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SECTOR ISSUES

# Municipal Public-Private Partnership Framework

# 15

# TABLE OF CONTENTS

1.0	Purpose of the Module	<b>02</b>	2.0	Bus/Truck Terminals	<b>03</b>
			2.1	Types of PPP in the Sector	<b>03</b>
			2.2	Lessons Learned/Key Issues	<b>03</b>
3.0	Water and Sanitation	<b>05</b>	4.0	Information, Communication, and Technology (ICT)	<b>08</b>
	3.1 Types of PPP in the Sector	<b>05</b>	4.1	Types of PPP in the Sector	<b>08</b>
	3.2 Lessons Learned/Key Issues	<b>06</b>	4.2	Lessons Learned/Key Issues	<b>09</b>
5.0	Public Markets	<b>10</b>	6.0	Public Parking	<b>12</b>
	5.1 Types of PPP in the Sector	<b>10</b>	6.1	Types of PPP in the Sector	<b>12</b>
	5.2 Lessons Learned/Key Issues	<b>10</b>	6.2	Lessons Learned/Key Issues	<b>12</b>
7.0	Government Administrative Offices	<b>14</b>	8.0	Sporting, Cultural and Tourism Venues	<b>16</b>
	7.1 Types of PPP in the Sector	<b>14</b>	8.1	Types of PPP in the Sector	<b>16</b>
	7.2 Lessons Learned/Key Issues	<b>14</b>	8.2	Lessons Learned/Key Issues	<b>17</b>
9.0	Rooftop Solar Power Generation	<b>18</b>	10.0	Street Lighting	<b>20</b>
	9.1 Types of PPP in the Sector	<b>18</b>	10.1	Types of PPP in the Sector	<b>20</b>
	9.2 Lessons Learned/Key Issues	<b>18</b>	10.2	Lessons Learned/Key Issues	<b>20</b>
11.0	Solid Waste Management (SWM)	<b>22</b>	12.0	Urban Redevelopment	<b>24</b>
	11.1 Types of PPP in the Sector	<b>22</b>	12.1	Types of PPP in the Sector	<b>24</b>
	11.2 Lessons Learned/Key Issues	<b>22</b>	12.2	Lessons Learned	<b>25</b>
13.0	Affordable Housing	<b>26</b>	14.0	Schools	<b>28</b>
	13.1 Types of PPP in the Sector	<b>26</b>	14.1	Types of PPP in the Sector	<b>28</b>
	13.2 Lessons Learned/Key Issues	<b>26</b>	14.2	Lessons Learned	<b>29</b>
15.0	Health Clinics	<b>30</b>	16.0	Bus Rapid Transit (BRT) and Light Railway Transit (LRT)	<b>32</b>
	15.1 Types of PPP in the Sector	<b>30</b>	16.1	Types of PPP in the Sector	<b>32</b>
	15.2 Lessons Learned/Key Issues	<b>30</b>	16.2	Lessons Learned	<b>32</b>
17.0	Ports and Airports	<b>34</b>	18.0	List of References	<b>36</b>
	17.1 Types of PPP in the Sector	<b>34</b>			
	17.2 Lessons Learned/Key Issues	<b>35</b>			

# 1.0

## Purpose of this Module

This module sets out some of the specific requirements of a few different sectors to help understand the different risks and issues relevant to each project type: transportation, telecommunications, power, water and sanitation, health, education, and urban services.<sup>1</sup>

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<sup>1</sup> For further discussion of PPP and sector issues, see Delmon, Jeffrey. 2016. *Private Sector Investment in Infrastructure: Project Finance, PPP Projects and PPP Frameworks*. Third Edition. Wolters Kluwer.

## 2.0

# Bus/Truck Terminals

Municipalities often provide facilities to manage and coordinate transportation modes, such as buses, taxis, and trucks. These facilities help reduce congestion, centralize services for the community, and provide services to the transport sector such as petrol stations, maintenance facilities, lodging, and restaurants.

Revenues collected from buses, taxis, and trucks in these terminals are generally limited, often not enough to cover operating costs. Charging high fees for transport operators to use the terminal can create perverse incentives, causing fewer transport operators to use the facility, increasing

congestion, and depriving the municipality of other benefits to be obtained from the terminal. Bus/truck terminal projects require robust consultation processes to understand the context of bus and truck companies, their client and passengers, their business models, the local community, and the services that can or should be provided in these terminals. This consultation process ensures that design, services offerings, and construction methodologies are appropriate, minimize disruption, and avoid resistance from and conflict with key stakeholders.

### 2.1 Types of PPP in the Sector

Bus and truck terminal PPPs are often structured as a concession for the PSP to design and build the terminal, then to operate the terminal, and collect revenues from users and from commercial activities. Bus/truck terminals provide an excellent opportunity to deliver other services for users, which can mobilize commercial revenues. The large number of passengers using the terminals are ready customers for other services such as grocery stores, restaurants, cafes, retail shopping, and advertising. These terminals can also offer commercial services for the buses and trucks using the terminal, such as petrol, mechanics, and garages.

In the Amritsar intercity bus terminal in Punjab, India, a number of buses started operating from outside the terminal to avoid the payment of the 'Adda Fee'. Where 2,000–3,000 buses per day were forecast, only 1,100 buses were actually coming to the facility (see project summary 7). The focus was therefore adjusted, reducing fees charged to buses and leveraging more revenues from commercial activities. In a similar structure, the bus terminal and municipal market in El Danlí, El Paraíso, Honduras provide access to municipal and inter-municipal transportation and to more than 400 commercial stalls in the same location (see project summary 5).

### 2.2 Lessons Learned/Key Issues

Some of the key issues that need to be addressed while developing a bus/truck terminal project, include the following:

- The design of the PPP must prioritize the basic functions of the terminal with respect to transport services. The commercial activities must not take priority, even if they are the primary source of project profits. Therefore, it may be apt to specify the maximum space that
- can be used for commercial activities within a terminal, in an effort to meet the objectives of financial feasibility as well as terminal operating efficiency.
- Bus/truck terminals are already congested places. Commercial activities should ideally be targeted to the passengers/users of the terminal, and should not attract any significant incremental traffic from outside the terminal, adding to the stress on the terminal

- infrastructure, unless space and capacity are sufficient.
- The service parameters of the bus/truck terminals must be clearly and objectively defined. For example,
    - o Within how many minutes should a bus be able to drop and pick up all passengers and depart the terminal;
    - o How long should someone take to find a parking spot or exit the passenger parking; and
    - o What frequency and standard should be applied to maintenance and cleaning, for example, minimum luminosity levels, energy conservation, schedule for repainting, the quality of maintenance of the toilets.
  - The location of the bus/truck terminal must be consistent with current practices—for example, with current bus/truck routes—to facilitate transition and avoid service disruption.
  - Support infrastructure at bus/truck terminals are typically under-designed, leading to heavy congestion resulting in a drop in levels of services of terminal operations. Project design needs to follow master planning guidelines to ensure that the support infrastructure is designed to reflect the projected reality of the facility.

**Table 1. Further Information on Bus/Truck Terminal PPPs**

<b>Toolkit</b>	<p>PPIAF. 2007. The Urban Bus Toolkit. <a href="https://library.pppknowledgelab.org/PPIAF/documents/2067">https://library.pppknowledgelab.org/PPIAF/documents/2067</a>.</p> <p>PPIAF. 2009. "Toolkit for Public-Private Partnerships in Roads and Highways." <a href="https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/highwaytoolkit/index.html">https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/highwaytoolkit/index.html</a>.</p> <p>Asian Development Bank and Government of India. 2011. Toolkit for Public-Private Partnerships in Urban Bus Transport - Maharashtra India. <a href="https://ppp.worldbank.org/public-private-partnership/library/toolkit-public-private-partnerships-urban-bus-transport-maharashtra-india">https://ppp.worldbank.org/public-private-partnership/library/toolkit-public-private-partnerships-urban-bus-transport-maharashtra-india</a>.</p> <p>Asian Development Bank. 2008. Bus Rapid Transport: Toolkit for Feasibility Studies. <a href="https://ppp.worldbank.org/public-private-partnership/library/bus-rapid-transport-toolkit-feasibility-studies">https://ppp.worldbank.org/public-private-partnership/library/bus-rapid-transport-toolkit-feasibility-studies</a>.</p>
<b>General Information</b>	<p>Global Infrastructure Hub. 2016d. "Transport Sector". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.gihub.org/risk_category/transport/">https://ppp-risk.gihub.org/risk_category/transport/</a>.</p> <p>World Bank. 2019h. "Public-Private Partnerships for Transport". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/transportation">https://ppp.worldbank.org/public-private-partnership/sector/transportation</a>.</p> <p>World Bank. 2019k. "Transport". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/transport">https://pppknowledgelab.org/sectors/transport</a>.</p>

# 3.0

## Water and Sanitation

<sup>2</sup> See also Delmon, Jeffrey. 2017. *Public-Private Partnership Projects in Infrastructure: An Essential Guide for Policy Makers*. Second Edition. New York: Cambridge University Press.

<sup>3</sup> Delmon, Victoria Rigby. 2014b. *Toolkit: Structuring Private-Sector Participation (PSP) Contracts for Small Scale Water Projects*. <https://www.wsp.org/sites/wsp.org/files/publications/PPP-Contracting-Toolkit.pdf>; Marin, Philippe. 2009. *Public Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries*. Washington, DC: World Bank; Andres, Luis A.; Guasch, J. Luis; Haven, Thomas; Foster, Vivien. 2008. *The impact of private sector participation in infrastructure: lights, shadows, and the road ahead (English)*. Latin American development forum. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/912661468231538767/The-impact-of-private-sector-participation-in-infrastructure-lights-shadows-and-the-road-ahead>; Gassner, Katharina, Alexander Popov, and Nataliya Pushak. 2007. "An Empirical Assessment of Private Sector Participation in Electricity and Water Distribution in Developing and Transition Countries". World Bank; and Delmon, Jeffrey. 2001. *Water Projects: A Commercial and Contractual Guide*. London: Kluwer Law International.

Water distribution is characterized by the high cost of transporting water, relative ease of storage, and significant social and political sensitivity.<sup>2</sup> The high cost of transportation makes the creation of a competitive market for water and sanitation services from competing providers particularly challenging. In smaller and more remote areas, the cost of transportation can be prohibitive, as they do not benefit from the economies of scale of more heavily populated areas. For these communities, and for poor and/or informal communities, informal water vendors may be the norm.

### 3.1 Types of PPP in the Sector

Loss reduction is a common challenge for water supply. The PSP can be rewarded for the amount of, for example, water or energy saved by reducing leakage, which affords the utility higher revenues as it has more water to sell and defers the cost of new treatment capacity. Caution should be used in the creation of incentives to reduce leakage. In one contract, the PSP was paid a fee per leak eliminated. Of course, it is easier to eliminate small leaks, especially at meters and household connections, but these leaks have a limited impact on the system capacity. The PSP was well paid, but the utility received less-than-anticipated aggregate benefit.

The private sector often has superior billing and collection systems and methodologies than most public entities and can thereby improve revenues significantly. The municipality may require metering improvement to help monitor performance requirements, for example, standards for unaccounted-for water and efficiency of treatment

This heavily regulated sector is also one of the oldest, with key water and sanitation assets often installed long ago and located underground, making it difficult to know their condition and to forecast investment needed in such assets without time-consuming and costly investigations.<sup>3</sup> Social risk takes on a particular prevalence for water services, where local communities are particularly sensitive to access to water services and tariffs charged. For this reason, the PSP will be concerned that the water tariffs charged often do not cover costs, much less capital expenditure, or a reasonable return on investment, and that the utility will not be able to pay the PSP fees.

of raw water. However, where the condition of the system is poor, the installation of meters may only make things worse because for each meter two new connections to the existing assets must be made, multiplying the potential for leaks and further damaging assets.

Resistance to new investments in water supply may come from staff concerned that an increase in efficiency will cause them to lose their jobs. If incentivized properly, labor productivity can increase efficiency gains and improve staff comfort and safety. Bucharest Water and Sanitation System in Romania improved the water and sanitation system while maintaining low tariffs without subsidy by tying improvements in services with tariff increases, investing in new equipment that increased employee safety and productivity while delegating more responsibility to the staff (see project summary 18).

### 3.2 Lessons Learned/Key Issues

- Private investors would like an accurate assessment of network assets to estimate capital expenditure requirements, whereas such an assessment is time and technical expertise intensive. Any error in this assessment can result in costly and protracted disputes.
  - o To manage this risk, the PPP agreement should provide for a robust mechanism for negotiation one to two years after commencement of the PPP agreement, that is, after the private partner has had adequate time to assess the network assets. This renegotiation can be tricky because the PSP will be in a stronger position, since it would have mobilized its resources based on the assumptions set out in the PPP agreement. Also, failed bidders might object that had they known about the actual asset conditions they might have been more competitive in the bidding process.
  - o Another approach is to start with a short-term (say, one to two years) operation and maintenance contract with a leading private operator to generate a detailed report on the condition of network assets. The operation and maintenance contract is then replaced with a PPP agreement (after an open, competitive bid) based on the updated asset register. The challenge of this approach is that the operation and maintenance contractor will be in a strong position to win the bid to be the PPP operator which may discourage other bidders. Or, under applicable law/practice, the operation and maintenance contractor may be disqualified from bidding as having an undue advantage over other bidders. The former situation undermines the bid process. The latter situation will limit interest of good firms to compete to deliver the operation and maintenance services.
- For PPP projects involving treatment plants (water or sewage), the input and output quality parameters and quantities supplied (of raw water and raw untreated sewage) need to be clearly established and monitored regularly.
- To help align incentives, tariff increases should be tied to water service improvements.
- The PPP needs to provide a robust continuous monitoring system for project services and levy penalties and offer incentives to ensure compliance.
- To protect consumers and ensure that the project is operated to a standard consistent with modern industry practice, the municipality will want to establish a progressive and reasonable regulatory structure (including economic and technical regulation). This structure should give the regulator sufficient latitude to supervise the activities of the PSP without unreasonably restricting competitiveness or the ability of the PSP to operate and finance its activities within the context of the market. Creating a regulatory structure can involve a substantial investment of resources by the municipality. It also creates risk for the PSP, to the extent that the regulator can impose obligations and standards different from the PPP agreement.
- The municipality will need to specify the management of existing municipal staff engaged in water and sanitation services. Municipalities should consider (1) reallocation of roles and responsibilities to perform other activities for the municipality, (2) absorption of staff by the private partner to leverage their knowledge and experience of the existing system (private partners often do not want to absorb all staff without an evaluation of their competence, dedication, attitude, and so on, and some municipal staff also often do not want to enter into private sector performance-oriented employment contracts); (3) offering of redundancy packages to municipal staff. When considering options, the municipality should consult with staff and relevant organizations (for example, labor unions).

**Table 2. Further Information on Water and Sanitation PPPs**

<b>Toolkit</b>	Delmon, Victoria Rigby. 2014a. "Structuring Private-Sector Participation (PSP) Contracts for Small Scale Water Projects." World Bank. <a href="https://library.pppknowledgelab.org/documents/4129?ref_site=kl">https://library.pppknowledgelab.org/documents/4129?ref_site=kl</a> .
<b>General Information</b>	<p>Delmon, Jeffrey. 2001. <i>Water Projects: A Commercial and Contractual Guide</i>. London: Kluwer Law International.</p> <p>Gassner, Katharina, Alexander Popov, and Nataliya Pushak. 2007. "An Empirical Assessment of Private Sector Participation in Electricity and Water Distribution in Developing and Transition Countries". World Bank.</p> <p>Global Infrastructure Hub. 2016e. "Water and Waste Sector". <i>Allocating Risks in Public-Private Partnership Contracts</i>. <a href="https://ppp-risk.gihub.org/content/uploads/2016/07/160610-GIH-Allocating-Risks-in-PPP-Contracts-2016-Edition.pdf">https://ppp-risk.gihub.org/content/uploads/2016/07/160610-GIH-Allocating-Risks-in-PPP-Contracts-2016-Edition.pdf</a>.</p> <p>World Bank. 2019n. "Water and Sanitation PPPs". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/water-sanitation">https://ppp.worldbank.org/public-private-partnership/sector/water-sanitation</a>.</p> <p>World Bank. 2019o. "Water and Sanitation". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/water-sanitation">https://pppknowledgelab.org/sectors/water-sanitation</a>.</p>



# 4.0

## Information, Communication, and Technology (ICT)

The growth and investment in ICT by the private sector have been significant, in particular over the last 10 years. Public involvement has been limited primarily to issuing of licenses. However, some key activities may still need to be undertaken through PPP, for example, broadband backbone and e-government.<sup>4</sup>

Governments have sought to increase connectivity of their populations to access the commercial and educational opportunities that come with ICT, and to encourage economic growth. ICT PPPs can help deliver services to disadvantaged communities,

where such consumers are not yet an attractive market for private operators, at service standards sought by the municipality. ICT PPPs can also help deliver administrative services such as property registration, visa applications, voting registration, identification document issuance, and complaint management. Generally speaking, the government is best placed to provide a good investment climate and let the private sector deliver such services.

### 4.1 Types of PPP in the Sector

Where there is demand, the private sector is generally best placed to deliver ICT services. However, in certain limited circumstances the municipality may need to encourage private investment through PPP, for example, where the municipality wants to attract investment in higher capacity systems (that are not yet profitable) or services delivered to less developed areas.<sup>5</sup> The PPP model might involve the municipality providing access to land to install the network and network operating centers. The municipality may also purchase in advance access to the system for public buildings, offices, schools, hospitals, and so on, to provide upfront funding to pay down the construction costs of the system. One of the challenges of ICT PPP projects is the need to keep up with technological changes. The payment mechanism needs to provide incentives for the PSP to adopt latest technology. Also, where the municipality supports an ICT PPP, the PSP should provide open access on the same terms for everyone to avoid creating a monopoly.

Singapore's Next Generation Nationwide Broadband Network is a wired network offering open access, competitively priced broadband through more than 12 different service providers and over 40 fiber-based broadband access plans for consumers and enterprise users.<sup>6</sup> NetCo must fulfill all reasonable requests to install fiber termination points in homes, offices, and buildings. Nationwide Broadband Network has catalyzed a greater range of innovative services for end users in homes, offices, schools, and other locations and has enabled Singapore to exploit new economic opportunities (see project summary 32).

The City of Barcelona bundled the different ICT services (previously outsourced with various operators) into one contract to update, operate, and maintain the city's fiber optic and WiFi system, which led to better ICT infrastructure and easier network control, and allowed the city to provide better corporate services to its citizens; in addition, it generated a new revenue stream for the city, as the private partner pays a yearly fee for the use of the spare ICT infrastructure capacity, which it sells to its customers (see project summary 31).

<sup>4</sup> See also Delmon 2017.

<sup>5</sup> See World Bank. 2012. *Developing Successful Public-Private Partnerships to Foster Investment in Universal Broadband Networks*. <https://ppp.worldbank.org/public-private-partnership/library/developing-successful-public-private-partnerships-foster-investment-universal-broadband-netw>.

<sup>6</sup> Infocomm Development Authority of Singapore. 2012. "Next Generation Nationwide Broadband Network". [www.ida.gov.sg](http://www.ida.gov.sg).

## 4.2 Lessons Learned/Key Issues

- PPP projects should focus on ICT services that the private sector is unlikely to offer on its own accord due to relatively lower financial returns. These projects therefore need to be evaluated closely from an economic point of view, that is, projects need to have strong economic justification.
- ICT involves technology that changes quickly, and PPPs are long-term arrangements. The project will need to consider adopting changes in technology, sharing costs and benefits of new technology.
- Where government ICT services are to be provided in parallel with commercial services earning revenues for the PSP, the municipality will need to ensure incentives on the PSP to deliver those government services and give them priority over commercial services.

**Table 3. Further Information on ICT Sector PPPs**

<b>Toolkit</b>	ICT Regulation Toolkit. n.d. "ICT Regulation Toolkit". Accessed October 03, 2019. <a href="http://www.ictregulationtoolkit.org/index">http://www.ictregulationtoolkit.org/index</a> .
<b>General Information</b>	<p>European Regulators Group. 2009. Report on Next Generation Access - Economic Analysis and Regulatory Principles. <a href="https://ppp.worldbank.org/public-private-partnership/library/report-next-generation-access-economic-analysis-and-regulatory-principles">https://ppp.worldbank.org/public-private-partnership/library/report-next-generation-access-economic-analysis-and-regulatory-principles</a>.</p> <p>Government of India. 2017. Guidance Notes for IT PPP Projects: Model RFP Templates for Public Private Partnership. <a href="https://meity.gov.in/writereaddata/files/public%20-private%20-partnerships%20.pdf">https://meity.gov.in/writereaddata/files/public%20-private%20-partnerships%20.pdf</a>.</p> <p>Um, Paul Nomba, Laurent Gille, Lucile Simon, Christophe Rudelle. 2004. A Model for Calculating Interconnection Costs in Telecommunications. Washington, DC: World Bank and the Public-Private Infrastructure Advisory Facility. <a href="https://openknowledge.worldbank.org/handle/10986/15040">https://openknowledge.worldbank.org/handle/10986/15040</a>.</p> <p>World Bank. 2019i. "Public-Private Partnerships in E-Government". PPP Knowledge Lab. <a href="https://library.pppknowledgelab.org/documents/2938?ref_site=kl&amp;restrict_pages=1&amp;sector%5B%5D=ICT%20%28Information%20and%20Communications%20Technology%29&amp;site_source%5B%5D=Handshake%20Journal&amp;site_source%5B%5D=Knowledge%20Lab">https://library.pppknowledgelab.org/documents/2938?ref_site=kl&amp;restrict_pages=1&amp;sector%5B%5D=ICT%20%28Information%20and%20Communications%20Technology%29&amp;site_source%5B%5D=Handshake%20Journal&amp;site_source%5B%5D=Knowledge%20Lab</a>.</p> <p>World Bank. 2019d. "ICT". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/ict">https://pppknowledgelab.org/sectors/ict</a>.</p>

# 5.0

## Public Markets

Public markets are generally publicly owned and operated facilities that provide vendors with structured space at affordable rents to offer their products. These spaces provide economic opportunities for low-income vendors, save time and provide convenience to buyers, offer more hygienic space for trade, provide spillover

economic opportunities for supply chains and associated economic activities, provide individual empowerment, provide entrepreneurial momentum, ensure creative usage of space, and promote public health.<sup>7</sup>

### 5.1 Types of PPP in the Sector

PPP in public markets generally involves the PSP building, maintaining, and operating the public market as well as associated commercial activities, such as warehousing, logistics, cold storage, and office space. The PSP earns revenues from rental of stalls, leasing of commercial space, and delivery of commercial services. Another model of PPP for public markets involves the PSP building the entire facility, including the public market and associated commercial facilities. The PSP leases the public market to the municipality and earns the majority or all of its revenues from the remaining commercial space.

The main market in Mandaluyong, Manila, the Philippines, was destroyed by a fire in 1991. Due to lack of funds, serious traffic congestion, and sanitation problems, the city decided to rebuild the public market through PPP. To make the project commercially attractive, the project included a seven-story commercial center with street-front stores, a parking garage, commercial shops, a bowling alley, and a movie theatre to subsidize the low-cost vendor facilities (see Project Summary 38).

### 5.2 Lessons Learned/Key Issues

- Engagement with community and main stakeholders throughout the project cycle is particularly critical for public market PPP (see Module 18: Community Engagement). The local community can provide critical information about project design and implementation parameters. Consulting vendors during project development is crucial due to their knowledge of the market and customers.
- Where retail facilities cross-subsidize low-income vendors, the project will need to place sufficient incentives on the PSP to ensure that services to low-income vendors are prioritized, for example, by establishing clearly defined services requirements and systems to monitor them regularly.
- If the project involves redevelopment of an existing market, the PPP agreement needs to include an intensive engagement with existing lessees regarding temporary relocation to another site for the period of construction of the refurbished market, and any compensation for such relocation.

<sup>7</sup> The Ford Foundation. 2003. *Public Markets as a Vehicle to Upward Mobility and Social Integration*. [https://s3.amazonaws.com/aws-website-ppsimages-na05y/pdf/Ford\\_Report.pdf](https://s3.amazonaws.com/aws-website-ppsimages-na05y/pdf/Ford_Report.pdf).

- It is tempting to charge lessees a higher rate for the refurbished facility, as services will be better and vendors will earn more revenues from the new facility. However, the community should be consulted on such higher rents, affordability/ willingness of lessees to pay, and the social impact of such higher rents. The municipality may want to consider a lesser increase for those less able to pay.

**Table 4. Further Information on Public Market PPPs**

General Information	
	The Ford Foundation. 2003. Public Markets as a Vehicle to Upward Mobility and Social Integration. <a href="https://s3.amazonaws.com/aws-website-ppsimages-na05y/pdf/Ford_Report.pdf">https://s3.amazonaws.com/aws-website-ppsimages-na05y/pdf/Ford_Report.pdf</a> .
	World Bank. 2016c. "PPPs for Public Markets, Malls and Slaughter Houses / Abattoirs". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/ppps-public-markets-malls-and-slaughter-houses-abattoirs">https://ppp.worldbank.org/public-private-partnership/ppps-public-markets-malls-and-slaughter-houses-abattoirs</a> .

# 6.0

## Public Parking

Rapid growth has its challenges, including the proliferation of vehicles and urban congestion. Parking in major urban centers is often a key challenge for municipalities looking to reduce congestion and free up space at street level.

### 6.1 Types of PPP in the Sector

Public parking offers a number of commercial opportunities from parking fees and from development rights within and above the parking facility. Parking has the added advantage of not needing natural light. Underground space is ideal for parking and is often not thoroughly exploited when land is developed, in particular for public facilities. Parking fees can be fixed or variable depending on the amount of time spent in the facility. The mechanisms to collect parking fees can vary from self-payment kiosks, in-person assisted payment, and basic parking meters. Parking garages can function for public use and to support residential units at the same time.

The City of Chicago leased its metered parking system for USD 1.2 billion in February 2009.<sup>8</sup>

A parking garage was built in the center of Dar es Salaam, Tanzania, with office space and a commercial shopping center built above and around the parking structure. The commercial facilities earned important revenue for the project

and allowed the operator to charge only modest parking fees, which helped the municipality to reduce congestion.

A PPP parking project in Peru's capital city, Lima, reduced traffic congestion in a highly commercial area by providing parking spaces under an existing public park. The three-story underground facility will provide more than 9,000 m<sup>2</sup> for 353 vehicle spaces and about 5,200 m<sup>2</sup> for commercial areas (see project summary 46). Revenues from the project also fund the refurbishment and maintenance of the public park.

In Virginia Beach, United States, a PPP project turned a little-used 244-space surface parking lot into 147 residential apartments, a unique indoor skydiving facility, and a public parking garage with 377 slots. The residential building provides parking to its tenants through the public parking garage (see project summary 78).

### 6.2 Lessons Learned/Key Issues

- Integral planning, proper land/space management, and community engagement are key elements for successful PPPs in public parking.
- Innovative approaches and creative use of space is key to solve urban traffic congestion. Adding commercial activities, for example above a parking facility, helps mobilize additional revenue sources.
- The provision of commercial activities in and around a parking garage can create additional congestion and increase the number of parking spaces needed. Therefore, project design needs to achieve a balance between financial feasibility and the incremental number of cars that can fit in the facility.

<sup>8</sup> For more information, see World Bank. 2016a. "Chicago Metered Parking System Concession of 2008". Public-Private Partnership Legal Resource Center. <https://ppp.worldbank.org/public-private-partnership/library/chicago-metered-parking-system-concession-of-2008>.

- Public parking facilities reduce congestion by moving vehicles out of on-street parking and into the parking facility. This will only work to the extent that vehicles are incentivized to use the parking facility. If the rates charged in the public parking garage are too high, or if the municipality does not enforce parking restrictions on the street, the parking project will not achieve its goals and may not be financially viable.

**Table 5. Further Information on Public Parking PPPs**

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<b>Toolkits</b>	<p>Kittelson &amp; Associates Inc. 2016. Portland Parking Analysis and Toolkit for Mixed-Use Centers and Corridors Parking Management Toolkit. <a href="https://www.portlandoregon.gov/transportation/article/567030">https://www.portlandoregon.gov/transportation/article/567030</a>.</p> <p>World Bank. 2019e. "Municipal Parking". Public-Private Partnerships Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/municipal-parking">https://ppp.worldbank.org/public-private-partnership/municipal-parking</a>.</p>
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# 7.0

## Government Administrative Offices

Municipalities need to invest in administrative and other office space to deliver an effective public service. But property management is often not a strength of municipal staff. A PPP can be a more effective mechanism to develop office facilities with latest technology and well maintained over time. The PPP will use a carefully crafted performance regime to ensure that the municipality receives the government offices to the right standard.

PPP can help municipalities consolidate their offices in one location to provide more access to facilities and to other government departments, saving time and delivering better/coordinated services.

### 7.1 Types of PPP in the Sector

One potential model for PPP for government office space involves the development of a mixed-use facility, comprising government offices, private offices, commercial space, and possibly residential space. This allows government staff to work in a dynamic, mixed-use space. The revenues from commercial and other activities reduce or eliminate the cost of the government offices to the municipality. Where conditions are right (for example, the land value is high, the site is large, and the market is buoyant), the municipality may also receive a revenue share from such a project.

Many municipalities do not want government offices to share space with other users, for security or other reasons. In such cases, the PSP can build and maintain government office space against availability payments from the municipality. Or the project may involve both government offices and

commercial/residential facilities but accessed and managed separately, allowing the PSP to earn revenues from the commercial space to offset the amount of revenue mobilized through availability payments.

The Municipality of Tlajomulco, Mexico, was struggling with outdated facilities spread around the city and was in a constant state of disrepair. The Tlajomulco Administrative Center PPP project delivered an administrative building for more than 630 public servants and with a capacity to serve more than 2,000 daily visitors. The PSP also constructed a multiple-use gymnasium, outdoor sports facilities, and renovated 7 km of main roads around the center (see project summary 49).

### 7.2 Lessons Learned/Key Issues

- Proper use of space to maximize the benefits of a PPP administrative offices project can include 24/7 public access, such as parks and recreation areas, commercial and ancillary services. A separate entrance for the government offices may be needed for security

purposes, but access may be desirable where these ancillary services include things that benefit government staff such as grocery shopping, copy and printing services, photography labs (for example, for personal identification documents), cafes, restaurants.

- Public buildings need to be multi-functional to address changes in usage over time. A PPP agreement is long term and therefore must be able to adjust to changes in use and needs of government staff.
- The long-term nature of PPP can also create challenges where government budget changes over time. Where a municipality needs to reduce costs and looks to reduce government office costs, the PPP must be sufficiently flexible to allow such reduction of costs where the level of occupancy is reduced or where the office is left empty for a time.
- The maintenance obligation placed on the PSP must be clearly and objectively defined and regularly monitored (maintenance levels should be defined based on output parameters not on input requirements).

**Table 6. Further Information on Government Administrative Offices PPPs**

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**General Information**

World Bank. 2019j. "Sub-national and Municipal PPPs". Public-Private Partnerships Legal Resource Center. <https://ppp.worldbank.org/public-private-partnership/ppp-sector/sub-national-and-municipal-ppps/sub-national-and-municipal-ppps>.

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# 8.0

## Sporting, Cultural, and Tourism Venues

Providing space to the community for sport and culture facilities can help provide a better life quality, attract more tourism, and create new revenue sources for the city, just to name a few.<sup>9</sup>

### 8.1 Types of PPP in the Sector

Tourism, sports, and cultural facilities while often not profitable by themselves, can provide commercial opportunities. Convention centers are often developed next to hotels and shopping centers, where those attending conventions can spend their money. In France, a town built an aquatic center to attract tourists to the area and, thus, create new income sources for the locals and revenue for the city (see project summary 54). In Bogotá, Colombia, a private developer renovated an old coliseum that was being underutilized; today the new venue is one of the most modern arenas in Latin America (see project summary 53). An art museum in Düsseldorf, Germany, was revitalized through a PPP for its reconstruction, operation, and maintenance (see project summary 55).

Historic and cultural sites are a key asset for government and investors alike. PPP can bring private investments to refurbish and maintain historic and cultural assets and, in the process, create an investment opportunity. An example would be PPP projects for the development of historic palaces in Rajasthan, India, that were falling to ruins due to lack of investment and maintenance. These historic properties were leased to private investors through a competitive process that allowed them to redevelop the properties for commercial purposes, in many cases resorts and hotels. The investors have clear obligations to develop the properties on time, maintain their historic properties, and provide access to the public.

Similarly, in Jaipur, India, an 18th century pleasure palace called Jal Mahal is located in the middle of a 300-acre lake. The lake was an ecological disaster, with the dumping of untreated sewage and poor upkeep. After several failed attempts at restoration through other means, the Government of Rajasthan awarded a PPP to use part of the site for private commercial development, and for the restoration and maintenance of the public space (see project summary 57). After a first phase, this project has been stalled for political reasons.

The Revolutionary Government of Zanzibar issued a concession for Chumbe Island, a 55-acre resort with marine park and forest reserve. The revenues generated from ecotourism cover operational expenses, park management, and environmental education. Chumbe Island Coral Park Ltd. (CICP) has a 33-year lease and a 10-year management contract. The concessionaire had to work with seven government departments and gain the support of area fishermen and local communities before the project was approved (see project summary 60).

<sup>9</sup> See also Delmon 2017.

## 8.2 Lessons Learned/Key Issues

- Tourism, sports, and culture PPPs need to identify commercial activities with a strong synergy to avoid the PSP focusing entirely on the commercial activity. Ideally, commercial activities should be designed to further bolster the attractiveness of the tourism, sports, or culture. For example, in commercial activities in nature reserves or safari parks, the PSP is incentivized to maintain the natural surroundings as they are directly linked to the profits the PSP will make from the commercial facilities—if the natural beauty of the area is lost, the tourists will stop coming. Similarly a hotel next to a convention center will have fewer vacancies if the convention center is used more often.
- Community engagement is of critical importance in these types of projects. Local communities are similarly interested in maintaining local natural resources or key cultural facilities, and can be a key partner for any PPP project to help ensure its success and to resolve any conflict with the community that might arise.
- The project design and communication to the public needs to ensure that the tourism, sports, or cultural attraction is not perceived to have been sold to the private partner. It should be as easily accessible to the public and as much a part of the community as before the PPP.

**Table 7. Further Information on Tourism, Sports and Culture Venue PPPs**

<b>General Information</b>	<p>Akhmetshina, E. R., O.A. Ignatjeva, and I.M. Ablaev. 2017. "Tendencies and Prospects of Public-Private Partnership Development in the Field of Physical Culture and Sport". <i>European Research Studies Journal</i> XX (2A). <a href="https://core.ac.uk/download/pdf/155235631.pdf">https://core.ac.uk/download/pdf/155235631.pdf</a>.</p> <p>World Bank. 2019j. "Sub-national and Municipal PPPs". Public-Private Partnerships Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/ppp-sector/sub-national-and-municipal-ppps/sub-national-and-municipal-ppps">https://ppp.worldbank.org/public-private-partnership/ppp-sector/sub-national-and-municipal-ppps/sub-national-and-municipal-ppps</a>.</p>
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# 9.0

## Rooftop Solar Power Generation

The power sector is characterized by unique constraints in the delivery of electricity to public, commercial, and residential consumers.<sup>10</sup> Electricity is relatively easy to transmit over long distances but hard to store, so it must be generated constantly and responsively, to meet demand instantaneously in its daily and seasonal variations. While electricity generation,

transmission, and distribution is generally an issue for national government or a national utility, municipalities often use PPP for power generation. Sections 9 and 10 will discuss in particular rooftop solar generation and street lighting projects.

### 9.1 Types of PPP in the Sector

One of the most common municipal PPP projects in the energy sector is rooftop solar. Solar panels are installed on municipal buildings and facilities, industrial/commercial sites, and possible residential properties. Power is purchased by the municipality, offsetting the power it needs to purchase from the utility. Municipal demand for power is generally greatest during the day when solar generation is most effective, reducing the need for storage (which can be expensive). Industrial/commercial purchasers can help diversify demand risk and ensure different revenue sources.

In 2010, the Government of Gujarat launched the 'Gandhinagar Rooftop Program', the first of its kind in India. The 5 MW solar rooftop program installed 4 MW solar panels on public buildings rooftops and 1 MW on private residences in Gandhinagar. Although the project faced some difficulties in its inception, it is now being replicated in more cities (see project summary 64).

### 9.2 Lessons Learned/Key Issues

- Rooftop solar projects generally involve the municipality paying fees for energy or efficiencies delivered. The PSP will need to be confident that the municipality will pay fees when due. The municipality may not have a good history of paying amounts due to private investors and will need to reassure investors and lenders that the municipality is a good credit risk. In some cases, this may require a guaranty, escrow arrangement, or other credit enhancement.
- Rooftop solar can be an interesting opportunity for the municipality to take more control of its power needs, in particular where the cost of power to be purchased from rooftop solar is cheaper than power purchased from the grid. In some cases, the lower price of solar is achieved through government subsidies for the use of renewable energy. The municipality will need to consider the risk that these subsidies might be withdrawn by the government.

<sup>10</sup> For a good review of the power sector, in particular its regulation, see Hunt, Sally. 2002. *Making Competition Work in Electricity*. New York: John Wiley & Sons. See also: Delmon 2017.

- Similarly, while power tariffs for solar may be lower than power delivered over the grid, the municipality may not pay its bills to the power utility or may pay only a portion in practice. If the municipality will not be saving money, the PSP will need to understand the municipality's motivation to allay concerns that future governments might not be interested in continuing with the project.

**Table 8. Further Information on Rooftop Solar PPPs**

<b>Toolkit</b>	<p>International Finance Corporation. 2015. Utility-Scale Solar Photovoltaic Power Plants: A Project Developer's Guide. <a href="https://www.ifc.org/wps/wcm/connect/a1b3dbd3-983e-4ee3-a67b-cdc29ef900cb/IFC+Solar+Report_Web+_08+05.pdf?MOD=AJPERES&amp;CVID=kZePDPG">https://www.ifc.org/wps/wcm/connect/a1b3dbd3-983e-4ee3-a67b-cdc29ef900cb/IFC+Solar+Report_Web+_08+05.pdf?MOD=AJPERES&amp;CVID=kZePDPG</a>.</p> <p>World Bank. 2014c. Rooftop Solar Public-Private Partnerships: Lessons from Gujarat Solar. <a href="https://library.pppknowledgelab.org/attached_files/documents/2408/original/PIQ_RooftopSolar_INTERACTIVE.pdf?1438367268">https://library.pppknowledgelab.org/attached_files/documents/2408/original/PIQ_RooftopSolar_INTERACTIVE.pdf?1438367268</a>.</p>
<b>General Information</b>	<p>Global Infrastructure Hub. 2016b. "Energy Sector". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.gihub.org/risk_category/energy/">https://ppp-risk.gihub.org/risk_category/energy/</a>.</p> <p>World Bank. 2019b. "Energy and Power PPPs". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/energy">https://ppp.worldbank.org/public-private-partnership/sector/energy</a>.</p> <p>World Bank. 2019g. "Power". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/power">https://pppknowledgelab.org/sectors/power</a>.</p>

# 10.0

## Street Lighting

The power sector is characterized by unique constraints in the delivery of electricity to public, commercial, and residential consumers.<sup>11</sup> Electricity is relatively easy to transmit over long distances but hard to store, so it must be generated constantly and responsively, to meet demand instantaneously in its daily and seasonal variations. While electricity generation, transmission, and distribution is generally an issue for national government or a national utility,

municipalities often use PPP for power generation. Sections 9 and 10 discuss in particular rooftop solar generation and street lighting projects.

Street lighting can be an energy intensive and expensive service for the municipality to provide. Latest technology in lightbulbs and energy management provide even more of an opportunity for PPP street lighting.

### 10.1 Types of PPP in the Sector

The PSP partners with the municipality to install energy-saving streetlights to improve efficiency, free of charge; the PSP recovers its investment through a shared energy-saving mechanism. With this mechanism, the savings are shared between the two partners according to percentages set out in the PPP agreement. For example, in Nasik, Maharashtra, India, the PPP contract is provided for different sharing percentages depending on the year of the contract, for the first year the sharing percentages were 70 percent for the public partner and 30 percent for the private; for the second year the percentages were 60 percent and 40 percent respectively, and so on (see project summary 67). Another PPP model mobilizes other revenues as

well, for example in Nairobi, Kenya, a street lighting project mobilized revenues from advertising installed on each streetlight. The PSP was given strict size and other parameters to avoid abuse of the advertising space allotted. The revenues generated were sufficient to cover installation of the streetlights and maintenance, with the municipality providing electricity.

### 10.2 Lessons Learned/Key Issues

- Street lighting PPP often results in the municipality's total cost of street lighting increasing because (1) a larger number of street lights are installed in the municipality and (2) more street lights are operational. This means that while energy cost per street light is lower, total energy usage may be higher. Project analysis should incorporate the social and economic benefits of better street lighting rather than only the financial saving in energy costs.
- The municipality may not have a good history of paying amounts due to private investors and will need to reassure investors and lenders that the municipality is a good credit risk. In some cases, this may require a guaranty, escrow arrangement, or other credit enhancement.

<sup>11</sup> For a good review of the power sector, in particular its regulation, see Hunt, Sally. 2002. *Making Competition Work in Electricity*. New York: John Wiley & Sons. See also: Delmon 2017.

**Table 9. Further Information on Street Lighting PPPs**

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<b>Toolkit</b>	Energy Efficiency Services Limited. n.d. "Street Lighting National Programme". Accessed October 03, 2019. <a href="https://eesindia.org/content/raj/eesl/en/Programmes/SLNP/about-slnp.html">https://eesindia.org/content/raj/eesl/en/Programmes/SLNP/about-slnp.html</a> .
<b>General Information</b>	Global Infrastructure Hub. 2016b. "Energy Sector". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.gihub.org/risk_category/energy/">https://ppp-risk.gihub.org/risk_category/energy/</a> .  World Bank. 2019b. "Energy and Power PPPs". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/energy">https://ppp.worldbank.org/public-private-partnership/sector/energy</a> .  World Bank. 2019g. "Power". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/power">https://pppknowledgelab.org/sectors/power</a> .

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# 11.0

## Solid Waste Management (SWM)

Management of solid waste is one of the most important functions of a municipality.<sup>12</sup> Improper treatment of solid waste poses a serious challenge for the environment and the entire community. Rapidly improving technologies and a deeper understanding of the use or reuse of solid waste has created increasingly larger roles for the private sector. In many developing countries,

informal waste pickers are key players in solid waste, gathering, sorting, trading and, in some cases, recycling, either individually or grouped in microenterprises. Waste pickers represent some of the most vulnerable, low-income communities, whose interests need to be considered in any waste project.<sup>13</sup>

### 11.1 Types of PPP in the Sector

PPPs in solid waste tend to focus on treatment, for example the construction and management of sanitary landfills, incineration facilities, recycling centers, or waste-to-energy facilities. These projects might include collection from transfer stations, where local waste collection is aggregated in a few locations and the PPP collects waste from those locations and bring it to the treatment facility, using larger trucks to reduce the cost of transportation and facilitate treatment.

In the city of Poznań, Poland, the local government entered into a PPP for the design, construction, financing, management, and maintenance of a waste-to-energy production plant. About 30 percent of the city's domestic electricity is generated by this new facility (see project summary 27).

In China, the City of Wenzhou generated approximately 400,000 tons in household waste each year, with a growth rate of 8–10 percent annually. A PPP developed a waste-to-energy plant able to treat 320 tons of MSW per day and generate up to 25 million (kWh) of electricity annually (see project summary 28).

### 11.2 Lessons Learned/Key Issues

- SWM projects can have multiple revenue sources: the collection fee paid by households, waste collection tax, associated revenues (for example, power generation and recycling fees), and governmental budget allocations. The fees and taxes charged by the municipality for collection are usually an important part of this revenue stream, and one of the most

difficult to achieve to the levels required. People generally do not like to pay for trash collection, in particular to the levels required to pay for proper management and treatment. The municipality may need to start engaging with the community to communicate the need for charging for collection long before the PPP project is launched.

<sup>12</sup> See also Delmon 2017.

<sup>13</sup> See also Delmon 2017.

- SWM projects should use technology appropriate to the local community, affordable for the community, or that reflects local demand for the services.<sup>14</sup> For instance, where waste to energy is contemplated, the efficiency of generation of electricity from waste depends not only on the quantum of waste generated and collected per day but also on the waste mix, in particular the quantum of organic content in the waste and the calorific value of waste. The municipality should first undertake a detailed assessment of waste generated from various parts of the city to understand the composition of waste and the potential of generating electricity from the waste.
- Where the PSP is responsible for collecting waste from a transfer station or waste is delivered to the treatment facility, the municipality will typically have to guarantee a minimum quantity of waste that would be available to the PSP every day. The treatment facility is designed to cater to this minimum guaranteed waste. If the municipality delivers less waste, then municipalities may have to compensate the PSP accordingly. Therefore, a detailed and robust study of how much waste a city is actually generating, and more importantly collecting, on a daily basis, is important before bidding out SWM projects.
- If the PPP includes a treatment facility as well as a sanitary landfill, then the municipality should specify the maximum percentage or quantity of waste that can be transferred to the sanitary landfill, creating an incentive to maximize treatment efficiency and ensuring that the sanitary landfill lasts longer.
- Waste to energy plants are often not financially feasible based on selling electricity to the electricity grid and require a significant 'tipping fee' per ton of waste delivered to the treatment facility.

**Table 10. Further Information on Solid Waste PPPs**

<b>Toolkit</b>	<p>Swiss Centre for Development Cooperation in Technology and Management. 2000. Private Sector Participation in Municipal Solid Waste Management: Guidance Pack (5 Volumes). <a href="https://ppp.worldbank.org/public-private-partnership/library/private-sector-participation-municipal-solid-waste-management-guidance-pack-5-volumes">https://ppp.worldbank.org/public-private-partnership/library/private-sector-participation-municipal-solid-waste-management-guidance-pack-5-volumes</a>.</p> <p>World Bank. 2017b. Draft Concession Agreement: Municipal Solid Waste Management, Delhi. <a href="https://ppp.worldbank.org/public-private-partnership/library/draft-concession-agreement-municipal-solid-waste-management-delhi">https://ppp.worldbank.org/public-private-partnership/library/draft-concession-agreement-municipal-solid-waste-management-delhi</a>.</p>
<b>General Information</b>	<p>Global Infrastructure Hub. 2016c. "Solid Waste Collection, Disposal, Landfill and Recycling". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.github.org/risk_category/solid-waste/">https://ppp-risk.github.org/risk_category/solid-waste/</a>.</p> <p>World Bank. 2019f. "Municipal Solid Waste (MSW) PPPs". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/transportation">https://ppp.worldbank.org/public-private-partnership/sector/transportation</a>.</p> <p>World Bank. 2019m. "Waste". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/waste">https://pppknowledgelab.org/sectors/waste</a>.</p>

<sup>14</sup> International Finance Corporation. 2014. "Waste PPPs". *Handshake (12)*. [https://www.ifc.org/wps/wcm/connect/97a0af43-441a-4528-bf39-9a7b1af1d7c7/Handshake12\\_WastePPPs.pdf?MOD=AJPERES&CVID=IKbDLHE](https://www.ifc.org/wps/wcm/connect/97a0af43-441a-4528-bf39-9a7b1af1d7c7/Handshake12_WastePPPs.pdf?MOD=AJPERES&CVID=IKbDLHE).



# 12.0

## Urban Redevelopment

Urban redevelopment can take many shapes including street space optimization,<sup>15</sup> heritage conservation,<sup>16</sup> public facilities renovation,<sup>17</sup> and neighborhood rehabilitation<sup>18</sup> involving a wide array of expertise, long-term planning, community engagement, maintenance, and operation risks. Cities deploy a combination of internal resources (including revenues and municipal land), external funding sources (including intergovernmental transfers, grants and, in the case of sovereign

cities, borrowing), policy and regulatory tools, and strategic partnerships with the private sector, among other resources.<sup>19</sup> The complexity and creativity of urban regeneration makes it difficult to establish standard bidding documents, revenue models, or model commercial structures. Partnering with the private sector is a key tool available to municipalities to achieve sustainable redevelopment.<sup>20</sup>

### 12.1 Types of PPP in the Sector

PPPs in urban redevelopment can range from a master developer for an entire new city—such as a satellite city, for example the Canary Wharf development in London—to the development of a discrete portion of an urban center, where disaster, urban blight, or some other circumstance has made a large tract of land available for a significant urban redevelopment. Urban redevelopment PPP is therefore extremely difficult to define or delimit but offers extensive opportunities to deliver redevelopment through mixed-use facilities and diversification of revenues to fund much needed redevelopment.

In Washington, D.C., United States, two outdated public facilities, a library and a fire station, were refurbished with latest technology and capacity in addition to providing approximately 150 multifamily residential condominiums, 9,600 square feet for retail space, and 52 residential rental units affordable to households earning at or below 60

percent of the area median income (see project summary 73). By providing prime development rights above the library and fire station, the municipality was able to provide refurbished public facilities and affordable housing.

Where the facility is located in a dense urban area, building up or digging down may provide opportunities for commercial revenues. Washington, D.C., redeveloped an area, building over a major highway to develop new residential and retail space and to bring life to that part of the city. The platform supports a 7-acre (204,386 m<sup>2</sup>), mixed-use development space for four office buildings, one residential structure with retail facilities at the ground floor, parking facilities with four underground levels and a capacity of 1,146 vehicles, and green space. (see project summary 75).

<sup>15</sup> See, for example, Capitol Crossing project in Washington, D.C. (project summary 75).

<sup>16</sup> See Macdonald, Susan, and Caroline Cheong. 2014. *The Role of Public-Private Partnerships and the Third Sector in Conserving Heritage Buildings, Sites, and Historic Urban Areas*. Getty Conservation Institute.

<sup>17</sup> See, for example, Redevelopment of Library and Fire Station in Washington DC (project summary 73), Mandaluyong City Market in Manila (project summary 38), and Campin Coliseum (Movistar Arena) in Bogota (project summary 53).

<sup>18</sup> See, for example, Regent Park Affordable Housing Project in Toronto (project summary 80).

<sup>19</sup> Amirtahmasebi, Rana, Mariana Orloff, Sameh Wahba, and Andrew Altman. 2016. *Regenerating Urban Land: A Practitioner's Guide to Leveraging Private Investment*. 2016. Urban Development Series. Washington, DC: World Bank. doi: 10.1596/978-1-4648-0473-1.

<sup>20</sup> Amirtahmasebi et al. 2016.

## 12.2 Lesson Learned

- Strong political support, community engagement, and proper planning are critical success factors for urban redevelopment PPPs. It is often the private sector that has more adequate human and technical resources to drive project development to achieve planning goals.<sup>21</sup> Designing a structure that allocates risks between the municipality and the PSP in the most effective manner requires a thorough understanding of the redevelopment, the local community, and the likely economic and financial outcomes of the redevelopment.
- Redevelopment projects may offer an enticing prospect but with so many challenges and uncertainties that private sector involvement in early stages may be unattractive or uneconomic. Building momentum with initial public redevelopment projects can attract investors for future-linked/adjacent projects.<sup>22</sup>
- Municipalities are often optimistic about the value that can be unlocked from real estate opportunities that emerge from such redevelopment projects. At the project development stage, it is important to get a realistic and maybe even worst case scenarios of unlocked real estate value from such redevelopment projects.

**Table 11. Further Information on Urban Redevelopment PPPs**

<b>Guidelines</b>	City of Liverpool. 2006. Public Private Partnership in Urban Regeneration. A Guide to Opportunities and Practice. <a href="https://urbact.eu/sites/default/files/p4a-_final_english_060906.pdf">https://urbact.eu/sites/default/files/p4a-_final_english_060906.pdf</a> .
<b>General Information</b>	<p>International Finance Corporation. 2012. "Cities &amp; PPPs". Handshake (4). <a href="https://library.pppknowledgelab.org/documents/1947?ref_site=kl">https://library.pppknowledgelab.org/documents/1947?ref_site=kl</a>.</p> <p>United Nations Habitat. 2011. Public-Private Partnership in Housing and Urban Development. <a href="https://new.unhabitat.org/sites/default/files/download-manager-files/Public-Private%20Partnership%20in%20Housing%20and%20Urban%20Development.pdf">https://new.unhabitat.org/sites/default/files/download-manager-files/Public-Private%20Partnership%20in%20Housing%20and%20Urban%20Development.pdf</a>.</p> <p>World Bank. 2019I. "Urban Revitalization". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/urban-revitalization">https://pppknowledgelab.org/sectors/urban-revitalization</a>.</p>

<sup>21</sup> International Finance Corporation. 2012. "Cities & PPPs". *Handshake (4)*. [https://library.pppknowledgelab.org/documents/1947?ref\\_site=kl](https://library.pppknowledgelab.org/documents/1947?ref_site=kl).

<sup>22</sup> Reuschke, Darja. "Public-Private Partnerships in Urban Development in the United States". NEURUS Program, University of California in Irvine: 2001. <https://core.ac.uk/download/pdf/7035711.pdf>.

# 13.0

## Affordable Housing

Private developers deliver low-cost housing where they can earn a reasonable profit.<sup>23</sup> Housing policies,<sup>24</sup> government support/incentives, and building codes/planning regulation can help create

the right incentives for private developers to do more. The municipality can also make affordable housing commercially attractive for private developers, including through PPPs.

### 13.1 Types of PPP in the Sector

Affordable housing can be achieved by the municipality providing land and allowing the PSP to develop mixed-use facilities, including high-, middle-, and low-income housing as well as retail facilities. Mixed-use facilities also create a better living experience for the low-income tenants who will prefer to be closer to economic and social opportunities, such as jobs, schools, and health care, that are available through or near such mixed-use facilities.

population groups, that is, families waiting for public housing, low-income young couples, postal workers, students, and immigrants. The building consisted of 182 flats equipped with 470 beds with kitchen, and ancillary services such as restaurant, laundry, grocery store, medical clinic, employment office, after-school activity, and car/bike-sharing system. Aside from the flats which are rentable for 12 months maximum, the building is also equipped with 58 affordable hotel rooms (see project summary 81).

In Turin, Italy, two abandoned buildings were turned into temporary social housing projects to provide housing to support disadvantaged

### 13.2 Lessons Learned/Key Issues

- Affordable housing PPPs are capital intensive. Unless other revenues are available, the project may demand significant financial support from the municipality. Sometimes this financial support can be accessed through national subsidies or tax incentives designed to promote affordable housing. The PPP project will need to be designed to access those funds.
- Where affordable housing is provided through a mixed-use development, there is a risk that the PSP will focus efforts and investment on the more profitable activities in the development, with less attention paid to affordable housing. Incentives should be created (and enforced) to ensure that the affordable housing is provided to the agreed specifications, quality, and livability.
- At the project development stage, the municipality will need to decide how to allocate low-cost housing, for example leased or sold, with the municipality subsidizing either the capital cost or the interest on the housing loan.
- Municipalities may want to play a role in determining the specific beneficiaries or groups of beneficiaries of the municipality supporting low-cost housing. In such cases, the municipality can either require the PSP to construct the low-cost houses and hand them over to the municipality for allocation or outline the criteria for allocation of the low-cost housing and require the PSP to implement.

<sup>23</sup> Owens, Kate. 2016. "Constructing housing PPPs to build trust". World Bank Blogs. <https://blogs.worldbank.org/ppps/constructing-housing-ppps-build-trust>.

<sup>24</sup> India passed a 'Housing Policy and Affordable Housing Plan' in 2015 aiming to deliver between 50,000 and 100,000 affordable houses.

- Payment for maintenance of common areas needs to be designed early, for example, should the occupants of low-cost housing pay for maintenance of the common areas or is it cross-subsidized from other project revenues. If funding for maintenance is limited,

the municipality may want the specification of the maintenance to prioritize affordability. The maintenance of the common areas may form part of the PPP arrangements for say the first 10–15 years.

**Table 12. Further Information on Affordable Housing PPPs**

<b>Toolkits</b>	SALGA. n.d. MUNICIPALITIES: Municipal Focus - Municipal Guidelines on Social & Rental Housing. <a href="https://www.salga.org.za/Municipalities%20F%20MGOSARH.html">https://www.salga.org.za/Municipalities%20F%20MGOSARH.html</a> .
<b>General Information</b>	<p>United Nations Habitat. 2011. Public-Private Partnership in Housing and Urban Development. <a href="https://new.unhabitat.org/sites/default/files/download-manager-files/Public-Private%20Partnership%20in%20Housing%20and%20Urban%20Development.pdf">https://new.unhabitat.org/sites/default/files/download-manager-files/Public-Private%20Partnership%20in%20Housing%20and%20Urban%20Development.pdf</a>.</p> <p>World Bank. 2019I. "Urban Revitalization". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/urban-revitalization">https://pppknowledgelab.org/sectors/urban-revitalization</a>.</p>

# 14.0

## Schools

Educational facilities are often provided by national government, but municipalities may be responsible for primary or even secondary school facilities,

while teachers will generally be regulated and possibly provided by the national government.

### 14.1 Types of PPP in the Sector

A number of different approaches and creative commercial engagements have been developed to support the education sector through PPP. For the sake of discussion, these might be organized into the following:

- *Infrastructure Delivery*.<sup>25</sup> The PSP builds, maintains, and operates an educational facility such as a public school, university building, or hostel.<sup>26</sup> Payments under the contract are contingent upon the PSP delivering services to an agreed performance standard.<sup>27</sup>
- *Under Management Services*, the PSP manages one or more facilities. The schools remain publicly owned and all non-managerial personnel continue to be public sector employees.<sup>28</sup>
- *Service Delivery* involves the PSP delivering facilities and educating students, possibly a mix of private and public students. The PSP may charge fees to private students, and the municipality purchases education services for public students.

PPP arrangements can be used to make educational philanthropic support more sustainable and better coordinated with government activities. Examples abound globally.<sup>29</sup>

By paying for students to enroll in existing schools, governments can quickly expand access without incurring any upfront expenditure on constructing and equipping new schools. Another variation of

this approach is for the municipality to contract out students' enrollment in specialized services that are not available in the public sector. This type of contract can be targeted to specific students and groups, such as low-income, disadvantaged, or disabled students.<sup>30</sup> These targeted beneficiaries need to be defined from the beginning to ensure that the financial structure delivers the benefits desired.

In 1993, the James F. Oyster Bilingual Elementary School was in danger of closure due to a crumbling, inadequate building and lack of public capital. A PPP was formed between DC Public Schools, the District of Columbia, and a national real estate development firm. They divided the school property in half to make room for a new school and a new residential development. The District of Columbia issued a 35-year, US\$11 million tax-exempt bond for the construction costs to be repaid entirely with the revenue generated by the private apartment building. The private partner redeveloped the school on half the site, built a new 211-unit apartment building on the other half, and agreed to pay US\$804,000 a year for 35 years to repay the bond. The school facilities included a computer lab, library, gym, and classrooms designed to accommodate the school's bilingual program and office space<sup>31</sup> (see project summary 88).

<sup>25</sup> For example, in Toronto, Canada, The Toronto District School Board suffered from a shortage of funds and limited land availability and the NTCI, a public high school founded in 1912, was an aging facility with a strategic location in midtown Toronto with direct access to public transit and vibrant retail main street. After a PPP for the school redevelopment, a four-story secondary school building was delivered to accommodate 1,200 students and it includes science, art, music, and drama classrooms, a 600-seat theatre, library, and a triple gymnasium (see project summary 91).

<sup>26</sup> See also Delmon 2017.

<sup>27</sup> LaRocque, Norman. 2008. *Public-Private Partnerships in Basic Education: An International Review*. CfBT Education Trust.

<sup>28</sup> World Bank. 2011. *The Role and Impact of Public-Private Partnerships in Education*.

<sup>29</sup> LaRocque 2008.

<sup>30</sup> World Bank 2011.

<sup>31</sup> ULI Development Case Studies. 2015. *James F. Oyster Bilingual Elementary School and Henry Adams House*.

## 14.2 Lessons Learned/Key Issues

- The municipality needs to work out its objectives for the PPP and create incentives accordingly.<sup>32</sup> Left to its own, the PSP will prioritize the most profitable services.
- Educational facilities can also mobilize commercial revenues, for example the PSP could utilize school infrastructure such as classrooms, the computer lab, the gymnasium, or the library to deliver other services such as training programs for adults after school hours on a for-profit basis.

**Table 13. Further Information on Education PPPs**

<b>General Information</b>	<p>Hogan Lovells Lee &amp; Lee. 2011. PPP Projects in the Education Sector - Key Principles. <a href="https://www.hoganlovells.com/~//media/hogan-lovells/pdf/publication/pppprojectsintheeducationsectorkeyprinciplessept11_pdf.pdf">https://www.hoganlovells.com/~//media/hogan-lovells/pdf/publication/pppprojectsintheeducationsectorkeyprinciplessept11_pdf.pdf</a>.</p> <p>World Bank. 2019a. "Education". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/education">https://pppknowledgelab.org/sectors/education</a>.</p>
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<sup>32</sup> LaRocque 2008.

# 15.0

## Health Clinics

The health sector is generally regulated by the national government; however, in many countries municipalities must provide local clinics and even some small hospital and specialist facilities.

PPPs in the health sector<sup>33</sup> have delivered important advantages, including more timely completion, delivery to cost, technological

innovation, and service improvement, but some important challenges have arisen, including labor resistance, need for better monitoring and contract management, access to experienced health care specialists, rapid technological change, and the need to introduce flexibility into the contract to accommodate change.<sup>34</sup>

### 15.1 Types of PPP in the Sector

Health PPPs can be divided into two broad categories: facility-based PPPs and clinical PPPs.<sup>35</sup> Facility-based PPPs involve the PSP providing construction, maintenance, and operation of a hospital or clinic, but not delivery of clinical services. The United Kingdom had vastly underinvested in its National Health Service (NHS) hospitals, many of which were built in the Victorian era (during the late 1800s). Beginning in the 1990s through the Private Finance Initiative (PFI), the United Kingdom built approximately 100 new NHS hospital buildings in 12 years. Since 2003, more than 50 hospital PPPs valued at over CAD 18 billion have been developed in Canada.<sup>36</sup> This model is also common in Australia and Italy. In clinical PPPs, the PSP delivers all services, including supply of infrastructure and clinical services. This model has been adopted in, for example, Australia, Spain, Portugal, India, and Lesotho.

PPP is often used to deliver specialist services, such as cancer clinics, imaging services, and dialysis centers. The National Kidney and Transplant Institute in the Philippines specializes in the treatment of renal diseases. In 2003, it entered into a Hemodialysis Center PPP, to furnish the hospital with state-of-the-art machines for patients suffering from end-stage renal diseases, serving more than 120 outpatients a day.<sup>37</sup> The Government of Andhra Pradesh entered into a PPP in 2010 to establish and operate dialysis centers in 11 tertiary care state-run hospitals for a period of seven years<sup>38</sup> (see project summaries 97 and 98).

### 15.2 Lessons Learned/Key Issues

- Health service PPPs should include a thorough baseline study to capture specific performance and outcomes of the project.
- The split between clinical services and facilities

can be challenging. Many countries use PPP to deliver the facilities (the hospital building, utilities, heating, air conditioning, maybe even laundry) under simple performance-based

<sup>33</sup> See also Delmon 2017.

<sup>34</sup> A major issue in hospital PPPs is the need to constantly update medical equipment to reflect advances.

<sup>35</sup> UNECE, WHO, ADB. 2012. "A Preliminary Reflection on the Best Practice in PPP in Healthcare Sector: A Review of Different PPP Case Studies and Experiences". Paper prepared for the conference PPPs in Health Manila 2012: Developing Models, Ensuring Sustainability: Perspectives from Asia and Europe. [https://www.unece.org/fileadmin/DAM/ceci/images/ICoE/PPPHealthcareSector\\_DiscPaper.pdf](https://www.unece.org/fileadmin/DAM/ceci/images/ICoE/PPPHealthcareSector_DiscPaper.pdf).

<sup>36</sup> UNECE, WHO, ADB 2012.

<sup>37</sup> UNECE, WHO, ADB 2012.

<sup>38</sup> UNECE, WHO, ADB 2012.

obligations. In such projects, the interface between facilities management and clinical services (the medical services provided - doctors, nurses, and specialist technicians) can be challenging, the clinical staff will have a certain way they want the facilities managed, but a PPP establishes a mechanism for management for a long period, say, 20–30 years. The services should be flexible enough to allow the clinical staff to get the support they need.

- Clinical services are difficult to define on a performance basis, for example if the PPP contract requires the PSP to keep fatalities below a certain level, the PSP may be incentivized not to treat the most complex patients. The incentive framework for a PPP providing both facilities and clinical services will need to establish the right balance and urgency of service delivery. An incentive scheme that compensates well for cleaning and maintenance may find itself with a beautiful clean facility, but few patients treated.

Where compensation is paid for patients that get better quickly (for example, shorter stays in the hospital), the municipality may find that the hospital has a tendency to treat only the easiest, least complicated cases.

- The regulator for the health sector will need to adjust to the presence and context of the PPP to ensure that the sector remains cohesive, within the constraints created by the PPP agreement. The regulator should be involved in PPP project design, and should develop the capacity needed to regulate both the public sector and the PPP.
- PPPs involve a long-term commitment by the PSP to operate and maintain the facility. This makes it difficult for the government to save money in times of budget shortfalls by reducing use of the facility or even closing it for a period the PPP payments must still be made and the PSP must be compensated where it is not able to earn the agreed revenues.

**Table 14. Further Information on Health PPPs**

General Information	
	PricewaterhouseCoopers (PwC). 2017. PPPs in Healthcare: Models, Lessons and Trends for The Future. <a href="https://www.pwc.com/gx/en/healthcare/assets/ppps-in-healthcare.pdf">https://www.pwc.com/gx/en/healthcare/assets/ppps-in-healthcare.pdf</a> .
	World Bank. 2019c. "Health". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/health">https://pppknowledgelab.org/sectors/health</a> .
	World Bank. n.d. "Public-Private Partnerships Legal Resource Center." PPPLRC. Accessed July 19, 2019. <a href="https://ppp.worldbank.org/public-private-partnership/">https://ppp.worldbank.org/public-private-partnership/</a> .



# 16.0

## Bus Rapid Transit (BRT) and Light Railway Transit (LRT)

Construction of high-capacity transportation systems in urban areas is usually tied to large or country-wide programs managed by the national government given their size and complexity.

However, in certain situations BRT and LRT projects are delivered through municipal PPP.

### 16.1 Types of PPP in the Sector

Rail is a highly regulated industry. Where work is to be done on an existing rail system, access to that rail system will be limited to those times when the track can be cleared (that is, when it is not in use or to the extent it can be closed down). Construction works will need to consider the specific requirements of existing signaling systems, rolling stock, and other issues associated with the management of services for the railway. Where the existing railway is to be modified, the signaling system design will need to be amended to consider changes in the physical infrastructure.

A number of light rail train or metro systems have been delivered through PPP, for instance in Kuala Lumpur, Malaysia or in Manila, the Philippines. The structures used range from the PSP designing, building, financing, and operating the facility to the municipality financing the infrastructure and the PSP operating and maintaining, possibly also providing network operating centers and/or rolling stock.<sup>39</sup>

### 16.2 Lessons Learned/Key Issues

- Rail services are often unprofitable, even recovering operating costs may be difficult. In addition to public capital contributions, finding other sources of revenues will be critical, including land value capture,<sup>40</sup> property development,<sup>41</sup> and, where those are insufficient, payments from government.<sup>42</sup> Commercial and property development opportunities at terminal stations can be particularly important. In Hong Kong, SAR, China, the mass rapid transit system not only pays for itself through commercial revenues but it also provides a revenue stream for the Hong Kong Government (see project summary 2).
- Railway, as well as other mass transport projects need to be linked to other transport services. For example in Madrid, Spain, the Moncloa Transportation Exchanger is where urban (metro and buses) and interurban (highways and railways) transportation modes intersect to facilitate connectivity (see project summary 1).
- The need for access to large amounts of land (or right of way) and space to build transportation facilities makes them expensive, long-term, and politically sensitive undertakings. Public reaction to new transport facilities can be challenging, no one wants a railway line or new road running through their backyard. It is best for all land to be acquired before the bid process. It may be tempting to try to accelerate the process and commence bidding assuming that the land will be acquired on time; but this has been the downfall of many projects and has created massive liabilities for governments across the globe.

<sup>39</sup> Mandri-Perrot, Cledan, and Iain Menzies. 2010. *Private Sector Participation in Light Rail - Light Train Metro, Transit Initiatives*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/355141468323976491/Private-sector-participation-in-light-rail-light-metro-transit-initiatives>.

<sup>40</sup> See Module 16: Harnessing Land Value Capture.

<sup>41</sup> See Module 17: Capturing Commercial Value.

<sup>42</sup> For further information on how policy makers can best deal with the main risks involved in designing, procuring, and implementing urban rail transportation, see Mandri-Perrot and Menzies 2010.

- Transport projects are particularly vulnerable to subsurface risk, where subsurface conditions encountered differ to those anticipated requiring changes in construction methodologies and subsequent increases in cost and delays. Often, the contracting authority will bear the risk of unforeseeable subsurface conditions. The contracting authority needs to financially provide for this to assure potential bidders that they would have access to funds in case of unforeseen changes required during construction. Another common approach is to establish a baseline for anticipated ground conditions, sharing costs, and delays to the extent the baseline proves inaccurate.
- Where the PSP takes traffic risk, the toll regime for a transportation project should be based on reliable economic, technical, and financial assumptions. Lenders will generally undertake their own traffic forecasting exercises to verify those provided by the contracting authority and the project company. The inherent vulnerability of traffic forecasts to optimism bias was demonstrated more than 15 years ago in a Standard & Poors study<sup>43</sup> from 2002 of traffic forecasts in user fee-based toll road schemes. Of 32 different projects, actual traffic was on average only 70 percent of that forecast, with a large majority of projects not reaching even 90 percent of the forecast traffic. Governments therefore often provide revenue or traffic guarantees<sup>44</sup> to protect the project company and/or the lenders from a certain portion of traffic risk.

**Table 15. Further Information on BRT and LRT PPPs**

<b>Toolkits</b>	<p>Asian Development Bank. 2008. Bus Rapid Transport: Toolkit for Feasibility Studies. <a href="https://ppp.worldbank.org/public-private-partnership/library/bus-rapid-transport-toolkit-feasibility-studies">https://ppp.worldbank.org/public-private-partnership/library/bus-rapid-transport-toolkit-feasibility-studies</a>.</p> <p>Asian Development Bank and Government of India. 2011. Toolkit for Public-Private Partnerships in Urban Bus Transport - Maharashtra India. <a href="https://ppp.worldbank.org/public-private-partnership/library/toolkit-public-private-partnerships-urban-bus-transport-maharashtra-india">https://ppp.worldbank.org/public-private-partnership/library/toolkit-public-private-partnerships-urban-bus-transport-maharashtra-india</a>.</p> <p>PPIAF. 2007. The Urban Bus Toolkit. <a href="https://library.pppknowledgelab.org/PPIAF/documents/2067">https://library.pppknowledgelab.org/PPIAF/documents/2067</a>.</p> <p>PPIAF. 2017. Railway reform: Toolkit for improving rail sector performance (English). Washington, DC: World Bank Group. <a href="http://documents.worldbank.org/curated/en/529921469672181559/Railway-reform-Toolkit-for-improving-rail-sector-performance">http://documents.worldbank.org/curated/en/529921469672181559/Railway-reform-Toolkit-for-improving-rail-sector-performance</a>.</p> <p>PPIAF. 2009. "Toolkit for Public-Private Partnerships in Roads and Highways." <a href="https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/index.html">https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/index.html</a>.</p> <p>Pulido, Daniel, Georges Bianco Darido, Ramon Munoz-Raskin, Joanna Charlotte Moody. 2018. The Urban Rail Development Handbook (English). Washington, DC: World Bank Group. <a href="http://documents.worldbank.org/curated/en/583011538651181032/The-Urban-Rail-Development-Handbook">http://documents.worldbank.org/curated/en/583011538651181032/The-Urban-Rail-Development-Handbook</a>.</p>
<b>General Information</b>	<p>Global Infrastructure Hub. 2016d. "Transport Sector". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.github.org/risk_category/transport/">https://ppp-risk.github.org/risk_category/transport/</a>.</p> <p>World Bank. 2019h. "Public-Private Partnerships for Transport". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/transportation">https://ppp.worldbank.org/public-private-partnership/sector/transportation</a>.</p> <p>World Bank. 2019k. "Transport". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/transport">https://pppknowledgelab.org/sectors/transport</a>.</p>

<sup>43</sup> Standard and Poor's 2002.

<sup>44</sup> With the revised act on Private Participation in Infrastructure, the Republic of Korea introduced a PPP framework that is designed to reduce traffic forecasting risk by guaranteeing a minimum revenue. See Kim, Kang-Soo. 2013. *Valuation of the Minimum Revenue Guarantee in the Urban Railway PPP Project*. Korea Development Institute. [http://www.kdi.re.kr/kdi\\_eng/publications/publication\\_view.jsp?pub\\_no=13482](http://www.kdi.re.kr/kdi_eng/publications/publication_view.jsp?pub_no=13482).

# 17.0

## Ports and Airports

Ports and airports are normally national-level projects given their size, complexity, and importance to national connectivity agendas.<sup>45</sup> However, some port and airport investments are managed at the municipal level, such as ferry terminals and local airports, and will therefore be addressed here briefly.

Airport projects generally benefit from a diversity of revenue sources, a strong monopoly position, and access to foreign currency revenues from international traffic and duty-free shopping. Airport charges are often based on taxes that can be imposed on the use of airport services or other such fees and charges. Non-aeronautical revenues represent more than 60 percent of total international airport revenues in developed countries. Services provided by ports include cargo facilities and passenger services. A port requires space, not just for the equipment needed to deliver services and to process cargo and passengers (cranes, gantries, immigration, and customs) but

also hinterland space to allow the development of other services linked to port operations, for example industrial development, warehousing and storage for cargo, or hotels, restaurants, and retail facilities for passengers. Suape Port in Brazil was developed in 2001 under a 30-year PPP and was the first dedicated container terminal in the country. Thereafter it became one of the 12 ports with the highest number of regular routes and general cargo ships in the country.

One of the major challenges for a port is depth. The larger the ship to be received at the port, the deeper is the required draft and therefore the deeper the water required in front of the quays. Ports located at the mouth of a river or in a coastal position that suffers from long-shore currents will need to manage siltation, which will gradually reduce depth. Dredging is expensive, at construction and during operation (maintenance dredging).

### 17.1 Types of PPP in the Sector

Port and airport PPPs tend to involve the entire port or airport, or possibly an entire port terminal or airport terminal building. Examples abound.<sup>46</sup> PPPs can also be let for smaller parts of the facilities, for example terminal facilities, fueling facilities, cargo warehouses, cargo handling, catering, parking, hotels, commercial businesses, and a variety of other support services. For example, a private concession was issued for the non-aeronautical facilities in the airport in Bali, Indonesia. This private concession increased non-aeronautical revenues by 15 times (Q3 2009 versus 2014) from US\$444,000 to US\$6.8 million (see project summary 12).

Airports and ports can often mobilize foreign currency revenue from international traffic, and are generally an attractive opportunity for PPP.

<sup>45</sup> Kim 2013.

<sup>46</sup> Ricover, Andy, and Jeffrey Delmon. 2020. *Airport Public Private Partnerships: A practical guide for decision makers*. Routledge.

## 17.2 Lessons Learned/Key Issues

- The PSP will need sufficient flexibility to improve revenue flow and investment in infrastructure on the site, and the experience of passengers, airlines, and shipping companies.
- Airport and port demand may be heavily influenced by government policy, including locations of competing facilities, open sky policies, governance of local carriers/shippers/logistics, and low-cost carrier traffic. Clarity on these issues will help PSPs assess airport and port projects and to place a premium on asset values.

**Table 16. Further Information on Port and Airport PPPs**

<b>Toolkits</b>	World Bank. 2016f. Port Reform Toolkit PPIAF, World Bank, 2nd Edition. <a href="https://ppp.worldbank.org/public-private-partnership/library/port-reform-toolkit-ppiaf-world-bank-2nd-edition">https://ppp.worldbank.org/public-private-partnership/library/port-reform-toolkit-ppiaf-world-bank-2nd-edition</a> .
<b>General Information</b>	<p>Global Infrastructure Hub. 2016e. "Water and Waste Sector". Allocating Risks in Public-Private Partnership Contracts. <a href="https://ppp-risk.gihub.org/content/uploads/2016/07/160610-GIHUB-Allocating-Risks-in-PPP-Contracts-2016-Edition.pdf">https://ppp-risk.gihub.org/content/uploads/2016/07/160610-GIHUB-Allocating-Risks-in-PPP-Contracts-2016-Edition.pdf</a>.</p> <p>Ricover, Andy, and Jeffrey Delmon. 2020. Airport Public Private Partnerships: A practical guide for decision makers. Routledge.</p> <p>World Bank. 2019h. "Public-Private Partnerships for Transport". Public-Private Partnership Legal Resource Center. <a href="https://ppp.worldbank.org/public-private-partnership/sector/transportation">https://ppp.worldbank.org/public-private-partnership/sector/transportation</a>.</p> <p>World Bank. 2019k. "Transport". PPP Knowledge Lab. <a href="https://pppknowledgelab.org/sectors/transport">https://pppknowledgelab.org/sectors/transport</a>.</p>

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