



## Strategies for collaborative funding of intermodal airport ground access projects



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Projects to improve airport ground access not only provide important intermodal connections but can also present difficult funding challenges. This paper reviews the recent literature on funding airport ground access projects as well as some of the wider literature on funding transportation projects in general in the United States (U.S.) that is indirectly relevant to airport ground access projects. This is followed by a review of current U.S. federal transportation funding programs relevant to airport ground access projects, as well as a discussion of state and local funding programs and potential opportunities for private sector funding. The paper then describes several case studies of airport ground access project funding that were undertaken as part of this research. Based on this discussion, the paper discusses potential funding strategies for intermodal airport ground access projects in the U.S., requirements for effective implementation of these strategies, and a recommended approach to facilitate successful project development and implementation. It also presents recommended changes to the transportation funding program rules and regulations in the U.S. that could facilitate and simplify the development of intermodal solutions to meet future airport ground access needs.

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### 1. Introduction

Airports are the principal interchange nodes in the passenger transportation system where local and regional transportation systems interface with those for national and international travel. At the same time, airports also facilitate the transfer of air cargo between the surface transportation system and the air transportation system, as well as sometimes serving as major sorting and distribution centers for freight that moves entirely by surface transportation.

However, projects in the United States (U.S.) to improve the connectivity between the surface transportation system and the airport circulation and terminal facilities are often hampered by the fact that program regulations limit the type and location of projects eligible for funding from the various federal and state transportation funding programs. Policies regarding the allocation and use of these funds are often so restrictive that projects are difficult to implement or are rendered much less effective at improving

intermodal connectivity. These limitations and restrictions constrain the ability of both airport authorities and state and regional transportation agencies to plan and implement effective intermodal solutions to airport ground access needs.

This paper is based on a recently completed research study that examined the potential for the development of collaborative funding strategies to facilitate the implementation of airport ground access projects in the U.S. (Gosling et al., 2012). The objectives of the research were to develop guidance material and make recommendations on how to implement collaborative funding arrangements for intermodal airport ground access projects within the constraints of the different funding sources in the U.S. The research was based on a review of relevant literature, a review of various funding programs and sources, and a set of detailed case studies of funding approaches for a range of recent airport ground access projects in the U.S. Although the scope of the research addressed airport ground access projects within the U.S., some relevant international experience and lessons are also discussed briefly in the paper.

The remainder of this paper consists of six sections. The next section summarizes the findings of a literature review that examined the literature on funding airport ground access and intermodal projects, as well as the limitations and restrictions imposed by the regulations and eligibility requirements of the relevant funding

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programs. The third section provides a brief review of the various funding programs, together with their limitations and restrictions and applicable regulatory and guidance material. The fourth section provides an overview of seven case studies of intermodal airport ground access projects that were selected to explore the variety of different funding programs and sources that have been used to finance such projects. The fifth section presents guidance on the development of collaborative funding strategies for intermodal airport ground access projects that was developed in the course of the research. This guidance addresses identification of potential funding sources, institutional considerations in generating a regional consensus on the need for improved airport ground access, and inter-agency agreement on project selection and priorities. The next section presents a set of recommended changes to applicable funding program rules and regulations, as well as associated legislative requirements, in order to better facilitate collaborative funding of airport ground access projects. The seventh and final section presents the principal conclusions of the research regarding opportunities for innovative and collaborative funding of intermodal airport ground access projects. Although these conclusions have been developed to address funding such projects in the U.S. context, the general conclusions may also apply to other countries, although obviously the specifics of the available funding programs will differ.

## 2. Literature review

There is fairly limited literature that specifically addresses funding airport ground access projects, with a somewhat larger literature collection on airport ground access planning, some of which addresses funding issues. The latter includes guidance documents on planning airport ground access facilities and services prepared for the Federal Aviation Administration (FAA) and Federal Highway Administration (FHWA), and recent studies by the U.S. Government Accountability Office (GAO) and the Airport Cooperative Research Program of the Transportation Research Board. Given the scope of this research, the review focuses primarily on literature addressing the U.S. experience.

In 1994 the FAA sponsored a workshop to define a research agenda to support a national program of airport ground access development. Workshop presentations, included in Gosling (1994), identified some 15 studies or programs that are needed to ensure that both policy makers and planners have appropriate information and tools, including information on funding strategies. Although earlier descriptions of specific airport ground access projects sometimes addressed funding considerations, presentations prepared for the FAA workshop (Coogan, 1994; Lacombe, 1994) were some of the earliest work that specifically addressed airport ground access funding issues. Subsequently, the FHWA and the FAA sponsored the preparation of a planning guide (Shapiro, 1996), which provides a brief discussion of funding sources, and the Transit Cooperative Research Program (TCRP) sponsored a two-phase study to examine strategies for improving public transportation access to large airports (Leigh Fisher Associates, 2000, 2002). The 2000 TCRP report includes a discussion of institutional considerations and funding options for airport ground access projects. A study in 2001 for the California Department of Transportation on ground access to California airports (Landrum and Brown, 2001) addressed a wide range of issues and problems at some 47 airports in the state as well as one in Mexico adjacent to the California border, including project selection and funding. The study developed a set of policy recommendations, four of which specifically address project funding issues, including the need for improved coordination of different funding sources.

More recently, a 2005 study of airport intermodal transportation capabilities (GAO, 2005) undertook a survey of existing

and planned bus and rail connections at 72 U.S. airports, and presented the results of 14 case studies of intermodal projects at selected airports. The GAO report includes a review of federal, state and local funding programs applicable to airport intermodal ground access projects as well as potential private sector funding opportunities, with some discussion of airport intermodal projects that have used particular sources of funding. Subsequently, a 2008 Airport Cooperative Research Program report on ground access to major airports by public transportation (Coogan et al., 2008) examined a broad range of issues involved in planning for enhanced public transportation access to airports, including attributes of successful systems, application of market research, management of the airport landside system, considerations in attracting airport employees to public transportation, and effective ways to get ground access information to travelers. The report contains a discussion of factors governing airport financial operations and sources of funding for ground access projects, although this largely repeats the discussion in the 2000 TCRP report on improving public transportation access to large airports, in somewhat less detail.

In addition to literature specifically addressing airport ground access funding, there is extensive literature on transportation funding in general, some of which is indirectly relevant to airport ground access funding. A 2006 report published by the Mineta Transportation Institute (Weinstein et al., 2006) examined transportation financing opportunities for California. Then in 2009, the National Surface Transportation Infrastructure Financing Commission (NSTIFC, 2009) provided an overview of the issues being faced in surface transportation funding and potential solutions. Two aspects that have received considerable attention in recent literature are the equity implications of changing the way in which transportation projects are financed and funded, and issues involved in forming public–private partnerships. Rosenbloom (2009) summarized the discussions on this topic at a Transportation Research Board (TRB) Executive Committee policy session in January 2008. A subsequent TRB Special Report (TRB, 2011; Wilson, 2012) explored these issues in more detail and developed a set of recommendations for public policy makers, researchers and analysts, federal agencies, and states.

The increasing interest in public–private partnerships (PPPs) as a way to finance transportation infrastructure has also led to a growing body of literature covering the potential use of PPPs for transportation projects (DeWitt, 2011), including U.S. and international experience (Bailey-Campbell, 2011; Garvin, 2011), obtaining value from PPPs (Startin, 2011), public-sector decision-making in selecting PPPs (Yarema, 2011), and protecting the public interest (Poole, 2011). These build on research on PPPs undertaken by the National Highway Cooperative Research Program (NCHRP) over the past 20 years (Meisner et al., 1988; Buxbaum and Ortiz, 2009; Fishman and McDaniel, 2009). While the NCHRP reports naturally focus on the application of PPPs for highway projects, many of the findings are equally applicable to transit or airport projects. In 2007 the Federal Transit Administration (FTA) reported on the costs, benefits and efficiencies of PPPs for fixed guideway transit capital projects (FTA, 2007). Then in 2008, a team sponsored by the FHWA International Technology Scanning Program undertook a program of visits to Portugal, Spain, the United Kingdom, and Australia to gather information on experience with PPPs for highway infrastructure in those countries (Brown et al., 2009). PricewaterhouseCoopers (2010) subsequently provided a summary of U.S. experience with PPPs, which compares enabling legislation in the 25 states that had passed such legislation at the time of the report, and provides a discussion of why PPPs are attractive, when they make sense, and hurdles that need to be overcome. In addition the National Conference of State Legislatures (NCSL, 2010) provided a toolkit for legislators which discusses key characteristics of PPPs, related benefits, concerns and

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