APPENDIX C:

Airport PPP Risk Allocation Matrix

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in an airport PPP transaction, together with guidance on how those risks are typically allocated between the Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in airports PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in airports projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the Introduction.*

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new greenfield airport PPP project. Scope may include the whole of the airport or the construction / refurbishment of a component of the airport, such as a terminal. Operations may include landside and airside services. Scope typically excludes services which the Contracting Authority believes are appropriate to retain or which cannot by law be delegated (these may include security and police, customs and border control, quarantine, fire services, passport and air traffic control). Where single airports lack the revenue to be commercially viable, the Contracting Authority may group higher performing airports with lower performing airports to address the commercial viability challenges. Additional considerations will be relevant if scope includes future expansion of the airport. *See Augmentation under Variations risk.*
ASSUMPTIONS	The Contracting Authority has identified the site and there is no existing airport on the site. If there is an existing airport, a number of elements of the risk allocation will change, such as potentially who makes payments and how these payments are adjusted for risk. Customs, passport and air traffic control remain public sector obligations. The Private Partner is granted a concession to develop and operate the airport and to generate third party revenues and may pay a variable concession fee to the Contracting Authority based on project revenues. The matrix also considers where the Contracting Authority and the Private Partner enter into an availability payment model under a PPP contract. The Private Partner finances the development of the new airport and only starts to receive payment from users (and/or where applicable, the Contracting Authority) once the airport is in operation. Airline tariffs and other charges may be set under the contract (or through a national airport regulatory regime).
MARKET APPROACHES	Airport procurement models depend on the relevant market and the project circumstances. While the concession model is common, the availability model is also seen, for example, in some developing markets where a revenue risk approach may not be viable at least initially to establish the airport infrastructure. A PPP availability style risk allocation would therefore be appropriate where a new airport is developed, rather than for the growth of an existing airport (where revenues are already established). That is why most airports operate as some form of concession. As well as PPP concession and availability approaches, there are other contractual structures and procurement models which the Contracting Authority can use to deliver airport infrastructure with private sector involvement. These include directly procuring certain construction and/or operational elements, or under a privatisation model. In addition to new build PPP projects, rehabilitation and extension of existing airport structures are common and governments are increasingly considering airport privatisation as markets develop. Market regulation varies from country to country. The risks and associated guidance included in this matrix will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	Project revenues are generated either through user payments to the Private Partner from a variety of sources, including airlines that use the airport terminals, car parking fees and retail tenants given retail licences within the terminals, or availability payments under a government pays model, or a combination of both. User revenues will depend on throughput and pricing, and the Private Partner's ability to set prices for the different streams will depend on the applicable regulatory regime and/or the PPP contract, as applicable. User revenues may be supported by minimum revenue guarantees from the Contracting Authority for some or all of the revenue streams, particularly where project revenues are unlikely to be sufficient to cover the project costs. Where project revenues exceed project costs over a certain threshold, there may be a variable concession fee paid by the Private Partner to the Contracting Authority, depending on the level of project revenues. This is a common approach in many jurisdictions but is dependent on the project circumstances.

KEY RISKS	**Demand risk in respect of each revenue stream:** If the PPP project is run more as a concession (i.e. third parties provide the revenues), and actual use of the airport by airlines and passengers is lower than forecast, then the Project's revenues will be reduced, risking inability to repay financiers, fund operating costs and provide a return to the Private Partner. Ultimately this could result in the project failing and the Contracting Authority either assuming the project itself or finding a third party to take over. Demand in an airport project will be dependent on several factors that are within the government's control (such as regulation of competing airports and airlines) and the Private Partner will expect certain protections. The extent to which countries have agreements regarding reciprocal flying (and landing) rights – and the continuance of such agreements – can be a significant factor in assessing traffic levels in certain markets. The credit risk of anchor airline customers will also be a key consideration in assessing revenue risk, both as regards national carriers from the project's own jurisdiction and foreign airlines. *See Demand risk.* **Force majeure risk, particularly terrorism risk:** Airport projects are particularly sensitive to extreme weather conditions which can delay or cancel flights. Airports are also a more likely target for terrorist action. Both can have an effect on revenues and require substantial rectification costs. *See Force majeure risk and MAGA risk.* **Environmental risk, particularly onsite contamination and noise and air pollution:** Due to the nature of the airport operations there is a higher risk of pollution, particularly from underground fuel storage tanks. The large radius of airport flight paths leads to a noise and air pollution footprint that is much larger than the airport's physical footprint and requires particular consideration to be given to land acquisition and local communities (including, for example, opposition groups). *See Environmental risk and Social risk*.
OTHER CONSIDERATIONS	Airports consist of multiple components, some of which will be retained by the Contracting Authority, particularly immigration and typically air traffic control services (and services which by law cannot be delegated). It is most common for the private sector to be engaged to construct, operate and maintain the airport terminals and manage the retail tenancy opportunities within the terminals. This can create unique interface issues. It is important that, prior to the commencement of operations, airports are subject to a robust commissioning process, commonly referred to as operational readiness and airport transition (or "ORAT") process. This can help ensure that the different components of the airport operate as a cohesive whole in accordance with the Contracting Authority's expectations. It is also important that the Private Partner has sufficient expertise in managing airports.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the Introduction* and *Cost increases and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost increases and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner may enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. Alternatively the Private Partner may retain operational responsibility and enter into a technical services contract with an experienced airport operator (who is usually a shareholder of the Private Partner) pursuant to which staff will be seconded and other required information and experience will be provided to the Private Partner. **Demand risk**: Accurate forecasting is essential to mitigate demand risk. Securing airlines as long term anchor customers and suitable retail tenants can also protect against demand down turns. Depending on the level of risk, some projects may also require guarantees that competing airports will not be built within a certain radius. *See Demand risk.* **Insurance:** *See Risk Allocation in PPP contracts in the Introduction.* **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the Introduction*. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the Introduction*. Enacting enabling legislation (if required) and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security directly from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. The Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner). Security will have a cost attached which will feed through to pricing.

	Disproportionate security requirements will negatively affect value for money.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract (e.g. effectively take back much of any demand risk purportedly transferred) and affect value for money. For example, financial support may be sought by the Private Partner and its lenders where a state-owned national airline is an anchor customer and there are concerns over its credit or existence over the life of the project. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders in respect of the Contracting Authority's contractual financial obligations. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk.*

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and people; resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation, including augmentation of the airport.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.			●
DEMAND RISK	The risk of usage levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the site and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. During the feasibility stage (see *PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the airport. Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost increases and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in some markets, so the Contracting Authority may need to allow more time to acquire the land. The Contracting Authority should also consider the impact that the project will have on neighbouring properties and trades and may need to retain this risk of unavoidable interference. In rare cases some markets have taken a different approach which allocates all land acquisition and permitting risk to the Private Partner. This approach should only be taken if Private Partners already possess the land or if the precise location of the airport is not important, which will not usually be the case. Typically the ability of the Contracting Authority to exercise rights of eminent domain / compulsory acquisition will mean these risks are better allocated to the Contracting Authority.
	Timing of provision of required land	●			The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land			●	**General:** The risk that the land is not suitable is typically allocated to the Private Partner, who should be required to design an airport that is compatible with the project site provided or propose a solution if additional land is required. *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In particular this includes where the Contracting Authority is also the body responsible for issuing any of the key permits.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known. It is not uncommon for the Private Partner to be primarily responsible for procuring key planning consents, particularly in markets where there are clear procedures and time frames for procuring consents. In such circumstances some risk will continue to be assumed by the Contracting Authority where, despite complying with the relevant procedure, the issue of the permit is delayed or withheld or the permit has unusual conditions attached to it. Such circumstances will
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements to assist the Contracting Authority in securing the key permits) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					process. *See also MAGA risk, Design risk and Environmental risk.*	entitle the Private Partner to time and money as a compensation event.
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction. Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.*	Where the project consists of the operation of an airport terminal or another component of an airport, rather than the entire airport, then if the terminal can only be accessed through other parts of the airport the Contracting Authority will usually be responsible for providing rights of way and assume risk of the availability of such rights of way.
		[●]		●	**Operation phase:** The Private Partner will typically be responsible for ensuring it can access the airport once it is operational. Also, airports are subject to substantial vehicular traffic and the Private Partner should be responsible for ensuring that traffic is free flowing and delays avoided. If the Contracting Authority will remain responsible for any routes into the airport (or the component of the airport that is being provided by the Private Partner) then interface risk will need to be addressed and typically allocated on a shared basis.	
	Site security	[●]		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the airport. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk, Vandalism under Construction risk and Vandalism and Interface under Operating risk.*	For example, where there is public opposition to the airport, there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available or obtainable and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available or obtainable. It may also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate, unless the Private Partner is provided with an opportunity to verify such information.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs. A successful bidder will include the cost in its contract price whilst unsuccessful bidders may seek to recover by inflating its contract price for subsequent projects.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	If the project is an expansion or refurbishment of an existing airport then existing site conditions, and particularly contamination, will be a particular focus for bidders. Projects in some markets seek to limit the exposure of the Contracting Authority by providing a site validation period before or at the start of the construction phase. Contamination found during this period is the Contracting Authority's responsibility whilst anything found after this period is the responsibility of the Private Partner.
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project (for example, an existing terminal), they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	If the project is an expansion or refurbishment of an existing project then in some markets the Contracting Authority only warrants that the existing assets are structurally sound, with the Private Partner taking all other risks relating to the condition of the existing assets. Projects in some markets seek to limit the exposure of the Contracting Authority by providing an asset validation period before or at the start of the construction phase. Issues found during this period are the Contracting Authority's responsibility whilst anything found after this period is the responsibility of the Private Partner.
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people; (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●			Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. In the context of an airport, consideration should be given to the impact of the potentially widespread noise and air pollution as well as the more traditional social impacts of the project. *See also Environmental risk.* During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the airport. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure

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				[●]	Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the airport). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk. In this case, the Contracting Authority may bear the risk (if a MAGA event, such as a strike by the government-run national air traffic control service) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event. In developed markets, industrial action by workers at the airport who are to transfer to the Private Partner can be an issue if their conditions are not as good or they perceive that they may be disadvantaged in the future. Also customs workers and air traffic controllers often remain public sector employees and can be prone to taking industrial action that can cause the

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						Private Partner to fail to meet performance targets at the airport or suffer loss of revenue.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk.*	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. For example, some institutions will have their own requirements for environmental and social plans, in particular in relation to noise pollution, and will require that there are provisions in relevant agreements that will lead to remediation or mitigation. *See also Communities and businesses under Social risk.*
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project. Responsibility for obtaining any permits related to works or work method usually sits with the Private Partner.	
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. See also *MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. See also Key Planning Consents under Land availability, access and site risk, *Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					not take on any risk in doing so. Airports are major pieces of general infrastructure with particular problems of noise and air pollution affecting local communities, both in the locality of the airport and the take-off and landing corridors. There are also environmental risks associated with fuel spillages arising out of the transport and storage of fuel and fuelling of aircraft on site.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from an adjacent property forces an airport closure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to enforce environmental laws in respect of polluting aircraft and the pollution damages the airport or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these types of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**			●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the project and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept full responsibility for the amended design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate traffic forecasts or site condition or existing asset surveys). The Private Partner should be allowed to rely on the technical information unless it will be given the opportunity to verify. The cost of such verification should be balanced against the benefits of the Private Partner providing an absolute design wrap. *See also Changes to design under Design risk.*	Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority. Frequently an airport is either a national or local matter of pride and importance meaning both the aesthetics and day one functionality of the airport are extremely important. The Contracting Authority may hire a leading firm of architects to design the airport and to provide the outline specification. In these circumstances the Private Partner will be required to adopt the outline design and to provide detailed design that fits in with this, whilst still ensuring that the airport will comply with the output specifications set by the Contracting Authority. Alternatively increased weighting will be given by the Contracting Authority to the aesthetic appeal of the design when assessing bids in order to encourage greater innovation by bidders. In some less developed markets there have been projects where the Private Partner is required to spend additional amounts on aesthetic improvements if directed to do so by the Contracting Authority. This is a less efficient means of achieving optimal design and can lead to unnecessarily inflated contract prices.
		●			**Prescriptive specification:** A prescriptive specification can ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the terminal design constrains the efficiency of the design or the throughput of passengers), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered. It may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g.	Markets differ in how they approach the criteria that design must meet in order for approval to be given. More developed markets specify objective criteria and provide for specific processes and time periods for approval of designs. Less developed markets provide the Contracting Authority with more discretion in approving the design, which can lead to uncertainty for bidders.

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					architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient or the Private Partner wishes to realize efficiencies, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.*	**Cost increases**	[●]	[●]	●	Construction cost increases (i.e. costs exceeding the construction costs assumed in the project's financial model as at financial close) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost increases to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate the risks it bears by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met. *See Taking performance security under Public Sector Risk Mitigation.* Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date as at financial close can have a variety of causes, such as unavailability of construction materials, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA risk, Variations risk and Change in law risk.* Airport projects require complex commissioning and testing regimes given the intricacies involved in ensuring that the check-in, customs, baggage handling and the wider system will meet the necessary reliability and punctuality and throughput requirements of the output specifications. In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. The management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the

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					in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through the risks it bears as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. In an airport context this may be reduced revenues or contractual damages that the Contracting Authority will incur and pass on to the Private Partner due to the airport opening later than expected or the cost of continuing the operation of an existing airport where the new airport is a replacement project. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project Management:** The Private Partner is best placed to integrate complex works within the project and typically assumes project management risk. In an airport context this may include ensuring that the project is compatible with other components of the project (such as other terminals or access roads). **Interface with other works/facilities:** Interdependence with other projects (such as access roads and air trains that transport passengers between terminals or electricity and transmission facilities) may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will be the Contracting Authority's risk. For example, transport to and from the new airport is usually extremely important; if the government is providing new road or rail links to the airport, the Private Partner will need these to be provided on time for the opening (or by a specific time thereafter if a build-up of traffic at the airport is envisaged that will necessitate such link(s) being provided at a later date). In addition, a large airport upgrade may require a significant upgrade to power infrastructure and transmission infrastructure off the site. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. *See also Utilities and installations and Access to the site under Land availability, access and site risk, Suitability of design under Design risk, Maintenance standards under Operating risk, Demand risk and MAGA risk.*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes	

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	and other construction regulatory standards				are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price (where applicable) to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*).	In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services. In allocating this risk, it should be borne in mind that in many jurisdictions by law it is not possible to exclude (or cap) a party's liability in respect of death and personal injury.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years after completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	Defects liability periods and responsibilities vary between legal systems and jurisdictions and may be set contractually or in some cases by law. Market practice also varies between sectors. Some jurisdictions impose strict liability for defects and may compulsorily require corresponding insurance. In the Middle East, for example, decennial liability may apply as a matter of law for ten years from completion of certain (commonly civil) works.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant intellectual property licences for the construction and operation of the airport and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the airport.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation*, including augmentation of the airport.	**General**	●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments, e.g. through financing the variation directly itself, requiring the Private Partner to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.
	Augmentation	●		●	Often the Contracting Authority wishes to provide in the PPP contract for expansion of the airport in order to provide for an increase in passengers and/or aircraft movements. This may involve an expansion of existing terminal(s), a new terminal or an additional runway. The Contracting Authority may require that the Private Partner is obliged to carry out the expansion. The Private Partner will only agree to carry out the expansion if it can be justified by reference to passenger number trends and performance metrics and if the Private Partner will not lose money or be unable to service its existing debt (if the airport has been project financed) plus any additional debt to be taken on to finance the expansion. The onus falls upon the Contracting Authority to draft attainable standards based on relevant market data and policy objectives. Performance based on passenger waiting times and throughput and quality of service can be measured against pre-determined schedules or standards. The trigger for airport expansion should be forward looking and based on upward trends in passenger numbers over a number of years. The trigger should not just be one year (or a couple of years) if this is potentially unsustainable. The expansion will need to lead to a demonstrable increase in airport revenues that will be capable of paying operating costs, allowing debt service and a margin as a return on investment for the Private Partner and	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					lenders. *See also Demand risk.*	
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the output specification under the contract (i.e. by ensuring that the relevant service is available and operational performance is of the necessary quality and level (typically measured against key performance indicators)). The scope of the performance regime will depend on the contractual model and the level of demand risk being borne by the Private Partner. In a user fee-based payment concession structure, underperformance by the Private Partner may result in it incurring certain user fee deductions but the concession contract does not typically include a payment deduction regime in the same way as under an availability payment model and in practice the Contracting Authority (or regulator) may have limited means of tackling underperformance/unavailability except through termination. Underperformance may adversely affect demand so the Private Partner should be naturally incentivised to perform in order to maximise revenues. Where there are concerns about long term incentivisation (e.g. where there is a minimum revenue guarantee from the Contracting Authority and incentivisation is not as apparent), the Contracting Authority needs to consider ways of mitigating this. For example, continual failure to meet long term key performance indicators could ultimately result in concession termination or result in a minimum revenue guarantee being reduced. *See also Demand risk and Private Partner default termination under Early termination risk.* In an availability payment model, failure to meet the availability criteria and performance-based standards will typically result in the Private Partner having contractual payments abated or penalties applied by the Contracting Authority in accordance with a specified regime. It can also ultimately lead to contract termination. *See also Private Partner default termination under Early termination risk.* In either model, where performance cannot be fulfilled or availability criteria or performance indicators cannot be met due to actions of the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, the required performance standards for an airport will often include those relating to the experience and availability at check in, in customs/immigration and security. If these functions are not fully under the control of the Private Partner and its failure to meet the relevant standard may be due to lack of performance by a public sector retained service (such as insufficient officers at immigration gates or security resulting in punctuality and throughput targets not being met), then the Private Partner may require relief from any penalties. These types of failures can also cause flight cancellations, not just at the affected airport but also at other airports in other countries. In some cases, if this causes cost or loss of revenue to the Private Partner, it may be a compensation event. *See also Demand risk, Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives and set appropriately	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable aircraft maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the airport has stabilized. This can mitigate the risk of long-term performance failure.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					according to the chosen project model. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets. Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation.	
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. The management of costs is particularly important where the Private Partner is paying a periodic variable concession fee to the Contracting Authority based on gross, rather than net, revenue. Therefore any increase in costs will not decrease the amount payable to the Contracting Authority (possibly with some limited exceptions such as increases in tax or the pass through costs of utilities to airport users such as police, customs, air traffic control, etc.) but will reduce the amount available to pay the other costs of operations, service debt and provide a return to the equity investors. The Contracting Authority will be allowed to monitor the supply of required resources, and may allow for the Private Partner to substitute resources if necessary. Some of the cost risk can be managed on demand-risk projects, such as airports, by passing the risk through to the user by way of increases in airport duties or other charges to airlines or users. However, the ability to do this may be limited as airport projects tend to be demand elastic (i.e. costs to airlines go up so they reduce flights to the airport and the revenue goes down).In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the airport and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death,	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset.	In certain jurisdictions, it may be appropriate for the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	personal injury, property damage and third party liability				Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any construction issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities and typically the Contracting Authority will set certain minimum insurance requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services. In allocating this risk, it should be borne in mind that in many jurisdictions by law it is not possible to exclude (or cap) a party's liability in respect of death and personal injury.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust, attracts passengers and airlines and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Where the system constitutes an essential public service or effective monopoly operation over that route, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties). Failure to maintain the assets in accordance with the performance specification will lead to payment penalties and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As maintenance standards are often set at a higher level in PPP projects than in existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment mechanisms, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits. In certain specific cases, the Private Partner for the airport is different from the Private Partner for the runways. In this case, the maintenance risk is allocated to each Private Partner according to the specific scope of the relevant contract.	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk.
		[●]		●	**Existing assets in the project:** If the project is not entirely new build and involves some existing structures, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, particularly where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** Similarly, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of existing (or other) assets that integrate with and are key to the performance of the project. *See also Access to the site and associated infrastructure under Land availability, access and site risk.*	
	Interface	[●]	[●]	●	**Services/third party interface:** Although the Private Partner is typically best placed to manage many of the operating phase interface risks that could adversely affect the project, there may be certain interface risks which need to be shared with or borne by the Contracting Authority. These include, for example, where the Contracting Authority/government retains certain core services (e.g. customs and border control or baggage handling) which affect throughput of passengers or flight schedules. Similarly, there may be interface risks to be shared where there are third parties providing services to the Contracting Authority (such as maintenance of the runways or provision of transport links to the airport) which similarly affect throughput or flight schedules. **Existing asset interface:** *See also Maintenance standards under Operating risk.* *See also Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Demand risk.*	Where core services are retained by the Contracting Authority, in some projects the Private Partner may be required to provide suitable space for the relevant staff at the airport either for free or at cost.
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. *See also Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the airport.
DEMAND RISK *The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**		[●] [●]	●	In concession model airport projects the Private Partner typically bears demand risk (i.e. the risk of flight and passenger numbers and total revenue receipts being higher or lower than forecast and total revenue subsequently being higher or lower than expected). The Contracting Authority should do a full assessment of the risk as part of its feasibility studies, including independent traffic forecasting. If there is high uncertainty over traffic projections and therefore revenues (for example, due to tariff limitations and/or currency volatility) or forecast revenues are insufficient to cover the cost of constructing, financing and operating the project in question, as well as meeting the likely project contingencies, then it would be appropriate for the Contracting Authority to provide minimum revenue guarantees. Where demand risk is to be allocated to the Private Partner, bidders will want to carry out their own assessment of the risk and extensive traffic analysis in order to price their bids. The contract should appropriately address and allocate the risk for all factors that impact on demand, including social issues, and the parties should develop a comprehensive strategy to deal with the implementation of the project. Bidders forecasts should also be reviewed to ensure they have not been overly optimistic in order for the bidder to provide a more attractive and viable financial proposal. There are many factors outside the parties' control which can affect passenger and airline demand, including health pandemics, increased airfares, carbon footprint concerns, tourism promotion, airline insolvencies, changes in routes offered by carriers to and from the airport, changes in operational and fuel costs and aircraft incidents. Although the general position is	In developed markets, the Private Partner should have access to various data sources to develop realistic and attainable traffic and revenue forecasts (in the absence of shock events), such that the Private Partner is well placed to manage demand and traffic. The extent to which countries have agreements regarding reciprocal flying (and landing) rights – and the continuance of such agreements – can be a significant factor in assessing traffic levels in certain markets. Transferring demand risk is more difficult in less mature markets, particularly in the case of market first projects, where there is likely to be a lack of relevant comparative market data to begin with. This may involve some level of government revenue support underpinning the risk transfer (such as a minimum revenue guarantee) or result in an availability (or hybrid) payment model being required. In some markets, the lack of any competing airports and the provision of guarantees that competing

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					that the Private Partner takes demand risk there is usually an exception to this for so-called "shock events". These are events or circumstances that may not occur within the country in which the airport is situated but which cause a significant fall in traffic within a certain period but which would not qualify as force majeure. For example, 9/11 would be a shock event as it had a significant effect for several years on air travel worldwide but the global financial crisis may not have been treated as a shock event. The effect of a shock event is to reduce significantly the revenues of the airport to such an extent that it is either not capable of paying its operating costs, servicing debt and meeting its banking ratios and paying the concession fee or it is forecast that it will not be able to do so. In this situation, all or an amount of the variable concession fee may be deferred until things have stabilised and the full concession fee can once again be paid in full together with payment of deferred amounts.	airports will not be built unless demand exceeds certain thresholds may give the private sector greater confidence to accept demand risk without a minimum revenue guarantee. Similarly, the private sector may be willing to accept demand risk where the capacity for – and anticipated pace of – economic growth is perceived to be high.
	Higher demand than anticipated		[●]	●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. First, the increased traffic may result in augmentations being required sooner than expected. This may alter the risk profile for the Private Partner if it is required to undertake large capital projects sooner and more frequently during the project than it expected. *See also Augmentation under Construction risk.* Second, if actual demand is higher than forecast, there may be public perception issues if the Private Partner is thought to be making a higher profit than originally anticipated (even if in reality it is facing higher maintenance costs as described above). If the airport faced public opposition originally then this perception is likely to be exacerbated. This could cause problems for the Private Partner if users start to boycott the airport or launch protests, as well as be politically uncomfortable for the Contracting Authority. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, the augmentation regime should be configured to ensure the Private Partner is properly reimbursed for the expansion works and able to manage the associated risks. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), typically through payment to the Contracting Authority. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	Some markets have variable concession/operating periods, where the contract will terminate once the Private Partner has generated sufficient revenues to repay its debt and provide a return for equity investors. Such an arrangement may mean that the Contracting Authority receives an asset back much earlier than expected.
	Lower demand than anticipated	[●]	[●]	●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their traffic and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. **Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					control. Such changes (and any materiality threshold) should be clearly defined and might include the construction of a new competing airport or other transport option (or failure by the Contracting Authority/government to deliver a key airport access road). Whilst the Private Partner may feel justified in requiring these measures in support of its estimated traffic forecasts, some of these steps may prove politically unpopular and will need to be carefully considered by the Contracting Authority. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary urban development over the timeframe of the restrictions. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under Operating risk and MAGA risk*.	
	Government support measures		**[●]**		Projects where the Private Partner accepts demand risk are often underpinned by some form of government support in order for them to bankable. The effect of these measures is that the Contracting Authority shares demand risk. **Subsidies:** Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction costs) where user fee revenue is forecast to be insufficient for the Private Partner to meet its debt service and other financial needs. This type of support may be seen across all markets. **Minimum revenue guarantees:** An alternative to upfront subsidies is for the Contracting Authority to guarantee a minimum level of revenue for the Private Partner. The contract will provide that if revenue falls below a specific level, the Contracting Authority will pay the Private Partner an amount to ensure it receives a minimum revenue. The threshold for the guarantee should be set at a level which incentivizes the Private Partner and other stakeholders (e.g. other public sector entities) to increase user demand and the contract should still require appropriate levels of maintenance. This is to ensure that the Private Partner is not incentivised to rely solely on the guarantee and to discourage users and reduce maintenance costs. If this is structured as a "cap and collar" arrangement then the Contracting Authority may also benefit from economic upsides above the Private Partner's base case. **Other support:** The Contracting Authority may also share demand risk by setting upper and lower revenue limits within which the Private Partner bears full demand risk and outside of which the Contracting Authority bears or shares the risk.	Government financial support may, for example, relate notionally to intended usage levels by the national (state owned) carrier if it is an anchor customer, particularly where its credit is weak or uncertain. The Private Partner will typically not want to tie such support specifically to a particular entity in case its identity changes or it ceases to exist during the life of the contract. Several projects transfer demand risk but have cap and collar revenue arrangements. This results in a hybrid position where demand risk is fully transferred to the Private Partner within a certain revenue range, but outside of this the Contracting Authority retains full demand risk.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation;*	**Inflation**	**[●]**		**●**	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
interest rate fluctuation; unavailability of insurance; and refinancing.		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user (or by the Contracting Authority in availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. Airports need the ability to increase the charges to airport users or to increase prices, but this ability may often be restricted as raising airport charges is likely to be a sensitive political issue and may well have an impact on usage and therefore revenue. The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase. The Contracting Authority may provide flexibility to increase charges to airport users (possibly up to limits) or allow additional increase in high inflation scenarios.	during the contract term. In some markets, this risk has been addressed through closed priced construction contracts with the inflationary risk allocated to the Private Partner or the construction sub-contractor. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of an airport project will depend on the relevant project jurisdiction and the nature of the project costs and revenues. In airport PPP concession models, the Private Partner's revenues will often be a mix of the domestic currency of the project jurisdiction and foreign currency. The level of foreign currency revenues will depend on the services in question and whether it is commercially determined and permissible under local law for relevant fees (such as airline fees and ground handling charges) to be levied in foreign currency. In an availability-based model, the Private Partner is more likely to be paid by the Contracting Authority in domestic currency, subject to alternative agreement. The Private Partner may incur costs in a foreign currency and such costs may be translated into its bid price in the domestic currency on the basis of a particular exchange rate. In some projects, the Private Partner (and its lenders) may seek to transfer exchange rate risk to the host country by requiring that some or all the project revenue (or price) is linked to a foreign currency, such as USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs (or has to pay concession fees) in a currency different to the currency of the various revenue streams received, such as airline charges and retail, duty free and food and beverage. For example, exchange rate risk can arise if the debt used to finance construction is	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* In emerging markets, as landside revenue will be collected in local currency (and possibly airport charges too in some cases), the Contracting Authority may need to retain the risk of devaluation of the local currency to the extent that such devaluation impacts on the economic viability of the project (due to the need to pay for foreign currency imports and service

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					denominated in a currency different to the currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be factored into the contract price bid. The ability to earn revenues in non-local currency should also be assessed as it is a potential mitigant to exchange rate shifts. Airport projects typically provide greater opportunity for revenue generation in hard currencies than some other sectors due to the number and nature of different revenue streams available (both aeronautical and otherwise). Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	foreign currency debt). Some cost risk can be managed on demand risk projects by passing the risk through to the user by way of price adjustments (e.g. to airline fees), but the ability to do this may be limited
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance .		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure).

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			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium. The Contracting Authority may need to consider whether it stands behind unavailability of insurance, in particular where this has been caused by certain events, such as an act or threat of terrorism.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g. in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (known as mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is possible they will face increased constraints even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs.

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					crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent to refinancing is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) where public funds are being used to pay for the PPP project (e.g. in an availability-based model), or to the extent concession fees and any support measures are tied to financing costs (in a concession model). To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit; or (c) by a combination of the above. For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects, there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into

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					shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in	●		●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In some jurisdictions, step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties'	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court.

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					senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as the potential introduction of electric aircraft. For example, the Contracting Authority may want to ensure the output specification takes into account both current and projected need for electricity charging points and requires the Private Partner to build in capacity to its design to enable the future development/addition of charging points and connections to local electricity grids. Similarly, an increased uptake of electric cars may require	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).

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					greater provision of electricity charging points for cars parking at the airport. In such cases, the Contracting Authority should also assess the capacity of local grids to cope with projected increased demand. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate its potential exposure through clear contractual cost and improvement parameters, beyond which any changes will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk*. It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, digital technologies will allow for quicker, more efficient check in, baggage drops and security screening. However, this will reduce the time it is necessary to spend at the airport itself which may reduce the "dwell time" at airports and lead to less revenue for the airport derived from duty free and food and beverage sales. Similarly, ride share services and driverless cars could mean that it will be possible to travel to the airport and, rather than paying very high airport parking charges, the car could be sent home or used for another journey. Car parking revenue, which is a good source of revenue for airports, either directly or through fees charging to parking tenants, would be greatly reduced. Drop-off fees to compensate for reduced parking revenue could be introduced to mitigate this. On a broader spectrum, the increased usability and availability of digital communications such as virtual meetings and personal video conferencing may lead to less business travel and so lower aircraft movements and passengers at non-tourist airports. Coupled with businesses' desire to reduce their carbon footprint and wishing to save money this could lead to lower revenues for the Private Partner and may be a factor which the parties need to consider in assessing the long term viability of the project.	
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome.

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					may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc.). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.* **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc.), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc.). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will

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					Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards and in a demand-based model some element of payment subsidy. For an airport, a significant force majeure event could have a major impact on revenues if uninsured. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction. Increased security costs as a result of terrorist events (even in different countries) may also need to be addressed given heightened security concerns.
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force

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					will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where load limits exceed permitted levels and increased maintenance costs are incurred). *See also Maintenance Standards under Operating risk.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific airport project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes except to the extent it can pass such increased costs on to airport users. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should

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		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the air transport sector or to investors in airports businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism.	
					Taxation: Where the payment structure of an airport project is a concession fee payable to the Contracting Authority based on gross, rather than net, revenues, an increase in taxation will increase the costs of the Private Partner without providing any relief in relation to the amount of the concession fee payable. This will reduce the amount available to the Private Partner to pay operating costs and debt service. If there are restrictions on increases in airport charges then the Private Partner may not be able to pass the cost of the increase in the taxation on to the airport users, as would be the case with other businesses that were not operating in a similar price regulated environment. Even if there are no price controls, the Private Partner cannot just increase charges to airlines without meeting resistance, either because they cannot pass on the extra charges to their customers or because they will reduce their usage of the airport. For these reasons, Private Partners have often sought and received protection from tax increases above thresholds by reduction in concession fee rates. This has generally not been the case with increases in taxes and duties on duty free goods or food and beverage sales.	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	

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		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.

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					available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority

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						default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or

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						resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.					conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. airports are usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.