This case study primarily was evaluated through a stakeholder analysis as well as review of the decision-making process.

The second case study was of the proposed high-speed rail line between Los Angeles and Las Vegas, which would be privately built and operated, along a major interstate highway right-of-way. The main purpose of the high-speed rail line would be to support and expand the entertainment- and leisure-based economy in Las Vegas. Currently, the project has had difficulty finding sufficient financing, and it is not clear if the project will be built. Sufficient information was available, however, to learn about the decision-making process and relevant factors that would impact the success of the project. This case study primarily was evaluated through a stakeholder analysis and a benefit-cost analysis that highlighted the relationship between local land development in Las Vegas and the high-speed rail line.

Findings

A review of literature established the importance of high-speed rail as a mode of intercity transportation present throughout the world, especially in Western Europe and East Asia. The costs and benefits of high-speed rail and the location of a high-speed rail station are central to the system's competitiveness and its ability to achieve benefits. Transit-oriented development can maximize benefits of high-speed rail on the local and the value of land adjacent to rail stations. The review also considered how stakeholders connected to complex infrastructure systems can collaborate across geographic and political boundaries to improve the system's efficiency and efficacy.

The rehabilitation of St. Pancras Station was part of the High-Speed 1 project in the United Kingdom. In effect, the Central Government of the UK planned and funded this project. St. Pancras Station and the adjacent King's Cross Central development garnered widespread acclaim for their architectural preservation and public place-making. In addition, there has been significant economic growth in the Borough of Camden and the King's Cross Ward where St. Pancras Station is located. It is difficult to determine the exact impact that the rehabilitation of St. Pancras Station has played in this economic growth; however, it likely has contributed significantly to it. The King's Cross Central development is expected to earn £200-400 annually, split between London and Continental Railways the United Kingdom Department for Transport. In this case, the financial benefits of the entire High-Speed 1 project may not have justified its high costs; however, the public sector funded the project, at least in part because it valued these other social and cultural benefits in addition to the financial benefits. In addition, high-quality infrastructure development and place-making at the local level received enthusiasm and interest among the public and industry and generated local economic growth.

A high-speed rail link between Southern California and Las Vegas has been proposed by XpressWest, a private infrastructure developer. Since the XpressWest route follows the right-of-way of Insterstate-15 directly into Las Vegas, its construction should be less costly than the construction of other urban high-speed rail lines. This project, however, would be the first international-quality high-speed rail line in the United States and the first completely privately funded intercity route. XpressWest has had difficulties in obtaining funding from the private sector or loans the federal government to begin construction.

A Benefit-Cost Analysis (BCA) was conducted using information primarily gathered from the *Final Environmental Impact Statement and Final Section 4(f) Evaluation for the Proposed DesertXpress High-Speed Passenger Train Victorville, California, to Las Vegas, Nevada* (FEIS) (2011), the project's *Draft Environmental Impact Statement* (2009) (DEIS) and the *Supplementary Draft Environmental Impact Statement* (2010). This BCA showed that the project would be socially detrimental and financially unprofitable for XpressWest, unless wider economic benefits were considered. Many of these benefits would be focused in Las Vegas' gambling, entertainment and convention industries, which depend on building hotels, casinos, entertainment venues and convention centers. With this understanding, these other private-sector stakeholders could collaborate with XpressWest and transfer a portion of their financial benefits to XpressWest so that it may earn a profit on the project. They could subsidize the high-speed rail project outright by contributing to a fund to support XpressWest, or they may subsidize tickets for passengers, who stay at related hotels or go to certain events.

These two case studies were compared and contrasted under three themes: physical and spatial context, economic context, and social and political context. In the urban context, each project addresses the limitations to further economic growth and land development at the appropriate scale: local neighborhood land development in the St. Pancras Station case and regional tourism for the Los Angeles to Las Vegas high-speed rail link case. The economic context of each project and the projects' economic benefits were characterized by these different urban contexts. The St. Pancras Station rehabilitation may create wealth and economic growth at the neighborhood scale by attracting residents, businesses and visitors. XpressWest may augment the entire Las Vegas economy by bringing more tourists and visitors to the city and creating further demand for hotels, casinos and entertainment venues. In both cases, these benefits depend on the high-speed rail stations being located close to central areas of the city and integrated in the surrounding urban environment. In the St. Pancras Station case, the design of the station and surrounding area has garnered high praise. The political context for each case is defined by public-sector and private-sector interests and ability to fund and support the high-speed rail projects. At St. Pancras Station, the public sector values social benefits highly, even if the project may not earn sufficient revenues to exceed its costs. In Las Vegas, XpressWest must build and operate a profitable high-speed rail route regardless of how much political support there is.

Conclusions

Appropriate placement and design of a rail station is essential to the efficacy of a rail system and its local impacts. A station's location can increase or decrease passengers' total travel time, it can impede or ease passengers' access to the rail system, and can be

separated from or integrated with the surrounding urban area. In both of the cases considered, the local-level benefits are dependent on the station's location and design. In the St. Pancras Station case, the station is located in a central area of London, facilitates passengers' movements through different concourses and commercial areas within the station, and integrates well with the surrounding urban neighborhoods. These are the characteristics that have earned it such a positive image and that have created the significant local benefits in and around the station. The two proposed Las Vegas stations similarly are located near the city's entertainment district and are planned to integrate well with a variety of other modes of transportation. If built, the station should fit well with Las Vegas' urban structure and characteristics in order to facilitate the connections upon which local-level benefits depend.

The exact nature and type of local benefits that occur at or near rail stations vary and depend on the urban, economic and political contexts. For example, the station itself might be a destination. In addition to providing transportation services, St. Pancras Station is a historic landmark with distinctive architectural beauty, which attracts cultural and political interest. The commercial district at St. Pancras Station and in King's Cross Central is defined by and builds upon the station. In that area, walking and public transit are common modes of transportation.

In Las Vegas, connections to other sites across the city, such as hotels and casinos, rather than the station itself being a destination would be a more important quality for the rail station. In this way, it could support the most important local-level benefits of the XpressWest project. Visitors who use the XpressWest high-speed rail line and the station in Las Vegas likely wish to spend time beyond the station on longer visits. Even so, the station can be designed and built to provide for the local-level benefits appropriate for that situation.

Stakeholders' interests are major factors in developing rail infrastructure. High-speed rail especially can serve a variety of purposes—potentially supportive or conflicting. In order to ensure that the most valuable impacts are realized, these rail systems should address the opinions and values of the relevant stakeholders, especially those with the greatest saliency in the system, especially the stakeholders that are funding the project. Many high-speed rail systems may not be profitable on revenue alone, and these projects even may not provide sufficient financial benefits to justify their cost. Some stakeholders, however, also may value the provision of modern amenities, a more equitable distribution of or access to industry, or a city's or a nation's image. It is difficult to monetize these benefits, and it may be difficult to determine their wider impacts on economic growth. In certain cases, such as at St. Pancras Station, rail development in fact can provide these kinds of additional benefits and they likely had positive impacts on local economic growth. When stakeholders value profitability as a necessary outcome, then it becomes more difficult to justify a project using these other benefits; however, there may be ways of quantifying and leveraging indirect benefits to support rail development.

This discussion points to the conclusion that local-level benefits at major rail stations can be significant. The value of these benefits has the potential to make a project have socially net positive benefits and be even financially profitable. Many of these local-level benefits, however, are controversial, because they are difficult to gauge and they are difficult to connect directly to a rail project and a specific rail station. In many cases, the benefits may be caused by a combination of the development of a rail system and broader economic and social factors rather than the by the infrastructure alone. Every stakeholder has its own principles and its

own willingness to take risks on a project, and certain stakeholders may value certain benefits highly when others do not. With the understanding that many different local-level benefits are possible and with the motivation to explore how best to produce these benefits, stakeholders can take charge of a project or collaborate with each other in order to develop their desired rail system and rail stations. The two case studies presented in this thesis demonstrate these processes and offer examples of certain opportunities for coupling goals for local benefits with successful rail station and land development.

Work produced

MIT Master's Theses:

Mascoop, Daniel R. "High-Speed Rail and Local Land Development: Case Studies in London and Las Vegas." Master in City Planning Thesis, Massachusetts Institute of Technology, 2017. http://dspace.mit.edu/handle/1721.1/113807.

Heywood, Rebecca J. "Multi-Scale Regional Transportation Governance: Evaluating Cooperation and Decision-making at New York Penn Station." Master of Science in Transportation and Master in City Planning Thesis, Massachusetts Institute of Technology, 2016. http://dspace.mit.edu/handle/1721.1/104992.