2. Development of this Reference Guide

The primary objective of this Reference Guide is to assist government and public sector asset owners in the development of Quality Infrastructure (QI). Specifically, this Reference Guide has considered the output specifications, performance measures, reporting and contractual mechanisms of 14 reference projects.

This Reference Guide focuses on commonalities and lessons learned which proponents and government stakeholders of PPP projects could utilise to further the Quality Infrastructure agenda. This section provides an overview of the process used to develop this Reference Guide.

Figure 1: Reference Guide development process

2.1 DEVELOP THE PROJECT LIST

This Reference Guide uses project examples to communicate the principles of good output specification development and how output specifications can contribute to the delivery of Quality Infrastructure. This Reference Guide includes case studies that were selected based on the following criteria:

- **Location:** The projects represent a range of jurisdictions to identify similarities, differences and best practices between different locations.
- **Asset class:** The projects cover the main infrastructure sectors – built environment (such as education, housing and healthcare), energy, information and communication technology (ICT), transportation, and water and waste.
- **Stage of development:** Projects are either in construction or operational, so lessons learned could be identified. This introduces some limitations as current best practice in emerging areas, such as building information modelling (BIM), climate change adaptation and mitigation, and flexibility to respond to disruptive technology, is unlikely to be fully reflected in the examples provided.
- **Information availability:** The project's output specification was required to be either publicly available or Owner permission was granted to include the project in this Reference Guide. Preference was given to projects where members of the Reference Guide development team had insights from past project involvement.
- **Alignment with Quality Infrastructure focus areas:** The project's output specification was required to demonstrate an active approach to address the Quality Infrastructure focus areas.

The project list and its alignment with the Quality Infrastructure focus areas are summarised in Table 1 over the page.

2.2 IDENTIFY QUALITY INFRASTRUCTURE FOCUS AREA EXAMPLES

After finalising the project list, a review was completed to identify potential Quality Infrastructure focus area examples for each project. The examples were then compared across the projects and selected for inclusion in the case studies where there were similarities between approaches to show trends and consistencies between asset class and location, or selected based on their novel approach to deliver Quality Infrastructure.

Each case study in this Reference Guide provides examples in three to five of the Quality Infrastructure focus areas. The exception to this is where a secondary case study was included to supplement examples in a primary case study. For example, the Presidio Parkway project was included to supplement the Central 70 Managed Lanes project to provide an example of seismic requirements on a highway project.

Case studies may not have an output specification example provided for every Quality Infrastructure focus area, however this does not mean that the project only delivered on some focus areas and not others; rather, examples of the demonstration and implementation of Quality Infrastructure focus areas were selected based on their strength, unique approach and leading practice elements. The intent of this Reference Guide is to provide a range of examples across a number of projects that collectively show how Quality Infrastructure can be delivered through intentional requirements in output specifications.

2.3 DEVELOP THE PROJECT CASE STUDIES

The project information has been collated via document review and interviews with the relevant project stakeholders, reviewed and case studies developed. Direct quotes from the output specifications have been included in the case studies where information was available and the examples were considered relevant. An alternative approach was to provide paraphrased requirements. Direct quotes are highlighted in italics text and project specific defined terms, which may be capitalised, have been kept. Although examples in the case studies may be applicable to other projects, the quoted and paraphrased text in the case studies alone is not considered sufficient to successfully implement the requirement on a project.

2.4 HOST A CONSULTATIVE WORKSHOP

A consultative workshop on this Reference Guide was held in Paris in partnership with Mott MacDonald on April 15, 2019. Over 40 delegates from 10 countries attended, including representatives from the European Union (EU) PPP Units or Ministry of Economy, in addition to the European Commission, the European PPP Expertise Centre (EPEC), the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank (ADB), the Sustainable Infrastructure Foundation (SIF) SOURCE, the Private Infrastructure Development Group (PIDG), the Organisation for Economic Cooperation and Development (OECD), civil society organisations (CSOs) and private sector partners. Feedback from the workshop has been incorporated into the Reference Guide.

2.5 CREATE THIS REFERENCE GUIDE

This Reference Guide collates the background information on output specifications and Quality Infrastructure, and the project case studies, and presents lessons learned and observations. This Reference Guide adopts terminology, definitions and concepts from recognised global publications on PPPs and output specifications to develop a document that is not specific to one jurisdiction. This Reference Guide is not intended to be a substitute for proper technical due diligence. The Private Partners provided in the case studies are intended to reflect the team members at contract signing (prior to construction).

Table 1: Summary of case studies and QI focus area examples

Project (PPP model)	Sustainability & longevity/ Expectations of end users	Health & safety	Withstand natural & other disasters	Job creation, capacity building, transfer of knowledge	Social impacts & inclusiveness	Environmental impacts	Economic & development strategies/ Respond to changes
BUILT ENVIRONMENT							
Milton Hospital - Canada (DBFM)	●	●	●	●		●	
Mersin Integrated Health Campus - Turkey (DBFOM)	●	●	●	●	●	●	●
Pan Am Athletes Village - Canada (DBF)	●				●		●
Lewisham Grouped Schools - United Kingdom (DBFM)	●	●			●		●
PPP Prisons Program (Lots 1-3) - France (DBFM)	●	●		●	●	●	●
ENERGY							
John Hart Generating Station - Canada (DBFM)	●	●	●	●		●	
INFORMATION & COMMUNICATION TECHNOLOGY (ICT)							
Plan France Très Haut Débit (rural highspeed broadband) – France (DBFOM)	●			●		●	●
TRANSPORTATION							
Central 70 (I70) Managed Lanes - USA (DBFOM)	●			●	●		●
Complementary case study: Presidio Parkway - USA (DBFOM)			●				
Gautrain Rapid Rail - South Africa (DBFOM)	●	●		●			
Complementary case study: Melbourne Metro Rail Tunnel - Australia (DBFM)	●		●		●	●	
Madinah Airport Expansion Phase 1 - Saudi Arabia (BTO)	●	●				●	
Mactan-Cebu International Airport - Philippines (DBFOM) (includes comparison to Japanese airport concessions)	●	●			●	●	●
WATER AND WASTE							
Organic Resource Recovery Centre - Hong Kong (DBOM)	●	●	●	●		●	●
Agadir Mutualized Desalination Plant - Morocco (DBFOM)	●		●			●	●