This is a new section of the Public-Private Partnership Resource Center website and is currently in draft form. Your feedback is welcome: If you would like to comment on the content of this section of the website or if you have suggestions for links or materials that could be included please contact us at ppp@worldbank.org.

Photo Credit: Image by Freepik
Photo railroad travel passenger train with motion blur effect, concept tourism.

Moncloa Transportation Exchanger, Madrid, Spain

Download Chatbot

On this page: *An Integrated Multi-Modal Transportation Case Study of the* ***Moncloa Transportation Exchanger*** *in Madrid, Spain. Find more at the Municipal Public-Private Partnership Framework - Project Summaries section for brief summaries of around 100 projects from around the world, examples of successes and challenges, as well as innovative ideas on solutions, or visit the Guidelines on Innovative Revenues for Infrastructure section.*

Project Summary:

Background

Madrid's metropolitan area has a population of about six million people, with most of them located in the center of Madrid. To mobilize its people, the city maintains a metro, an urban bus network, an extensive network of high capacity freeways, interurban buses, and railway services. To ensure effective service delivery, the city needed a way to integrate the different transportation modes, urban and metropolitan. This led to the introduction of transportation exchanger. Transportation exchangers are intermodal nodes of urban and interurban transport networks that facilitate the integration of different transportation types and minimize the inconvenience of transport transfers for travelers. They are equipped with air-conditioning, commercial areas, and other facilities that make the travelers more comfortable. This infrastructure provides an optimal mode of transfer from regional and inter-regional buses or railway services to the metro network and urban buses. The Moncloa transportation exchanger was initially constructed in 1995 with public funds. As demand for public transportation grew, however, the Moncloa exchanger's capacity was pushed to its limits during peak hours. This caused problems for travelers trying to enter Madrid, delaying commutes, and contributing to excessive levels of air pollution. Additionally, according to the urban development plans, demand was expected to continue growing over the following years, further intensifying the need to expand and improve the exchanger.

Project Structure

In light of budget limitations and the general economic situation of the country, the public authority invited private sector participation in the expansion. In August 2005, Consorcio Regional de Transportes de Madrid (CRTM), Madrid's transportation authority, initiated a public tender to award a 35-year concession for the construction, maintenance, and operation of the Moncloa exchanger. The contract was awarded to a consortium consisting of Itínere Infraestructuras, Sacyr, and Castromil y Transportes la Unión and signed on 1 March 2006.

The concessionaire receives revenue from three different sources: a) for interurban bus passengers: (i) a fixed payment from CRTM, guaranteeing a minimum demand, and (ii) a sum paid by bus operators corresponding to actual demand; b) fares from long-distance transit passengers; and b) commercial revenues such as commercial and office space leases, vending, ATM spaces, and advertisement sales at the facility. Transit operators collect the user tariff as part of the ticket price paid by passengers who embark or disembark at the exchanger and this is then passed on to the concessionaire. Initially, the private partner assumed all financial and demand risks. At this time, the investment cost was estimated at EUR 112.78 million (USD 127.5 million [1]), and the user tariff for passengers on transit lines within CRTM's authority, which comprise the majority of the passengers that use the facility, was set in the contract at a price of EUR 0.1476 (USD 0.17) (VAT included) per user.

The contract included a clause that established a variable concession term/duration, depending on the real yields obtained by the concessionaire. The variable term mechanism allows the concessionaire to finish the concession five years earlier (maximum) in case the traffic concession is higher than expected, or five years later (maximum) in case the traffic is lower than expected. Hence, the concession term would also act as a cushion for the demand risk.

In 2007, there was a modification in the project's design due to a new environmental regulation, which increased the investment cost by 17.2 percent. To compensate for the increase in cost, the tariff for passengers on CRTM lines was increased to EUR 0.20 (USD 0.23) per passenger. However, rather than passing the tariff increase on to end-users, CRTM and the bus operators jointly absorbed the additional cost, meaning they did not increase their fares to reflect the increase in the tariff payable to the concessionaire. In addition, due to serious discrepancies between the estimated and real traffic, the demand risk was modified so that the concessionaire assumed the demand risk only for those transportation lines that did not depend on CRTM. To this end, CRTM guaranteed a minimum fixed payment for user traffic on the lines dependent on CRMT. This mechanism was vital to ensure the project's continued feasibility, as the financial conditions and demand forecasts that were estimated at the beginning of the contract were notably different from those at the time of financial close in 2009.

The concessionaire ultimately delivered a more than 46,000 m2 facility with 1000 lineal meters of tunnels and four different levels: Level Zero (street access); Level One (bus station); Level Two (metro bus connection and commercial zones); and Level Three, two metro lines. The renovated facilities were inaugurated in February 2008 and the number of metro users transiting the exchanger rose from 44,000 in 1995 to 110,000 in 2011.

Lessons Learned

The Moncloa exchanger has improved Madrid's mobility and its citizens' quality of life significantly. Through this PPP, Madrid was able to develop highquality infrastructure within a very short period of time and with a lower impact on the public budget.[2]

The project provides the following lessons.

- The importance of robust demand studies permeates all aspects of a PPP project.
- In long-term PPP contracts where user demand is central to the sustainability of the project, mechanisms such as: minimum fixed payments and variable contract term clauses can be used to increase the project's feasibility. However, careful attention must be given to guaranteed fixed payments, as these can represent significant disbursements for the contracting authority.
- Although they provide room for operational growth in the future without additional construction, overly optimistic demand forecasts may result in higher construction, maintenance, and operation costs for a facility that could have had a lower capacity, and so lower costs, while providing the same level of service.

Footnote 1: All currency conversions are approximations based on current exchange rates at the time of writing.

Footnote 2: Source: http:// scioteca.caf.com/ handle/123456789/758, accessed 8 February 2019

Related Content

- **Selected World Bank Tools**

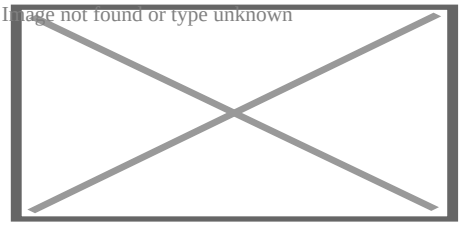
Additional Resources

- Climate-Smart PPPs
- Finance Structures for PPP

Partner Resources

Find more @ Global Platform for Sustainable Cities

Image not found or type unknown



The Guidelines on Innovative Revenues for Infrastructure (IRI) is intended to be a living document and will be reviewed at regular intervals. They have not been prepared with any specific transaction in mind and are meant to serve only as general guidance. It is therefore critical that the Guidelines be reviewed and adapted for specific transactions.

To find more, visit the Innovative Revenues for Infrastructure section or check the Content Outline. For feedback on the content of this section of the website or suggestions for links or materials that could be included, please contact the Public-Private Partnership Resource Center at ppp@worldbank.org.

Image not found or type unknown