



Global Compact
Network India

Vision360
Management Consulting



Public Private Partnership Framework For Infrastructure Sector

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Preface



Over the last few years Public Private Partnership (PPP) projects have seen a sharp rise in India as Govt. of India has started recognizing PPP as an effective & efficient strategy for meeting ever-growing demand for better infrastructure across the country, while keeping the exchequer's investment in such projects on the lower side. Govt. of India has introduced various initiatives such as establishment of *Public Private Partnership Appraisal Committee (PPPAC)*, an *Infrastructure Project Development Fund*, and *Viability Gap Fund* to provide financial support for various PPP projects that are being planned & executed across the country.

Lack of clarity in various components of PPP projects as well as lack of well-defined processes have created substantial huddle in selecting suitable project to be executed under the PPP mode, their procurement process & the implementation of PPP projects. There is significant confusion in place in absence of provisions such as PPP dispute resolution bill etc.

This document has been developed by **VMC Management Consulting Pvt. Ltd.**, a Knowledge Partner for **UN Global Compact Network, India** for smart cities for specific purpose of creating a support system for **Pune Smart City (PSCDCL)** for fulfillment of requirements thus defined under the MoU signed between UN GCNI & PSCDCL.

This document has been created with the sole objective of defining & streamlining the process of effective implementation of PPP projects. The document has been divided into seven sections as below:

- 1. Introduction to PPP** – The section defines PPP, key stakeholders, various modes of PPP along with risk allocation, supporting & conducive environment, and various advantages of PPP.
- 2. Phase 1: Project Identification** – The section includes strategic planning for the prospective projects, project need identification, project management team, pre-feasibility study and suitability checks etc.
- 3. Phase 2: Full Feasibility Study** – The section includes mechanisms to perform full feasibility study along with market analysis, need analysis, option analysis, social & environmental feasibility, technical feasibility, risk studies, financial & economic feasibility, value for money & key set of documents needed at such stages.
- 4. Phase 3: Procurement, Final Approval & Award** – This consists of procurement activities & modalities to conduct them which also details Pre-procurement activities, process of procurement, preparing for procurement, expression of interest, request for proposal, selection of preferred bidder.

5. **Phase 4: Contract Management Activities** – The section includes contract management activities throughout the project lifecycle viz. in development period, construction stage, O & M stage, exit stage; performance monitoring & reviews.
6. **Exit Strategy** – This section dabbles with one of the most pertinent issues in any PPP project, i.e., exit strategy for projects via. Phasing down, transfer of responsibility (handover), phasing out. Documentation requirement for handover of the project has also been detailed in the section.
7. **Annexure** – For various activities in PPP project.

This document can be used while implementing PPP projects in the Infrastructure sector. It has been developed with an intent to provide a transparent and balanced business environment to avoid any process and procedure related roadblocks while implementing prospective PPP projects.

We hope you find this framework a useful tool in itself. This is a broad framework and a much detailed and customized toolkit can be developed for any specific project as the need may be.



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Foreword



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Acronyms Used

<u>Acronyms</u>	<u>Expansion</u>
ADB	Asian Development Bank
BBO	Buy-Build-Operate
BLT	Build-Lease-Transfer
BOLT	Build-Operate-Lease-Transfer
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
BTL	Build-Transfer-lease
CA	Competent Authority
CAA	Cost of the Annuity Approach
CADS	Cash Available for Debt Service
CCA	Cost of the Conventional Approach
CCEA	Cabinet Committee on Economic Affairs
CDP	City Development Plan
CAN	Communication Needs Assessment
COD	Commercial Operations Date
CP	Conditions Precedent
CRP	Concept Review Paper
CRR	Cash Reserve Ratio
DB	Design-Build
DBFO	Design-Build-Finance-Operate
DBFOOT	Design-Build-Finance-Own-Operate-Transfer
DBFOT	Design-Build-Finance-Operate-Transfer

DBFOT	Design-Build-Finance-Operate-Transfer
DBO	Design, Build, Operate
DBOOT	Design-Build-Own-Operate-Transfer
DCA	Draft Concession Agreement
DEA	Department of Economic Affairs
DFC	Dedicated Freight Corridor
DPR	Detailed Project Report
DSCR	Debt-Service Coverage Ratio
DSRA	Debt Service Reserve Account
EA	Equivalent Annuity
EIA	Environment Impact Assessment
EIRR	Equity Internal Rate of Return
EMD	Earnest Money Deposit
ENPV	Economic Net Present Value
EoI	Expression of Interest
ERR	Economic Rate of Return
FCI	Food Corporation of India
GoI	Government of India
HUDCO	Housing and Urban Development Corporation
IDC	Interest During Construction
IEC	Information, Education and Communication
IIPDF	India Infrastructure Project Development Fund
IRR	Internal Rate of Return
JVC	Joint Venture Company
LLCR	Loan Life Cover Ratio
LoA	Letter of Award

MAT	Minimum Alternate Tax
MCA	Model Concession Agreement
MoEF	Ministry of Environment and Forests
MoU	Memorandum of Understanding
MSW	Municipal Solid Waste
MTPA	Million Tonnes Per Annum
NGO	Non-Government Organisation
NHAI	National Highways Authority of India
NIT	Notice Inviting Tender
NPV	Net Present Value
O&M	Operations and Maintenance
PAP	Project Affected Party
PBC	Partnerships British Columbia
PCU	Passenger Car Unit
PED	Price Elasticity of Demand
PFDF	Pooled Finance Development Fund
PIM	Project Information Memorandum
PIRR	Project Internal Rate of Return
PLCR	Project Life Cover Ratio
PNPV	Project Net Present Value
PO	Project Officer
PPIAF	Public-Private Infrastructure Advisory Facility
PPP	Public Private Partnership
PPPAC	Public Private Partnership Approval Committee
PR	Public Relations
PSC	Public Sector Comparator

PSU	Public Sector Unit
PWD	Public Works Department
QCBS	Quality Cost-based Selection
RDPR	Department of Rural Development and Panchayati Raj
RFP	Request for Proposal
RFQ	Request for Qualification
ROMT	Refurbish-Operate-Maintain and Transfer
SDR	Social Discount Rate
SIA	Social Impact Assessment
SICS	Social Intermediation and Communication Strategy
SPV	Special Purpose Vehicle
TDR	Transfer of Development Rights
ToT	Training of Trainers
TPC	Total Project Cost
UFW	Unaccounted for Water
UK	United Kingdom
ULB	Urban Local Body
VAT	Value Added Tax
VDIS	Voluntary Disclosure of Income-Tax Scheme
VfM	Value for Money
VGf	Viability Gap Funding
VNTR	Value of Non-Quantified Transferred Risks
VQTR	Value of Quantified Transferred Risks
WACC	Weighted Average Cost of Capital
WPI	Wholesale Price Index
WTP	Willingness to Pay



Section – 1

Introduction to
Public Private Partnership

1 Introduction & Background on PPP

1.1 Definition of Public Private Partnership (PPP)

Public Private Partnership means an arrangement between a government / statutory entity / government owned entity on one side and a private sector entity on the other, for the provision of public assets and/or public services, through investments being made and/or management being undertaken by the private sector entity, for a specified period of time, where there is well defined allocation of risk between the private sector and the public entity and the private entity receives performance linked payments that conform (or are benchmarked) to specified and pre-determined performance standards, measurable by the public entity or its representative.

1.1.1 Essential conditions in the definition are as under

Arrangement with private sector entity: The asset and/or service under the contractual arrangement will be provided by the Private Sector entity to the users. An entity that has a majority non-governmental ownership, i.e., 51 percent or more, is construed as a Private Sector entity.

Public asset or service for public benefit: The facilities/ services being provided are traditionally provided by the Government, as a sovereign function, to the people. To better reflect this intent, two key concepts are elaborated below:

- (a) **Public Services** are those services that the State is obligated to provide to its citizens or where the State has traditionally provided the services to its citizens.
- (b) **Public Asset** is that asset the use of which is inextricably linked to the delivery of a Public Service, or, those assets that utilize or integrate sovereign assets to deliver Public Services. Ownership by Government need not necessarily imply that it is a PPP.

Investments being made by and/or management undertaken by the private sector entity:

The arrangement could provide for financial investment and/or non-financial investment by the private sector; the intent of the arrangement is to harness the private sector efficiency in the delivery of quality services to the users.



Operations or management for a specified period:

The arrangement cannot be in perpetuity. After a pre-determined time period, the arrangement with the private sector entity comes to a closure.

Risk sharing with the private sector:

Mere outsourcing contracts are not PPPs

Performance linked payments:

The central focus is on performance and not merely provision of facility or service.

Conformance to performance standards:

The focus is on a strong element of service delivery aspect and compliance to pre-determined and measurable standards to be specified by the Sponsoring Authority.

1.1.2 Good Practices for PPP

The above definition puts forth only the essential conditions for an arrangement to be designated as a Public Private Partnerships (PPP). In addition to these, some of the desirable conditions or good practices for a PPP include the following:

- a) Allocation of risks in an optimal manner to the party best suited to manage the risks;
- b) Private sector entity receives cash flows for their investments in and/or management of the PPP either through a performance linked fee payment structure from the government entity and/or through user charges from the consumers of the service provided;
- c) Generally a long term arrangement between the parties but can be shorter term dependent for instance on the sector or focus of PPP;
- d) Incentive and penalty based structures in the arrangement so as to ensure that the private sector is benchmarked against service delivery;
- e) Outcomes of the PPP are normally pre-defined as output parameters rather than technical specifications for assets to be built, though minimum technical specifications might be identified. Such a structure is expected to leave room for innovation and technology transfer in project execution / implementation by the private sector entity.

1.1.3 Various Models for PPP

The models where ownership of the underlying asset remains with the public entity during the contract period and project is transferred back to the public entity after the termination contract are the preferred forms of Public Private Partnership models. The final decision on the form of PPP is a determinant of the Value for Money analysis.



- Some of the commonly adopted forms of PPPs include management contracts, build-operate-transfer (BOT) and its variants, build-lease-transfer (BLT), design-build-operate-transfer (DBFOT), operate-maintain-transfer (OMT), etc.
- Build-own-operate (BOO) model is normally not the supported form of Public Private Partnership in view of the finite resources of the Government and complexities in imposing penalties in the event of non-performance and estimation of value of underlying assets in the event of early termination. Government of India does not recognize service contracts, Engineering-Procurement-Construction (EPC) contracts and divestiture of assets as forms of PPP.
- Government commits to the spirit of partnership amongst all the stakeholders public, private, end users and community. While the current initiatives on having strong public community private partnerships would continue, with the growing capacity and maturity of the stakeholders concerned under a PPP arrangement, Government would in due course selectively consider newer models of partnerships which would be simpler, flexible and engage increased participation amongst the contracting parties.
- **Unsolicited Bid/ Swiss Challenge Proposals**
Unsolicited bids/Swiss Challenge proposals are not preferred by the Government. The discomfort with the use of unsolicited proposals in the public sector is on grounds of lack of transparency, and lack of fair and equal treatment of potential bidders. There are elements of informational asymmetry and bidding asymmetry between an Original Proponent (OP) and its competitors. The bidding asymmetry is due to time and price asymmetries. Since only the OP essentially gets an opportunity to make the BAFO (Best and Final Offer) after one or more rounds of negotiation an opportunity that is denied to its competitors who are not authorized to submit an equal number of negotiated responses. In exceptional circumstances, in sectors not traditionally associated with PPP structures or where procurement of proprietary technology is involved, variants of the approach could be considered for development, with prior approval of the competent authority, provided the Value for Money (VFM) analysis establishes such a decision.



1.2 Key Stakeholders of PPP

1.2.1 Public Entity

Means all Governments Departments & Directorates, Government sponsored boards, societies, Municipal or Local Bodies, Panchayat, Government sponsored education, research and knowledge management institutions, Public Sector Undertakings, Government owned companies, statutory authority and other entities, which are under the administrative control of the State Government.

1.2.2 Private partner

Includes any entity other than the Public entity.

1.2.3 Concessionaire

Refers to the private partner awarded tender for the implementation of the PPP project.

1.2.4 Special Purpose Vehicle (SPV)

Is simply an entity created to act as the legal manifestation of a project consortium, with no historical financial or operating record that Government can assess. An SPV is a legal entity with no activity other than those connected with its borrowing. Typically, a private partner forms a special company called a "Special Purpose Vehicle" (SPV) which contracts with Government. The SPV has to develop, build, maintain and operate the asset for the contracted period. In cases where the Government has invested in the project, it is typically (but not always) allotted an equity share in the SPV. The consortium is usually made up of a Developer, Operator and bank lender(s). It is the SPV that signs the contract with the Government and with subcontractors to build the facility and then maintains it.

1.2.5 Transaction Advisors

Are consultants hired through a transparent system of procurement by the sponsoring authorities to assist them in designing the project and/or providing technical, financial and legal input for the project design, and providing advice for the management of the process of procuring the private sector partner for the PPP project

1.2.6 Lead Bank/ Lender

Is the financial institution (FI) that is funding the infrastructure project by providing debt to an extent not less than 25 percent (twenty five percent) of the total project debt and designated as such by an inter-institutional group or consortium of financial institution.

1.2.7 Lead Financial Institution

Means the FI that is funding the PPP project, and in case there is a consortium of FIs, the FI designated as such by the consortium.



1.2.8 Independent Engineer

Is a consultant appointed for supervision and monitoring quality of the project (different from TA). Usually, Independent Consultant is appointed after the project has been awarded and the Concession Agreement has been signed. The Independent Consultant ensures that the project work goes as per schedule and as per the quality criteria specified in the agreement.

1.2.9 Users

End users of the infrastructure created or in other terms project beneficiaries.

Each stakeholder plays a significant role in the success of a PPP project during the PPP project lifecycle. It is necessary to consider the interests of all stakeholders while structuring any project for development under PPP framework.

1.3 Traditional Procurement vs. Procurement in PPP Model

Governments have always procured assets and services from the private sector, even in the traditional systems of procurement through BOQ contracts, EPC contracts etc. PPPs are nothing but an alternative method of procurement, which involve substantial risk sharing with the private partner. The key differences between traditional methods of public procurement and PPPs are set out below.

1.3.1 Risks

In PPP, there is an allocation of risks between the public entity and the private partner. PPPs involve the allocation of the risk to the party who is best suited to handle or mitigate the risks. But in traditional public procurement methods, the public entity bears almost all the risks associated with the project.

1.3.2 Project Management

In traditional practice, the public entity is solely responsible for complete project management whereas in PPP, responsibility for operations and management of the project is primarily with the private partner.

1.3.3 Focus

The focus in a traditional form of public procurement is on building assets. In PPPs, the focus is in on buying of services or output service delivery. The output specifications are clearly set out in the bid documents which the private sector is expected to accomplish as a result of the project.



1.3.4 Financing

Traditional public procurement is financed by the public entity through its budgetary resources. However, in the PPP form of procurement, the private sector may bring in finances in the form of debt or equity to develop the project.

1.3.5 Payments

Traditionally, the public entity will need to make frequent and short term payments to the contractors who are selected. In the PPP form of procurement, the association between the public entity and the private partner is long term and the payments tend to be made on the basis of the outputs. Also, in traditional procurement, payments may be linked to construction milestones and/or testing milestones whereas in PPPs they tend to be linked to service delivery.

1.4 Misconceptions about PPP

In developing countries PPPs are often plagued by common misconceptions. Some of which are contrasted with actual facts

- **"The Government has no concern in PPPs."** The truth is that it always has a stake in it whether or not it has any direct participation in a PPP project.
- **"PPP is privatization."** Privatization in the sense of full transfer of ownership is only one of many potential models and in fact privatization of infrastructure is not very common.
- **"The public sector has no control over the project."** In fact, the government always retains some form of control, for example, through regulatory, legal and other measures.
- **"PPP projects are large."** PPP projects do not always have to be large.
- **"PPP projects cannot be implemented by local bodies."** In many countries, local bodies have the legal authority to implement PPP projects, and they have implemented such projects, for example, in the Philippines.
- **"PPP projects are panacea to infrastructure development."** Meeting all infrastructure needs through PPP mechanisms may not be feasible not desirable due to many limitations (see below).
- **"PPP projects are less expensive."** This is not true in cases where the higher cost of borrowing cannot be offset through efficiency gains.
- **"The poor do not benefit from PPPs."** Depending on the project, the poor may or may not benefit directly, but much depends on the project design itself.
- **"Governments can always finance at a lower cost."** In these cases, governments would not consider to implement the project through the PPP modality.



1.5 Myths and Realities about PPPs

- **Myth: Profit motive of private sector is incompatible with the service motive of public Sector**
No. The key is to harness the private sector's profit motive by incentivizing them to provide better quality service and earn a reasonable return through appropriate project structuring.
- **Myth: PPPs increase user tariffs**
Not necessarily. When appropriate safeguards such as effective regulation and adequate competition are in place, prices do not increase arbitrarily. However, in sectors where existing tariffs are inadequate to cover the costs of a specified level of service, tariffs may initially require some upward adjustment. Over time, efficiency gains are expected to rationalize tariffs.
- **Myth: Money for PPPs comes from private “pockets”**
Initially, yes. However, the private sector will make those investments provided they can recover them either from users or the government with a reasonable return.
- **Myth: Once a private sector partner is brought in, there is little or no role for the public sector**
No. The public sector's role changes from direct involvement in construction and service provision to ensuring that the PPP delivers value for the government and better services for users.
- **Myth: PPPs do not provide value for eventual cost to the public sector**
Value for the public sector comes from a number of factors such as competitive bidding, improved designs and service quality and efficiencies in project delivery.
- **Myth: Private operators are not committed to protecting the environment**
Compliance with all applicable acts, guidelines and rules is built into the contracts through procedures to be followed.



1.6 Advantages of PPP to Government

- Exploring PPPs as a way of introducing private sector technology and innovation in providing better public services through improved operational efficiency
- Incentivizing the private sector to deliver projects on time and within budget
- Imposing budgetary certainty by setting present and the future costs of infrastructure projects over time
- Utilizing PPPs as a way of developing local private sector capabilities through joint ventures with large international firms, as well as sub-contracting opportunities for local firms in areas such as civil works, electrical works, facilities management, security services, cleaning services, maintenance services
- Using PPPs as a way of gradually exposing state owned enterprises and government to increasing levels of private sector participation (especially foreign) and structuring PPPs in a way so as to ensure transfer of skills leading to national champions that can run their own operations professionally and eventually export their competencies by bidding for projects/ joint ventures
- Creating lasting change in the economy by making the country more competitive in terms of its facilitating infrastructure base as well as giving a boost to its business and industry associated with infrastructure development (such as construction, equipment, support services)
- Supplementing limited public sector capacities to meet the growing demand for infrastructure development
- Extracting long-term value-for-money through appropriate risk transfer to the private sector over the life of the project – from design/ construction to operations/ maintenance



1.7 Limitations/ Potential Risks of PPP

- 1.7.1. Development, bidding and ongoing costs in PPP projects are likely to be greater than for traditional government procurement processes - the government should therefore determine whether the greater costs involved are justified. A number of the PPP and implementation units around the world have developed methods for analyzing these costs and looking at Value for Money.
- 1.7.2. There is a cost attached to debt – While private sector can make it easier to get finance, finance will only be available where the operating cash flows of the project company are expected to provide a return on investment (i.e., the cost has to be borne either by the customers or the government through subsidies, etc.)
- 1.7.3. Some projects may be easier to finance than others (if there is proven technology involved and/ or the extent of the private sectors obligations and liability is clearly identifiable), some projects will generate revenue in local currency only (e.g. water projects) while others (e.g. ports and airports) will provide currency in dollar or other international currency and so constraints of local finance markets may have less impact
- 1.7.4. Some projects may be more politically or socially challenging to introduce and implement than others - particularly if there is an existing public sector workforce that fears being transferred to the private sector, if significant tariff increases are required to make the project viable, if there are significant land or resettlement issues, etc.
- 1.7.5. There is no unlimited risk bearing – private firms (and their lenders) will be cautious about accepting major risks beyond their control, such as exchange rate risks/risk of existing assets. If they bear these risks then their price for the service will reflect this. Private firms will also want to know that the rules of the game are to be respected by government as regards undertakings to increase tariffs/fair regulation, etc. Private sector will also expect a significant level of control over operations if it is to accept significant risks
- 1.7.6. Private sector will do what it is paid to do and no more than that – therefore incentives and performance requirements need to be clearly set out in the contract. Focus should be on performance requirements that are out-put based and relatively easy to monitor
- 1.7.7. Government responsibility continues – citizens will continue to hold government accountable for quality of utility services. Government will also need to retain sufficient expertise, whether the implementing agency and/ or via a regulatory body, to be able to understand the PPP arrangements, to carry out its own obligations under the PPP agreement and to monitor performance of the private sector and enforce its obligations



- 1.7.8. The private sector is likely to have more expertise and after a short time have an advantage in the data relating to the project. It is important to ensure that there are clear and detailed reporting requirements imposed on the private operator to reduce this potential imbalance
- 1.7.9. A clear legal and regulatory framework is crucial to achieving a sustainable solution (for more, go to **legislation and Regulation**)
- 1.7.10. Given the long-term nature of these projects and the complexity associated, it is difficult to identify all possible contingencies during project development and events and issues may arise that were not anticipated in the documents or by the parties at the time of the contract. It is more likely than not that the parties will need to renegotiate the contract to accommodate these contingencies. It is also possible that some of the projects may fail or may be terminated prior to the projected term of the project, for a number of reasons including changes in government policy, failure by the private operator or the government to perform their obligations or indeed due to external circumstances such as force majeure. While some of these issues will be able to be addressed in the PPP agreement, it is likely that some of them will need to be managed during the course of the project



2 PPP in Infrastructure Sector

2.1 Introduction of PPP in Infrastructure Sector

Physical infrastructure, such as roads, water and sanitation networks, and transportation systems, involve large investments that can put a strain on the public purse. This strain is especially great for countries, such as India, whose economies is undergoing rapid development and urbanization and has a great need for expanded infrastructure.

Public-private partnerships (PPPs) are increasingly being used by governments and public sector authorities throughout the world as a way of increasing access to infrastructure services for their citizenry and economies at a reduced cost.

2.1.1 The objectives of a PPP in infrastructure are to:

- Increase the availability of infrastructure services
- To do so with greater efficiency (lower cost for the level of services provided) than could be achieved using the traditional public sector approach

2.1.2 PPPs make this possible because:

- PPPs allow access to the substantial financial resources of the private sector
- PPPs enable the public sector to benefit from private sector technical expertise, experience and efficiency
- PPPs enable the public sector to transfer project-related risks to the private sector

2.1.3 A PPP typically has the following characteristics:

- The private sector is responsible for carrying out or operating the project and takes on a substantial portion of the associated project risks



- During the operational life of the project the public sector's role is to monitor the performance of the private partner and enforce the terms of the contract
- The private sector's costs may be recovered in whole or in part from charges related to the use of the services provided by the project, and may be recovered through payments from the public sector
- Public sector payments are based on performance standards set out in the contract
- Often the private sector will contribute the majority of the project's capital costs, although this is not always the case

It will often be necessary to build or add to existing assets in order to meet the infrastructure needs of the economy and users. However, an important part of the infrastructure PPP concept is that:

- A PPP is focused on outputs, and
- The outputs of the PPP are infrastructure *services*, not infrastructure *assets*.

The reason for the focus on outputs and services rather than assets is to encourage efficient use of public resources and improved infrastructure quality.

A PPP brings the public and private sectors together as partners in a contractual agreement, for a pre-defined period (e.g. 30 years) matched to the life of the infrastructure assets used to provide the services. The private partners (investors, contractors and operators) provide specified infrastructure services and, in return, the public sector either pays for those services or grants the private partner the right to generate revenue from the project. For example, the private partner may be allowed to charge user fees or receive revenue from other aspects of the project.

The best PPPs will have the public and private partners working together to build and sustain a long-term relationship that is of benefit to all.



2.2 Why use PPP (Benefits of PPP):

2.2.1 Mobilizing additional funding for infrastructure

Governments often turn to PPPs because they recognize that more investment in infrastructure is needed, but cannot afford to undertake projects through traditional public procurement.

Although this is one of the most common motivations for using PPPs, it is also among the most debated. The extent to which PPPs genuinely enable governments to increase spending in infrastructure depends on the nature of the project, and of a government's particular constraints.

Generally speaking:

- some PPPs create additional funds for infrastructure, by introducing user charges, collecting revenues more effectively, or finding alternative revenue sources—these options are also open to governments outside of the framework of a PPP, but can be harder to implement given managerial or political constraints; and
- Others are ultimately paid for partly or entirely from the public purse, through availability or other payments.

Note that while a direct reduction in financial obligations of the government depends on the project structure, the fiscal risks associated with providing infrastructure are always reduced in PPPs through the transfer of some of project risks to the private sector. The financial obligations that remain with government create contingent liabilities (potential liabilities in the future) that need to be accounted and planned, for in the present.

Improving planning, co-ordination and project selection

PPPs can help improve infrastructure project selection, by harnessing the analysis and ideas of private sector investors, whose financial returns depend on getting cost and revenue forecasts right.

During tender, private investors and lenders undertake their own project analysis based on their experience and strong, profit-driven incentive to carefully assess benefits and costs. The tender process itself acts as an effective filter for non-viable projects.



2.2.2 Providing better value for money

PPPs can also achieve better value for money—whether through reduced costs or improved quality. This value can be achieved through several mechanisms, often called value drivers. These include:

- lowering whole-of-life costs by bundling responsibility for construction and maintenance;
- ensuring adequate funding for maintenance;
- providing opportunity and incentives for innovation and efficiency by private sector
- Ensuring accountability through performance-linked remuneration.

The impact of these value drivers depends on the appropriate allocation of risk between the public and private parties to the contract.

2.2.3 Ensuring Transparency

Lack of good governance increases costs and reduces quality by:

- making potential investors and lenders worry (*increasing the cost of financing*);
- reducing competitive pressure on bidders (*by increasing costs and reducing quality and expediency of solutions proposed*); and
- Increasing the likelihood of rent-seeking, bribery, and other forms of corruption (*adding cost and delay to project implementation and reducing quality of performance*).

PPPs provide an opportunity to incorporate good corporate governance practices into every aspect of project design, tender and implementation, and to provide transparent, fair treatment and open competition.

For example:

- the use of financial and fiduciary management, in particular ring fencing revenue and subsidy flows from the government;
- improved public access to information about the project and the procurement process, for example through a dedicated project website to attract bidders and improve competition;
- through enhanced project procurement processes to increase competition, transparency and control; and
- Through the over-riding monitoring function of the lenders, who stand to lose money if, for example, corrupt practices are encountered in the project.



2.2.4 Reducing construction time and costs

A common rationale for involving the private sector in infrastructure provision is that the private sector is more efficient and effective at managing the construction phase of the project cycle. Studies in the PPP programs of the UK and Australia shed light on this.

- In the United Kingdom, the National Audit Office surveyed the proportion of PPP projects coming in over budget or late, and compared this with previous assessments of the performance of publicly-procured projects. PPPs outperformed public projects, particularly on cost by imposing greater discipline through incentives created through the contract.
- In Australia, two studies (Duffield, and Infrastructure Partnerships Australia) disaggregated the project development process and found that PPP projects have lower project cost over-runs than traditionally procured public projects. However, when comparing the timing of project delivery, the studies found that both PPPs and traditionally-procured projects took longer than expected.

2.2.5 Improving service delivery

There have been relatively few studies on the impact of private sector participation on infrastructure delivery. What evidence there is suggests that private sector participation can improve service delivery and management compared with publically-run infrastructure services. Examples of this evidence include:

- A study by the World Bank (by Gassner et al) analyzed the effect of private sector participation through concessions and the full privatization in over 1,200 water and electricity utilities in 71 countries. It found significant efficiency gains when private sector participation was introduced—including reduced water losses, increased staff efficiency, increased coverage and daily hours of service.
- A study by Marin of private participation in urban water utilities analyzed 65 large water PPPs and similar contracts (including management contracts) in, also finding that introducing a private operator consistently improved operational efficiency and service quality.

2.2.6 Ensuring regular maintenance

Infrastructure assets are often poorly maintained due to poor planning or deferred maintenance. Political incentives often prejudice infrastructure expenditure towards new assets over maintaining existing assets.



Regular maintenance maintains service standard and minimizes lifecycle costs by not allowing the asset to degrade to the point that costly rehabilitation is needed. Evidence of this includes:

- The World Bank's Africa infrastructure diagnostic study estimates that preventative maintenance for the roads sector in Africa could save \$2.6 billion a year in capital expenditures rehabilitation.
- A review of road maintenance by the South African National Roads Agency indicates that delaying road maintenance for three years leads to increased costs of six times the original costs of preventative maintenance. If road maintenance is delayed for five years, costs rise to 18 times the preventive cost.

By bundling construction (or rehabilitation) and on-going maintenance into a single contract, PPPs incentivize the private operator to build to standards that minimize the need for and cost of future maintenance. The contract also creates strong incentives to carry out adequate maintenance:

- when the operator's revenues depend on user-fees, they have the incentive to attract users with well-maintained assets; and
- Under government-pays PPP, payment depends on the availability of the asset and the operator's ability to meet specified service quality levels.

2.3 List of Major Risks in PPP

Allocating risk to achieve added efficiency is what makes PPP a potentially powerful way of reducing project-related costs and achieving improved value for money for the public sector. The *level* of risk can be changed by allocating responsibility for individual risks to those who are best able to manage them.

The parties involved in a project can affect the amount of risk by:

- The level of **influence** they have over events, and
- The level of **information** they have about the present and the future.

Influence relates to the power parties have to create action and determine outcomes. Influence can come from delegated authority, for example where a public authority has certain powers granted to it under law, from good management and organisation, and from specific knowledge.



- Information is directly related to risk. It is precisely because we usually don't have all the information that we can't predict future outcomes for certain. When we have better information we are better able to foresee and reduce risk.

The public and private sectors are different in the types of influence and information that they have. This means they can control risks in different ways from each other and they are better at controlling some risks and not as good at controlling others.

On their own both the public and private sectors are weaker in their ability to control certain risks. One of the goals of a well-designed PPP is to pick out the strengths and combine them together. The result should be that a partnership of public and private parties is stronger and more efficient than either party by itself.

There is usually concern about downside risk: the risk that something will go wrong. This is because of a focus on costs. Costs are very important to any person or any organisation that has responsibility for the use of resources, both in the public sector and in the private sector. However, there are also upside risks, created because outcomes can be better than expected.

For example

The public sector has certain powers and advantages in the process of land acquisition that mean it is sometimes better suited to this task and taking the associated risks.

By contrast, the private sector is exposed to competitive pressures that force it to establish improved management practices. It is also often the technology leader. This means it may be better suited to managing the design and construction risks.



Table No. 1 – Various Risk Types & Description

Risk Type	Description
Pre-Operative Risks	
Delays in Land Acquisition	Refers to the risk that the project site (or sites) will be unavailable or unable to be used within the required time, or in the manner or the cost anticipated or the site will generate unanticipated liabilities due to existing encumbrances and native claims being made on the site.
External Linkages	Refers to the risk that adequate and timely connectivity to the project site is not available, which may impact the commencement of construction and overall pace of development of the project.
Financing Risks	Refers to the risk that sufficient finance will not be available for the project at reasonable cost (e.g. because of changes in market conditions or credit availability) resulting in delays in the financial closure for a project.
Planning Risks	Refers to the risk that the pre-development studies (technical, legal, financial and others) conducted are inadequate or not robust enough resulting in possible deviations from the outcomes that were planned or expected in the PPP project development.
Construction Phase Risks	
Design Risks	Refers to the risk that the proposed design will be unable to meet the performance and service requirements in the output specification. It can result in additional costs for modification and redesign.
Construction Risk	Refers to the risk that the construction of the assets required for the project will not be completed on time, on budget or to specification. It may lead to additional raw materials and labour costs, additional financing costs, increase in the cost of maintaining existing infrastructure or providing a temporary alternative solution due to a delay in the provision of the service.
Approvals Risks	Refers to the risk that delays in approvals to be obtained during the construction phase will result in a delay in the construction of the assets as per the construction schedule. Such delays in obtaining approvals may lead to cost overruns.
Operational Phase Risks	
Operations & maintenance Risk	Refers to the risks associated with the need for increased maintenance of the assets over the term of the project to meet performance requirements.
Tariff Risk	Refers to the risk that demand for a service will vary from the initial forecast, such that the total revenue derived from the project over the project life will vary from initial expectations.
Payment Risk	Refers to the risk that fees for services are not collected in full or are not set at a level that allows recovery of costs.
Financial Risk	Refers to the risk that the concessionaire introduces too much financial stress on a project by using an inappropriate financial structure. It can result in additional funding costs for increased margins or unexpected refinancing costs.
Non Operations Revenue Risk	Refers to the revenue risk related to real estate or other similar business operations that are associated with the project. This risk is only relevant to Lease Develop Operate type PPPs, in which real estate development are often an important revenue source for the project.



Risk Type	Description
Handover Risks	
Handover Risk/ Terminal Value Risk	Refers to the risk that the concessionaire will default in the handover of the asset at the end of the project life, or that it will fail to meet the minimum quality standard or realizable value of the asset that needs to be handed back to the public entity.
Other Risks	
Change in law	Refers to the risk that the current legal / regulatory regime will change, having a material adverse impact on the project.
Force Majeure	Refers to the risk that events beyond the control of either entity may occur, resulting in a material adverse impact on either party's ability to perform its obligations under the PPP contract. These events are sometimes also called "Acts of God", to indicate that they are beyond the control of either contracted party.
Concessionaire risk	Refers to the risk that the concessionaire will prove to be inappropriate or unsuitable for delivery of the project, for example due to failure of their company.
Sponsor Risk	Refers to the risk that the Sponsor will prove to be an unsuitable partner for the project, for example due to poor project management or a failure to fully recognise the agreed terms of the Concession Agreement.
Concessionaire event of default	Refers to the risk that the concessionaire will not fulfill its contractual obligations and that the public Sponsor will be unable to either enforce those obligations against the concessionaire, or recover some form of compensation or remedy from the concessionaire for any loss sustained by it as a result of the breach.
Govt. event of default	Refers to the risk that the public Sponsor will not fulfill its contractual obligations and that the concessionaire will be unable to either enforce those obligations against the Sponsor, or recover some form of compensation or remedy from the Sponsor for any loss sustained by it as a result of the breach.



3 PPP Model Variants & Risk Allocation

3.1 PPP Structure

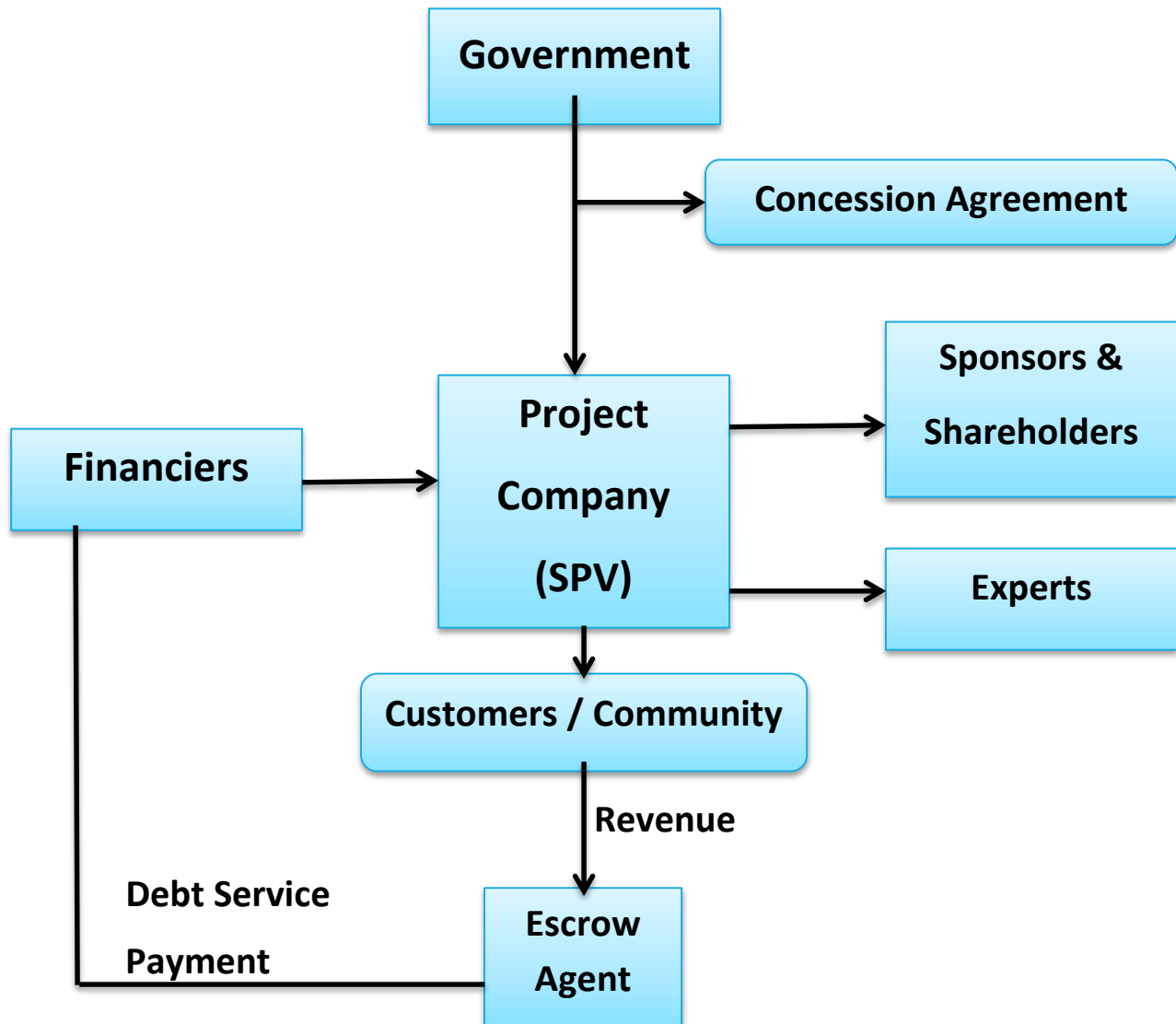


Figure No. 1 – PPP Structure

A typical PPP structure can be quite complex involving contractual arrangements between a number of parties including the government, project sponsor, project operator, financiers, suppliers, contractors, engineers, third parties (such as an **escrow**



agent), and customers. The next figure shows a simplified PPP structure. However, the actual structure of a PPP depends on the type of partnerships.

Note: *The box on the right side labelled "expert" represents various participating groups in a PPP project including engineers (designer), contractor (builder), operator and insurer.*

Similarly, the box on the left side labelled "financiers" includes various parties investing in a project comprising equity and debt financiers which may include domestic and foreign banks and financial institutions, bi-lateral and multi-lateral donor agencies, development banks, and similar other agencies.

The box labelled "escrow agent" represents normally a financial institution that is appointed by the project company and the lenders for managing an account called escrow account. The escrow account is set up to hold funds (including project revenues) accrued to the project company. The funds in the account are disbursed by the escrow agent to various parties in accordance with the conditions of the agreements. An escrow account is also used to hold a deposit in trust until certain specified conditions are met.

3.2 Project characteristics that affect the choice of PPP mode

The different modes and variants of them will be appropriate to different projects. This will depend in particular on the nature of the service or output required, which in turn depends on the sector and sub-sector, and the political and economic climate in which the PPP will be carried out.

The key aspects that define the PPP mode are:

- Does the PPP involve building **new assets** to provide the service (capital expenditure project), or are the required services for operations and management only?
- Which **roles** will the private sector carry out? For example, who will provide finance? Who will design and construct?
- Who will have **ownership** of the assets during the PPP and when the PPP ends?
- What will be the **duration** of the PPP contract?
- How are the various project risks allocated between the private and public partners?
- What will be the major **revenue source** for the project? For example, will it be from charges to users (direct tolls), or payment from Government (e.g. shadow toll or annuity)?
- Is demand for the infrastructure service expected to be stable over the period of the contract?



3.2.1 New (“Greenfield”) or existing assets

Greenfield developments, which include **major capital expenditure** to build new infrastructure, have different requirements to the **rehabilitation or management of existing assets** in Brownfield developments.

The scope of potential private sector roles is broader in Greenfield projects. The chosen PPP mode will reflect whether the private sector will be responsible for the design, finance and construction of the project (e.g. DBO agreement or a variation) or only some of these roles.

3.2.2 Ownership flexibility

There may be legal restrictions on public ownership (as is the case in India for highways or port frontages). Other practical issues need to be taken into account in deciding ownership, such as political acceptability (e.g. due to resistance to public ownership of certain facilities that are seen as providing strategic or ‘vital’ services, such as may be the case in electricity).

Restrictions on ownership rule out PPP modes that specifically contain ownership aspects, such as Build-own-operate (BOO) and its variants (e.g. BOOT). In this case other options such as lease management contracts, BOT, BTL, could be considered.

3.2.3 Lifetime of the asset and scale of capital costs

Infrastructure assets that involve large up front capital costs such as roads require long timeframes for cost recovery. Such assets may be suited to long-term contracts (e.g. BOT, BLT etc.)

However, long timeframes also bring greater risk of future unknowns. The public sector may be required to take on some of these risks by providing some guarantee to cost recovery in order to attract private sector project finance. For example, for a road project where future traffic volumes are uncertain the PPP might be structured with annuity payments rather than being toll-based, to reduce the revenue risk to the private operator. Alternatively, if long-tenor finance from the private sector is not available public sector financing may need to step into the gap (e.g. IIFCL).

The willingness or ability of the public sector partner to meet these risks is a further factor to be considered in determining the length of contract. For example, if facilities to support long-tenor debt are not available shorter term contracts with renewal clauses may be appropriate.



3.2.4 The nature of the service to be provided and the supporting infrastructure assets

More broadly, the nature of the end-user service itself will tend to favour a type of contracting structure. This is related to the capital cost structure (scale and timing) and the nature of the assets (physically fixed to their location or transportable).

Large capital-intensive network infrastructure assets tend to be natural monopolies and require some form of institutional price and quality regulation, either within the terms of contract or by a dedicated regulatory agency.

By contrast, some services such as those that are provided *on* the network (e.g. municipal buses, electric energy) or solid waste collection can be subject to market competition. A different contracting structure is possible in this case, including greater opportunity for shorter contracts and periodic competitive re-bidding to maintain pressure on costs.

3.2.5 Cost recovery options

Whether the revenue from PPP will be from user charge or a management fee or annuity paid by public sector has important implications for the nature of risk sharing.

3.2.6 Stability of demand for the services required

Long-term PPP contracts are best suited to the provision of infrastructure services which are not expected to change much through time. These projects have lower risk of unforeseeable outcomes compared with projects whose services are subject to change, for example in sectors that are subject to rapid technological change.

In some cases it may be necessary to provide the project with some protections from competition in order to reduce volume and revenue risk. For example, a roads project might have a guarantee from public sector that an alternative route won't be allowed nearby within a set number of years or until traffic has reached a specified level.

3.3 Various PPP Models

PPP arrangements are characterised by the identification of risks and their allocation among the parties to the arrangement. On the basis of the risk allocation, the various PPP models are designed. Many variants of PPP models are implemented across different projects essentially differentiated on the basis of the risk allocation framework employed within these projects. Given below are the basic PPP models that are prevalent in project development.

1. Management Contract
2. Lease Contract
3. Concessions & Build-Operate-Transfer (BOT) & it's variants



Table No. 2 – Various PPP Modes/ Models

Modes/ Features	Asset Ownership during contract	PPP Duration	Capital investment focus & responsibility	Private partner revenue risk & compensation terms	Private Partner Roles	Features, relevance in India & examples
Management Contract	Contractual arrangement for the management of a part or whole of public facility or service by private sector. Capital investment is typically not primary focus of such arrangement.					
Management Contract	Public	Short to Medium (3 to 5 yrs.)	Not capital investment focus & Public responsibility	Low (Pre-determined fee, Possibly with performance incentives)	Management of all aspects of operations & maintenance	This involves contracting to private sector most or all of operations & maintenance of public facility. Although the ultimate obligation remains with public authority, day to day management control is with private sector. Private sector is not required to make capital investment.
Management contract (with rehabilitation & expansion)	Public	Medium - Long	Capital investment – Limited focus Brownfield (rehabilitation/ expansion) Responsibility - Private	Medium (Tariff / Revenue Share)	Min. capex, Management, Maintenance	This is similar to management contract but include limited investment for rehabilitation & expansion of facility. This mode has been adopted in power distribution & water supply sector.
Lease Contracts	Asset is leased either by public entity to Private Partner or vice – versa.					
Lease Contracts	Public	Medium (10 to 15 yrs.)	Capital investment – Not focus & Responsibility - Public	High revenue from Operations	Management & maintenance	E.g. Leasing of retail outlets at railway station by Indian Railway.



Build Lease Transfer (BLT) or Build own Lease Transfer (BOLT)	Private	Medium (10 to 15 yrs.)	Capital investment – Greenfield & Responsibility - Private	Low – medium Preset lease from govt.	Capex	Involves building facility leasing it to the govt. & transferring facility after recovery of investment.
Build Transfer Lease (BTL)	Public	Medium (10 to 15 yrs.)	Capital investment – Greenfield & Responsibility - Private	High revenue from user charges	Capex & Operations	Involves building an asset, transferring it to the govt. & leasing it back. Here private sector delivers services & collects user charges.
Concessions	Responsibility for construction (typically brownfield / expansion) & operations with Private Partner while ownership is retained by Public sector.					
Area Concessions (Public sector role shifts from being service provider to regulating price & quality.	Public	Long (20 to 30 yrs.)	Capital investment – Brownfield / Expansions & Responsibility - Private	High Tariff revenue	Design, finance, construct, manage, maintain	Private sector is responsible for full delivery of services in specific area including operations, maintenance, collations, management & construction. Operator is now responsible for all capital investment while assets are publically owned.
Build Operate Transfer Contract	Responsibility for construction (typically Greenfield) & Operations with Private partner while ownership is retained by Public sector.					
Design Build Operate (DBO)	Public	Short to Medium (3 to 5 yrs.)	Capital investment – Greenfield Responsibility - Public	Medium – high Tariff revenue	Design, construct, manage, maintain	Typically financing obligation is not retained by Public sector. Not very common in India.
Build Operate Transfer (BOT) / Design Build Finance Operate Transfer	Public	Long (20 to 30 yrs.)	Capital investment – Greenfield Responsibility - Private	High Tariff revenue	Design, finance, construct, manage, maintain	Most common form of BOT concession in India. BOT typically relates to greenfield asset developments



(DBFOT)						where the risk allocation to the private sector may be significant, including volume risk, finance risk, and potentially price risk.
Build Operate Transfer (BOT) Annuity	Public	Long (20 to 30 yrs.)	Capital investment – Greenfield Responsibility – Private	Low Annuity revenue/ unitary charges	Design, finance, construct, manage, maintain	It is preferred approach for socially relevant projects where revenue potential is limited. This has been adopted for NHAI in past.
Build Own Operate Transfer (BOOT) contract	Private partners have responsibility for construction & operations. Ownership is with private partner for duration of concession.					
Build Own Operate Transfer (BOOT) or DBOOT	Private	Long (20 to 30 yrs.)	Capital investment – Greenfield Responsibility - Private	High Tariff revenue	Design, construct, own, manage, maintain, transfer	Most common form of BOOT concession in India.
Build Own Operate (BOO)	Private	Perpetual	Capital investment – Greenfield Responsibility - Private	High Tariff revenue	Design, finance, construct, own, manage, maintain	Under this structure asset ownership is with Private sector & service/ facility provision responsibility is also with the private sector. Not common in India.



3.4 Allocation of Risk in PPP

One of the important features at the heart of a PPP arrangement is the allocation of project risks between the public and private partners. Careful risk allocation is critical to unlocking the efficiency benefits of private sector involvement and is a key driver of value in a PPP.

Table No. 3 – Allocation of Risk in PPP

	Risk Type	BOT Toll	BOT Annuity	BOT shadow Toll	Performance based management contract
1	Pre – Operative Task Risks				
1.1	Delay in Land acquisition	Public sector	Public sector	Public sector	Not Relevant
1.2	External Linkages	Public sector	Public sector	Public sector	Not Relevant
1.3	Financing Risks	Private Sector	Private Sector	Private Sector	Not Relevant
1.4	Planning	Private Sector	Private Sector	Private Sector	Not Relevant
1.5	Approvals	Private Sector	Private Sector	Private Sector	Not Relevant
2	Construction Phase Risks				
2.1	Design Risk	Private Sector	Private Sector	Private Sector	Not Relevant
2.2	Construction Risk	Private Sector	Private Sector	Private Sector	Not Relevant
2.3	Approvals	Private Sector	Private Sector	Private Sector	Not Relevant
3	Operation Phase Risk				
3.1	Technology Risk	Private Sector	Private Sector	Private Sector	Private Sector
3.2	Ops & maintenance Risk	Private Sector	Private Sector	Private Sector	Private Sector
3.3	Volume Risk	Private Sector	Public sector	Private Sector	Public sector
3.4	Payment Risk	Private Sector	Public sector	Public sector	Public sector
3.5	Financial Risk	Private Sector	Private Sector	Private Sector	Private Sector
4	Handover Risk Events				
4.1	Handover Risk	Private Sector	Private Sector	Private Sector	Private Sector
4.2	Terminal Value Risk	Private Sector	Private Sector	Private Sector	Private Sector
5	Other Risk				
5.1	Change in Law	Public sector	Public sector	Public sector	Public sector
5.2	Force Majeure	Shared	Shared	Shared	Shared
5.3	Concessionaire Risk	Public sector	Public sector	Public sector	Public sector
5.4	Sponsor Risk	Private Sector	Private Sector	Private Sector	Private Sector
5.5	Concessionaire event of default	Private Sector	Private Sector	Private Sector	Private Sector
5.6	Government event of default	Public sector	Public sector	Public sector	Public sector

The allocation shows which party is usually best able to manage the particular risk. It reflects typical contract allocations and presumes that all contract terms can and would be enforced.



3.5 Private Sector Revenue Risk under different PPP payment mechanism

Table No. 4 – Private Sector Revenue Risk under different PPP payment mechanism

		Annuity/ Periodic payment	Operational subsidy + User charges	Fixed periodic payments by Govt. + User charges	Output based air for capex + user charges	Construction grant during construction + User charges	Cross subsidy by providing development rights to ancillary project	Fixed payment on take or Pay arrangement
Capex recovery risk	Source of capital recovery	Annuity payment	NA	Fixed payments	User charges	User charges	Dependent on prospect of ancillary project	NA
	Private sector risk level	Low	NA	Low	Medium	Medium	High	NA
	Allocatio n of time & cost overrun risk	Private Sector	NA	Private Sector	Private Sector	Private Sector		NA
Revenue Risk for opex	Private sector risk level	NA	Medium – High	High	High	High	NA	Low
	Source of revenue risk	NA	Revenue risk reduced by ops subsidy	Revenue risk due to dependen ce on user charges	Revenue risk due to depende nce on user charges for Ops expenses	Revenue risk due to dependence on user charges for Ops expenses	NA	Take or Pay provides guaranteed revenue system

It is to be noted that the level of project related risk which is transferred from the public entity to the private partner increases from a service contract to a BOT contract. For instance, in the service contract which is more akin to outsourcing, only a portion of the O&M risk is transferred to the private partner whereas in a management contract, the entire O&M risk including revenue risk is transferred to the private partner. In both cases, the design, finance and construction risk along with the ownership of assets remains with the public entity. In a lease, the public entity transfers the design and O&M risk along with a portion of the financing and construction risk to the private partner. In such an arrangement, the private partner is expected to share a portion of the user fee collected from the consumers/ users as lease fee to the public entity. In both area concessions and BOT, almost every project related risk is transferred to the



private partner; the ownership of assets at all times lies with the public entity. It is only in a BOO framework that the ownership of assets gets transferred to the private partner and in a BOOT framework the ownership of assets gets transferred to the private partner for a certain time period.

The transfer of risk from the public entity to the private partner in various PPP models is set out in the diagram below:

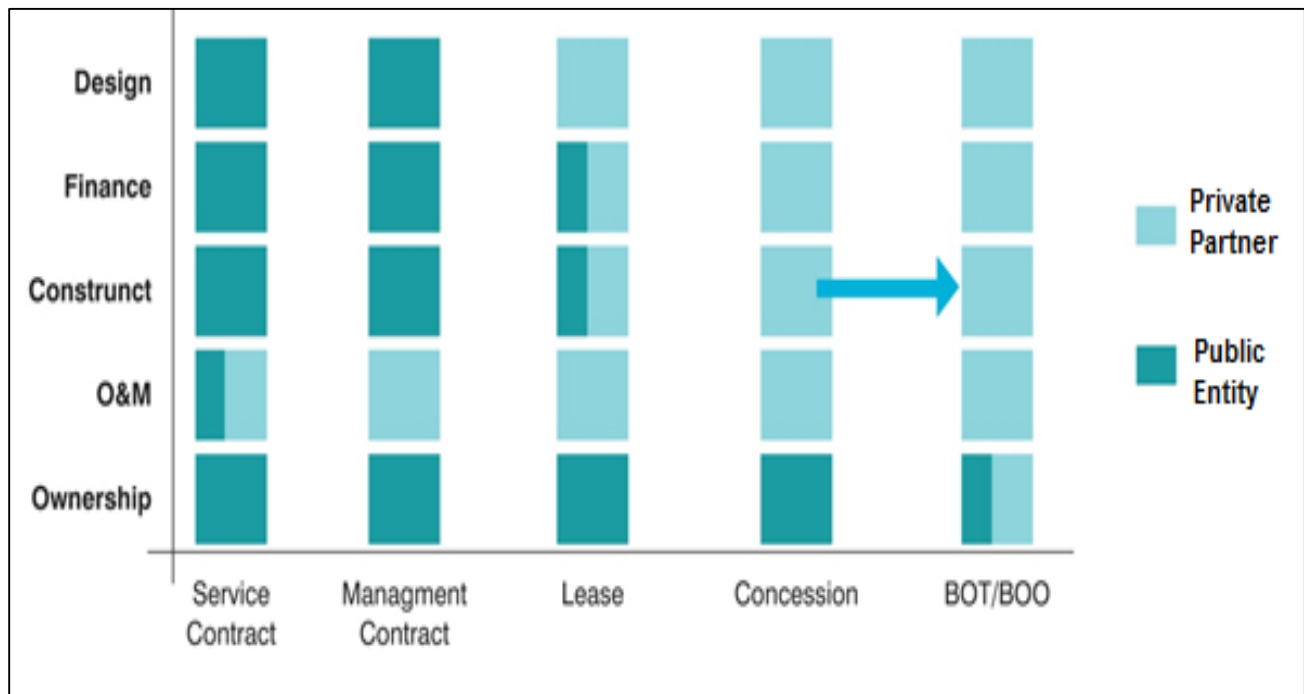


Figure No. 2 – Transfer of Risk from Public entity to Private entity in different PPP modes



4 PPP Supporting Environment

4.1 Law that enables PPP

4.1.1. Since they are a contractual arrangement, the legal environment is very important to PPPs. At a minimum, existing legislation and other legal requirements must not prohibit the use of PPPs. In particular, it must be permitted for private firms to provide the infrastructure services that are the subject of the PPP. There have been cases in the past in India where an existing law made it very difficult for a private partner to enter into a meaningful PPP contract (eg, in the case of airport PPPs).

The general legal structure may include aspects that prohibit PPPs or, while not prohibiting PPPs, create legal barriers that inhibit them. In cases where there is no prohibition on a particular PPP, private sector partners may still not find the project sufficiently attractive unless the legal framework is stronger and clearer, granting them sufficient comfort that their investment will be protected and the terms of the contract honoured.

This general legal enablement of PPPs can cover a wide range of areas, such as:

- Regulation of tariffs
- Award of the PPP
- Procurement in PPP contract
- What secondary approvals are required and how these can be obtained
- Dispute resolution options (right to arbitration etc.)
- Right to sell/grant security over the assets
- Rights to exclusive service (monopoly), existing or able to be assigned
- Protections of foreign exchange convertibility, to enable repatriation of proceeds from the project (in the case of foreign investment)

Without a strong framework in some of these areas, investors either will not be interested in the project, or may demand higher returns, government guarantees or other compensations for the legal and regulatory risk they perceive.

4.1.2. When a PPP policy is established a legal review should be carried out as part of an overall assessment of the enabling environment for PPPs. This involves analysis of legislation and other legal requirements governing all aspects of PPP schemes. The legal review will make an assessment of regulatory requirements (such as permissions) for, and any legal barriers to, implementation of the project as a PPP. It should also highlight



where it may be necessary or desirable to introduce new legislation or amend existing legislation so as to enable the project to take place, to provide a clearer legal basis for the PPP scheme or to provide the necessary regulation of the infrastructure services.

A specific law can provide some advantages by consolidating legal details into a single point of reference. The preparation of a single Act can also be an opportunity to explicitly specify procedures that must be followed for PPPs, such as for procurement and dispute resolution. This can be advantageous where oversight and procedural provisions are less well established.

However, sufficient legal support can be achieved through reliance on the supporting legal framework embodied in existing laws, regulations and judicial decisions, often with amendments where necessary to ensure the necessary powers to participate in PPPs are vested in the public sector agencies.

4.1.3 Need clarity in following Laws for PPP Projects to be successful

- Contract Law - Limitations on Freedom of Contract
- Dispute Resolution Systems Available / Sovereign Immunity
- Gender-Responsive PPP Legal Framework
- Government Organization - Approval and Award / Monitoring and Regulation of PPP Projects
- Health and Safety Laws
- Insolvency Laws
- Insurance
- Labor Law / Employment Issues
- Land / Environment and Social Issues
- Lender Issues - Taking Security / Step-In Rights/ Government Support
- Mechanisms Enabling Legal Challenges Against PPP Projects
- Procurement Restrictions
- Restrictions on Foreign Investors / Currency Exchange Controls
- Standards and Public Liability
- Tariff Setting / Funding Constraints
- Taxation
- Constraints in the Law on Scope of PPP Projects



4.2 Political Support for PPP Projects

4.2.1. Other factors being equal, jurisdictions where there has been a lack of political support for PPPs have had less success with PPP implementation. For example, among Indian States there has been a higher rate of success with PPPs in those with strong government commitment to the programmes, even when there is a similarity among States in their institutional approaches to project development (for example, where a central project development agency had been created to support sponsoring agencies).

Often, a project will have a greater chance of being realised as a PPP if it is supported and promoted by a strong political 'champion'. A political champion is someone at a sufficiently high political level who is committed to making the PPP happen.

Committed government support is essential to the development of public-private partnership (PPP) projects to attract private investors in a highly competitive market. The private sector participation in infrastructure through PPP models is no sleeping pillow for the government authorities. As the name "Public-Private Partnerships" indicates, PPP is a partnership arrangement where active support from public authorities to private sector development of infrastructure projects is required, in particular in the pre-construction phases of a project.

There is no general recipe for an active public support to PPP projects. Each government must assess realistically the country's attractiveness to domestic and foreign private investment. As each government must decide by which active steps private sector investment and development of infrastructure projects can be encouraged and the negative impact of existing, country-related impediments can be reduced.

Infrastructure projects can often have a large impact on the communities in the area or those affected by it and people are often understandably concerned by related change or uncertainty. There may be fears about private participation, misinformation about the project, or the project may simply not be well understood. In this case the Project Sponsor needs to be aware of the need to make the case for the PPP in the public domain.

4.2.2 Strategies that will increase Public acceptance & buy into PPP are:

- Adequate Legal Framework for Public-Private Partnership Projects
- Selection of Projects suitable for Public Private Partnership
- Ensuring value for money as objective; not as requirement for PPPs
- Transparent, competitive & orderly Procurement proceedings
- Streamlining of Public Private Partnership contract
- Credible & efficient administrative framework for PPP
- Assistance to obtain & renew approvals, licenses, & permits
- Provision of land use rights, access to the site, service from utilities, other logistics support



4.2.3. The government has an important stake in infrastructure development. Considering its public good in nature, strategic importance, profound effects on other sectors, and related issues in public safety and security, and utilization of natural resources, governments always take interest in infrastructure development, whether implemented by the public sector or the private sector.

There are also other reasons of government's interest which include:

- The network nature of most infrastructures implies that they cannot be considered as isolated projects (road, energy transmission line, telephone line, etc.)
- Can be used as a policy tool for development
- Infrastructure is important and needed but individual projects are not always commercially viable (water supply, rural/local roads, for example)
- Bulky nature and large size of investment requirements
- Long to very long existence with perpetual liability through generations (external costs, for example).

4.3 Public Sector PPP capacity & experience

4.3.1. PPPs create requirements on the public sector for the management of the whole PPP process. In order to enjoy the potential cost savings from a PPP the PPP process needs to be carried out efficiently and effectively.

The PPP development and management process entails costs of its own that are additional to the cost of traditional public sector procurement. These include the time of staff within the Sponsoring Authority as well as the use of advisors. International experience suggests these costs can be in the order of 1-3% of project cost. If they are not carefully contained the benefits of PPP procurement will be diluted.

4.3.2 **The efficiency of the public sector capacity to manage the PPP process is improved when:**

- There are clear, streamlined and **appropriate procedures** for the preparation, review and clearance / approval of a PPP
- Responsibility for the management of the process is clearly allocated



- The **Sponsoring Authority has access to the skills** required to procure PPPs, specifically legal, technical and financial expertise
 - Staff within the **Sponsoring Authority is experienced** with the steps in the PPP process or have access to guidance
 - Sponsoring Authorities have **access to supporting resources**, including advice and manuals
 - A **PPP focal point** has been established that can provide advice and assistance on developing and managing PPPs. The focal point can take various forms such as a PPP Cell, Project Development Agency, line ministry team etc.
 - Activities and functions that are common to PPPs (for example, across sectors) are centralised and streamlined so that wasteful duplication is avoided
 - Availability of supporting infrastructure, including the required land and necessary clearances, have been ensured
 - A **single window clearance** is available to speed up the clearance process
 - The Sponsoring Authority has a clear plan for managing the PPP during the operation phase
- 4.3.3.** Previous experience is considered to include PPP projects that have progressed to at least tendering with all project documents concluded and approved and, ideally, where contracts have been successfully concluded. Another critical aspect is whether the Sponsor has experience with monitoring and enforcing a PPP contract during its operating life. This means monitoring the performance of the private partner against the requirements of the contract and enforcing the standards set forth in the contract, including any penalty and reward clauses.

Sponsoring agencies that have implemented PPPs in the past will naturally be better placed to implement a new one. However, PPPs are still possible for Sponsors with limited or no previous experience providing they have access to a range of assistance and advisors. In this way Sponsors will develop experience and capability in PPPs.

4.4 Institutional Framework

An institutional framework for PPPs should be in place. This framework will define the roles, responsibilities and decision-making authorities in the PPP process. The key institutional components of the framework often include:



- **Sponsoring Authorities**

Nodal departments located within the sponsoring agencies (State or municipal-level line departments, para-statal agencies and other administrative bodies empowered to implement PPPs in their activity area).

- A central **PPP agency**, a PPP Cell, located in the finance department (or sometimes Planning) of the State government. The key functions of a PPP Cell include:
 1. Creating coordinated, efficient machinery for PPPs whereby viable transactions are tendered to the market and, by bringing economies of scale to the process, lowering the costs of each transaction
 2. Identifying, conceptualising and creating a shelf of projects and recommending approval of suitable projects for implementation as PPPs
 3. Ensuring rigorous adherence to managing effective and transparent tendering processes
 4. Developing internal evaluation guidelines in consultation with the respective Departments to evaluate and assess the projects
 5. Inspecting, visiting, reviewing and monitoring any PPP Project under implementation
 6. Conducting/recommending exposure visits and training programmes on PPPs
- A **Project Development Authority (PDA)** / Project Management Unit (PMU) may be created to support the sponsoring agency with assistance and funding through the project development steps and contract management during operations stage.
- Funding initiatives such as **Project Development Funds, Viability Gap Funds** or **Infrastructure Funds**. Coordination with these funds is usually via the PPP Cell.
- **Approving Authorities**, usually consisting of a high-level final-approval committee and a lower-level clearance committee. Other associated entities may provide comments to these committees.

4.5 Clearance / Approval Process

The clearance / approval process provides important oversight to the PPP process. Clearances and approvals should be required at several stages of the PPP development process and at different decision-making levels depending on the stage, value and type of project. The process should ensure that there are sufficient checks on the use of public resources in developing PPP projects and on the projects that are selected, while imposing as little additional cost on the PPP development process as possible (costs are incurred in preparing submissions and in time spent waiting for decisions).



A single clearance window can be provided to streamline and speed up the clearance process.

4.6 Public Sector Funding Assistance for PPPs

- 4.6.1.** Viability Gap Funding (VGF) is designed to provide capital support to PPP projects which would not otherwise be financially viable. VGF has the effect of reducing the revenue required to recover costs and provide a financially attractive return for private sector.

The quantum of financial support (VGF) to be provided under this Scheme shall be in the form of a capital grant at the stage of project construction. The amount of VGF shall be equivalent to the lowest bid for capital subsidy, but subject to a maximum of 20 percent of the total project cost. In case the sponsoring Ministry/State Government/statutory entity propose to provide any assistance over and above the said VGF, it shall be restricted to a further 20 percent of the total project cost.

- 4.6.2.** Viability Gap Funding under this Scheme will normally be in the form of a capital grant at the stage of project construction. Proposals for any other form of assistance may be considered by the Empowered Committee and sanctioned with the approval of the Finance Minister on a case-by case basis.

Viability Gap Funding up to Rs. 100 crore (Rupees one hundred crore) for each project may be sanctioned by the Empowered Institution, subject to the budgetary ceilings indicated by the Finance Ministry. Proposals up to Rs. 200 crore (Rupees two hundred crore) may be sanctioned by the Empowered Committee, and amounts exceeding Rs. 200 crore may be sanctioned by the Empowered Committee with the approval of the Finance Minister.

Unless otherwise directed by the Ministry of Finance, the Empowered Institutions may approve project proposals with a cumulative capital outlay equivalent to ten times the budget provisions in the respective Annual Plan.

In the first two years of operation of the Scheme, projects meeting the eligibility criteria will be funded on a first come, first served basis. In later years, if need arises, funding may be provided based on an appropriate formula, to be determined by the Empowered Committee, that balances needs across sectors in a manner that would broad base the Sectoral coverage and avoid pre-empting of funds by few large projects.

4.6.3 Sectors eligible for Viability Gap Funding under this Scheme are:

- Roads and bridges, railways, seaports, airports, inland waterways
- Power
- Urban transport, water supply, sewerage, solid waste management and other physical infrastructure in urban areas
- Infrastructure projects in Special Economic Zones



- International convention center and other tourism infrastructure projects

4.7 Private and Public Sector Appetite & Capacity

4.7.1 Need for Capacity Building in Public Officials

- PPP projects are primarily for public good
- Traditionally they would be done by Government
- Conceptualisation, selection of the project done is Government domain
- Development, assessment and due diligence also done by Government
- Success primarily depends on performance and skills of public officials
- In case of default by private partner onus to take over PPP infrastructure rests with Govt.

4.7.2 Need for Capacity Building in Private Sector

- Similar concerns as in government plus company financial status more susceptible
- Substantial risks taken over a long tenure
- Financing is difficult with lack of long-tenor loans
- Working in conjunction with Government a relatively new experience
- Conflict resolution process still in nascent stage

4.7.3. For a PPP to be successful and least-cost there needs to be a healthy level of competition among potential bidders. This means there are a number of potential private partners actively participating in the market for PPP projects, each with the technical and financial capacity to undertake the project.

Assessments of private developer interest can be made from the response to previous PPP opportunities, either in the same State or authority or elsewhere in India for similar projects. The best indicator is the number of firms submitting bids following pre-qualification. The number of responses to pre-qualification notices can also be used to help assess interest. Where no similar projects exist, then evidence of private sector interest might include the number of visits made by potential developers to discuss project opportunities and other enquiries received.



- 4.7.4.** The risk that there won't be enough interest and competition for the PPP among the private sector has two clear consequences: failure at the procurement stage or a weakened procurement exercise that results in poor value for money for the public sector.

If the PPP fails to attract bidders at the procurement stage there will be a cost to the public sector in terms of the resources that were put into developing the project and preparing the bid. If very few bidders respond to the tender but procurement goes ahead it is much more likely that the value for money from the PPP will be reduced as a result of weakened competitive pressures. It should be noted that this can mean both a worsened financial outcome for the public sector and lower quality of services.

- 4.7.5.** Three levels of private partners may be targeted: firms based locally to the project (in the same State or municipality), national firms, and international firms.

The Sponsoring Authority may invite bids from Indian firms active in other States and at the national level and from international firms. In addition to adding to the competitiveness of the market for PPPs, international firms can bring valuable experience and knowledge transfer to both public and private partners in India.

Potential private sector partners will be required to meet minimum criteria with regards to their ability to carry out the technical, financial and operational aspects of the project. The pool of potential private sector providers will be largest for small projects and those using PPP modes for which the transfer of roles and risks to the private sector is relatively lower, for example in management contracts.





Section – 2

PPP Decision Making & Phase 1 - Project Identification

5 PPP Framework Process (Decision Making)

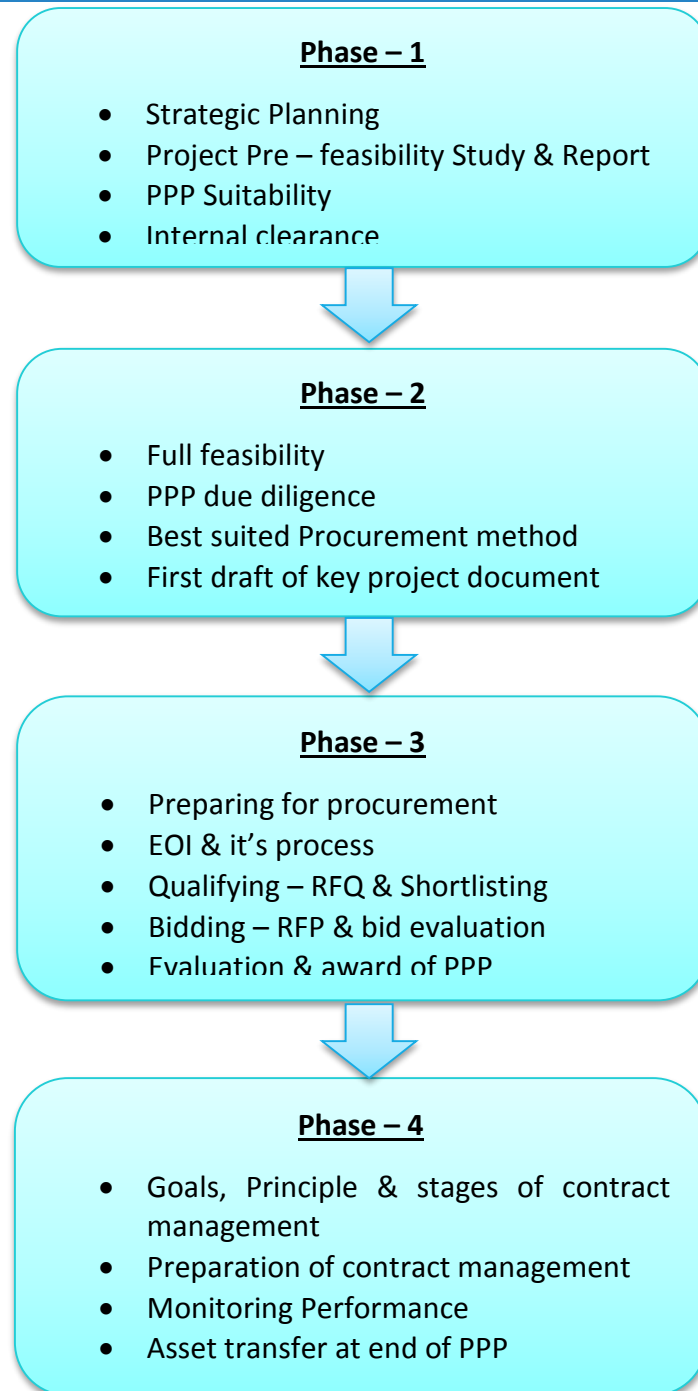


Figure No. 3 -PPP Framework Process



6 Ph-1 Project Identification

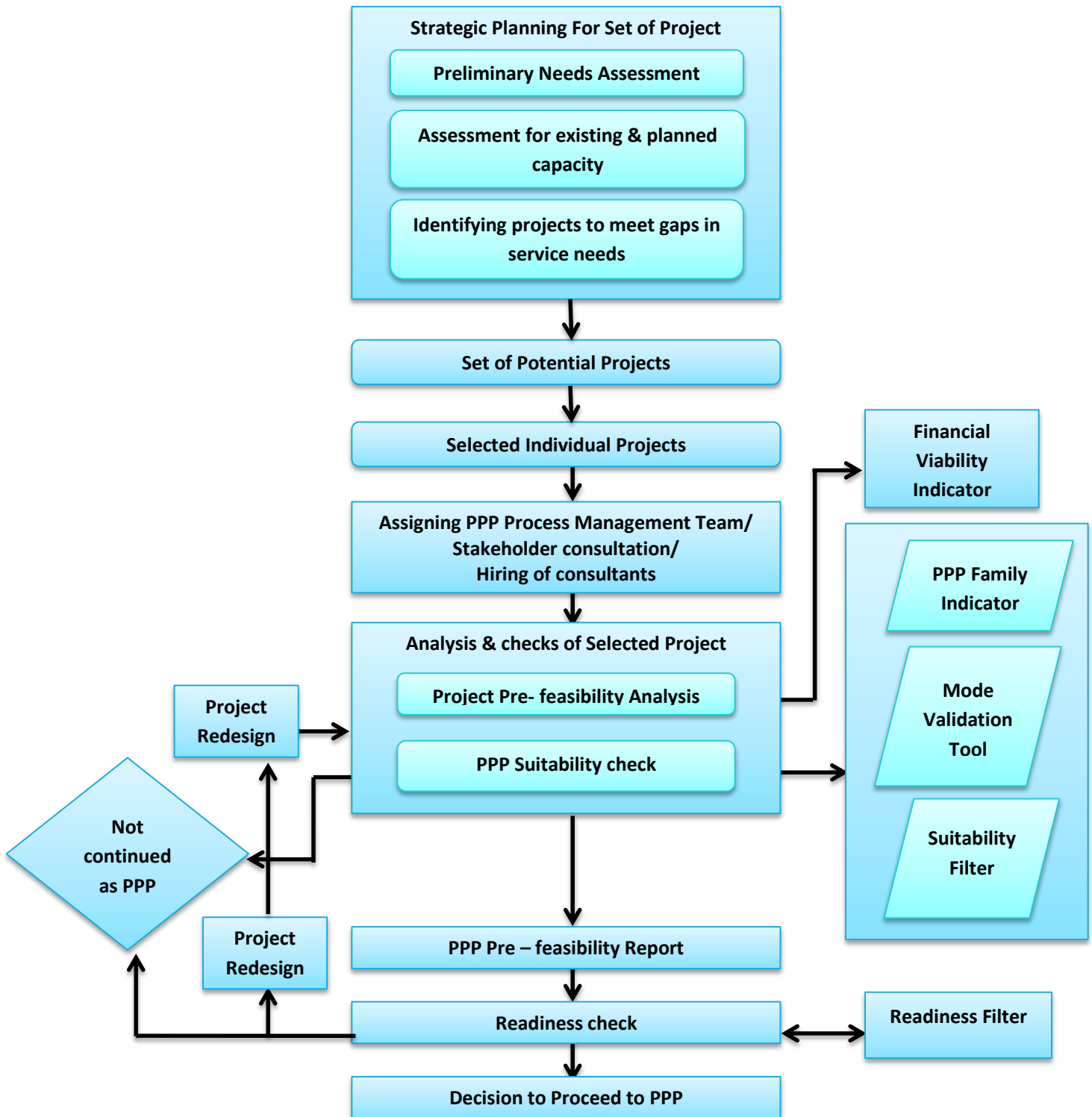


Figure No. 4



Project identification is the first stage of a project life cycle and precedes project preparation and procurement stages. It is a crucial stage in which the public entity seeks to identify the needs of the community for provision of public services along with its quantum, duration and the best procurement approach to fulfilling those needs.

The process of project identification typically has two parts: one is the Conceptualisation of the project along with clarity about what social need it will meet and another is the formation of the team that will manage it.

Project Identification Stage addresses:

- Whether there exists a pressing need for the project?
- Whether all possible service delivery options have been considered for the project?
- What are the benefits of constituting a cell within the department for the project?
- What goes into the pre-feasibility study?
- Why is it advisable to hire advisors and how are they hired?

6.1 Strategic Planning for Set of Projects

6.1.1 Strategic planning is an organizational management activity that is used to set priorities, focus energy and resources, strengthen operations, ensure that employees and other stakeholders are working toward common goals, establish agreement around intended outcomes/results, and assess and adjust the organization's direction in response to a changing environment. It is a disciplined effort that produces fundamental decisions and actions that shape and guide what an organization is, who it serves, what it does, and why it does it, with a focus on the future. Effective strategic planning articulates not only where an organization is going and the actions needed to make progress, but also how it will know if it is successful.

Strategic planning involves identifying infrastructure service needs and planning to meet these needs according to the objectives of the Sponsoring Agency. The plan will typically relate to a sector or sub-sector, but may also cut across sectors, such as in a development plan for an urban area.



- 6.1.2** A formal sector-level planning activity results in the formulation of a medium or long-term expansion, rehabilitation and investment plan (covering the coming five years, for example). Projects within the investment plan are prioritised on economic and other policy grounds, such as according to social priorities.

The investment plan feeds the project pipeline. Projects can be taken from the plan and developed individually, either through the traditional public sector route or as a PPP.

- 6.1.3** A strategic plan is sometimes referred to as a sector master plan, sector expansion plan or development plan (such as a city or urban development plan). Examples include network expansion plans, for example in electricity, natural gas or water and sanitation, and national- or state-level ports development strategies. Examples at the broader level include the Central and State governments' five-year plans.

The broader, sector-level focus of strategic planning activity is what sets it apart from the other activities in the PPP process. Strategic planning is the one step in the process that does not take place with each individual project.

6.1.4 Steps in strategic Planning

1. It is a **forward-looking activity**, carried out for a medium or long-term period. Strategic planning means planning for the future.
2. It **identifies infrastructure needs** across the Sponsoring Agency's jurisdiction currently and into the future. This might be across a whole sector or geographically bounded parts of a sector (such as a state or urban area). A strategic plan may also be part of a broader multi-sector plan, such as an urban development plan which integrates planning for transport, water and sanitation, and solid waste management with other urban issues such as housing.
3. **Analysis or assessment**, where an understanding of the current internal and external environments is developed. It includes an **assessment of the current infrastructure situation**, including the delivery capacity in existing infrastructure and existing plans for service expansion.
4. **Strategy formulation**, where high level strategy is developed and a basic organization level strategic plan is documented
5. **Strategy execution**, where the high level plan is translated into more operational planning and action items, and
6. **Evaluation or sustainment / management phase**, where ongoing refinement and evaluation of performance, culture, communications, data reporting and other strategic management issues occurs.



6.2 Preliminary Need Assessment Study

The key drivers for planning an infrastructure programme are the service needs of the end-users. An overall needs assessment should be carried out taking account of the types of services users will need, total user demand for those services, and all sources of existing and planned delivery of services.

Planning for infrastructure services that are provided by assets with long lives should include a needs assessment that covers a correspondingly long period. This requires a holistic view taking account of factors that might affect the level and location of demand, including expected and planned urban and industrial development.

Infrastructure services can be defined and measured in total for all users and broken down into totals for specific groups of users. The strategic plan should provide at least a preliminary assessment of needs for user groups that would be served by particular infrastructure assets or integrated systems. These can then be mapped to individual project interventions.

6.3 Assessment of existing and planned service capability

6.3.1 The existing infrastructure should be assessed for its ability to deliver the currently needed services and the service requirement expected for the future.

This assessment will tend to focus on existing assets or systems and the way they are currently managed. An assessment should be made of:

- The service capacity of existing assets
- The service standard provided by existing assets. Service standards are typically measured by performance indicators relevant to the sector.
- The condition of existing assets, including how well maintained they are, their age and the number of years remaining in their useful lives

6.3.2 The service capacity and service standard should be measured at the point of the end-user. This means end users need to be identified and grouped according to the infrastructure that they use. 'Infrastructure' will often refer to a group of assets that together provide service for example structures, cranes and storage facilities in a port.

The assessment of asset condition would need to be carried out for all assets in the system. Best practice is to prepare an asset inventory that records the essential details of each component asset in the system.



The inventory should include at least:

- a description of the asset
- date of installation
- expected useful life
- asset value
- maintenance cycle

An assessment should also be made of existing plans for new infrastructure or planned infrastructure improvements. This should include a review of existing Technical Due Diligence Studies, including those that have already been approved and those still under preparation.

6.4 Identifying projects to meet service needs

6.4.1 The various activities that form part of project identification (expression of need, need analysis and options analysis) and the activities that happen after this identification (stakeholder consultation, hiring of advisors and constitution of project management cell) are set out in the diagram below.

Project identification starts with identification of the need for the project and the options which can address the need. During this process economic analysis of each of the options is undertaken to determine whether or not the project is beneficial to society.

Much of what is discussed in this module is relevant to all projects, immaterial of whether they are proposed for development under a PPP or a traditional procurement framework. This is especially true for the section on need analysis. It is only in the "options analysis" stage that PPP options are considered.



Figure No. 5 - Identification of Project to meet Service Needs



- 6.4.2** The difference between assessed needs and the existing and planned delivery capacity can be used to assess the medium- or long-term strategic infrastructure requirement. Taking these results at the aggregate and user-group levels provides a basis for the identification of project interventions.

A project intervention is a planned activity that is designed to meet a service need. It is important to remember that to deliver the required service, infrastructure projects may use existing assets, create new assets, or may require no assets at all. These different service delivery options would be assessed in greater detail for individual projects at the pre-feasibility and feasibility study stages.

- 6.4.3** Once projects have been identified they need to be prioritised so that they can be sequenced in the strategic plan. Projects should be prioritised on a cost-benefit basis following a preliminary assessment of costs and benefits expected from each project.

The assessment of project benefits should take account of impacts beyond those directly relating to the project itself and those who use its services. For example, in network infrastructure there can be spillover effects from a single project that create benefits for the network as a whole. These effects feed back into the benefit-cost ratio for the project to give it a higher priority. Indirect impacts also include impacts on the wider economy.

A more detailed assessment of each project would take place at the pre-feasibility analysis and PPP suitability analysis stages. The purpose of these studies is to be sure the project meets the Sponsoring Agency's objectives, to determine the best delivery option, and to decide whether the project is suited to being a PPP.

6.5 Expression of Project Need

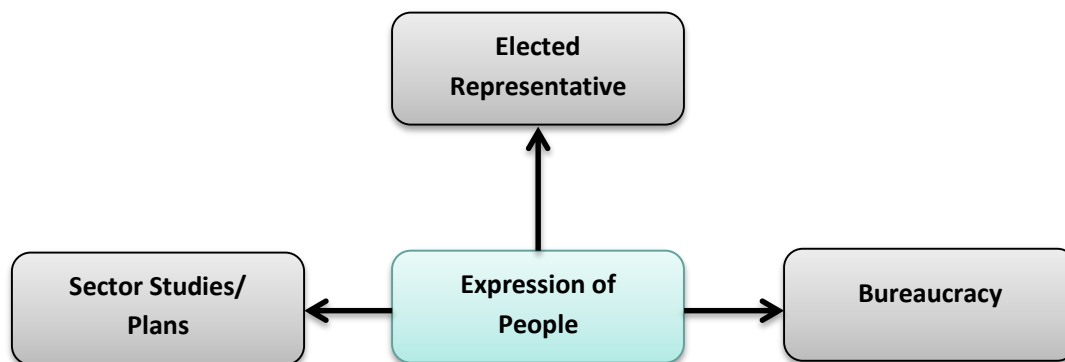


Figure No. 6 – Expression of Project Need



6.5.1 Normally, projects are conceived on the basis of existing or future need among a cross section of society. Sometimes, projects are an outcome of political commitments. Sometimes, they are conceived as a part of the Centre Sponsored or State Sponsored Schemes or Master Plans for Cities / City Development Plans / City Traffic and Transportation Plans. In all these cases, the common factor is the interest of the people and their need for the project.

Ideally, projects are finalised only after an elaborate sector analysis, assessment of demand and supply for the service delivery option, identification of gaps in service delivery, and a review of local community issues that might emerge from stakeholder consultations. A misconceived project tends to fail because there was never any real demand for the service or asset in the first place.

6.5.2 Type of Needs:

Projects emerge from a need to fulfill public service or economic development requirements of the general public or a specific community. Sometimes the need is obvious such as when basic housing, health, water services, etc. are lacking or inadequate. At other times need could be latent and based on future demand brought about by changes in aspirations or economic and social circumstances. For instance, the development of a bridge across a river where people initially commuted by way of ferry is an outcome of the expressed need of the people. But the development of an integrated township is an outcome of a latent need among people to organise their livelihoods and function in a non-congested and well planned city.

There are two kinds of needs:

- A need which is an improvement on the existing facility, such as greater capacity, newer technology or integration of the existing facility with another service/project. Road widening and increasing the capacity at airports or ports are two examples.
- A new need for a service or facility which was never there before. New townships and industrial clusters are two examples.

Project needs can be similarly categorised as either a need for development in an area with no basic infrastructure in place at all or the need for development in an area which has some basic infrastructure.

In certain cases, the public entity proposes the creation of completely new infrastructure in a place where even a basic water or power supply or connectivity is barely available. A classic example is satellite townships such as Noida, Navi Mumbai and Naya Raipur that have arisen around growing cities.



Other projects are conceived to improve services in places where infrastructure already exists; these could be a sewerage network in a metro or the construction of a new international convention Centre in the heart of a city.

6.6 Assigning PPP Process Management Team

Responsibility for the management of the PPP development process within the Sponsoring Authority should be clearly assigned from an early stage. A Project Officer should be available to lead the preliminary analysis and checks, possibly supported by a small team. In jurisdictions with PPP procedures already established there may already be a dedicated PPP Project Officer. In other cases this person will need to be assigned.

The project team for the Phase 1 analysis might be small, perhaps containing only one or two people. These people should ideally have previous experience in PPPs and knowledge of the finance, legal, planning, and technical aspects of the proposed projects. Technical or financial consultants are likely to be engaged to carry out the pre-feasibility analysis.

The Sponsoring Authority's PPP process management team will probably need to be expanded as the project moves deeper into the development process, depending on the project size and complexity and on how many external advisors are used. This expansion is likely to begin once the project enters the PPP development pipeline in Phase 2.

6.7 Activities Post Project Identification

It is useful to carry out certain activities in the period between identifying the project and conducting feasibility studies. These activities include the hiring of consultants for helping the public entity to carry out the feasibility studies/project structuring/, stakeholder consultations and the creation of a project management team and monitoring cell within the office of the public entity.

In addition, the public entity may also conduct a workshop or a roundtable discussion to create awareness among its staff about the new project. The views that emerge from within the organisation may help to fine-tune the conception and improve the execution. Moreover, special programmes to build the specific skills that will be needed from the employees might also benefit project execution. More on capacity building is discussed in Module 17 of the PPP Guide for Practitioners.

6.7.1 Stakeholder consultation

Communication in projects is critical to their successful implementation. Consultations also clarify the project need and help choose the correct option owing to stakeholder feedback.



The main objective of stakeholder consultations should be to:

- Ensure an inclusive approach to development through adequate information dissemination to
 - a. Users (direct and indirect)
 - b. Existing employees
 - c. Trade Unions
 - d. Other stakeholders

- Increase transparency and trust among stakeholders in project development activities
 - a. Bid process in terms of selection of successful bidder
 - b. Project execution in operational matters

6.7.2 Hiring of consultants

The public entity might find it useful to hire consultants to help with selecting the private partner for the project, carrying out the feasibility studies, project structuring, bid documentation, bid process management, and post award contract management. An indicative list of consultants to be engaged would include market study consultant(s), technical consultant(s) for carrying out technical feasibility studies, finance experts for undertaking financial feasibility studies, procurement experts for bid process management, legal experts for drafting and vetting of contractual documents, among others.

These consultants – one individual or several - can advise the public entity at every stage of the project development process.

6.7.3 Appointing PPP Project Manager & Project Team

The Sponsoring Authority should appoint a project manager to oversee and take responsibility for the process. This person would be supported by and would lead a Project Team. This team, with the project manager at its head, would be the key entity driving the PPP project. It should be formed in Phase 1 (PPP Identification) and remain together at least until technical close in Phase 3 (PPP Procurement). Such a Project Team is sometimes also called a Project Implementation Unit (PIU).

Both the project manager and members of the Project Team would usually be from the staff of the Sponsoring Authority. Sponsors that already have experience with PPPs may have a PPP team in place or that can be quickly reconstituted. Alternatively, a team might be created specifically for the project at hand. These may be permanent members of the team or a core project management team might be created with specialists from other areas of the Sponsoring Authority called in as required.



A single consultant who provides help from start to finish is known as a “transaction advisor”. Whenever a consultant is appointed, the procedure will have to be consistent with the rules on transparency in the procurement of services.

Sometimes, the public entities look at hiring Transaction Advisors (TA) on a success-fee basis. In such cases it forces the TA to “force-fit” a PPP onto a project just so that they can be paid their success fee. It is useful to select TA based on their past experience. In cases where a success fee is used as means for selection of TA, the public entity would need to ensure the certainty with which a PPP can be awarded before deciding the mode by which they would engage with a TA.

Ministry of Finance, Department of Expenditure has issued model RFP for Selection of Financial Consultants and Transaction Advisers vide Office Memorandum No. 24(32)/PF-II/2009 dated March 2010. This could be used by all administrative Ministries and other public entities intending to procure the services of financial consultants and transaction advisors.

The Project Team will guide the project through PPP process. Their role will include

- Overall project management, ensuring the process is delivered according to schedule and containing costs
- Engaging advisors, including determining their terms of reference; managing advisors to ensure they deliver, and assessing their services
- Championing the project and submitting the application for approval

External support may be used to provide specialist advice and to bolster the capacity of the Sponsor’s Project Team. Support may be provided through a Project Development Agency, by the PPP Cell, or by engaging technical consultants.

6.7.4 Preparation of a project plan

One of the important functions of the PPP project manager and Project Team is to plan the process of the PPP development and procurement in advance. Work done at the beginning of the process will pay dividends later as the Project Team will be better prepared for the next steps and better able to anticipate issues before they arise. This can increase the likely success and quality of the PPP development and procurement.

A Project Plan, prepared by the Project Team at the outset of the process, can be a useful planning tool. The preparation of the plan will give the team a point of focus for thinking in greater detail about how the PPP process will be carried out.



The Project Plan would specify

- Project timetable, showing key steps and tasks in project development, plans for consultations, and critical decisions and approvals required
- Key roles within the project, including decision-making authorities, and sources and funding for assistance

6.8 Preliminary Analysis & checks of the selected project

Individual projects can be selected for further analysis from the set of possible projects identified in the strategic plan. The PPP process for individual projects begins from this stage.

Selected projects that might become PPPs should be analysed for their quality as a project and checked for their suitability to being developed as a PPP:

- Project pre-feasibility analysis
Key question: is the project itself feasible?
- PPP suitability checks
Key question: is this project suited to being a PPP?
Pre-feasibility analysis is a necessary stage in the evaluation of an individual PPP project.

The PPP suitability analysis checks for the presence of certain conditions in the supporting environment (such as legal, institutional and market capacity) that should be in place for a PPP to be successful. The purpose is to weed out poorly suited projects early, before more resources are used on developing them as PPPs. The main tool for this is the Suitability Filter. If a project achieves a satisfactory result in the Suitability Filter then it can proceed to a standard pre-feasibility analysis of the project itself.

The Suitability Filter is a crucial gateway to the PPP pipeline. If the outcome of the Suitability Filter is that the project is unlikely to be well suited to development as a PPP then the project should exit the PPP process. The project might be redesigned on the basis of the findings and re-appraised for its PPP suitability. Alternatively, the project may still be developed through the public-sector route but it would not be appropriate to use any more of the limited resources available for PPP development. The Project Officer might then take another potential project from the strategic plan and test that one for its PPP suitability.

If either public or private options are available for procurement then it will often make sense to carry out the pre-feasibility analysis first, as some of the information discovered in the study may be useful for answering questions in the Suitability Filter.



Once the pre-feasibility and PPP suitability analysis have been done the results are summarised in a Pre-feasibility Report.

In cases where pre-feasibility analysis and the Suitability Filter support a decision to proceed with PPP development the project would continue to Readiness Check 1. If the Readiness Check shows the project is ready and suited to development as a PPP it would proceed to more detailed analysis in Phase 2, beginning with the Full Feasibility Study.

6.9 Pre – feasibility Analysis

6.9.1 The pre-feasibility of the project should include the following preliminary analysis:

- Needs and options analysis
- Legal feasibility
- Technical feasibility
- Scoping social/environment safeguards analysis
- Preliminary financial viability including expectations of required Govt financial support
- Institutional capability analysis
- Identification of next steps required

A preliminary analysis means the depth of study at this stage is enough to guide a decision to proceed further, but it is much less detailed than the analysis in a full feasibility study. Unless the Sponsor has in-house capacity to carry out the study, an external advisor would be engaged.

Funding for a pre-feasibility study is sometimes available from project development agencies or other institutions that play a similar role (such as the PPP Cell). In other cases it will have to be met from the budget of the Sponsoring Authority. The costs may be recovered later from project revenue if the project reaches implementation.

The needs analysis will expand on the analysis made during the strategic planning process. The needs analysis must have a focus on the services required by end-users. Areas that should be assessed in the needs analysis include those in the table below

6.9.2 Need Analysis

- The existing level of service
- Desired level of service
- Benefits that would be provided to user
- Sponsoring Agency's Objective



6.9.3 Options Analysis

A preliminary options analysis should also be carried out at the pre-feasibility stage. The options analysis asks the question: which delivery options are best for meeting the identified needs. Delivery options may involve new assets, existing assets or solution requiring new asset.

- Use non asset solution
- Improve existing assets
- Use new assets

6.9.4 Technical Pre – feasibility

Detailed technical studies (e.g. structural, geotechnical, hydrological, drainage etc.) are not required at this stage, but sufficient technical and survey work must be undertaken to be able to provide a cost range for the project (including alternatives). A preliminary cost estimate should be prepared along with the preliminary design. The technical pre-feasibility should consider:

- The engineering and technical aspects of the project
- The manageability of the operational aspects of the project
- Preliminary assessment of all likely technical and operational risks.

6.9.5 Preliminary Financial & Economic Viability

- The cost recovery/income generation assumptions of the project
- Likely private sector interest in the project
- The overall project cost (capital + operations + maintenance costs)
- Possible financial risks
- Identification of likely economic benefits generated by the project

The next steps to be taken if the project proceeds should also be identified, by:

- Assessing the resources required to complete the project preparation process
- Identifying parties responsible for completing next steps
- Determining the roles and responsibilities of involved parties
- Determining the time frame required for completing project preparation.



6.10 PPP Suitability Check

Projects entering the PPP development pipeline should be carefully selected on the basis of their suitability for development as a PPP and their likelihood of providing value for money to the public sector. This toolkit includes tools to help the Project Officer choose and prioritise projects for development as PPPs and to continually refine the project design so as to increase the likelihood of achieving VFM.

Politics

- Ownership
- Potential Political Deal breaker

Law and Institutions

- Law & Regulations
- Standard document & methodology
- Internal Organisation
- Transparency & accountability

Economics & Finance

- Business case
- Fiscal Issues
- Financing

Execution

- Internal & external capacity for implementation
- Procurement
- Contract Management

6.11 Suitability Criteria & Drivers of Value

Table No. 5 – Suitability Criteria & Value for Money Drivers

	When to Use (e.g. Suitability criteria)	Value for Money Drivers
PPP	<ul style="list-style-type: none"> • Complex and long-term infrastructure projects • Outputs can be clearly defined and measured • Scope for innovation • Whole-of-life asset management is achievable and cost-effective • Strong market interest • Opportunities for appropriate risk transfer • Opportunity for bundling contracts • Significant service component • Complementary commercial development 	<ul style="list-style-type: none"> • Sufficient scale and long-term nature • Complex risk profile and opportunity for risk transfer • Whole-of-life approach from integration of design, construction, operation and maintenance over the life of an asset, in a single project package • Innovation • Appropriate third-party use of facilities, reducing net cost to government • Efficiency of contract management



<p>Alliance / Joint Venture</p>	<ul style="list-style-type: none"> • Complex and high-risk infrastructure projects • The solution is unclear or there is a significant likelihood of scope changes • A high level of innovation is required • Risks are unpredictable and best managed collectively, with costs of transferring risk prohibitive • The owner can be closely involved and add value 	<ul style="list-style-type: none"> • Cost of adversarial conduct, claims and disputes is eliminated (e.g. the “no blame” culture) • Culture promotes innovation • Integrated planning, design and construction process with early contractor and consultant involvement
<p>Construct Only</p>	<ul style="list-style-type: none"> • The scope is defined and there is little likelihood of scope creep or wholesale changes to requirements • Little incentive or need for innovation from the contractor • It is desirable and there is sufficient time to complete design documentation before tendering • Limited opportunity for bundling services/maintenance and creating whole-of-life efficiencies 	<ul style="list-style-type: none"> • Larger pool of potential tenderers which leads to increased competition • Greater scope for competitive prices because of design certainty • Contract value is set before construction starts

	When to Use (e.g. Suitability criteria)	Value for Money Drivers
<p>Design & construct</p>	<ul style="list-style-type: none"> • The government’s requirements are tightly specified before tender or do not change • Government is best-placed to manage most project risks • Limited opportunity for bundling services/maintenance and creating whole-of-life efficiencies 	<ul style="list-style-type: none"> • Single point of accountability for design and construction • Fixed price contract • Potentially, reduced overall project cost because the Contractor has the opportunity to contribute construction experience into the design, resulting in innovation and efficiencies
<p>Managing contractor</p>	<ul style="list-style-type: none"> • Complex or high-risk projects with uncertain scope, risks or technology • A degree of expert government input is available • Early contractor involvement is beneficial 	<ul style="list-style-type: none"> • Flexibility in delivery to manage uncertain risks • Maximising government input to manage risks where appropriate • Managing contractor is incentivised to achieve cost and schedule targets



6.11.1 Projects likely to provide value for money using a PPP delivery method are those with some or all of the following attributes:

- **Long term.** Contracts tend to be long-term (up to/or more than 30 years), and reflect an acceptance of whole-of-life cycle costing risk by the private party;
- **Measurable service outputs.** Government service requirements should have measurable outputs that can be translated to a performance contract. Payment mechanisms are generally structured around these output specifications to provide incentives for achieving key performance indicators;
- **Innovation.** The project is sufficiently complex to encourage innovative approaches (in design and technology) that can deliver value for money;
- **Whole-of-life costing.** Full integration, under the responsibility of one party, of up-front design and construction costs with ongoing service delivery, operational, maintenance and refurbishment costs. This delivers improved efficiency through whole-of-life costing as design and construction become fully integrated up-front with operations and asset management;
- **Market appetite.** The project creates a genuine business opportunity which is likely to attract a sufficient number of private parties and create an effective and competitive bidding process;
- **Opportunity for risk transfer.** A PPP project needs to be structured to achieve optimal risk allocation. Value for money is a key driver of PPPs and there needs to be scope to allocate appropriate risk to the private sector.
- **Bundling of contracts.** In many cases, the provision of a service or capability by the public sector depends on a number of separate contracts with different contractors. PPPs provide an opportunity to combine related services and an asset into a single long-term contract;
- **Non-core services.** Contracts are likely to include a requirement for a range of non-core services and support activities to be delivered that currently divert management and skilled staff in the public sector. These services may include accommodation availability, information technology outputs and many other services; and
- **Complementary commercial development.** The commercial opportunities that may add value to the project and/or reduce service payments to the private party (where complementary to the project objectives).

Together, these characteristics can create cost savings for government in the competitive bidding process, while giving an opportunity for innovative service delivery



and a viable opportunity to the private sector (where complementary to the project objectives). The value for- money outcomes can produce both quantitative value (through cost savings) and qualitative value (enhanced built environment, environmental achievements and improved contract management disciplines).

While the presence of these characteristics will not always mean those PPPs are a viable or the most appropriate option, their presence does suggest that PPP options should be properly considered as part of any Procurement Options Analysis undertaken.

6.12 PPP Family Decision Tree

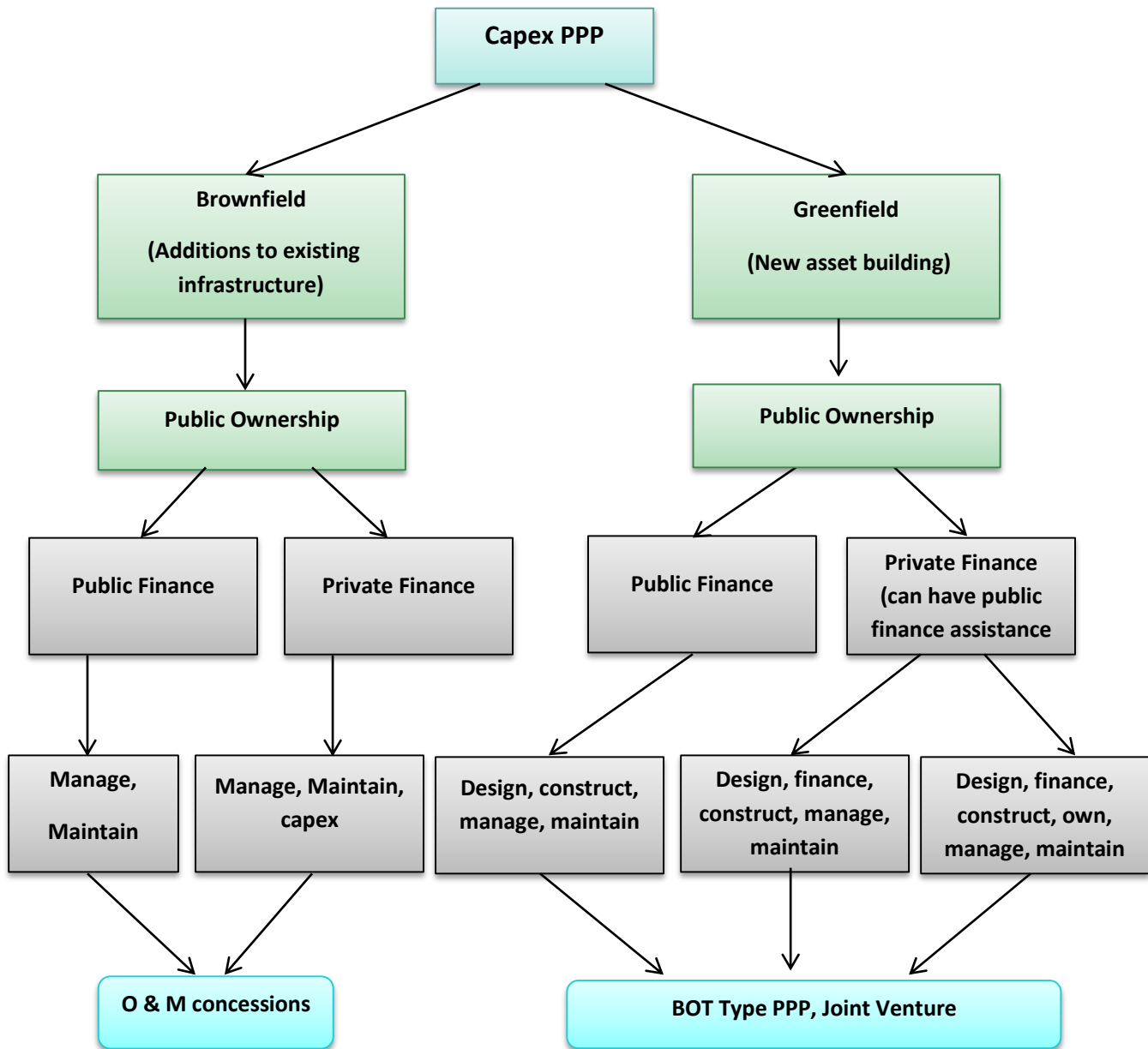


Figure No. 7 – Capex PPP



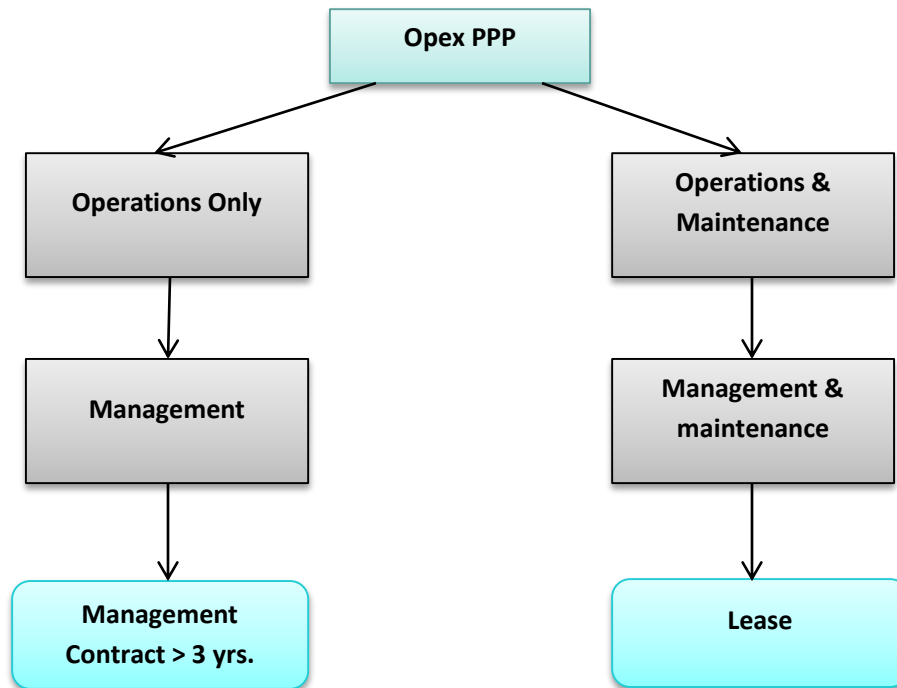


Figure No. 8 – Opex PPP

6.13 Pre - feasibility Report

Once the pre-feasibility analyses and PPP suitability checks have been completed the Sponsoring Authority will have a well-defined description of the proposed project, its general scope, preliminary cost estimates, identified resettlement and environmental issues and requirements, income generating opportunities, initial financial viability, private sector opportunities, any identified project risks, and what further actions are required to complete the project preparation and by whom.

The results of the pre-feasibility analysis would be drawn together into the Pre-Feasibility Report (PFR). The PFR is the key document to be put forward by the Project Officer in support of internal clearance in the first Readiness Check for the project. It should contain all the information that the internal review committee needs to assess whether the project is ready to proceed with further development.



The PFR will therefore give a summary of the analysis of the project that has been carried out so far. This will include:

- **Support for the project:** Outline of the need for the project, other options considered and why the proposed option is preferred
- **Preliminary project feasibility:** preliminary legal feasibility, technical feasibility, social/environment feasibility, estimates of financial viability including expectations of required Government financial support, and institutional capability analysis
- **Support for procurement as a PPP:** Outline of the Suitability Filter results, including overall assessment of PPP suitability (full results can be included as an annex); description of envisaged PPP mode and public and private sector roles
- Next steps and issues to be dealt with.

6.14 Readiness Check

If the Suitability Filter and the results of the pre-feasibility analysis are supportive of procurement via PPP the potential PPP should be subject to internal checks of its readiness and the quality of preparation to date. This Readiness Check would be carried out by a review committee within the Sponsoring Authority. If the project is deemed ready it would be given internal clearance to continue with development as a PPP.

6.14.1 The purpose of this first Readiness Check for the PPP is:

- To ensure that only projects that are suited to being a PPP are allowed to proceed into the PPP development pipeline, and
- To check for and raise flags about risks areas and aspects of the project that need particular attention during the project development.

6.14.2 The Readiness Filter for RC1 is organised into five checklists

- Project design, need and justification.
- Project suitability for PPP.
- Initial commercial case.
- Initial risk management strategy.
- Forward planning.



The members of the review committee should include the Project Officer and key personnel who have worked on the pre-feasibility checks and analysis, and high-level staff from the Sponsoring Authority who are empowered to make major procurement decisions and decisions concerning the use of the Authority's resources.

The review can be conducted in a relatively informal manner. However, the project must be made to prove itself as having sufficient quality as a PPP. This should draw on support from the results of the Suitability Filter, Mode Validation, and other pre-feasibility analyses. The committee should critically evaluate the results of the Suitability Filter, including the judgments made by the Project Officer.

It is important at this stage that the Project Officer is held accountable for all subjective judgments made in the Suitability Filter and other pre-feasibility analyses and is able to defend them robustly.

If Readiness Check 1 is favourable then the PPP project development can continue with a detailed full feasibility study. This second step is covered in the Feasibility Study section.

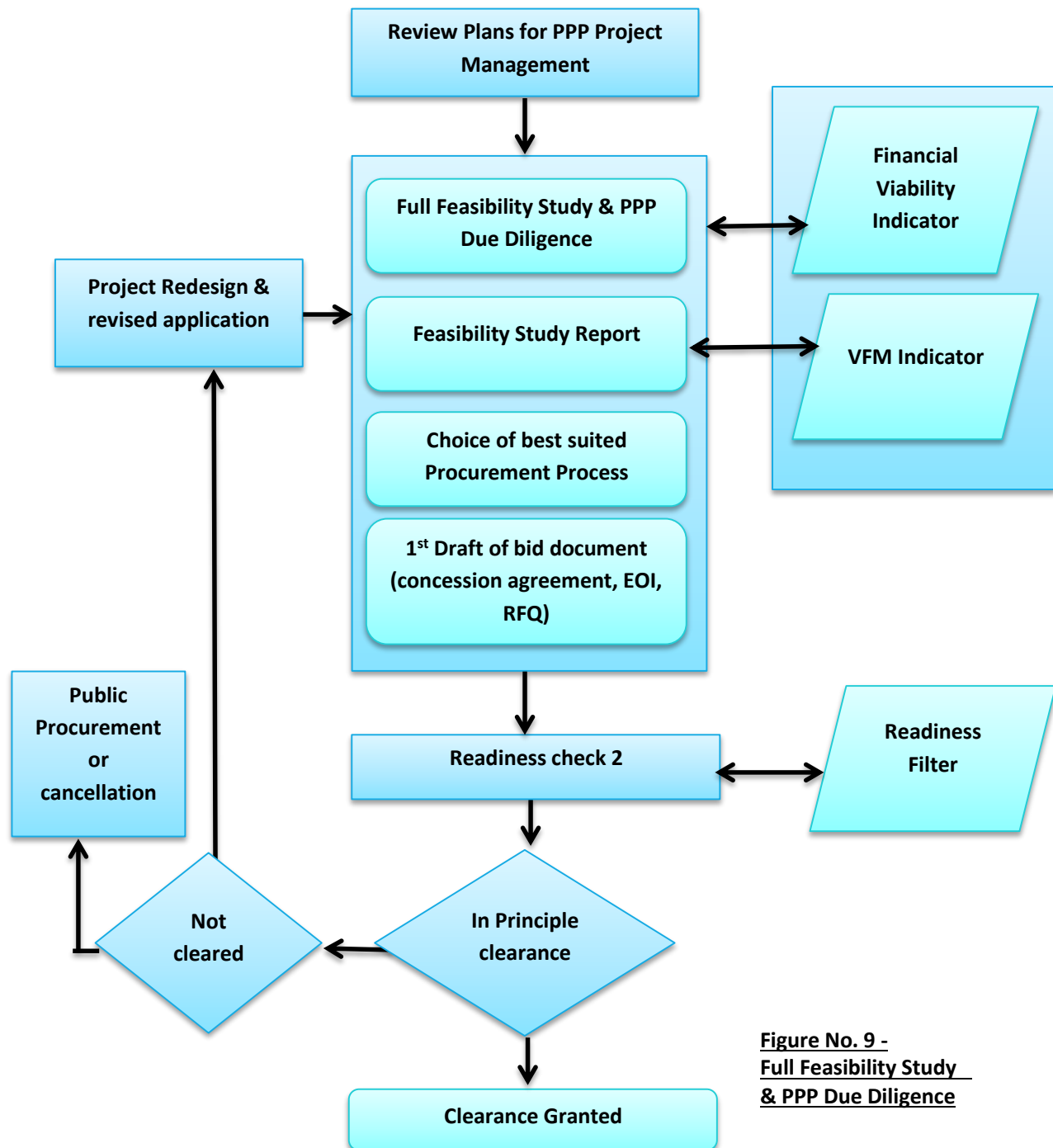




Section – 3

Phase 2 - Full Feasibility Study & PPP Due Diligence

7 Feasibility Study & PPP Due Diligence



**Figure No. 9 -
Full Feasibility Study
& PPP Due Diligence**



For projects that have internal clearance for further evaluation as PPPs the next, more detailed, stage of analysis incorporates a full feasibility study and PPP due diligence.

The purpose of the feasibility study is to investigate in detail whether the project is a desirable, viable and achievable investment. The 'full' feasibility study will expand on the preliminary scoping in the Pre-Feasibility Report to enable a more thorough assessment of project costs, benefits and risks, and further refine its development as a PPP.

The feasibility study will assess and describe the technical, social, environmental, legal, financial and economic and risk characteristics of the project and produce a project implementation schedule. It will also specify the particular PPP mode for the project.

The actual contents of the feasibility study will depend on the type of potential PPP project under analysis. A more comprehensive analysis is required for capex projects, in which design, planning and construction are major components.

The FSR will provide crucial information for the drafting of key project documents, including the RFP. It will also help with the evaluation of bids if the project continues to the PPP procurement phase. The aim at that stage is to help the public sector sponsor to negotiate and sign a PPP contract with confidence.

Several aspects of the project must be considered specifically from a PPP point of view. A PPP due diligence analysis of the project should be carried out as part of the feasibility study.

Due diligence simply means taking the full level of care to be sure the project has been well developed and planned. Of course, this level of care should be applied to all parts of the PPP process. However there are several stages where particular PPP due diligence activities need to happen, specifically:

- **Risk analysis and risk allocation**, which contributes to the detailed specification of the PPP mode
- **Financial viability**, which includes the essential financial assessments of the selected PPP mode and of the conditions under which the project can be financially successful
- **Value-for-money analysis**, using quantitative evidence if available
- Checks that the project has been well prepared through the PPP development process and is ready for the in-principle clearance process



7.1 Contents of Full feasibility Report

The analysis and information contained in a feasibility study will in general include those listed below. Each of these is a detailed separate section of the toolkit. Sector specific contents of feasibility studies are given in the tools section.

The general contents of a feasibility study include:

- **Market analysis and project scope**, to assess the need for and appropriate scope of the project, building on the work already done at the strategic planning and pre-feasibility stage. This would include:
 - a) **Needs analysis** – does the project meet an end-user need? Does it contribute to meeting the objectives of the sponsoring authority? Who will the users be?
 - b) **Options analysis** – what is the best option for meeting the service need: a no-asset solution, existing assets, or new assets?
 - c) **Define the output** – what services will the project provide?
 - d) **Estimate and forecast demand** – what level of demand is there for the outputs / services from the project, and how much are users willing to pay (what is the value of the demand)
- **Social and environmental feasibility**, including the requirements for impact assessments and for the associated mitigations
- **Technical feasibility** and technical parameters based on the market analysis, including specification of required facilities and scenarios of project size, for use in preliminary project design
- **Risk studies and refined PPP mode** – Assessment of the risks associated with the project, study of which party is best able to bear each risk, and refinement of the PPP mode selected at the pre-feasibility stage
- **Preliminary cost assessment**, to within a sufficient $\pm\%$ range based on the technical specification and assessed project risks
- **Financial analysis and due diligence**, incorporating a projected revenue structure (e.g. Proposed tariff, required annuity) and assessing any need for financial support from the public sector
- **Economic feasibility** – Assessment of overall net economic benefit of the project, incorporating estimated project benefits and costs including non-market factors such as those from the social and environmental assessment.
- Other PPP due diligence activities, including **value-for money analysis** if data is available



- **Project implementation schedule**, including an outline of the proposed PPP procurement and award process through to technical and financial close, an outline of the construction schedule and target operation date, and any phasing that is planned for project extensions or ongoing development

7.2 Market Analysis & Project Scope

The technical design and economic and financial viability of an infrastructure project depend crucially on the services that need to be delivered, the project size, and options for recovering the cost. This is especially true of physical infrastructure that has large capital cost requirements, such as ports and network infrastructure like roads and water and sanitation systems.

The market assessment and demand analysis provides an important foundation for determining the scope (definition and scale of outputs) of the project. The results feed into all the other parts of the feasibility analysis and support PPP due diligence.

A preliminary market analysis will have been carried out as part of the investment planning and / or pre-feasibility or initial screening analysis.

7.3 Need Analysis

Need analysis is about the proper identification of the outputs and objective of the project which is critical to achieving the desired public service outcome. The need for a new service can stem from a number of reasons, viz. new Government policies, regulatory compliance, increased demand for services, replenishing of asset capacity, increasing or providing an alternative range of services, business improvements and efficiencies, sustaining service delivery, or enhancing service capacity.

An overall need assessment should be carried out, taking into account the types of services users will need, total user demand for those services, and all sources of existing and planned delivery of services.

The existing infrastructure should be assessed for its ability to deliver the currently needed services and the service requirement expected for the future.

An assessment should be made of:

- The service capacity of existing assets.
- The service standard provided by existing assets. Service standards are typically measured by performance indicators relevant to the sector.

The condition of existing assets, including how well maintained they are their age and likely longevity.



The public entity would need to question itself on whether there is a need for the proposed development, whether the capacity of existing assets is adequate to provide the quality service delivery to people, what is the life of the existing asset and whether it is time to replace it or augment capacity, etc. It is only after sufficient scrutiny of the existing assets that it will be possible to establish the need for any project/ service delivery.

For example, service needs such as safe drinking water, sewage disposal, and provision of subways can originate from any of the above-mentioned reasons and thus can be identified as a service delivery need.

Example of Service Delivery Need – Constraints & Outcome

- low capital budgets with the Government
- urgency with which the solution is required to reap results
- making it affordable for users

The outcomes would broadly be:

- increasing the hours of power supply
- maintaining minimum voltage to a service level

7.4 Options Analysis

Options analysis would include listing out all the available options to address the need, evaluation of the merits and demerits of each option and selecting the optimum option which best suits/addresses the need. It is at this stage, the public entity looks into the pros and cons of several options by which the current need could be addressed.

7.4.1 Options Available (Three Main Options)

- **Existing Asset Based Options:**

The public entity needs to consider whether the existing assets held by the Government can be used to deliver the solution. This may involve the renewal, enhancement, replacement, adaptation, or reconfiguration of existing assets. Common examples are the development of properties under the Refurbish-Operate-Maintain and Transfer (ROMT) framework and the capacity augmentation of airports/ports, etc.

- **Non – asset based options:**

This involves delivering the necessary service without creating any additional assets but by reconfiguring the means of service delivery, developing initiatives to manage demand more effectively, or better using existing assets. Normally this solution requires improving the management of existing assets. One example of a non-asset based solution is a regulatory or policy change that allows for one way roads or no entry areas to better manage city traffic. This is more akin to introducing better management techniques to do away with the hurdles in traffic.



- **New Asset Based Options:**

In this option, new investment in assets may be envisaged based on the need to update an outdated technology or when new technology is needed. Examples for new asset based options are the Greenfield airports in Bangalore and Hyderabad and satellite townships around large growing cities such as the development of Naya Raipur to decongest Raipur.

Example of a solution using all three options in managing city traffic reducing traffic congestion in a city may require all three options to tackle the problem effectively:

- **Existing Asset Solution:** Widening of roads, enhancement in design, etc.
- **Non-Asset Solution:** Traffic Police managing the traffic during peak hours, making the road one way and using any other link road to divert the traffic during peak hours
- **New Asset-Based Solution:** A flyover or alternative/ bypass roads etc.

The next step is to evaluate the most viable option after identifying and examining the advantages and disadvantages of each option and the risks and benefits to the Government from each option.

The data typically used in options analysis include:

- Demand and cost projections
- Estimation of Life Cycle Costs (concept, development concept or preliminary design estimates)
- Service delivery models and performance requirements
- Technical information, for example, locality plans, topographical and geological data
- Permits/consents/approvals
- Site characteristics and constraints
- Any revenue expectations
- Suitability, performance/condition of any relevant existing infrastructure

7.4.2 Choosing Best Option

The first step in options analysis is to consider all available solutions for addressing the service need. The options should include identifying all potential methods that will meet the need, including non-asset solutions, using or adapting existing resources, and demand management strategies.

The options that are commonly adopted for analysis may include the following:

- Existing asset based option
- Non-asset based option
- New asset based option

All of these help to deliver the required service/projects and may use existing assets, create new assets, or may require no new creation of assets.



7.4.3 Definition of Project Output

Clearly, stating the output from the project and other basic parameters. Project outputs should be defined in terms of the delivery of services rather than the creation of assets.

Output definition would include project timing: when will investment need to be made, when will the project become operational, and what will be the economic life of the project? This is an important input to the demand analysis.

7.4.4 Demand Forecast

This involves a forecast of the potential demand for the defined outputs among target users, and of expected growth in demand over the life of the project. This would usually require an estimate of the level of demand that isn't currently being met (that is, the level of need) due to insufficient coverage or quality. The ability or willingness of the target users to pay for the service should also be estimated.

The market study estimates the likely revenues that will accrue to the project over the project period. This is an important input for the economic and financial viability analysis and is critical when assessing the bankability and affordability of a project.

Demand estimation is crucial in estimating the financial feasibility of the project and it ultimately has a bearing on the structure of the project. Inaccurate demand forecasts have the following implications:

1. If actual demand is more than the estimate

- The private partner might earn more revenues than expected, leading to higher equity returns;
- Infrastructure capacity might be insufficient to absorb higher demand implying that the project sizing may need to be reviewed.

2. If actual demand is less than estimated

- The private partner might earn less revenues than expected, which could impact service delivery;
- Tariffs might have to be increased to offset lower demand, which, in turn, would increase the burden on the consumer;
- If tariff increases do not lead to a financially sustainable situation or if tariff increases are unacceptable, the Government may have to step in and provide support or take over the project.

The market study also analyses the price elasticity of demand, which captures the user preferences for a project facility at different price points.

Elasticity of Demand

- Price elasticity of demand (PED) is an elasticity used to show the responsiveness of the quantity demanded of a good or service to a change in its price. More precisely, it gives the percentage change in demand one might expect from a one per cent change in price.



- Price elasticity is almost always negative, although analysts tend to ignore the sign even though this can lead to ambiguity. Goods with a small PED (less than one) are said to be inelastic: changes in price do not significantly affect demand as, for instance, in the case of drinking water. Goods with large PEDs (greater than one) are said to be elastic: a slight change in price may cause a dramatic change in demand.
- Revenue is maximised when price is set so as to create a PED of exactly one. PEDs can also be used to predict the incidence of tax. Various research methods are used to calculate price elasticity including test markets, analysis of historical sales data and conjoint analysis.
- Quality is also an important element in the elasticity assessment – for example, the issue of interconnectivity in case of urban transports projects. No interconnectivity implies low quality, which implies low demand.

7.5 Social & Environmental Feasibility

Infrastructure projects will often have significant social and environmental impacts arising from their construction and operation, which can be both positive and negative. The impacts may include flow-on effects beyond the immediate project area and beyond the people directly associated with the project (secondary impacts).

Along with the technical feasibility study, the legislative and regulatory framework of a project may require the public entity/private partner to undertake Environment Impact Assessment (EIA) and Social Impact Assessment studies prior to according approvals. Approvals may pertain to project development/approvals for sanction of funds. For instance, multi-lateral agencies that lend to infrastructure projects usually review the impact of the project on the environment and society. Hence, it may be required to conduct Environment Impact Assessment (EIA) & Social Impact Assessment (SIA) studies simultaneously with or immediately after the technical feasibility study in accordance with the prevailing statutes.

Social impacts on communities affected by the project include, for example, requirements for resettlement and the associated impact on quality of life and livelihoods, and impacts related to environmental alteration (e.g. on health and livelihoods)

Environmental impacts on the project location and in associated areas (e.g. downstream, ground water or ambient air) include effects on environmental resources due to alterations or pollutants

It will often be a mandatory regulatory requirement for assessments of social and environmental impacts to be carried out during infrastructure project development. The scope of social and environmental studies can cover:



- Quantifiable social and environmental costs and benefits
- Non quantifiable social and environmental costs and benefits
- Options for mitigating adverse impacts and the cost of mitigation.

The secondary effects should be included in the assessment. Public consultation is often a part of the social and environmental feasibility process.

The analysis should identify what type of social and environmental impact studies are needed, and the type of permits and licenses required, and should take into account health and safety standards. This information will assist the sponsor with the preparation of tender documents if the project is taken to market, and will assist bidders with the preparation of risk minimising bids.

The final assessment of environmental and social costs and benefits is an input to the economic assessment of the project. Therefore, in addition to being a requirement from a legal and regulatory perspective, the social and environmental analysis is an important part of the assessment of the project's overall welfare impact, as captured in the economic analysis.

7.5.1 Environmental clearance and Environmental Impact Assessment (EIA)

EIA studies are primarily based on the procedures stipulated by Ministry of Environment and Forests, Government of India (as per the EIA Notification No. S.O.1533, dated September 14, 2006). It involves screening of projects, scoping of environmental impact assessment, environmental clearance, and environmental monitoring and compliance during the construction and operation phases of the project. At the same time, EIA should be consistent with the environmental safeguard policies of funding agencies such as the World Bank and the Asian Development Bank (if lending from these agencies is envisaged). For instance, the screening criteria for infrastructure projects defined by Govt. of India do not entail environmental clearance for water supply and sanitation projects. Such projects, therefore, do not require preparation of environmental impact assessment. However, the environmental safeguard procedures of funding agencies like the World Bank require "Environmental Due Diligence" or "Environmental Assessment/Analysis" based on the nature, magnitude and significance of the project's environmental impact. Stakeholder consultations and review of legislations pertaining to environmental safeguards should be carried out as part of an EIA study.

An Environmental Impact Assessment (EIA) report is often a key requirement as part of the process of gaining Environmental Clearance. In the recent past an EIA has been a particularly stringent requirement for large infrastructure projects (such as Highways, Ports, Airports, Power Plants). EIA is governed within the EC process.



In some cases a preliminary EIA is carried out at the feasibility stage and a complete assessment takes place during procurement. In other cases the full EIA will be carried out as part of or in parallel to the feasibility study. Depending on the regulatory regime, final approval may depend on the EIA being satisfactory and that there are no major adverse environmental impacts which can't be mitigated. The whole environmental clearance process can take a year depending on the complexity of the project. This must be factored into the PPP development plan.

The various particular factors to be considered for EIA are sector specific. However, in general, following are common to EIAs prepared for all sectors

- **Project description:** Describes the proposed project and its geographic, ecological, social and temporal context, including any off-site investments that may be required. Indicates the need for any resettlement or social development plan.
- **Baseline Data:** Describes relevant physical, biological and socioeconomic conditions, including all changes anticipated before the project commences, within an area around the project site. Under current regulations in India this is a radius of 10 or 25km of the site, depending on whether the site is in the vicinity of sensitive areas such as National Parks, sanctuaries, or archaeological monuments. Additionally takes into account current and proposed development activities within the project area but not directly connected to the project.
- **Environmental Impacts:** Predicts and assesses the project's likely positive and negative impacts in quantitative terms to the extent possible. Identifies mitigation measures and any negative environmental impact that cannot be mitigated. Explores opportunities for environmental enhancement
- **Analysis of alternatives:** Systematically compares feasible alternatives to the proposed projects site, technology, design and operation including the "without project" situation in terms of their potential environmental impacts, feasibility of mitigating these impacts, their capital and recurrent costs, their suitability under local conditions and abatement.
- **Environmental Monitoring Programme and Environmental Management Plan:** Describes mitigation, monitoring and institutional measures to be taken during construction and operation to eliminate adverse impacts, offset them, or reduce them to the acceptable levels.
- Description of project costs and benefits
- **Consultation:** Record of consultation meetings, including consultations for obtaining the informed views of the project affected people (PAPs), local NGOs and regulatory agencies. Disclosure also of the consultants that were engaged during the study.



- Summary and conclusions covering the justification for the project and the approach to mitigating adverse effects

7.5.2 Social Impact Analysis / Social feasibility

Social Impact Assessment (SIA) is a process that provides a framework for prioritizing, gathering, analyzing, and incorporating social information and participation into the design and delivery of projects. It ensures that infrastructure project development is:

- informed and takes into account the key relevant social issues, and
- incorporates a participation strategy for involving a wide range of stakeholders

At the micro-level, SIA impacts on individuals, at the micro-level it impacts on collectives (e.g. groups of people, institutions, and organizations) and at the macro-level it impacts on social macro-systems (e.g. national and international political and legal systems).

7.5.3 The stages in Social Impact Assessment are:

- Describe the relevant human environment/ area of influence and baseline conditions
- Develop an effective public plan to involve all potentially affected public
- Describe the proposed action or policy change and reasonable alternatives
- Scoping to identify the full range of probable social impacts
- Screening to determine the boundaries of the SIA
- Predicting Responses to Impacts Develop Monitoring Plan & Mitigation Measures

Social Impact Assessment in relation to other assessment

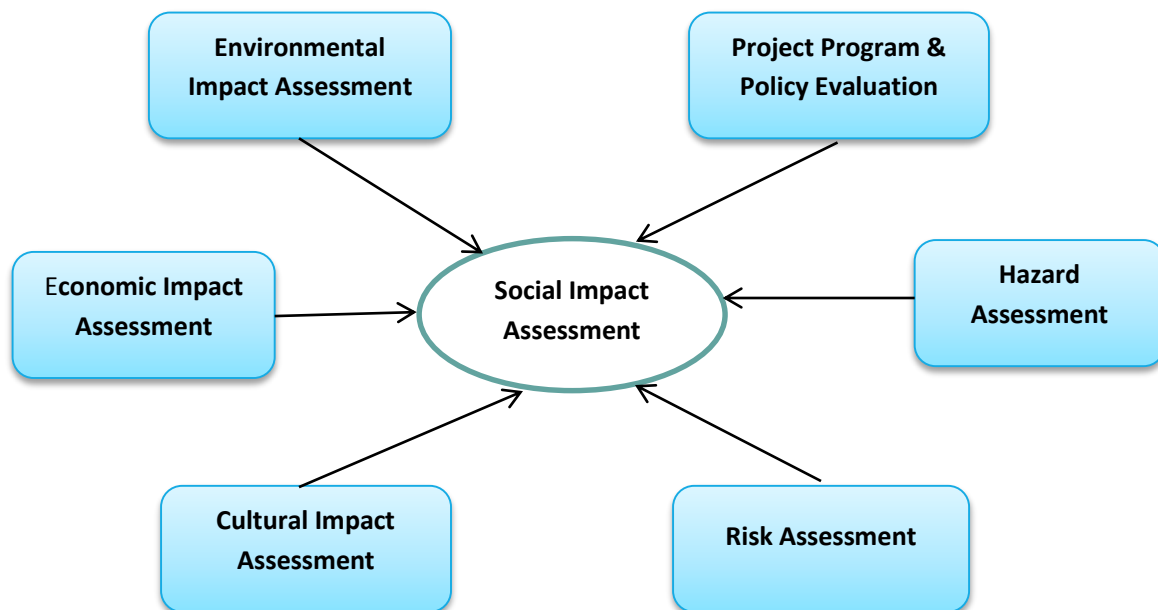


Figure No. 10 – Social Impact assessment in relation to other assessments



7.6 Technical Feasibility

A technical description of the engineering & non-engineering aspects of project would be developed. This would be based on service definition and sizing in project scope.

This would include:

- Field surveys of the project site, which may include (depending on the project) mapping, topographical and geotechnical surveys,
- Analysis of environmental conditions that impact on the technical design. There may be some overlap between the information collected for this task and for the environmental impact assessment.
- A preliminary technical design of facilities required to provide the project outputs. This should consider alternative design options, taking into account uncertainty in the demand projections and other site-related uncertainties.

Technical feasibility study will answer following answers:

- What are the various engineering/design options and the optimum option?
- What is the cost associated with and service levels expected of the various engineering/design options?
- Which of the engineering/ design options would be amenable for implementation by the private sector?
- How does each of the options affect environment and the society?
- What could be the public entity's extent of involvement in land acquisition and associated infrastructure creation, such as connectivity, water supply, power, etc.

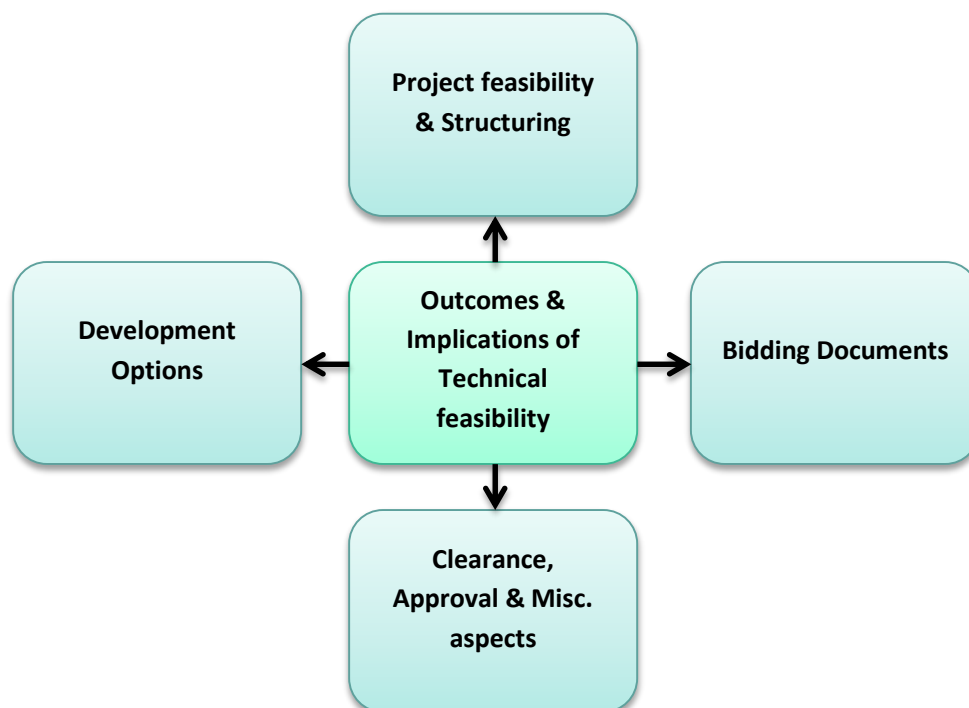


Figure No. 10 – Outcomes of Technical Feasibility



7.6.1 Development Options

Technical feasibility studies are carried out primarily to analyse the possible design and engineering options that could be applied and the different technologies that could be adopted for project implementation. The various development options generated from the technical feasibility study rest on the premise of delivering quality service that is cost-effective, energy efficient, environment friendly, commercially and economically viable and beneficial to society. At the same time, the development options must be flexible enough to allow for technology improvements that may be required from time to time.

The coverage of a technical feasibility study would vary across sectors and would depend on the scope of the project. For instance, in roads, railways, urban transport systems, bulk water supply systems and water distribution projects, it will be necessary to study network alignment options in addition to the design and engineering options. Similarly, in projects to develop industrial infrastructure such as logistic parks, special economic zones, or the development of transport projects like airports, ports, transport terminals, or the development of landfill facilities, it will be necessary to analyse various site suitability options.

While suggesting design and engineering options as part of the technical feasibility study, the life of the project and risk of obsolescence of the design/technology proposed must be considered. The risk of obsolescence is greater in technology intensive projects.

7.6.2 Inputs to Project Feasibility & Structuring

The key inputs from the technical feasibility study are the cost estimates (capital and O&M costs) and revenue estimates which determine the financial and economic viability of the project. The inputs have a significant impact on the implementation structure decided for the project. It is therefore important that the costs and revenues are estimated accurately, to the extent possible.

- **Estimated Project cost / Total Project cost**

The costs incurred to build/ renovate/ rehabilitate an asset or provide a service is referred to as the capital cost of the project (also termed as project cost) while recurrent costs during operation and maintenance of the same is termed as the operation and maintenance (O&M) cost.

The project cost is estimated primarily from the base construction cost (sum of costs associated with the construction of all project facilities) for a selected development option, derived from the technical feasibility study. Other costs such as escalation in prices, contingencies, pre-operative costs, financing costs and interest costs during construction (IDC) are added to the base construction cost to arrive at the estimated project cost.



Estimated Project cost may include following components:

- Base construction cost
- (+) Financing cost
- (+) Preliminary & Pre operation cost
- (+) Interest during construction & Financing cost
- (+) Escalation
- (+) Contingency

Correct calculation of the "Total Project Cost" or "TPC" is important in any project proposed for development under PPP framework as TPC has a bearing on certain commercial terms of the PPP arrangements. For instance, as per the MCA for development of National Highways, in the event of a default resulting in termination, the payments to be made by the public entity to the private entity is indirectly linked to TPC. Furthermore the performance security to be furnished by the private entity is also linked to TPC.

- **Operation & Maintenance Cost:**

The other component of cost is the O&M cost. This normally includes direct costs and overheads. Overheads reflect the expenditure for administration, management, risks and profits. Direct cost is the cost of inputs such as labour or material, which is determined by the cost of construction and the economic and market conditions.

Each design/engineering option set out in the technical feasibility study would have an O&M cost associated with it. O&M costs would be the recurring expenses that are to be incurred during the project period/concession period.

It may also be necessary to disburse the capital cost of a project in phases whereas O&M costs would usually exhibit a linear or block increase. In the case of a water supply project, the population increase in the region exhibits a linear growth whereas the capacity augmentation is required in phases (for example, in a block of ten/fifteen years depending on the project period, size and scale of infrastructure).

In the case of a metro project, rolling stock is added at specific time intervals, leading to block increase in both capital and O&M expenditure.

- **Contingencies**

One of the key challenges that infrastructure projects face is time and cost overruns. The table below gives an indication of the time and cost overruns in various infrastructure projects in India.



The possible causes for cost overruns are outlined in the diagram below:

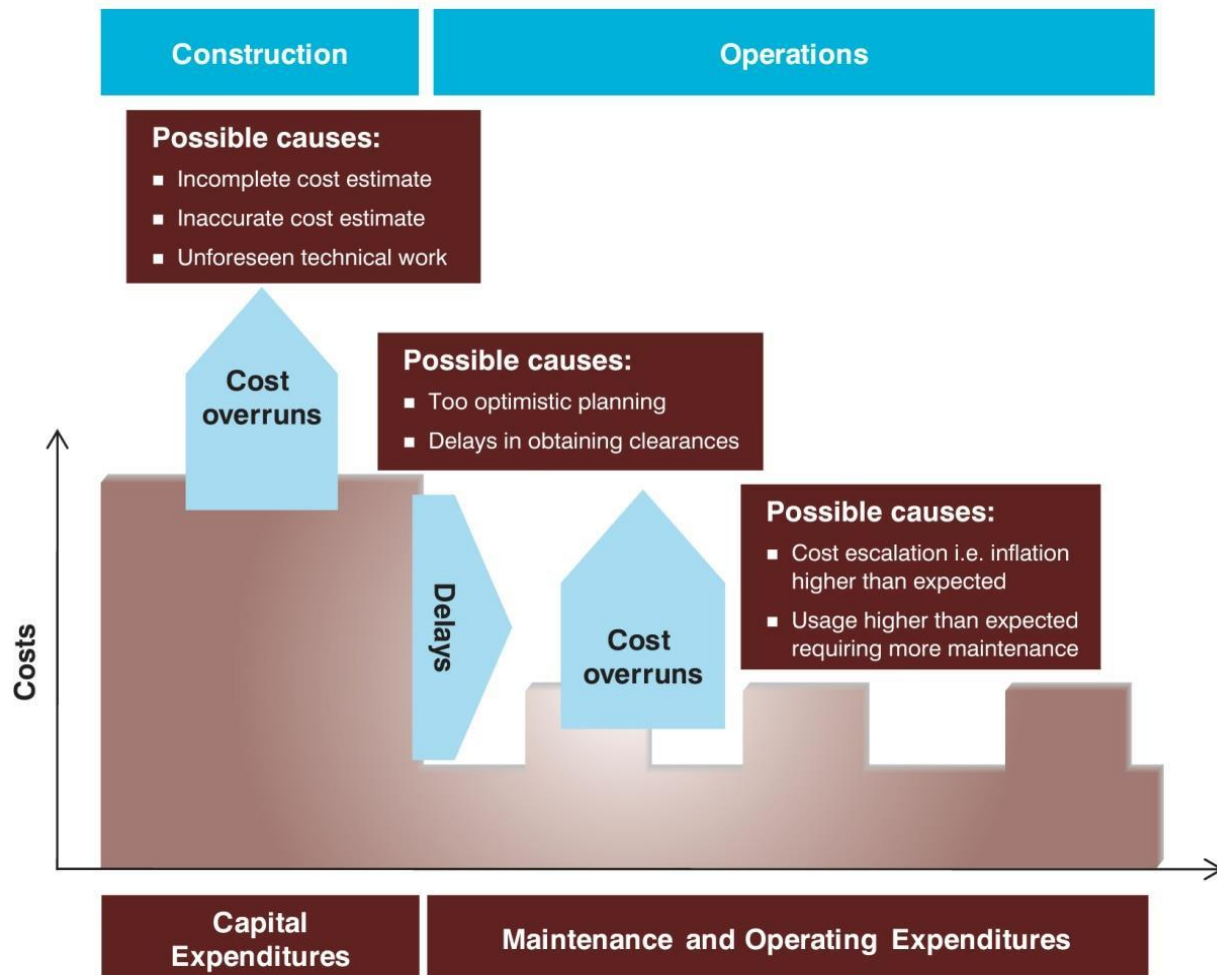


Figure No. 12 – Probable Causes for Cost Overrun

It may be difficult to make very accurate estimations on the costs (capital and O&M) and revenues at the time of technical studies. It is thus prudent to provide margins for cost overruns and other contingencies. The quantum of such margins may be determined on the basis of past experience in developing similar type of projects.

7.6.3 Inputs to Bidding Documents

The outputs of the technical feasibility study serve as an important input to finalize the bidding documents. Bidding documents typically consist of the Request for Qualification (RFQ), Request for Proposal (RFP), Draft Concession Agreement (DCA) and Project Information Memorandum (PIM). There are a few other variants of bidding documents which are used on the basis of project need.



Input to Bidding Document		
RFQ / RFP	Maintenance & Operations Expenditure	Project Information Memorandum
<ul style="list-style-type: none"> • Bid Security • Eligibility criteria • Qualification criteria • Performance Security 	<ul style="list-style-type: none"> • Estimated Project cost • Performance Indicators • Technical schedule 	<ul style="list-style-type: none"> • Project description • Designs / Drawings • Land use plans • Mandatory & additional facilities

- **Request for Qualification and Request for Proposal:**

The value of the bid security and performance security are derived as percentage of the estimated project cost. Estimated project cost also serves as one of the factors in determining other conditions of the bidding document such as eligibility criteria and qualification criteria pertaining to the technical capacity and financial capacity of a bidder.

- **Project Information Memorandum (PIM):**

PIM provides information about the project and is part of a bidding document. Model RFQ & Model RFP issued by the Ministry of Finance, Government of India (Govt. of India) provides for the public entity to insert either an information memorandum or a project report/feasibility report as part of the documents for bidder's information. The contents of the PIM are generated from the technical feasibility study report.

Indicative component of PIM

What generally goes into a PIM?

- General description of the project and project site
- Key issues and concerns in the project
- Brief market assessment study

What does not generally feature in a PIM?

- Financial viability analysis of the project
- Economic viability analysis of the project

Note: Contents of PIM could vary with the sector and the project.

- **Draft Concession Agreement and Schedules:**

In addition to information provided in the PIM, the technical feasibility study also provides details regarding the project site, development and construction requirements, etc. which is included in the agreement to be executed with the selected bidder.



Schedules in the DCA of an urban rail system would include following heads:

- Site of the project
- Development of the Rail System
- Project Facilities
- Specification and standards
- Applicable Permits
- Performance Security
- Project Completion Schedule
- Drawings
- Tests
- Completion Certificate
- Maintenance Requirements
- Safety Requirements
- Monthly Fare Statement
- Passenger Charter
- Traffic sampling
- Selection of Independent Engineer
- Terms of Reference of Independent Engineer
- Fare Notification
- Escrow Agreement
- Panel of Chartered Accountants
- Vesting Certificate
- Substitution Agreement
- Shareholders Agreement

It may be observed that most of these schedules are derived from the technical feasibility studies.

- **Key Performance Indicators:**

The clauses on minimum service levels or key performance indicators that feature in the agreement are largely determined from the technical studies. For example, the design capacity of the road in a road project and the service level benchmarks pertaining to reduction in non-revenue water, continuous water supply, etc. in a water supply project are derived from the technical studies.

7.6.4 Typical Performance Indicators

In Power Project

- **Generation** – Plant Load Factor, normative availability for generating station – 85%
- **Transmission** – Transmission losses
- **Distribution** - Aggregate technical and commercial losses



In Bulk Water Supply Project

- Permissible losses in storage of water – 1.5%
- Permissible losses in transmission of raw water from abstraction area to water treatment facility – 2%
- Permissible losses during the treatment of raw water at water treatment facility – 2%
- Permissible losses during transmission of treated water from water treatment facility to the water storage reservoir – 3%
- Supply of treated water not as per prescribed quality – penalty
- Delay in recording meter readings and entry in computerised billing system - penalty
- Sale of treated water without due authorisation of the public entity - penalty
- Failure to deposit consumer payments in the designated bank(s) within the stipulated period of time from the payment due date - penalty

7.6.5 Approval & Clearances

Project development requires availability of certain core/trunk infrastructure in place, at least up to the battery limits of the project site. Land is the foremost requirement for any project. The project site and acquisition of land that is free of encumbrances is the responsibility of the Government. The technical studies list out all the approvals and clearances that have to be obtained for implementation of the project. It also lists the utilities/ancillary infrastructure that may be required for the project.

The list of utilities (such as power, roads, right of way, drainage, water supply, etc.), the quantum of such utilities, the cost of providing them, and how far they need to be moved for the sake of project development are all outcomes of the technical studies.

The types of approvals largely fall under the following heads:

- **Administrative approvals:**
Administrative approvals for a project are the prerogative of the public entity.
- **Regulatory Approvals from Boards/Agencies/Authorities:**
Either the public entity or the private partner can obtain the regulatory approvals, depending upon the stage in the project development process, entity best suited for obtaining the approvals and the statutory requirements of the approvals/ clearances.

7.6.6 Utilities/Ancillary Infrastructure

In projects such as the development of roads, bulk water supply and urban rail development, the alignment options outlined in the technical feasibility study could entail shifting of utilities from the project sites. These are listed in the technical feasibility study report. It is in the interest of the project that the costs incurred on land acquisition and utility shifting from the project site are borne by the public entity.



Indicative Technical Feasibility Studies

Roads

- Alignment studies
- Topographic studies
- Traffic study including origin-destination surveys, willingness to pay survey, willingness to shift survey, junction traffic assessment etc. The traffic study would generally be carried out for a 7-day period to screen out outlying conditions
- Infrastructure requirement based on the alignment, topography and traffic studies is determined

Solid Waste Management (SWM)

- Quantum of waste generation
- Source wise waste generation
- Waste characterisation
- Assessment of calorific value
- Mapping of waste management system
- Landfill site assessment

Water Supply

- Base network map, setting out the assets (bulk and distribution) and their respective locations, location of any other utility lines
- Quality checks of the water samples
- Soil characteristics
- Hydraulic testing
- UFW assessment
- Inventory and status of assets (sub and super-surface) including source details, length of transmission and distribution networks, type of material, year of construction and installation as applicable, reservoirs and overhead tanks, pumping machinery, bore wells, water treatment plants (capacity, type and current status)

7.7 Risk Studies & Redefined PPP mode

Many of the PPP project risks should have been identified at the pre-feasibility stage using the Suitability Filter. The feasibility study should expand on this with an assessment of all foreseeable risks associated with the project.

The types of risks that are relevant will depend on the type of project and the sector. The analysts engaged for the feasibility study should assess all possible risks as applicable to the particular project.

The various risk factors that can affect the project performance need to be assessed continuously but a comprehensive risk analysis of a project is undertaken at least three times:



- Initially by the Government as a part of the project development process
- At the time of bidding, by the prospective bidders
- By financial investors, lenders and equity providers, before investment

If risk analysis is comprehensively done as part of the project development process, there will be fewer surprises later and private investors and lenders will have greater confidence in the project, ensuring quick and efficient financing.

Risk analysis is an iterative process and needs to be carried out at various stages of the project development process.

The parties involved in a project can affect the amount of risk by:

- The level of influence they have over events, and
- The level of information they have about the present and the future.

Influence relates to the power that parties have to create action and determine outcomes. Influence can come from delegated Authority, such as a public entity which has certain powers granted to it under law, or from good management and organisation, or from specific knowledge.

Information is directly related to risk. It is precisely because we usually don't have all the information that we can't predict future outcomes for certain. When we have better information we are better able to foresee and reduce risk.

The public and private sectors are different in the types of influence and information that they have. This means they can control risks in different ways and are better at controlling some risks and not as good at controlling others.

For Example:

The public sector has certain powers and advantages in the process of land acquisition that mean it is sometimes better suited to this task and to taking the associated risks.

By contrast, the private sector is exposed to competitive pressures that force it to establish improved management practices. It is also often the technology leader. This means it may be better suited to managing the design and construction risks.



7.7.1 Framework for Risk Assessment

Risk assessment is used throughout the project life cycle

There are four major steps in risk assessment

1. Risk identification
2. Risk management
3. Risk allocation
4. Risk valuation

By necessity, identifying risks is the first step. This is followed by allocation conducted in parallel with management, on the basis of which valuation can be determined. Once a project is underway, the management of risks may affect the allocation and valuation. New information may also become available throughout the project life cycle, making regular updates a necessity. After describing the different steps in detail in the chapters that follow, every chapter provides further guidance with respect to process, timing, information, and the experts needed.

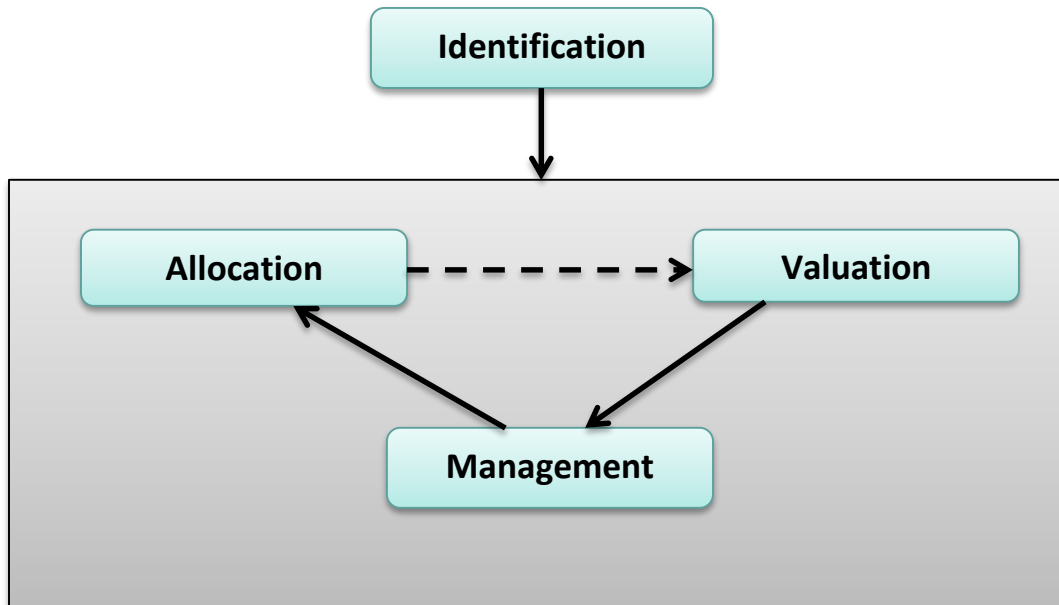


Figure No. 13 – Stages in Risk Assessment

Risk assessment remains a dynamic process throughout the total project cycle. The process illustrated above is repeated at certain intervals or when relevant information becomes available to the practitioner. However, as stated earlier, the risk assessment is not equally detailed throughout all project phases. In the early phases a high level assessment will suffice, whereas in later phases—for example when a PPP transaction is structured or when doing a VfM assessment on the basis of real PPP bids—a much more detailed analysis may be performed.



Be clear on the goal(s) of the risk assessment

Within the larger purpose of project management, risk assessment seeks to develop:

- Realistic risk valuation as part of financial feasibility analysis and VfM assessment;
- Effective risk management measures and strategies; and
- Efficient and realistic risk allocation to be used in structuring a contract

The methodologies used in risk assessment differ from project to project. When beginning an assessment, it is important to determine the goal of the analysis in order to fine-tune the methodology. The relative importance of the three goals listed above changes based on the different project phases. Roughly speaking, risk valuation is most relevant during the project assessment and project development stages. Risk allocation is usually most important during the procurement stage, and risk management is most relevant in the project implementation stage.

The three goals do not exist separately, but are instead interrelated. Risk management provides input for risk allocation and helps when answering the question, “Which party is best able to manage a risk?” The ability to manage—and thus accept—the risk influences and determines its valuation. This cycle can also be iterative in nature; constant information updates occur in any given project, therefore risk assessment is a continual process. When new information becomes available, the risk management strategy may change in parallel with risk allocation and valuation.

To conduct a risk assessment as part of the VfM assessment, the following steps are typically followed:

1. Identification of risks
2. Initial allocation of risks between the public and private entity for different delivery methods
3. Initial valuation of risks
4. Identification of risk management strategies
5. Optimization of expected value of risks, by choosing the optimal risk management strategy and allocation

7.7.2 Risk Identification

Risk identification is the foundation of risk assessment

Risk identification is not a goal itself; rather it is a step that directly serves the other elements of risk assessment: risk valuation, risk management, and risk allocation. The level of detail of the identification can vary depending on the nature of the analysis. For the purpose of risk valuation, it is important to be complete. Risk management requires the identification of the most important risks. Risk management does not require practitioners to identify every single risk, but only the biggest ones.

The emergence of PPPs has revealed explicit risks that practitioners were unaware of, prompting changes to the methodology for addressing risks when using innovative



delivery methods. In most conventional contracts, risks are explicitly transferred to the private party while all other unidentified risks essentially remain with the public agency. In a PPP contract, the risk transfer is the other way around. The contractor becomes responsible for the project and all of the risks attached, except for the ones explicitly retained by the public agency.

This change can create confusion because it is often not entirely clear, or easy to identify, which risks the public agency retains in a conventional delivery method and which ones are transferred to the private sector in PPP procurement. Given that under the PPP delivery scenario these previously unidentified risks are now transferred and priced, the PPP option may appear extremely expensive. This may be true when comparing a private bid to a Public Sector Comparator (PSC) in situations where these risks are not valued, but that is akin to comparing “apples to oranges.”

Whereas the risk identification method and process may vary depending on the goal of the risk assessment, the overall purpose of risk identification is fourfold:

1. Identifying the risks of a project within the scope of the risk assessment;
2. Verifying that project stakeholders have a common understanding of the risks;
3. Prioritizing and identifying the most important risks; and,
4. Structuring the risk register and assessing the overall risk profile

To identify all risks and avoid any “blind spots”

During the initial risk identification, one of the major challenges is avoiding blind spots. These blind spots can occur when areas are overlooked, either because of negligence or from paying too much attention to certain risks but not to others.

To avoid having to create a new process, several approaches for developing a complete risk identification process are described below:

- Have all relevant expertise perspectives involved and present in the risk workshops. Staff members and experts with knowledge and experience in all of the fields listed in Checklist #1 (below) should be involved in the process.
- Use existing risk assessments for inspiration. This should not be a simple “cut and paste” exercise; instead, it is tailored to the specific project, while simultaneously utilizing information from previous projects as guidance.
- Use standard categories and checklists to facilitate completeness. The most relevant checklists are the following:



<u>Checklist #1: Issue</u>	<u>Checklist #2: Project Phase</u>	<u>Checklist #3: Agreement</u>
<ul style="list-style-type: none"> • Financial & economic • Legal • Engineering • Permitting • Social • Technical • Organizational • Spatial & geographical • Demographical • Environmental & ecological • Political • Public safety 	<ul style="list-style-type: none"> • Project development • Design • Engineering • Construction • Operation • Maintenance • Major maintenance • Hand back 	<ul style="list-style-type: none"> • Compensation event • Delay event • Force majeure

Risk prioritization is a vital element for risk management purposes

The objective of risk prioritization is to preselect significant risks in order to separate them from insignificant risks. This step can save a great deal of time in the long run, because it prevents undue attention being given to the management of risks that, in actuality, matter very little. The qualitative risk assessment determines two factors: the likelihood of a risk occurring, and the consequences of it occurring. These factors are assigned the qualitative values of very high, high, medium, low, or very low. These judgments are then entered into a risk impact matrix to determine the risk rating.

Table No. 6 - Sample Risk Analysis Guidance Chart

			Cost Consequence				
			> 25 %	10% to 25%	3% to 10%	1% to 3%	< 1%
Probability	Scale		5	4	3	2	1
	> 70%	5	Very High	High	High	Medium	Low
	40% to 70%	4	High	High	Medium	Medium	Low
	20% to 40%	3	High	Medium	Medium	Low	Low
	5% to 20%	2	Medium	Medium	Low	Low	Low
	0% to 5%	1	Low	Low	Low	Low	Very Low

This prioritization is used to determine whether a risk is negligible, extremely important or lies somewhere in between. This decision is, of course, variable and the criterion for what passes as “negligible” and what is “extremely important” must be defined on a project-specific basis.



The extent to which a prioritization is relevant depends on the objective of the risk assessment. If the objective is to value risks as part of the development of a financial feasibility analysis or a VfM assessment, prioritization is less relevant. The reasoning for this is that prioritization reduces the number of risks accounted for, but in a VfM analysis and financial feasibility analysis the goal is to value the full risk profile, not just a selection of individual risks. However, if the main objective is to manage risks, prioritization can be extremely relevant because it focuses the risk manager's efforts in the proper direction.

The prioritization method also indicates the value of a risk and is therefore referred to as a semi-quantitative assessment. In cases where no detailed pricing information is available, this semi-quantitative assessment can even be used for determining the value of the risks.

Creating structure in the risk overview

Most projects will have a high number of identified risks, and finding order within this list can be extremely challenging. This difficulty is overcome by structuring the risk register in a way that indicates the relationships between the identified risks.

Unfortunately, some traditional listings of risks have no hierarchy or structure whatsoever—just one list with potentially hundreds of risks annotated on it. These lists do not create any useful insights aside from listing the risks but create the potential for double counting, listing redundant risks, and listing risks that occupy different “levels of abstraction.”

Applying order to this chaos increases the overall understanding of the risk profile of a project and provides the practitioner with better leveraging opportunities for control and measurement. A good way to do this is to establish a risk relation map (RRM). In the RRM, risks are presented with cause-and-effect relationships diagrammed between them, clearly demonstrating their linkages and hierarchy. An RRM allows the structuring of risks based on the project management goals, and defines the top risks as threats to these overall project goals. This step not only creates a better common understanding of the risk profile, but also assists the practitioner in recognizing blind spots.



7.7.3 Risk Management

Risk management generally focuses on three major steps

The risk identification step described in chapter 3 is the first step for risk management. It is useful to structure the risks in risk management according to: (1) the relation to project goals (time, money, quality, or safety); and (2) an indication of value. Ideally the risk valuation outputs are used for the indication of value. If these are not available, it is also possible to use a qualitative indication.

This qualitative indication typically scores all risks on the basis of probability and effect, using a five-point scale. Multiplying chance and effect returns a score between 0 and 25 for each risk on the list. The top 10 (or more) of this list—in terms of total score—provide guidance on which risks to focus on. In addition, it can be useful to scan the list for risks that are managed easily and at a low cost. For risks that are not actively managed, the default strategy is to accept or—depending on the type of PPP contract—transfer the risk to the private party.

The second step is to define risk management measures

Just as risks are identified in a brainstorming session, risk management measures can also be inventoried this way. To challenge practitioners to think creatively about control measures, different perspectives should be used.

These different perspectives are:

- *Preventive or Corrective:* A preventive measure is one that attempts to decrease the probability of a risk's occurrence. A corrective measure tries to minimize the damage once the risk has already occurred. These two types of measures are often complementary. If a preventive measure is not 100 percent effective, then a corrective measure should also be defined.
- *Differentiate types of control measures—allocate, avoid, adapt, accept:* Allocation of risks in terms of PPP contracts, such as between a public and private party, is covered in the next chapter. There are other forms of allocation, such as insurance of risks or specific financial products that cover price or interest rate risk (futures, forwards, interest rate swaps, etc.). The art of avoiding and adapting risks is related to optimizing the scope of the project and the planning process. Typical measures for this include avoiding innovation and complexity if the benefit does not outweigh the cost, choosing a realistic delivery date, or planning crucial building activities during the summer so there is less risk of weather-related delays. Another possibility is to just accept the risk. This is rational when the cost of the control measure outweighs the value of the risk, or when there is no other measure available. If a risk is accepted, then it is logical to include the potential impact as a buffer in project planning (risk of delay) or in the financial model (risk of additional cost).



The third step is to select and implement risk management strategies

In this final step, the best risk management measures are selected and combined in a risk management strategy. Step two provided a long list of risk management measures to choose from. For a single risk, a set of measures can be selected that form an effective and efficient risk management strategy in combination with one another. Development of the best strategy not only takes into account the effectiveness and cost of implementing individual risk measures, but also considers effectiveness of the combination of risk measures (and to what extent the probability or the impact is mitigated).

7.7.4 Risk Allocation

Purpose and principles of risk allocation

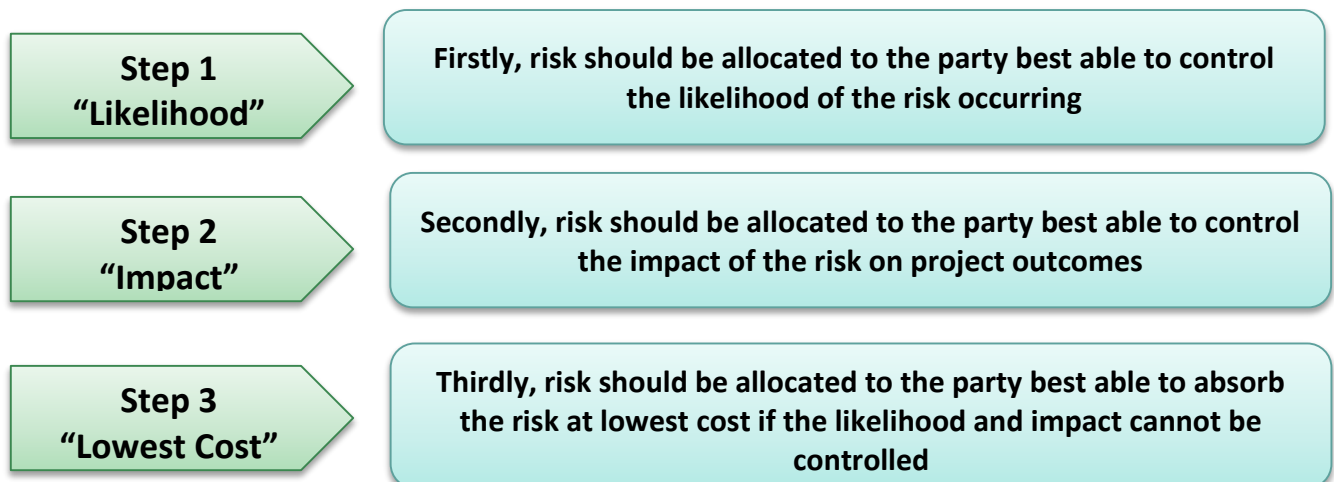
Risk allocation between the public agency and private sector entity is one of the core principles of PPPs. International and domestic studies show that the transfer of risk accounts for a large portion of the total forecasted VfM of the PPP approach. Therefore, the purpose of risk allocation as part of a risk assessment is to optimize this risk transfer from the public agency to the private sector.

The guiding principle for an optimal risk allocation is VfM

A generally accepted principle is that risk should be allocated on the basis of both the ability and willingness of different entities to manage each risk. Risks that the private sector is more capable of managing are transferred; risks that the public agency is more capable of managing are retained.

Transferring too much risk to the private sector will result in higher risk premiums, making the project more costly and decreasing VfM. Public agencies that are starting to explore the potential of PPPs for the first time may make the mistake of trying to transfer too much risk to the private sector. Conversely, transferring too little risk to the private sector constrains the magnitude of the VfM that can be achieved.

Risk Allocation Principles



Risk allocation is also about marketability and incentives

A successful PPP is not just about the party that is best able to manage the risk, but also:

- *An assessment of marketability for sponsors, subcontractors, and financial institutions:* Continuous discussions between the procurement agency on the one hand, and concessionaire, subcontractors, and financial institutions on the other hand will help structure a risk allocation that is both workable and optimal for the creation of maximum VfM. The outcome depends heavily on the private sector's risk appetite; this willingness to accept risks can change over time due to better information on risks.
- *Structuring of incentives:* Even if it is clear that the private sector is not able to control a certain risk (e.g., vandalism) it may still create VfM if part of that risk is transferred by letting the contractor share in the cost consequences of such an event. Whereas the contractor may not be able to fully control the probability of the event happening, it can take risk mitigation measures to reduce the probability of the occurrence and can also influence the potential damage by designing vandalism proof assets to reduce the costs of repair. Providing these incentives aligns the interests of the private sector bidders with those of the public agency to minimize the negative financial effects of external risks.
- *Ensuring a holistic approach that limits exceptions:* The starting point for a PPP contract is that the private operator is responsible for all tasks and risks, unless the contract states differently. If the contract is laden with exceptions with regard to what the private operator is responsible for, "gray areas" are introduced that can cause large transaction costs. An example of this is exceptions in maintenance responsibility due to weather circumstances. This is not efficient and can seriously harm VfM, only becoming visible after financial close.

Key questions to be answered

Deciding which risks should be allocated to which party brings up a number of questions that must be answered from the perspective of both the public agency and the private entity. For instance, it is important for the practitioner to ask: "To what extent can the public agency...

- Manage the likelihood of this risk occurring?
- Manage the impact of this risk?
- Absorb the impact of the risk?
- Take specific measures to manage the risk?"

Naturally, the same questions must be asked concerning the ability of the private entity in PPP procurement. The information above allows the most important question of all in risk allocation to be answered: "Who is best able to manage and absorb this risk?"



In addition to the above considerations, checks should be made to answer the following:

- *Similar contracts:* Are there specific reasons to deviate from the risk allocation chosen in earlier transactions and described in the model PPP contracts?
- *Marketability:* Are there any reasons to assume that the private sector will not accept the risk or price the risk at an unreasonably high value?
- *Incentives:* Do any of the potential risk allocation mechanisms create unintended incentives for the private sector?
- *Holistic approach:* Do any of the potential risk allocation mechanisms create “gray areas” in terms of responsibility?

7.7.5 Risk Valuation

Purpose of Risk Valuation

The purpose of risk valuation is to obtain an accurate value of the risks of the project in order to make well-informed financial decisions. Proper risk valuation is essential for determining the project’s financial feasibility (“go or no-go” decision), and for comparing different delivery methods. Risk valuation also offers a quantified basis for choices on the best risk management strategy and risk allocation. In reverse, choices on the risk management strategy and risk allocation affect the expected value of risks. This cyclical nature of optimization drives a risk valuation that is an iterative process utilizing new information when it becomes available. Risk Valuation is one of the inputs for VfM assessment.

Risk categorization

The first relevant distinction is between **exogenous** and **endogenous risks**. Exogenous risks are caused by external events. An accident at a construction site is an example of an exogenous risk. Endogenous risks are caused by the project stakeholders themselves; the decision to change the design of the project is an example of an endogenous risk. From the perspective of valuation, this is a useful distinction because endogenous risks are not part of the risk valuation, but are rather choices made that can affect costs.

The second distinction is between **risks before contract close** and **risks after contract close**. The distinction between these categories is tied to the point at which the effective risk transfer begins and the public agency commits to the project and the contract. Typically, during the development and procurement of a project the people involved will be able to identify many risks before contract close because these often occur in the short term. Therefore the long-list of risks will include many of these risks, which typically will not need to be valued. From the perspective of valuation, this is a useful distinction because risks before contract close are typically not part of the risk valuation but still require effective risk management.



A third distinction is between **systematic** and **non-systematic uncertainties**. Systematic uncertainties are risks that are related to changes in the economic climate. Examples are inflation, interest rate, and revenue risk for toll projects. These risks are, by definition, not manageable by a single actor but can be diversified in a portfolio strategy. Non-systematic uncertainties are not related to economic conditions and are considered to be manageable to some extent through risk management (either of risk occurrence or undesirable outcome). Examples of this are accidents at the construction site or adverse weather impacts. Natural disasters also fall under this category.

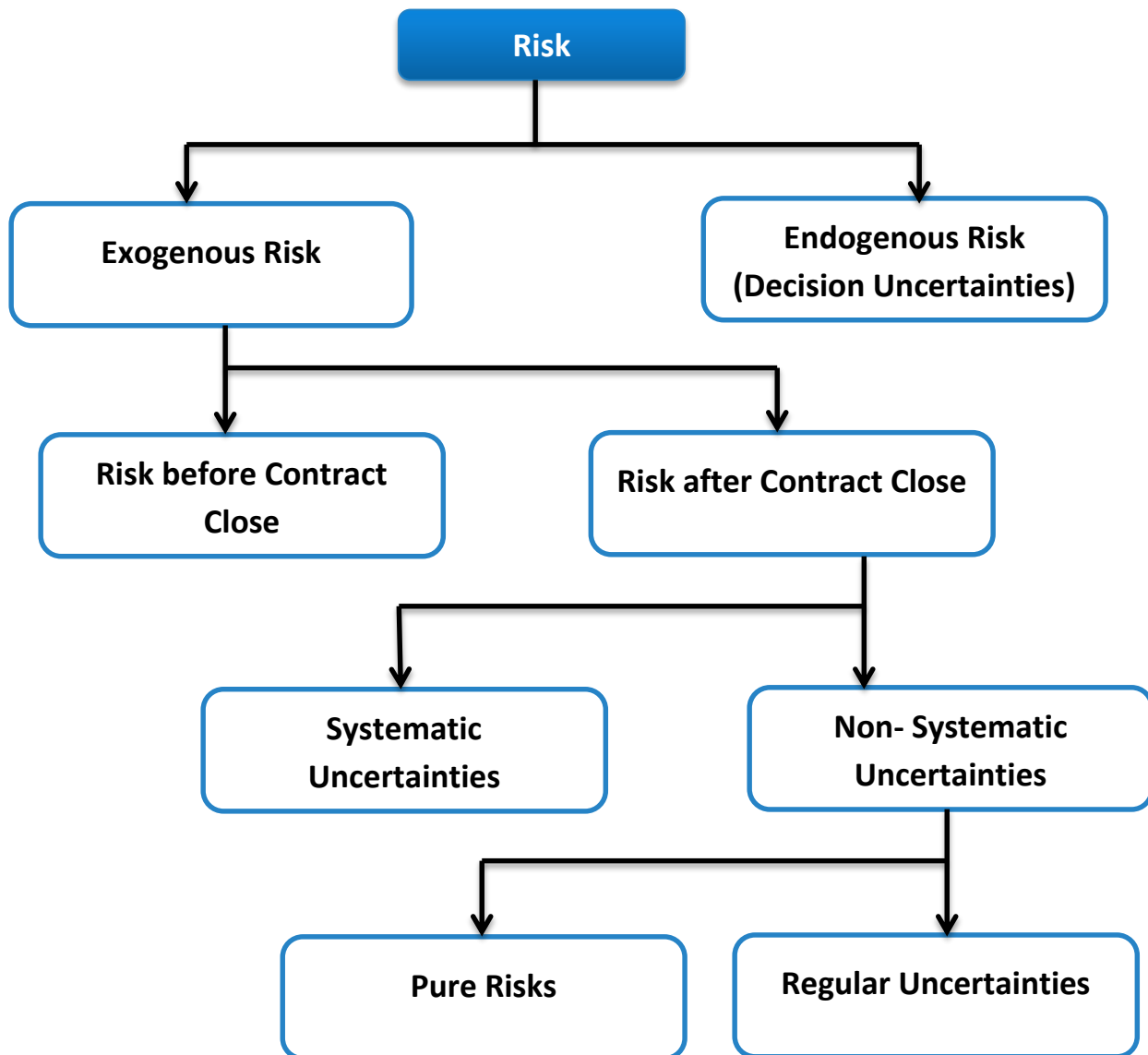


Figure No. 14 – Risk Categorisation

Apart from the fact that there are different methods for risk valuation for each respective category, this distinction also helps in placing risk with the partner best able to manage or minimize the impact of the risk.



In the non-systematic uncertainty category distinctions are made between:

- Pure risks: unforeseen uncertain events, resulting in some sort of damage; and,
- Regular uncertainties: uncertainties that are not related to market conditions, but are directly caused by a lack of information during, for example, the preliminary design stage of a project.

Table No. 7 - Risk Categories Linked to Valuation Method

Category	Example	Description
Decision uncertainties	Change in toll technology	Uncertainties affecting the project (scope) and caused by the project stakeholders themselves
Risk before contract close	Delay in go decision on project due to elections	Potential project-related events with a chance of occurrence and a negative impact; mainly present before the project starts
Systematic uncertainties	Inflation risk	Uncertainties in cost, revenue, and risk estimates; related to market circumstances
Pure Risk	Accident at construction site	Potential project-related events with a chance of occurrence and a negative impact (a loss, catastrophe, or other undesirable outcome), leading to an expected valuation
Regular uncertainties	Uncertainty in volume of asphalt	Uncertainties in cost, revenue, and risk estimates, not related to market circumstances but instead to intrinsic lack of certainty

A top-down approach to complement the risk valuation

PPP transfers risks normally retained by the public agency in the conventional delivery method to private parties. Unfortunately these risks are not always easy to identify and value. They include risks associated with long-term quality (related to the performance regime) and interfaces between project elements (road sections, crossings, arterials, and exits) and project phases (design, construction, maintenance, and operations). If the goal of the risk assessment is to determine the project's feasibility or to compare delivery methods, it is important to include all of these risks in the analysis as well.

Issues relating to unidentified risks:

At any stage in the development of a project, cost estimates will be composed of three components for which there are differing amounts of information: 1) known and quantifiable costs; 2) known but not quantified costs; and 3) costs that are unknown and therefore cannot be quantified in advance. The base estimate includes the known and quantifiable costs. The contingency percentage is intended to include both the known but not quantified and the unknown costs.



A focus on identified risks—and not on unidentified risks—will invariably lead to project cost overruns. Also, these unknown risks distort the fairness of VfM assessments, because private-sector bids include a valuation of all transferred risks, but the public sector comparator (PSC) may not.

A way of dealing with “unknown-unknowns” is to utilize both a bottom-up and a top-down approach to risk identification and valuation. Most risk assessment methods are bottom-up approaches, because they focus on identifying and quantitatively assessing individual risks. A top-down approach focuses on the risk profile of the project as a whole, on the basis of a number of project characteristics.

Several risk valuation methods can be used simultaneously

In some cases, a detailed quantitative risk assessment may not be meaningful. This occurs when a risk assessment is carried out in the very early stages of project development, when little quantifiable information about the project is available. In addition, when considering small and simple projects a detailed quantitative risk assessment may be unnecessary. In these cases, a qualitative top-down analysis—resulting in a quantitative assessment of the risk profile of the project as a whole—is sufficient.

Table No. 8 - Risk Categories and Valuation Methods

Category	Valuation Method
Decision Uncertainties	<ul style="list-style-type: none"> • No valuation, just multiple scenario analysis
Risk before Contract close	<ul style="list-style-type: none"> • No valuation, just multiple scenario analysis
Systematic uncertainties	<ul style="list-style-type: none"> • Beta analysis on the basis of the capital asset pricing model (CAPM) • Probability distribution (Monte Carlo analysis) and realistic confidence level on market related cost and revenue estimates • Market-based risk premium in the discount rate on the basis of the weighted average cost of capital (WACC)
Pure Risk	<ul style="list-style-type: none"> • Probability x damage • Typical contingency in cost estimate • Probability distribution (Monte Carlo analysis) and realistic confidence level on pure risks • Insurance premiums • Cost estimate of risk mitigation measures • Market-based markup for risk profile
Regular uncertainties	<ul style="list-style-type: none"> • Probability distribution (Monte Carlo analysis) and realistic confidence level on cost and revenue estimates • Typical allowance in cost estimate • Market-based markup for uncertainties



Whereas the risks and uncertainties in the first two categories will not be valued, the acknowledgement of these categories is very relevant, because it facilitates the distinction between risks that matter and risks that do not matter in the overall risk register. In the following sections the focus will be on the last three categories.

Note that cost estimates typically include contingencies (covering pure risks) and allowances (covering regular uncertainties). In a VfM assessment the starting point is a raw PSC, based on cost estimates without any contingencies and allowances. This also helps prevent double counting of risks and uncertainties. Of course, the estimated contingencies and allowances can be an important source of information for risk valuation. Typically, the contingencies and allowances focus on construction, which is why one should verify to what extent these values are realistic reflections of all of the risks and uncertainties throughout the life cycle of the project.

Systematic Uncertainties

Systematic uncertainties can be dealt with in a similar fashion as regular uncertainties, which is not uncommon for toll revenues. Another approach is to reflect the risk profile in the discount rate.

Pure Risks

The pure risk category is expected to contain the bulk of the risks from the long list in the risk register. Therefore, it is useful to distinguish between top-down methods to deal with the valuation of all risks in this category and bottom-up methods to value individual risks. The methods complement each other.

To get an indication of overall risk valuation, this category can be valued by benchmarking the project with similar projects. This is the same as assuming that the specific risks in this category are still unknown, but that it is expected that some risks will occur, and therefore a financial buffer is to be applied. Usually, this valuation method consists of a percentage of the total direct and indirect investment costs. This percentage can be in the range of 15% to 50% depending upon project characteristics and complexity, and cost estimation methods.

For the detailed (bottom-up) valuation, there are several methods to value each risk. The most important are: calculation of probability multiplied by damage for each risk; use of insurance premiums for individual risks or packages of risks; and cost estimates of risk mitigation measures.

Pure risks and insurance - The insurance will usually cover a bundle of risks and not one specific risk. After gaining this information, the risk register is adjusted accordingly. As soon as the risk is insured, and there is no risk remaining, this risk is considered "managed" and becomes a cost rather than a risk.



Regular uncertainties

Typically, this risk category includes uncertainty about the volume and price estimates for different cash flows such as capital expenditures, operational costs, and revenues. Estimate uncertainties about the pure risks can also be included in this category.

The typical valuation method is to develop a probability distribution on the basis of expert inputs for minimum, most likely, and maximum values. In addition, the expert will identify the distribution type as normal, lognormal, triangular, uniform, or discrete (which are the most common types). This leads to an overall probability distribution of the net present value (NPV) of all project cash flows together. Depending on the risk appetite of the stakeholder, a certain probability level is then accepted. Selecting probability levels between 70% (P70) and 90% (P90) is common practice. It is generally recommended that P70 be used as a starting point. The difference between the most likely NPV, and the NPV at this probability level, is considered to be the value of this risk category.

A risk assessment often focuses on risks that inflict a negative impact, because cost and revenue estimates tend to assume no major drawbacks. In reality, there is a possibility that cost and revenue values may turn out to be better than expected. In the probability analysis this is reflected in the minimum and maximum value for cash flows, leading to overall probability distributions expressing the uncertainty in cash flows. Although the value of that uncertainty is still a negative cash flow, it accounts for the fact that there can also be an upside. (The value of uncertainty is always negative because uncertainty is the potential deviation from expected value). Therefore, in theory, there can also be positive pure risks. If that is the case, these can be dealt with in the same way negative pure risks are dealt with. It is recommended to always check whether any positive risks can be expected.

Choosing the proper valuation method may be challenge. To further guide practitioners, the following three principles can be used:

1. Use all information available, and if possible, use different approaches as well to develop the most robust understanding of the risks.
2. Use market prices, unless there is a clear market failure or there are convincing reasons to expect that the government is better able to manage a risk (see Table 6-3. below for further guidance).
3. Benchmark to similar projects; this is an important source of information for the assessment of the risks.



7.7.6 Valuation Method Decision Tree

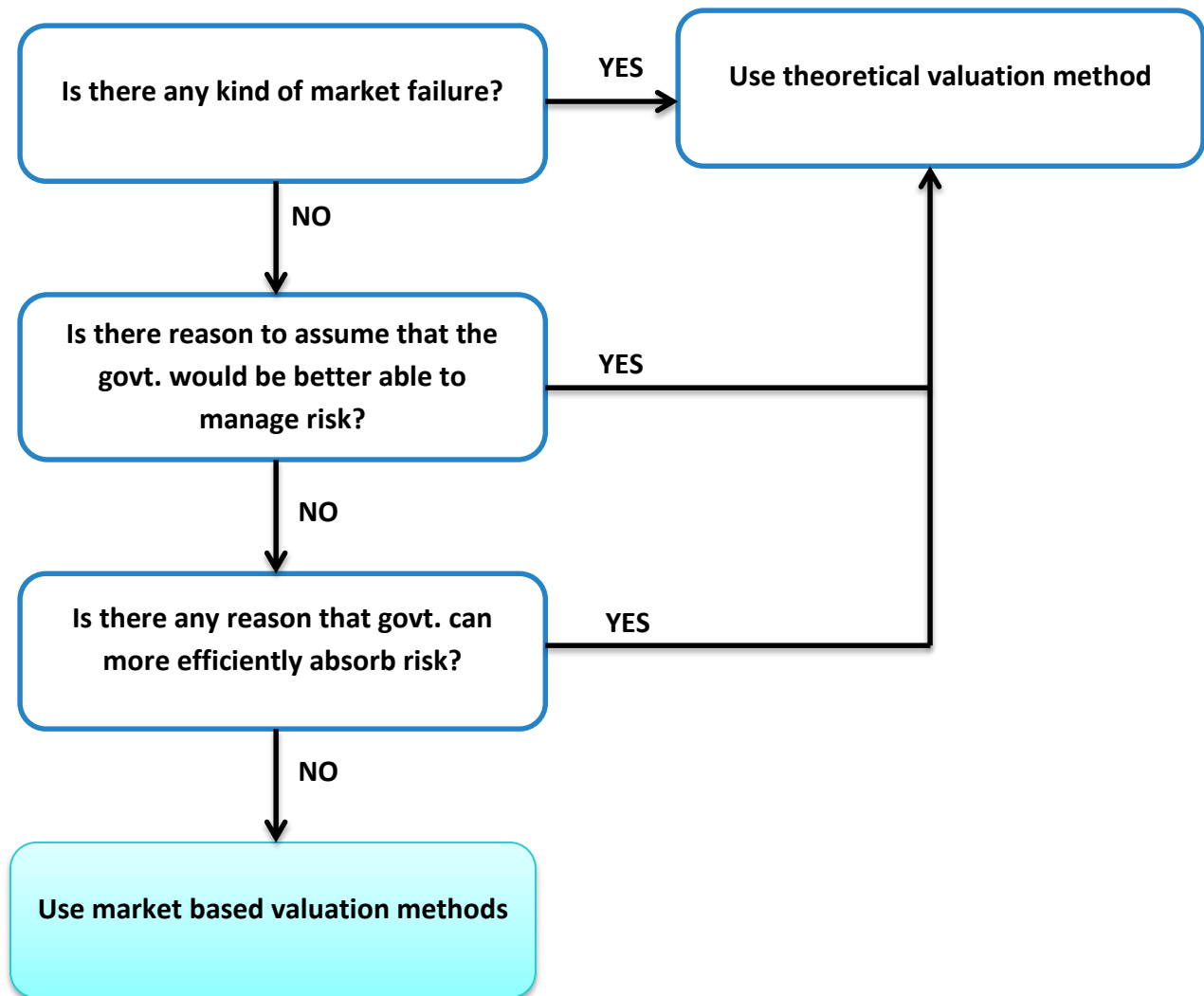


Figure No. 15 – Valuation Method Decision Tree



7.7.7 Key Project Risks & Mitigation Measures

Pre – operative / Early Project Risks

- *Developmental Risk*_- such as the quality and comprehensiveness of preparatory tasks (which may result in problems at a later stage, if not well conducted), conduct of the procurement process in a transparent manner, obtaining various statutory and regulatory clearances, acquisition of land (where required) and getting the buy-in of key stakeholders, could be addressed to a large extent through credible project development studies and the conduct of a transparent bidding process. Some of these are also specified as conditions precedent in the concession agreement.
- *Sponsor Risks*_- ensuring that private partners of the required experience and financial capability are selected, the qualification process is important and qualification parameters should be appropriately specified so that there would be sufficient competition and yet ensuring that only bidders of the desired capability are selected to implement the project. The concession agreement also has clauses which set out certain minimum equity-holding commitments for the sponsors to ensure their continued commitment to the project.
- *Counter Party Risk* - where the Government is a counter party either for payment, supply of key inputs (MSW for instance) or purchase of project outputs (water or power for instance), it may require certain arrangements to be in place, such as dedicated funds to be created (just as the Government of India set up the Central Road Fund), special taxes to be levied to raise additional revenue for paying for these services (cess on fuel or for solid waste management) or ring fencing of revenues (as was done for the initial power generation projects). In some cases certain assurances may need to be given (minimum level of MSW to be supplied or power to be purchased or standing charges to be absorbed) with penalties in case of non-compliance. Credit enhancement mechanisms such as letters of credit (L/Cs) or guarantees (in the initial annuity projects – a L/C covering one annuity will provided by Authority in India to the concessionaire) may be necessary. This risk would need to be suitably addressed and the arrangements may need to be put in place as part of the development process itself.
- Another early project risk is associated with changes in the project contours. This happens when project studies are conducted post award of project and the data that emerges changes the parameters of the project considerably.



Construction Phase Risks:

Completion risks are commonly observed in projects where there has been a delay in the acquisition of land and its transfer to the private partner within the time stipulated in the agreement.

This is one of the most critical risks that need to be addressed in projects, especially in those that have traditionally experienced a high level of difficulty in completing construction. Completion risks would also have a repercussion on commissioning of a project and thus the commissioning risk. Commissioning risk is the risk associated with delay in the commencement of the commercial operations of the project. The nature of completion risks are described below:

- Ability to start the project within the budgeted time
- Ability to complete the project within the budgeted costs
- Adherence of the project assets to the specifications (including the quality standards)
- Completion risks can delay the project and increase project costs very significantly

Table No. 9 - Typical Risks in Infrastructure Project

Risk Type	Description
Pre-Operative Risks	
Delays in Land Acquisition	Refers to the risk that the project site (or sites) will be unavailable or unable to be used within the required time, or in the manner or the cost anticipated or the site will generate unanticipated liabilities due to existing encumbrances and native claims being made on the site.
External Linkages	Refers to the risk that adequate and timely connectivity to the project site is not available, which may impact the commencement of construction and overall pace of development of the project.
Financing Risks	Refers to the risk that sufficient finance will not be available for the project at reasonable cost (eg, because of changes in market conditions or credit availability) resulting in delays in the financial closure for a project.
Planning Risks	Refers to the risk that the pre-development studies (technical, legal, financial and others) conducted are inadequate or not robust enough resulting in possible deviations from the outcomes that were planned or expected in the PPP project development.
Construction Phase Risks	
Design Risks	Refers to the risk that the proposed design will be unable to meet the performance and service requirements in the output specification. It can result in additional costs for modification and redesign.
Construction Risk	Refers to the risk that the construction of the assets required for the project will not be completed on time, on budget or to specification. It may lead to additional raw materials and labour costs, additional financing costs, increase in the cost of maintaining existing infrastructure or providing a temporary alternative solution due to a delay in the provision of the service.



Approvals Risks	Refers to the risk that delays in approvals to be obtained during the construction phase will result in a delay in the construction of the assets as per the construction schedule. Such delays in obtaining approvals may lead to cost overruns.
Operational Phase Risks	
Operations & maintenance Risk	Refers to the risks associated with the need for increased maintenance of the assets over the term of the project to meet performance requirements.
Tariff Risk	Refers to the risk that demand for a service will vary from the initial forecast, such that the total revenue derived from the project over the project life will vary from initial expectations.
Payment Risk	Refers to the risk that fees for services are not collected in full or are not set at a level that allows recovery of costs.
Financial Risk	Refers to the risk that the concessionaire introduces too much financial stress on a project by using an inappropriate financial structure. It can result in additional funding costs for increased margins or unexpected refinancing costs.
Non Operations Revenue Risk	Refers to the revenue risk related to real estate or other similar business operations that are associated with the project. This risk is only relevant to Lease Develop Operate type PPPs, in which real estate development are often an important revenue source for the project.
Handover Risks	
Handover Risk/ Terminal Value Risk	Refers to the risk that the concessionaire will default in the handover of the asset at the end of the project life, or that it will fail to meet the minimum quality standard or realizable value of the asset that needs to be handed back to the public entity.
Other Risks	
Change in law	Refers to the risk that the current legal / regulatory regime will change, having a material adverse impact on the project.
Force Majeure	Refers to the risk that events beyond the control of either entity may occur, resulting in a material adverse impact on either party's ability to perform its obligations under the PPP contract. These events are sometimes also called "Acts of God", to indicate that they are beyond the control of either contracted party.
Concessionaire risk	Refers to the risk that the concessionaire will prove to be inappropriate or unsuitable for delivery of the project, for example due to failure of their company.
Sponsor Risk	Refers to the risk that the Sponsor will prove to be an unsuitable partner for the project, for example due to poor project management or a failure to fully recognise the agreed terms of the Concession Agreement.
Concessionaire event of default	Refers to the risk that the concessionaire will not fulfill its contractual obligations and that the public Sponsor will be unable to either enforce those obligations against the concessionaire, or recover some form of compensation or remedy from the concessionaire for any loss sustained by it as a result of the breach.
Govt. event of default	Refers to the risk that the public Sponsor will not fulfill its contractual obligations and that the concessionaire will be unable to either enforce those obligations against the Sponsor, or recover some form of compensation or remedy from the Sponsor for any loss sustained by it as a result of the breach.



Common Reasons for Time & Cost overruns

- Delays in the site being made available
- Delays in supporting infrastructure
- Delays in approvals
- Design and engineering risks
- Geo-technical risks: uncertain ground conditions
- Construction technology
- Availability of construction materials
- Contractor's delays and failures
- Delay in/ non-availability of labour

Measures for Mitigation of Risks:

- Assurances from the Government entity regarding delivery of land – either 100% or the bulk of it, with suitable penalties and comforts in the event of non-compliance
- Other assurances –environmental clearance, statutory approvals, any other support infrastructure or activity (dredging of a channel, for instance, in a port project) – with suitable comforts in the event of non-compliance
- Evaluate DPR – supply of key construction inputs – material, equipment and manpower in the vicinity of the project sites and costs of these inputs
- Evaluate need for various components and specifications – extent of civil construction, access points, grade separators, drainage etc.
- Completion Certificate by Independent Engineer – only after verification that project assets created are as specified and of desired quality
- Other construction – in a railway over bridge – portion over rails – done by Railways or private partner
- Incentive structure in the contract – bonuses, penalties and liquidated damages



- Use of good quality planning techniques such as the critical path method, lean construction, building information modelling, etc.

Operation Phase Risks:

It is commonly perceived that the private partner comes with better efficiencies in operations and so operating risks are usually transferred to the private partner in projects developed through a PPP framework. These risks relate to technology, nature and costs of operations and maintenance and adherence to performance standards.

- **Performance Risks** - refers to the risks associated with the private partner not being able to deliver/ perform as per the key performance indicators/ minimum service levels as specified in the concession agreement. It could also be referred to as O&M risks. Such non-performance would in most cases result in payment of liquidated damages from the private partner to the public entity; repeated and persistent non-performance could also result in termination of the concession agreement.
- **Technology Risks** -
Ability to deliver the desired level of performance - For instance, while waste-to-energy technologies may successfully process organic wastes such as manure and green wastes, processing un-segregated MSW, mixed with silt and construction material, to the desired performance levels has been a challenge
- **Risk of Obsolescence** - this needs to be critically evaluated for whole or components of the project, more so when the concession is for a long period of 20 – 30 years. Dealing with these risks involves careful evaluation of the likely technological changes in these areas, for which technical studies by good and credible consultants will be necessary. The use of proven technology and appropriate technology transfer arrangements, together with performance guarantees and maintenance contracts from the provider of technology, will ensure a certain level of performance.

The need to follow appropriate standards is usually reflected in the O&M specifications set out in the concession agreement and which require the concessionaire to prepare standard operating systems and procedure manuals for various aspects – operations, regular, preventive and unscheduled maintenance, safety, security etc. Periodic monitoring through site visits, reviews and project monitoring committees, help to anticipate problems during operations. To ensure that funds for major maintenance works are available, lenders and financial investors often specify the use of sinking funds and the creation of maintenance reserves (out of the cash flows).

A better understanding of these risks and how they can be mitigated will enable the prescription of the most appropriate standards and specifications, estimation of projected costs and better capacity planning for the sector.



Market Risks:

Completion risk and revenue risk together constitute the two most important variables that can impact the successful implementation of a project.

Demand risks are common risks encountered in projects. This is the reason why the technical feasibility of a project becomes critical in project development and structuring.

Market risk could be on account of uncertainty in:

- determining the design for the project (also referred to as design risk) on the basis of future traffic which involves forecasting, changing elasticity of variables affecting traffic growth (transport projects), etc.;
- Estimating demand (also known as demand risk) viz. demand uncertainty i.e. insufficient demand for products and services, for instance for water, compost (MSW treatment facility), power etc.
- structural changes in the industry itself which may result in insufficient demand for competing facilities, competing technologies/competition;
- wholesale structural changes, for instance, a large part of the population switching to electric scooters could result in lower toll collection on a bridge or bypass road, or a similar shift to bottled water for drinking/cooking purposes or large scale water re harvesting may lead to lower demand growth for water, or the re-location of industries/new townships may impact public transport usage in one part of the city etc.

Price/ Revenue risks

Typically include non-payment due to resistance from users, regulatory control over pricing, delays in revision of prices or such revisions not keeping up with the increase in cost of service delivery.

The agreement would usually set out the basis, periodicity and process for revision of tariffs and user charges. An assumption on future inflation may need to be made where tariffs would be indexed either whole or in part to changes in the Wholesale Price Index (WPI). Sensitivity analysis for varying levels of WPI increase, risk of unilateral reduction in user charges (for political reasons) or delays in notification of toll will be useful to see how the project cash flows withstand these changes.



Measures for Mitigation of Risks:

- Where possible, firm throughput handling (ports) or off-take commitments for a significant part of the facility/ output would help address some of this risk.
- An assessment of the long-term cost competitiveness of both the input and output, and studies by experts when required as part of the project preparation would be useful.
- Financial incentives such as penalties and liquidated damages for interrupted/irregular supplies are often specified in the contracts. The adverse impact of some of these variables on the project can be assessed through a sensitivity analysis

Other Risks:

The exhaustiveness of identification and the quality in allocation of risk will increase with experience in structuring diverse projects through a PPP framework. There are certain risks that are specific to projects and/ or sectors and/ or regions.

Most of the residual risks such as **force majeure risks**, risk of Governmental action (early termination of the contract or expropriation) also referred to as **political risk, changes in law or regulation**, are usually addressed in the concession agreement. Any risk left open may need to be suitably priced and taken care of in the financial projections.

The remedy for **commercially insurable risks** is usually insurance cover that the concessionaire is expected to take. This needs to be suitably provided for in the financial projections. Further, though several risks/events may be identified and listed, unless one of the parties is materially adversely affected by the event and impaired from performing its obligations no relief can be sought. Any excuse from performance of obligations would also similarly only last till such time that the ability to perform is impaired. The bulk of the commercial risks will be addressed if completion, revenue and O&M risks are comprehensively evaluated.

Financing risk, while passed on to the private partner to an extent, is taken care of in the contract document (in case financial close is not achieved within the time stipulated). It is important that financing documents submitted by the private partner (if stipulated in the agreement) are evaluated for the possibility of interest rate or **currency risk**, so that one can prepare for any adverse situation. Ideally foreign currency debt should not be used to finance a project where revenues are entirely rupee-denominated – unless suitable hedging mechanisms are put in place. **Interest rate risk** (floating or fixed or with re-pricing options) could be similarly evaluated. The tenure of the debt should be long enough to ensure that cash flows are not unduly stressed.

Environmental and social risks are identified in the EIA/SIA study undertaken as part of the process of project preparation. Since the bulk of these risks are absorbed by the Governmental Authority, it is important to put in place a plan to ensure that the project



is insulated from the risks of land acquisition, environmental advocacy and social issues such as resettlement and rehabilitation issues and compensation claims etc. so that implementation is not hampered.

7.8 Financial Feasibility (Viability) & PPP Due Diligence

The financial feasibility assessment is a critical part in the project preparation stage. It provides information about the costs, expenses and sources of revenues, and gives an indication whether the project is self-sustaining or requires additional financial support in the form of grant to make it viable. In other words, financial feasibility helps determine whether the project will make sufficient revenues to offset all the costs incurred as well as allow for a reasonable return on investment for the private partner. Financial feasibility forms the basis for determining an appropriate project structure and eventually informs the preparation of bidding documents.

The public entity's priority could be quality service delivery to its citizens but the private partner's is to provide value to shareholders through an increase in turnover, revenues, profit, etc.

The financial feasibility assessment however, is an iterative process which is done during different stages in the project – during risk analysis, determining value for proposition, assessing whether or not to proceed with a PPP structure, etc.

In this stage a quantitative analysis of the financial feasibility of the project using the most promising PPP modal option or options is carried out. This stage also allows an assessment of likely VGF or other public-sector financial assistance requirements (e.g. IIFCL or state-level PPP finance vehicles).

This financial analysis is an important part of the “due diligence” that should be carried out on the PPP project. Although the entire PPP process should be conducted with due diligence, it is worth emphasising it at this critical stage.

The financial analysis will use information gained from the demand forecasts, technical feasibility, and cost estimates, and will reflect the PPP mode that has been chosen. It should include demand and cost scenarios. A typical structure and information flows in a financial model is shown in the figure and described more below.



7.8.1 Financing Structure:

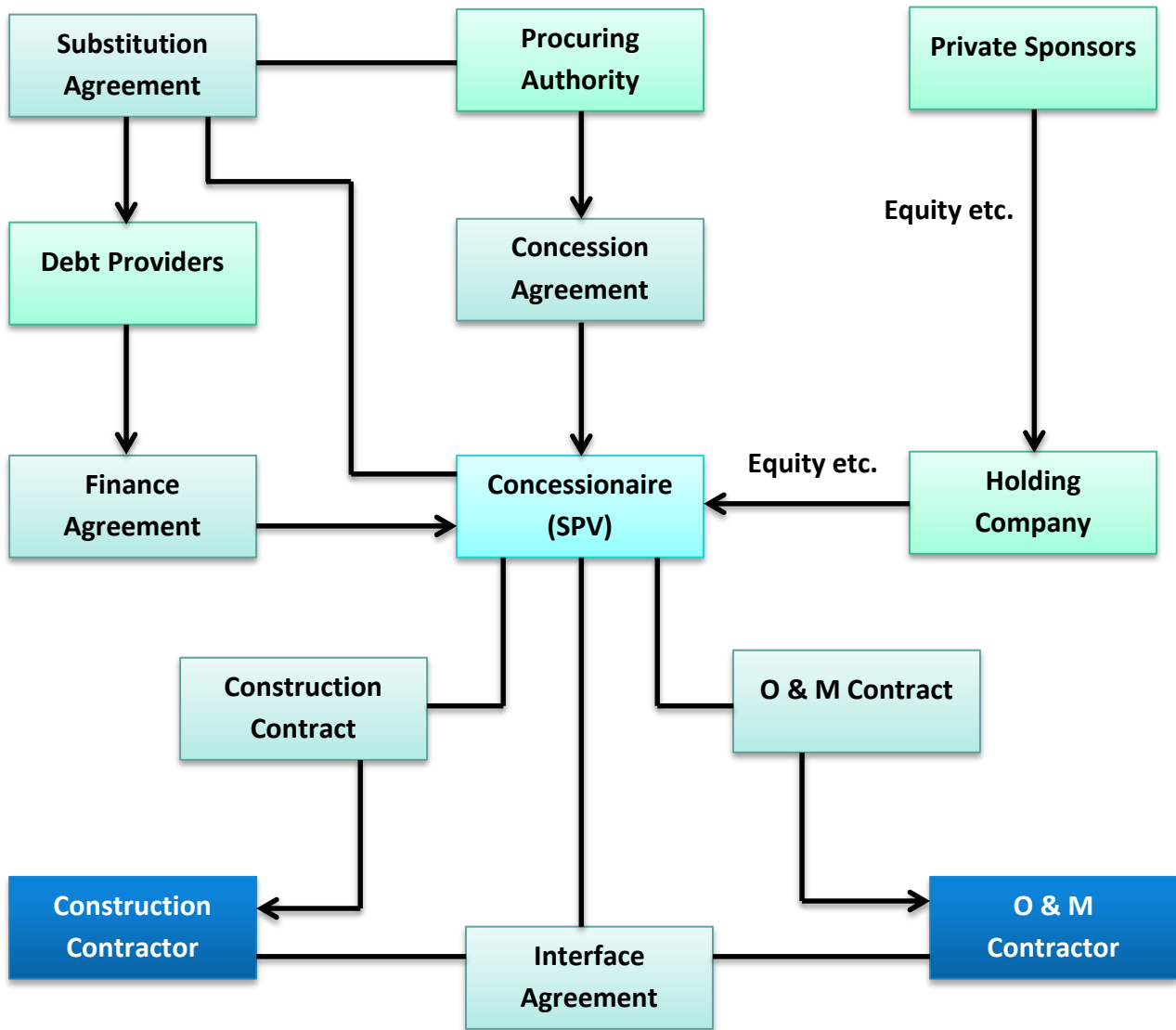


Figure No. 16 – Financing Structure of PPP Project

The substitution agreement between the public authority and the lenders permits “step-in rights” that allow the lender to force a change in management under certain stressed conditions. The interface agreement is concluded between the design-build subcontractor and the O&M subcontractor to reinforce project risk transfer arrangements and limit the potential for damaging claims disputes.



Typical Structure & flows in a Financial Model

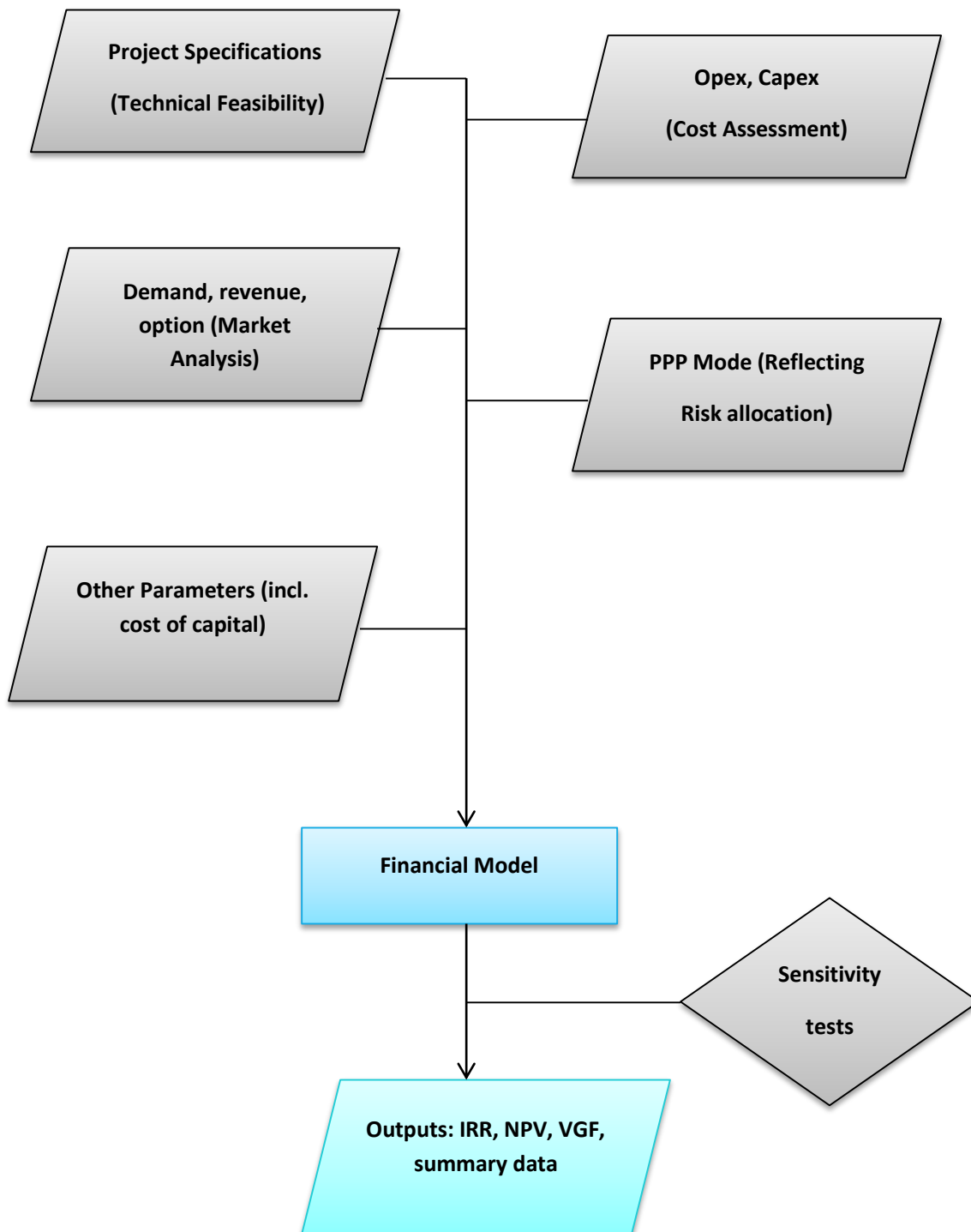


Figure No. 16 – Typical Structure of Financial Model



7.8.2 Inputs to the detailed financial analysis would include the following:

- The **life-cycle costs** of the project and their timing. These include the estimated capital costs and operating and maintenance (O&M) costs identified in the cost assessment and a depreciation schedule for physical assets
- **Revenue options** and the associated forecast revenue stream. This will include tariffs (where user-charges are possible), and secondary revenue sources from the project.
- **Forecast demand** including scenario ranges from the feasibility study
- Assumed capital structure (debt - equity mix) of private sector investment vehicle
- **Debt and repayment schedule**
- The **discount rates** for the public sector and private investor consistent with the capital structure and allocation of project risks
- **Project specifications** (investment timing, lifetime etc.)

Sensitivity ranges on assumptions, designed to encourage a careful consideration of probable outcomes and reduce optimism bias.

7.8.3 The outputs of the model would include:

- Expected returns from the project illustrated by the NPV, IRR (see below).
- An assessment of subsidy or viability gap funding requirements where there is a viability gap between the revenue requirement and the revenues that can be raised from users
- Summary financial information including ratio analysis

Together these outputs will provide a quantitative assessment of the financial viability of the PPP.

The scenario analysis may include different risk allocations and even variations in the PPP mode. This means there can be feedback between this analysis and the risk allocation.



7.8.4 Financial Feasibility Assessment Answers following:

- Solely on the basis of returns on investments, is the project possible through a PPP framework?
- Are financial returns from the project more than the investment cost?
- Are the project returns attractive for the private partner to participate?
- What revenue the private partner could share with the Government in case the project is attractive for private partnership?
- Does the project need funding assistance from the Government (grant/annuity) –if so, when and how much?
- Is the project feasible irrespective of the implementation option?
- What are the financial risks and their impact on the choice of PPP model?
- Is the project amenable to debt financing?

Financial feasibility assessment forms an input for dialogue with potential lenders and sector experts. It helps establish the financial sustainability of the project within the constraints of the sector in which it will operate. Further, it allows the public entity to make an informed decision about the most suitable procurement strategy for the project to meet the public services needs as well as protect stakeholder interests.

Financial feasibility assessment determines the financial structure/strategy for the project. The financing strategy or structure sets out the envisaged sources of funds the private investor may use to finance capital expenditure. The sources of funds may be debt, equity or Government support.



7.8.5 Steps Involved in Financial Feasibility

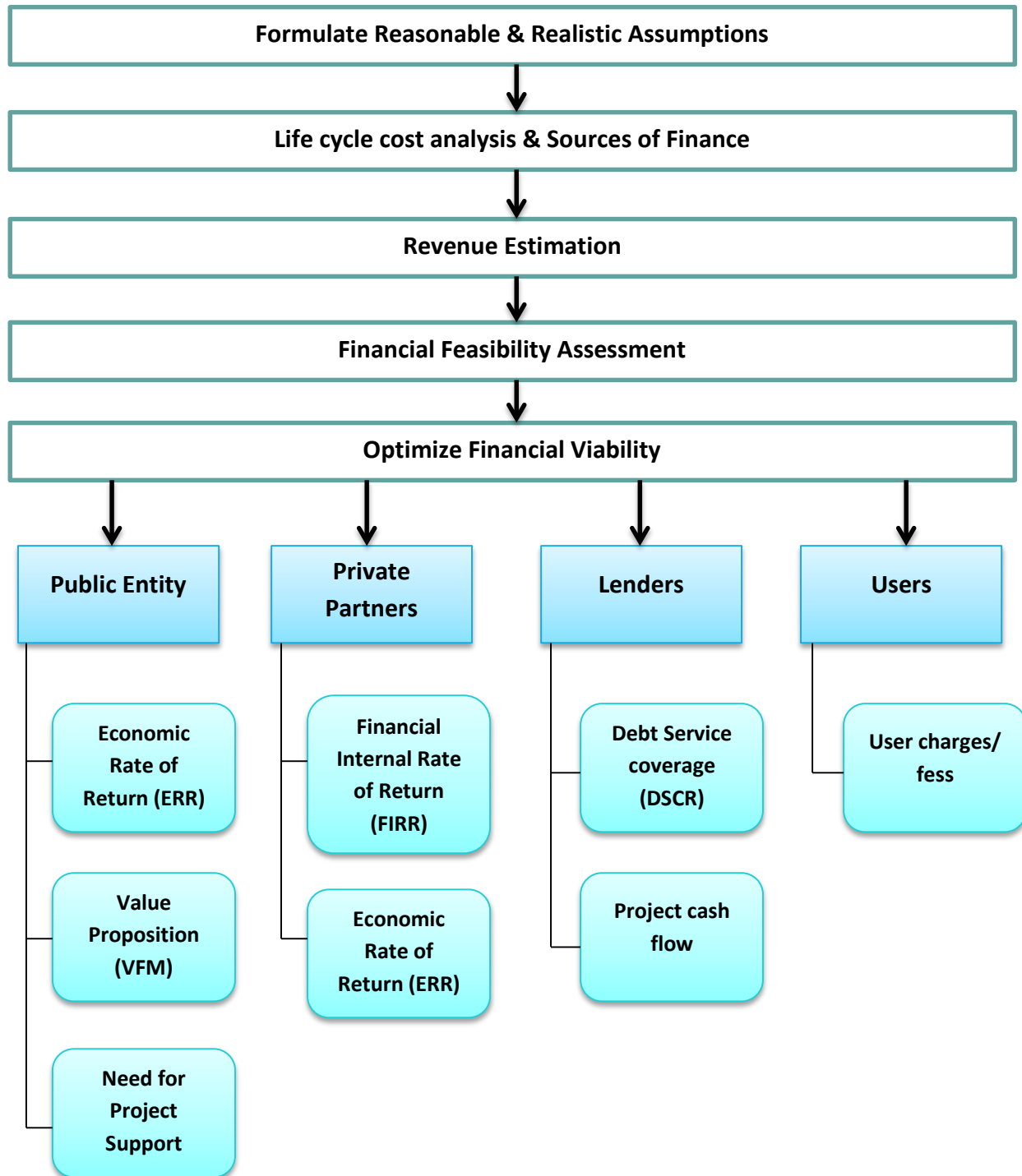


Figure No. 17 – Steps Involved in Financial Feasibility



A public entity is keener on the **economic benefits accruing from a project** and **value for proposition** in developing a project under the PPP framework whereas a private partner is concerned only with the project cash flows and the financial returns expected from it.

7.8.6 Formulation of Reasonable & Realistic Assumptions

Assumptions are baseline data that apply throughout and are often the drivers in a business or financial model. It is always useful to organise the assumptions into logical groups. Indicative categories of assumptions are general assumptions, financing assumptions, tax assumptions, cost and revenue assumptions and market-related assumptions.

In a PPP project, project finance is determined based on the project company's cash flow statements, balance sheet as well as profit and loss accounts, all of which are prepared on the basis of expected future performance for each year of the PPP arrangement.

Types of Assumptions – Inductive list

1. *General Assumptions* – output of project structuring activities/prevaling regulation/policy/ practices/regulation/technical studies
 - Type of PPP arrangement
 - Operating framework - key obligations of parties
 - Duration of the proposed PPP arrangement
 - Escalation
 - Contingency
 - Technology option
 - Alignment option
 - Project life
2. *Financing Assumptions* – based on prevailing regulations/practices/legislation
 - Cost of equity
 - Cost of debt
 - Duration of debt
 - Repayment schedule
 - Moratorium period
3. *Tax Assumptions* – based on prevailing regulations/practices/legislation
 - MAT
 - Corporation tax
 - Tax exemption tenure



4. *Cost Assumptions* – based on technical studies
 - Base Construction Cost
 - Phasing of costs
 - O&M Costs
5. *Revenue Assumptions* – based on technical studies
Demand for the product/service to be delivered by the proposed project.
6. *Market related assumptions* - outcome of market studies
 - Product mix for development
 - Land use for development

The assumptions need to be realistic and based on prevailing market conditions. A few of the key parameters for which suitable values need to be assumed are expected inflation over the project duration, tax rate, tax exemption period, cost of capital, rate of tariff increase, depreciation schedule, physical & technological life of assets, etc.

Making justified and reasonable assumptions is the key to arriving at a credible financial feasibility assessment for the project. There may be certain assumptions that are mandated by the existing regulatory and legislative framework for the project such as the prevailing corporate tax rate, escalation rate (based on WPI index in the past ten years), etc.

Sometimes, the public entity seeking the preparation of feasibility studies prescribes the use of certain assumptions. In such cases, the assumptions need to be used with an element of caution. For instance, in case of development of roads under PPP framework; to be eligible for Financial Support to PPPs in Infrastructure (under the VGF Scheme); the growth rate in traffic year on year is to be assumed at 5 per cent; which may not be the actual case. Also, in development of ports, the Tariff Authority for Major Ports (TAMP) allows only up to 16 per cent return on capital investment to the private partner which makes other assumptions in the development of port to be determined by reverse calculation.

Key Assumptions in Financial Feasibility – Development of Roads under DBFOT basis

In a typical road project to be developed on a DBFOT basis, indicative assumptions that are required to undertake the financial feasibility assessment are given below.

- **General Assumptions** – number of toll plazas, number of lanes, operating framework – whether annuity/toll, scope of services to be delivered by the developer, etc.
- **Tax Assumptions** – Corporate tax, Minimum Alternative Tax



- **Cost Assumptions** – base construction cost, annual maintenance per km, periodic maintenance per km, operations cost (manpower, medical aid, etc.), cost of maintenance of toll plazas, etc.
- **Revenue Assumptions** – toll notification
- **Demand Assumptions** – number of PCU counts
- **Financing Assumptions** – Source of finance, cost of debt, cost of equity, debt to equity ratio, etc.

7.8.7 Life Cycle Cost Analysis

Life cycle costs need to be assessed in order to gauge the funding requirements and to determine whether future economic benefits or future revenues are more than costs.

Life cycle costs are measured in terms of capital expenditure and operating expenditure (O&M costs). Capital expenditure usually is calculated as the sum of the base construction cost, preliminary & pre-operative expenses, and the financing costs. Each of such components is set out below:

- **Base Construction costs**: These are basic direct costs of the project
- **Pre-operative expenses**: These include accounting/ management fees, legal fees, labor burden, expenses on rent, repairs, telephone bills, travel expenditures, utilities, etc. They reflect expenditure on administration, management, risks and profits.
- **Preliminary expenses**: These are costs towards carrying out engineering studies such as land surveys, concept layouts, designing, drawing and preliminary studies.
- **Financing Costs**: These are costs towards financing charges collected by lenders, interest during construction (IDC) etc.
While estimating capital expenditure, factors like the construction period, phasing of costs over the period, effective life of the asset etc., need to be considered.

Operating expenditures are measured in terms of the fixed costs for regular operation and maintenance activities, e.g., administrative costs, the variable costs that depend on the use of the respective facility and periodic costs that are major maintenance costs to be incurred once at specified time intervals.



Table No. 10 - Cash flow elements for life-cycle and financing costs

Cost Item	Description
Capital costs	Referred to as capex, it includes costs for development of the project, including planning, environmental documents, design and procurement, right-of-way purchase, and construction costs. These costs are incurred in the first few years of the concession period (or term of the contract).
Operations costs	Day-to-day costs of operating the project, such as snow and ice removal.
Maintenance costs	Items such as replacement of lighting.
Reconstruction and rehabilitation costs	Items such as bridge or pavement replacement, which are included as capex.
Overhead costs	Items such as administrative costs, office space, supplies, employee salaries, etc.
Financing costs	Costs associated with the interest charged on public or private debt, returns to private equity, as well as other costs, such as arrangement fees and commitment fees.

7.8.8 Sources of Finance for PPP Project

Infrastructure projects are highly Capital intensive, the private partner clearly lists out the financing risks associated with them before making an investment decision. If the project is a Greenfield investment, there would be no cash flow during the construction period. Therefore, the private sector is unlikely to fund the total capital expenditure through equity participation.

The project sponsor and its advisors typically seek to minimise the cost of finance for the project. Because equity is regarded as more expensive than debt, project sponsors often try to use a high proportion of debt to finance the project. Typically, leverage (the proportion of debt in the total financing package) is high for infrastructure projects. Debt providers have less risk than equity providers. Return on equity is based on dividends and capital gain. Equity providers receive dividends only after operating expenditures, debt service and taxes are paid. This is uncertain and equity providers will price this risk accordingly. Interest costs are tax deductible and hence bring down the cost of capital for the project.

A project may use either conventional or innovative means to finance a PPP project. The kinds of financing that are considered conventional and innovative are shown in the figure below.



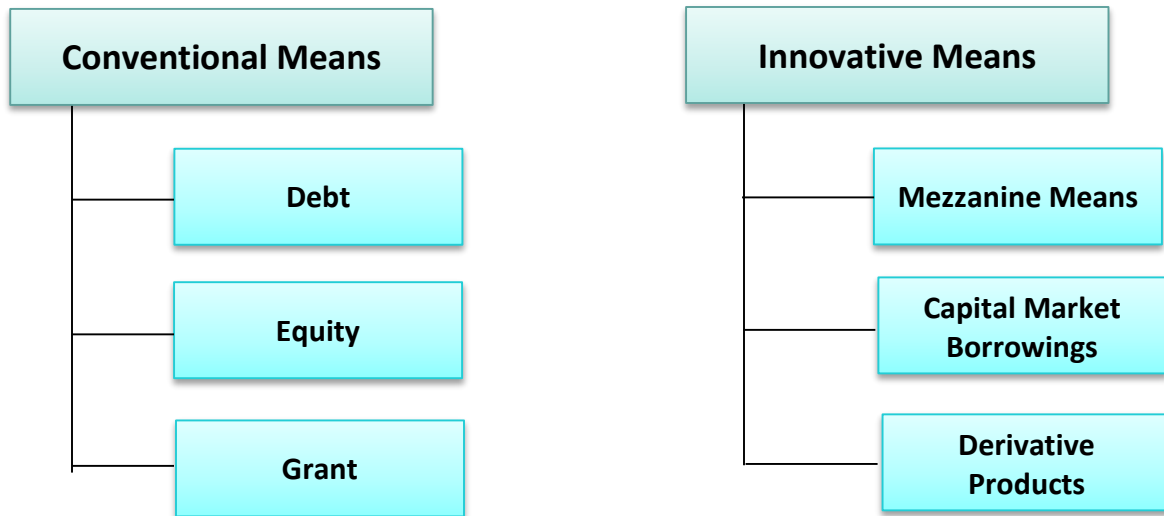


Figure No. 18 – Different modes to Finance PPP Project

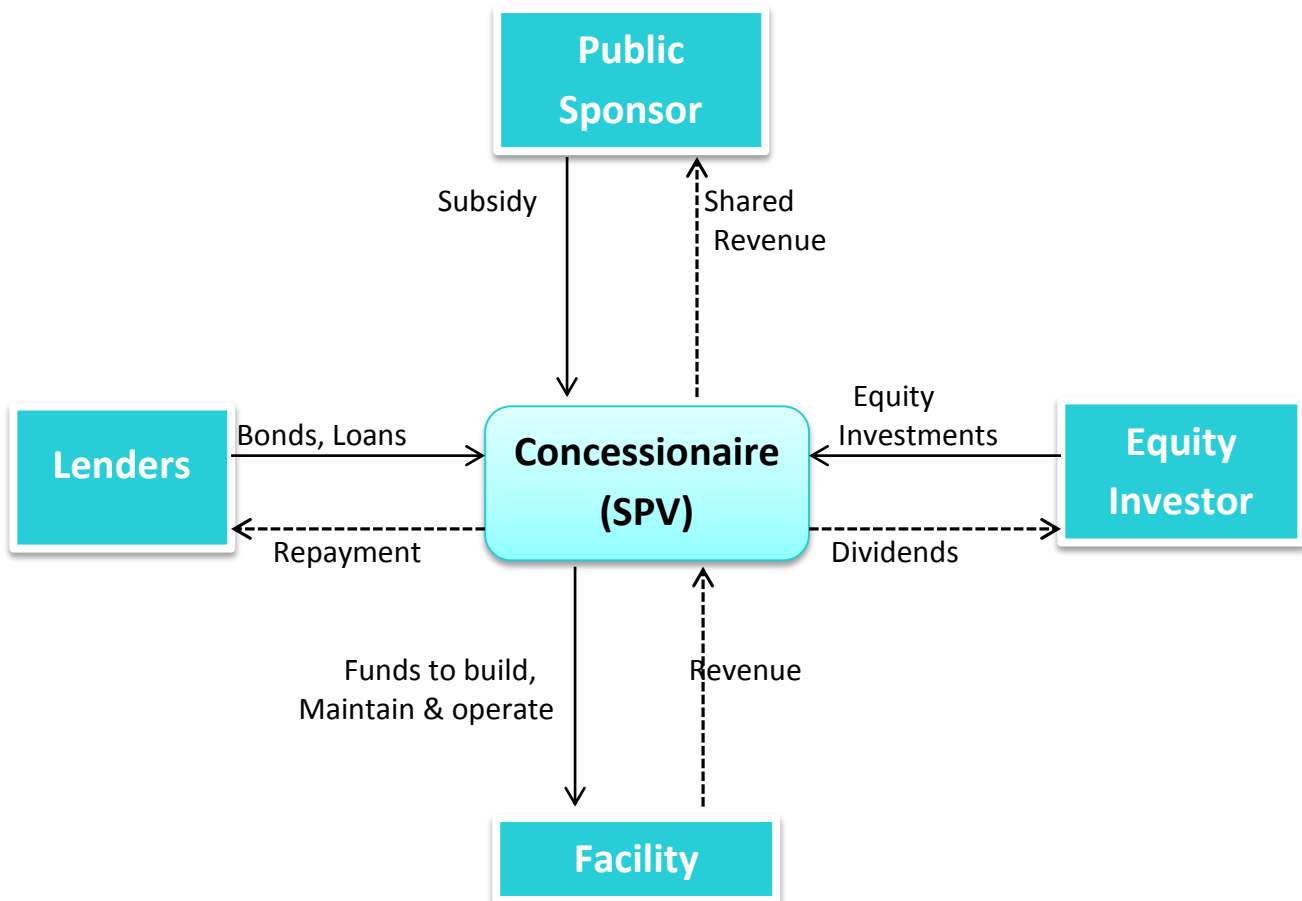


Figure No. 19 – PPP Financing Structure

Simple public - private partnership financing structure

Solid lines = cash flows into the project.

Dotted lines = cash flows out of the project.

SPV = Special Purpose Vehicle.



Conventional Means:

Conventional means of finance primarily include equity or debt (borrowings). In addition to the two, the Government can also contribute towards project development in the form of grant support.

While arrangements for equity and debt support are taken care of by the private partner, the grant support is generally provided by the public sector.

The flow of finances into project development follows a certain sequence. It is only after the infusion of substantial equity capital by the private partner that the sanctioned debt for the project is released. Further, Government support, extended in the form of grant, follows the achievement of pre-determined milestones as set out in the terms and conditions of the agreement signed among the Concessionaire, GOI and the Lender

Equity

Equity is generally provided by the consortium members or members forming SPV of the project partner for the PPP project. Other stakeholders like contractors, development partners or the public entity could also provide equity. Any project losses are borne first by the equity investors, and lenders suffer only if the equity investment is lost. This means equity investors accept a higher risk than debt providers and hence, require a higher return on their investment.

What does an equity investor look for in the financial feasibility assessment?

- Equity IRR
- Project period

A diagram showing the claim of different sources of funds on the project assets is provided below.

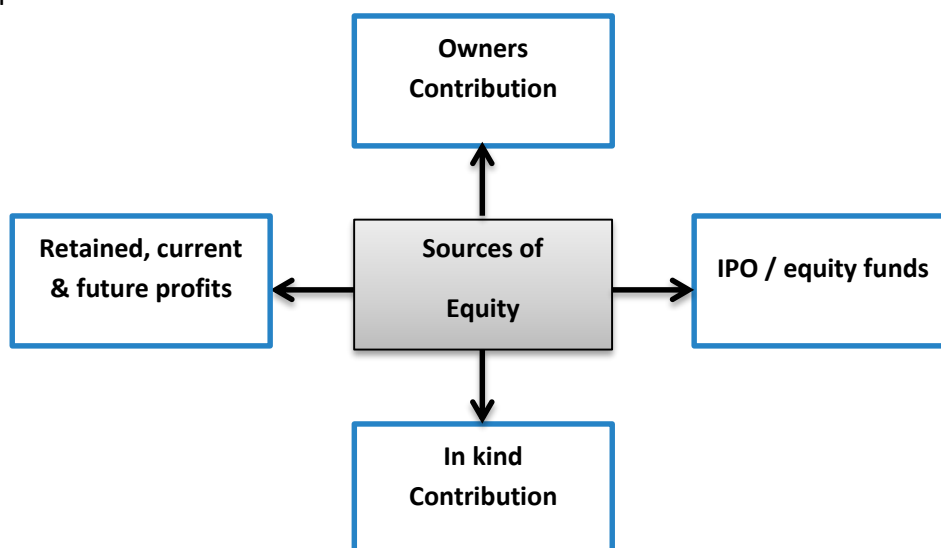


Figure No. 20 – Sources of Equity Finance





Figure No. 21 – Risk, Return & Claim to assets

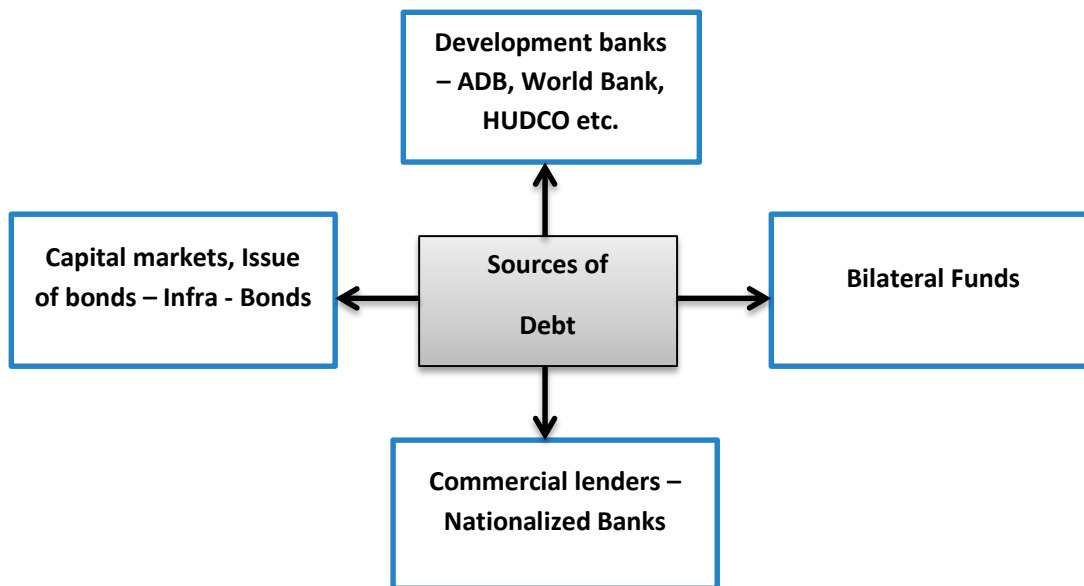


Figure No. 22 – Sources of Debt Finance



Debt

Debt is raised from banks, development partners and Government Agencies or the issue of bonds. Apart from these, subordinate debt and grants may also be sources of finance.

Debt plays a critical role in PPP projects. The project finance model is designed to be highly leveraged, meaning that debt—as opposed to equity—typically provides more than half of the financing required for the project. The level of debt in a project is a direct function of the project's level of risk. This attribute of the project is sometimes referred to as “gearing” and is measured by the project's debt/equity ratio. Projects with a low level of risk may be very highly leveraged, reaching as much as 90 percent debt and 10 percent equity, or 90/10. Riskier projects will require more equity financing and may feature debt/equity ratios in the range of 70/30 or 60/40. The level of debt in a particular project finance structure is dictated by the debt providers.

As a general rule, it can be said that debt providers are more conservative and risk-averse than equity investors. Debt providers accept lower returns, but only on the condition that loan repayment is predictable and involves less risk. Indeed, repayment of debt, at least senior debt, is a contractual requirement codified in the bond indenture or loan agreement. Equity returns, on the other hand, may have target rates but typically are not contractually obligated. There are two main financial products used for debt financing: bonds and loans. These may come as both senior and subordinate sources of financing.

Term sheets are prepared prior to financing debt by the financier and include the amount of project finance, the margins on this amount and other terms and conditions of lending.

Loans are rated by using the same credit rating scales as used with bonds. The key difference between loans and bonds is that bonds are tradable instruments (i.e., they can be sold in a secondary market) and have more liquidity than loans. Liquidity reduces the interest rate required by bondholders. Bonds offer advantages over loans, such as greater capacity and longer terms; however, bonds can be less flexible instruments than loans can be, especially with regard to drawdown of debt and repayment schedules.

Senior Debt

There are two main types of debt often used to finance PPP projects: senior and subordinate. These designations generally describe the priority of the creditor relative to other creditors with regard to two things—payments from the project (when the project is not in default) and security (after a project has defaulted). So, for example, cash flow waterfall that is typical in PPP financing. The waterfall describes the priority order in which payments are applied to different project needs—paying operating expenses, establishing reserves, repaying creditors, rewarding equity investors, etc. Senior debt providers receive their payments from the project cash flow before any other capital provider, helping to ensure that they are paid in full and on time even if



there may not be sufficient cash to pay a creditor lower in the order, or subordinate. For this relatively secure position, the creditor will be paid a lower return than a subordinate creditor.

Similarly, there is a priority of access to project collateral among the creditors if a default occurs. In a typical PPP project financing, a variety of assets will be used to provide security to creditors—real property (physical facilities and fixtures, and possibly land) as well as personal property (equipment, vehicles, intellectual property, and the project license itself). With first priority access, the senior debt providers are assured to be first in line to step into the shoes of the project operator, or under liquidation to receive the first proceeds of sale of any property, helping to minimize losses in that event.

Lenders provide most of the debt as “senior debt”. Since senior lenders do not have access to the sponsor’s balance sheets in project financed transactions, they need to ensure that the project produces sufficient cash flow to service the debt. They also need to be given priority over the assets of the project before other creditors. Senior lenders may also seek additional credit support from the shareholders or the Government Agency. The riskier the project, the more the credit enhancements expected by the senior lenders. This is necessary to ensure that the debt can be repaid even in a conservative cash flow scenario.

Senior debt enjoys priority in terms of repayment overall other forms of financing. Mezzanine debt is subordinated to senior debt in terms of repayment but ranks above equity both for distributions of free cash in the so-called “cash waterfall” (i.e. priority of each cash inflow and outflow in a project) and on liquidation of the project special purpose vehicle.

Debt Tail Requirement

To hedge against the risk of negative project performance, debt providers usually require a schedule of repayment that is shorter than the concession term, thus creating a debt repayment tail. Tails will be longer for riskier projects, particularly those for which the private partner accepts demand risk, such as toll roads. By this feature, the public authority provides an additional period for the debt providers to recover their principal in cases when the debt or the project is restructured. Under availability payment deals, the tail typically is very short. In Canada, for example, tails on availability projects are typically set at 6 months because availability payments are typically calculated to include debt service payments.

Some countries have experimented with flexible-term concessions to hedge against revenue risk. The term of these projects varies with pre-determined indicators, such as principal repayment, revenue generation and traffic volume targets or cumulative and discounted revenue targets. Under a “Present Value of Revenues (PVR)” criterion, Developers propose the minimum gross revenue (discounted at a common rate) they



are willing to accept. The PPP contract ends when the gross revenue PV is reached. The concession term may vary, but the contract provides for a base case and minimum/maximum terms. The mechanism transfers most revenue risk to the Agency, without immediate fiscal impacts. This makes it attractive from financial ability and fiscal impact perspectives.

Interest Rate Swap

An interest rate swap is a contractual agreement whereby two parties agree to exchange payments on a predetermined notional amount(s) over a predetermined set of time at agreed upon interest rate(s). Typically, one party will receive the floating rate payments in exchange for paying a fixed rate. Typically, there is a “netting” of the two payments, with one party receiving the net payments in each period. There is no exchange of principal, only an exchange in interest rate payments usually settled in net dollar amounts.

Interest rate swaps are common in bank-financed deals since banks usually lend at variable rates, which borrowers then swap for a set of payments based on a fixed rate. Prior to the 2008 financial crisis, some municipal issuers issued variable rate bonds and entered into an interest rate swap with a financial institution to obtain a “synthetic” fixed rate slightly below their direct fixed rate borrowing cost. In the current regulatory and interest rate environment, swaps are not common in bond-financed PPP projects, and most bonds used to finance these projects carry a fixed interest rate or coupon.

Grant

Based on financial feasibility of the project, the Government may provide support in the form of an upfront grant towards capital expenditure to improve its viability. The Government of India provides capital grants as Financial Support (Viability Gap Funding Scheme) to PPP in Infrastructure across sectors.

7.8.9 Innovative Means of finance

In addition to conventional means of financing a project, innovative means of project finance have emerged over the years to develop projects through the PPP framework. These means involve other stakeholders such as capital markets, development banks, municipalities, etc.

Given below are a few of the innovative means of finances:

- Mezzanine means
- Capital Markets– Bond Financing



Mezzanine means

Subordinate debt requires lower DSCRs than senior debt but higher interest rates to compensate for its lower position in the cash flow waterfall. Subordinate debt may be provided by specialized funds or by project shareholders.

Shareholder loans and mezzanine financing are sometimes provided by investors to satisfy project financing needs and enhance their own returns. These lending instruments offer the benefits of loans in that they pay a predetermined rate on a contractual basis. The interest on these loans is also deducted from the project company's taxable income. These loans typically carry a higher interest rate than senior debt but a lower rate than targeted equity returns.

These include subordinate debt and preference shares that fall in between senior debt and equity. Payment is made to these investors only after senior debt is serviced and upon complying with certain conditions such as adherence to coverage ratios and investment requisites related to project performance. The risks taken by mezzanine providers are lower than those of traditional equity investors. Since the use of mezzanine means of finance reduces the amount of equity required for the project, it works to the advantage of the project company.

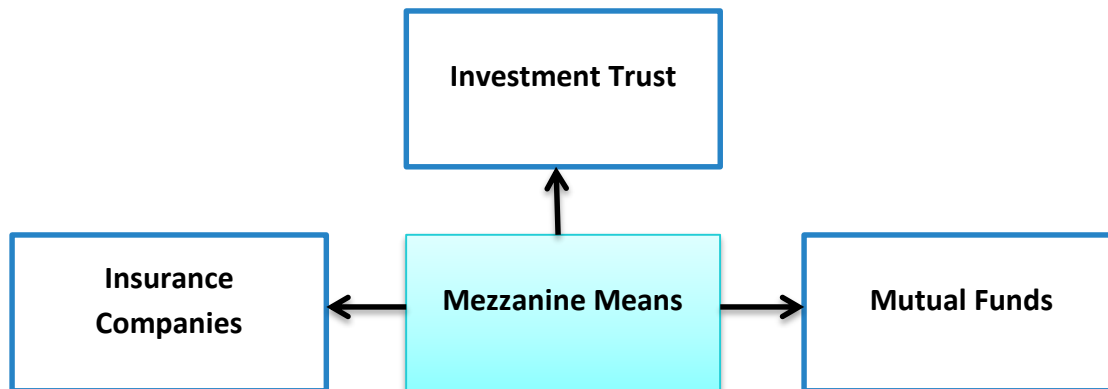


Figure No. 23 – Mezzanine Means of Finance

Capital Markets – Bond Financing

Bonds are common means of financing in corporate finance whereas the same as a means of financing in project financing is not very common. The commercial debt financing in project finance are offered under a floating rate with a medium-term maturity whereas, bond financing offer long-term maturity by institutional investors thus making it a better option of debt financing.

Types of Bonds:

- Municipal Bonds
- Pooled Finance Bonds



Bonds

Public agencies and private firms can both issue bonds to finance a project. Public agencies may issue tax-exempt municipal bonds, which may be paid back by using general revenues or a dedicated revenue stream, such as project tolls. Private firms may also issue bonds that can be paid back through corporate revenues or, in project finance, dedicated project revenues (i.e., project revenue bonds).

The interest rates that must be paid on bonds are determined by market demand. That demand is heavily influenced by the credit ratings of the underlying debt as determined by rating agencies (if the bond will be repaid through project revenues) or by the issuing of government's credit history and financial circumstances. Rating agencies evaluate a wide variety of potential risks associated with the bond issuer and the project's projected costs and revenues before applying a credit rating.

Municipal Bonds

Funding from bonds may be used by a public agency to provide a capital investment subsidy to a concessionaire. Bonds issued by State or local governments are termed municipal bonds. Bond investors are often willing to accept lower interest rates on municipal bonds because they are generally exempt from income taxes as well as from most State and local taxes in the State of issuance.

There are many different kinds of municipal bonds that can be issued to help finance transportation projects, including general obligation bonds, revenue bonds, and grant anticipation notes.

Bond financing has certain potential disadvantages. For instance, it involves a single, up-front subscription and hence limits the ability to draw down funds as and when required. This also leads to increased capitalised interest charges. Unlike commercial lenders, bond investors lack sector knowledge and have no active involvement in project development. The traditional bond structure does not allow investors to react to changes in project development/operation. In developed economies, this disadvantage has been moderated by the entry of insurance companies, who offer a financial guarantee to investors. In such cases, the bondholder's exposure is transferred primarily to the balance sheet of the insurer.

An example of bonds issued for project financing are those issued by Local Governments to fund projects in urban areas for better service delivery to their citizens. These are project-specific bonds. A few of the successful urban sector projects that have been financed through municipal bonds are the Ahmedabad Water Supply and Sewerage programme by the Ahmedabad Municipal Corporation and the Greater Bangalore water supply project by Karnataka Urban Water Sector Improvement Project (KUWASIP).

The Government of India has set up a Pooled Finance Development Fund (PFDF) to provide credit enhancement to ULBs to access market borrowings based on their credit



worthiness through a State-level pooled finance mechanism. This scheme improves the access of urban local bodies to capital markets for borrowings. The scheme is meant to provide credit enhancement grants to access market borrowings through Pooled Financing Bonds on behalf of identified ULBs for investment in urban infrastructure projects.

7.8.10 Non-Recourse lending in Project Finance

Under non-recourse project finance, lenders are paid only from the project's revenues without recourse to the assets of equity investors. That is, the project company's obligations are ring-fenced from those of the equity investors, and debt is secured on the future cash flows of the project. In non-recourse project finance, lenders need to undertake rigorous due diligence of project cash flows and the contractual structure. Generally, PPP projects are highly leveraged, with debt-equity ratios usually ranging from 70:30 to 60:40. Some of the key advantages and disadvantages of non-recourse project finance are provided below.

Advantages of non-recourse finance:

- It can improve the capacity to raise large amounts of long-term equity and debt finance.
- Project sponsor balance sheets are shielded from risk. Investor capacity to borrow and take more projects increases as they can hold the debt "off-balance sheet".
- Irrespective of project risks, the liability of the private partner is capped to its equity exposure. This may not be the case when the promoter guarantees for completion of construction etc. Owing to relatively lower risks, the private partner would be more willing to undertake projects under such an arrangement. This would mean greater competition for PPP projects.
- Financing arrangements can be tailored to suit the specific project.
- High leverage can make it easier to achieve the required equity rates of return.
- Provides the advantage of relative ease of raising debt compared to equity.
- There is better due diligence as the investor and lenders are expected to scrutinise cash-flows in detail.



Disadvantages of non-recourse finance:

- Project finance transaction is complex and has a higher lead time as compared to corporate finance.
- Non-recourse debt is typically more expensive than corporate finance.

7.8.11 **Lenders' Concerns on PPP Funding**

Banks play a crucial role in PPP arrangements. In a PPP, the private partner is highly incentivised to deliver the project on time and within the budget. In case the private partner fails to complete the project on time, it will need to request the banks to allow delayed repayment of debt, as revenues would be delayed. In case of cost overruns, the private partner would need to ask the bank to increase the loan. In such cases, the banks may impose penalties on these companies leading to a lower return on investment for the shareholder.

The amount of debt which could be raised by a project company is primarily determined by its ability to service its debt services from future cash flows with reasonable comfort. The lenders generally estimate this ability based on a set of ratios that are calculated on a periodic basis over the life of a project.

Interpreting Debt Service Coverage Ratio

Debt service refers to the principal and interest payments on all debt. The debt-service coverage ratio (DSCR) is the ratio of free cash flow to debt service. It indicates the capability of the project company (SPV/ private partner) to service debt through the margins in cash flow.

$$\text{DSCR} = \frac{\text{Net Operating Income}}{\text{Total Debt Service}}$$

- DSCR must ideally be more than 1
- DSCR > 1 means, the project is generating enough income to pay its debt obligations
- DSCR < 1 means that the project company has negative cash flows
- DSCR = 0.95 means there is only enough net operating income to cover 95 per cent of the annual debt payments

In certain cases where DSCR is less than 1 for any year, the lenders ask the project company to maintain a Debt Service Reserve Account (DSRA) year on year to safeguard its debt service obligations. A financial model is not sustainable if the DSCR in any year of operations is less than 1.



Key Ratios that interest Lenders

Average Debt-Service Coverage Ratio

- The ratio is defined as:
- $\text{Average Cash Available for Debt Service (CADS) / Average Debt Service}$
- This estimates the average cash available over the agreement period of the project against the average debt service requirement over the period.

Annual Debt Service Coverage ratio (ADSCR)

- The ratio is defined as:
- $\text{Cash Available for Debt Service (CADS) in a year / Debt Service in that year}$
- This ratio is calculated for each year. This ratio is the primary determinant of the maximum loan that can be raised against the project.

Loan Life Cover Ratio (LLCR)

- The ratio is defined as:
- $\text{NPV of CADS for loan period / debt outstanding at calculation date, calculated with discount rate as interest rate}$
- The ratio is a useful measure for the initial assessment of the project company's ability to service its debt over the whole term. This ratio may not be useful if significant cash flow fluctuations are expected from year to year.

Project Life Cover Ratio (PLCR)

- The ratio is defined as:
- $\text{NPV of CADS for project period / debt outstanding at calculation date, calculated with discount rate as interest rate}$
- The ratio is used to assess the capacity of the project company to make repayments with the tail period of the PPP contract after the original maturity date of the debt. This ratio would be a useful in cases where difficulties are expected in repaying all of the debt in time.

7.8.12 Credit Enhancement while raising Debt Finance

Credit enhancement involves the use of both internal structural provisions and external financial guarantees from higher-rated entities to provide greater security to creditors, thereby lowering default risk and reducing financing costs. Some of these techniques can result in a higher credit rating on the debt obligations than would be attainable otherwise.



Table No. 11 – Types of Credit Enhancement

Type of Enhancement	Purpose
Internal Credit Enhancement	
Cash Reserves	Cover debt service or other expenses if net revenues are insufficient
Debt Trenching	Obtain higher rating on most of the debt by making portion of its junior lien
Cash Flow Optimization	Enhance debt through applying excess cash to prepaying portions of it ahead of scheduled amortization
External Credit Enhancement	
Letter of Credit	Guarantee debt service to investors
Lines of Credit	Working Capital for Project Sponsor
Bond Insurance	Guarantee debt service to investors
Governmental Guarantees	Guarantee debt service to investors or subsidized operations
Construction Risk Guarantee	Protect against contractor default

Internal Credit Enhancement

Cash Reserves

The establishment of cash reserves provides resources to meet obligations in the event that pledged project revenues prove insufficient to meet semiannual principal and interest payments or other project spending requirements. Reserves usually are managed by a trustee acting on behalf of bondholders who has specific instructions that indicate under what conditions reserves are to be paid out, either to bondholders or to the borrower, depending upon the nature of the reserve. Under traditional PPP models, reserves are built up after project completion from the project's initial earned revenues. When bond financing is used, it is typical to establish certain reserves (such as the debt service reserve fund) upfront with bond proceeds. Reserves may drive up project costs and financing requirements but also provide additional security for investors.

Typical reserve accounts used in connection with project financing are:

- *Debt Service Reserve Fund*: capitalized either with bond proceeds or available revenues accumulated over several years, and required to be maintained in an amount equal to average (and sometimes maximum annual) principal and interest payments;
- *Operating Reserve Fund*: usually built up over time from excess project revenues to provide liquidity to pay operating expenses, and required to be maintained at a certain level (such as 90 days of budgeted operating costs);
- *Maintenance Reserve Fund*: usually built up over time from excess project revenues to fund unanticipated extraordinary maintenance costs necessary to maintain the facility's



operability, and typically required to be maintained at a level specified by an independent expert engineering consultant each year.

Debt Trenching

A project can also structurally enhance the creditworthiness of a portion its debt financing by segmenting it into a senior tranche (“slice” of indebtedness) and a junior or subordinate tranche. Giving certain bondholders or creditors a first claim on revenues before other bondholders provides a higher level of debt service coverage for the senior holders, and often can result in a higher rating for that portion compared to all the debt being uniformly secured. Because there is lower risk on the higher rated debt, the more attractive interest cost achieved on the senior portion can more than offset the interest cost of selling the smaller tranche of lower-rated subordinate debt.

Other Structuring Techniques

Project sponsors may enhance the creditworthiness of debt obligations through other structuring techniques as well. For example, structuring the annual “flow of funds” so that all or a set percentage of residual cash flow are captured through a “cash sweep,” and using it to accelerate (prepay) portions of the outstanding debt, reduces bondholder exposure in the out years. Equity lockups and similar mechanisms provide additional security for lenders by limiting conditions under which cash flow may be released to equity holders, decreasing the risk of default on the debt. In addition, setting the term of a PPP agreement so that it extends well beyond the final maturity date of the debt obligations issued to finance a project provides latitude for restructuring and extending the debt to be repaid over a longer time period. All of these mechanisms add security to bondholders and lenders.

External Form of Credit Enhancement

Letter of Credit

A Letter of credit (LOC) is a form of guarantee typically provided by a commercial bank that assures the recipient of full and timely payments. In the context of project finance, an LOC would take the form of a bank guaranteeing to a creditor (lender or bondholder) that debt service payments would be received as they became due. If the LOC is from a highly-rated bank and covers the full amount of principal outstanding plus accrued interest due on the payment date, the bond rating will reflect the bank’s rating rather than the (lower) underlying rating of the project. Although LOC’s are used to secure long-term (25 to 30 year) bond issues, the bank commitment typically extends only 5-10 years. If the bank elects not to renew its LOC at the end of the commitment term, either a substitute bank must be brought in with at least as high a credit rating, or the bonds must be redeemed with a final draw on the LOC and the issuer is forced to refinance the issue.

LOCs often are used in connection with variable rate demand obligations (VRDOs), which are floating rate securities that allow the bondholder to put or tender the bond



back on a weekly or monthly basis. VRDOs were quite prevalent 10-15 years ago, but as a result of sustained low long-term interest rates and the decline in the credit ratings of many of the major banks, LOCs are much less common today.

The obligor pays annual commitment fees to the bank providing the letter of credit, and to the extent the LOC is drawn upon, such advances must be repaid to the bank with interest over a defined "reimbursement period" (e.g., five years). The borrower will determine the cost-effectiveness of the bank's credit enhancement by comparing the rate on the LOC-backed issue plus annual bank fees to its own cost of borrowing without enhancement.

Lines of Credit

A Line of credit differs from a letter of credit, in that it is a standby lending commitment from a bank generally issued in favor of the obligor, not the creditor, within specified limits. Lines of credit offer liquidity on demand for project companies. They can be used for general working capital needs of the project, typically arranged at project start-up or once project revenues have begun. They offer coverage in the case of a cash flow shortfall and may be used by the borrower for debt service or for operational expenses. But they do not directly provide the bondholder with a guarantee protecting them from default risk. Lines of credit also may be used to repurchase bonds with a "put" feature that have been tendered back to the project company issuer but have not yet been remarketed to new investors.

The obligor pays annual commitment fees to the bank providing the line of credit, and any draws on the bank facility must be repaid typically within five years at interest set at some margin over the prevailing short-term London Interbank Overnight Rate (LIBOR), an international benchmark lending rate.

Bond Insurance

Monoline bond insurers use their capital base and high ratings (AAA in the best scenario) to support project financings by guaranteeing repayment, thus sharing some of the risk and reducing the price (interest rate) charged by debt providers for financing. The borrower typically pays the insurer a guarantee fee (the bond insurance premium) upfront out of bond proceeds. If the borrower defaults, the insurer steps in and pays principal and interest as originally scheduled. As with the bank LOC's, issuers take into account the cost of the credit enhancement (the bond insurance premium) in determining whether the guarantee is cost-effective.

Governmental Guarantees & Subsidies

A governmental project sponsor can provide credit enhancement to local projects through various mechanisms, ranging from contingent funding commitments to outright guarantees. Governmental project sponsors may also provide credit enhancement indirectly, by assuming certain project operating costs, thereby allowing all project



revenues to first be applied to debt service. State/local sponsors can also “over collateralize” a new project financing by making available additional revenue streams to augment project-generated revenues.

Construction Risk Guarantees

Various external credit enhancement mechanisms are used to reduce the risk of project construction not being completed because of contractor performance issues.

- *Parent Company Guarantees:* Private sector companies usually participate in PPP projects through subsidiaries or special purpose vehicles (SPVs). The objective is not solely to limit the parent company’s financial exposure. Indeed, a separate governance structure around a project is necessary to provide delegated authority and the autonomy needed to motivate project executives.

The public authority project sponsor, however, reasonably requires parent company financial engagement over and above the reputational risk for the private companies undertaking construction of the project. As described below under “Contractor Surety Bonds,” construction contracts typically require various surety policies, and may additionally require bank letters of credit covering a limited percentage of the value of the contract. Debt providers consider the amount of such financial guarantees in stress testing the project for downside scenarios. If the amount of parent equity investment in the SPV and/or the surety policy backstopping of the SPV’s contractual obligations proves insufficient in some scenarios, debt providers may ask for the parent companies to guarantee the provision of greater amounts.

Parent companies typically guarantee compliance with all financial and technical requirements of the design-build agreements that form part of the overall PPP agreement. They also guarantee equity contributions to project financing by the project company, which commitment may be further backed by a bank letter of credit. Parent companies have also pledged contingent capital to supplement any shortfalls in revenues during construction and to replenish reserve accounts

- *Contractor Surety Bond:* A contractor surety bond is a guarantee, in which the surety guarantees that the contractor, called the “principal” in the bond, will perform its obligation to construct the project, as stated in the bond. It normally remains in full force and effect until the contractor fully performs the stated obligation.

For example:

- The obligation stated in a bid bond is that the principal will honor its bid and enter into a binding construction contract if it is selected as the winning bidder.
- The obligation in a performance bond is that the principal will complete the project.



- The obligation in a payment bond is that the principal will properly pay subcontractors and suppliers.

If the principal fails to perform the obligation stated in the bond, both the principal and the surety are liable on the bond, and their liability is “joint and several.” That is, the principal, the surety, or both may be sued on the bond, and the entire liability may be collected from either the principal or the surety. The upward limit on the amount that may be collected is the amount in which a bond is issued (known as the “penal sum,” or the “penalty amount,” of the bond).

Surety providers may not pay immediately. They may try to negotiate a settlement or litigate. This is why debt providers prefer letters of credit. However, surety providers can and do pay out and even take control of the project to ensure completion.

Surety providers have responded to market concern over probability of payouts with a product referred to as a demand-pay surety, or surety with a liquidity layer. This product features a portion of the available payout that is made immediately to support continued progress on the project while the surety investigates the cause of the cash flow short fall and who is to blame.

7.8.13 Equity in PPP Projects

Equity investors seek to maximize their risk-adjusted returns within their investment parameters and risk profile. They do this by minimizing costs and risks. This makes them efficient managers and owners of projects. In this sense, equity investor goals are generally aligned with government clients on PPP projects. However, in some cases goals may diverge. Most equity investors who invest at the initiation of the project have a short-term horizon of 10 years or less. To ensure “skin in the game,” design-build subcontractors generally are required to hold equity in PPP projects at least until construction is complete and the project is operational. Public authorities and other equity investors may require O&M subcontractors to keep equity invested in projects during the entire contract term. Different types of equity investors are discussed in more detail below.

Another strategy for equity investors to amplify their returns is to maximize leverage, or the debt/equity ratio. Increasing the level of debt financing on a project creates a higher return on a lower amount of equity invested, although it may also increase financial risks.

On projects with terms much longer than the debt used to finance them, equity investors look forward to the last phase of the project when all debt has been paid down, since more cash flows are then available to be paid out as dividends. In other cases, equity investors prefer to increase leverage to have more equity available for



other investments. This is often the case in asset monetization, where the initial acquisition may be done using all equity, only to be leveraged after acquisition.

Role of Equity in PPP

Equity investors are considered to be in a first-loss position and to accept the highest level of risk among sources of financing. They appear at the bottom of the cash flow waterfall. While equity investors may have target rates of return, the amount and timing of their returns are uncertain. This is the main difference between debt and equity financing. Debt providers enter into contracts to provide upfront financing and be repaid at predetermined rates and times over the course of a designated term. Equity investors take the risk and reward of being business owners. Just like investors in the stock market, equity investors may lose their entire investment without recourse. Because of this high level of risk to equity investments, equity investors require a higher return on their investments.

While equity investors are in a first-loss position, they also seek to insulate themselves from losses and to transfer risks, just like debt providers and public authorities. Major risks can be passed on to sub-contractors, up to negotiated financial limits.

Public authorities can benefit from the incentive framework in which equity investors operate. For example, equity investors will seek to minimize costs. However, public authorities need to ensure that their interests are aligned with equity investors in terms of project outcomes.

Types of Equity Investors

Equity investors in transportation PPP projects fall into three main categories, as described below:

- *Strategic Equity*: Subcontractors responsible for construction and/or operation and maintenance of the project may contribute equity. This may take the form of a direct investment by the contracting company or be made on an arm's-length basis by a parent company. Alternatively, another company in the same group may only act as an investor.
- *Financial "Short-term" Equity*: This category includes investors who are not involved in the delivery or management of the project, but seek a competitive risk-adjusted return. This category could be broken down to include direct investors and indirect investors through intermediary funds, as well as shorter-term and longer-term horizon investors. Financial institutions, such as investment banks and limited partnerships, invest following a private equity model. They include "direct" equity investors that get involved in the project versus "indirect" equity investors that go through funds. This is usually a short-term investment, and these investors are willing to take higher risk, but



seek a relatively early “exit strategy.” The exit will typically take place once a project has started to deliver stable earnings. Such investors may target returns of 25 percent or more from successful exits, as further discussed below.

- *Financial “Long-term” Equity:* Other financial institutions prefer to invest in operating projects which offer them a long-term, stable return. Pension funds and life insurance investment funds are typical investors in this category. Often, these long-term investors are interested in the scale and duration of the overall investment opportunity, rather than in a shorter-term highly leveraged return on a small amount of equity.

Equity IRR / Hurdle Rate

The minimum rate of return required by investors is also known as a hurdle rate. The hurdle rates used by investors to determine their bid price do not necessarily reveal their expected returns.

$$\sum \frac{(D_i - I_i)}{(1 + r)_i} = 0$$

Where,

r = Internal rate of return (Bid rate)

D_i = Dividend at year “i”

I_i = Amount invested by shareholders at year ‘i’

For an investment to be justified, and if held to the targeted investment horizon, the equity IRR must be above the hurdle rate. The approach used by bidders for pricing PPP projects is to determine the leverage and cost of debt, and then to apply their required equity return to the balance of funding needed. The required equity IRR (i.e., the hurdle rate) may then be used by bidders, under a number of different scenarios, to calculate the required annual availability payment or to set the target level of revenues from tolls. Actual returns may turn out higher than expected because of operating efficiency, or because of changes from the assumptions made in the original project model. For example, if the rate of increase in operating costs is overestimated, and the rate of increase in revenues is underestimated, the resulting trends will increasingly diverge, and profitability will be boosted.



7.8.14 Cost of Capital

Depending on the means used to finance a project, costs will differ since the cost of raising debt and equity are different. The effective cost of capital (or cost of raising funds) for a project is measured in terms of the Weighted Average Cost of Capital (WACC). WACC takes into consideration the amount and cost of debt and equity raised for the project.

The formula for WACC

$$\text{WACC} = \frac{E}{E+D} \times Re + \frac{D}{E+D} \times Rd \times (1-T)$$

Here,

E = Market value of the company's equity

D = Market value of the company's debt

Re = Cost of Equity

Rd = Cost of Debt or interest rate at which debt is raised

T = Tax Rate applicable for the project

The cost of debt depends on the risk free rate and spread. The cost of equity indicates the minimum rate of return a company must offer shareholders as compensation for waiting for returns and for bearing risk. It reflects the shareholder's opportunity cost of investment. The value of the cost of equity can be estimated based on the capital asset pricing model, in which the risk free rate and equity risk premium are estimated.

7.8.15 Role of Public Sector in Project Finance

The Government's support to the private partner, in a PPP project, aimed at enabling the partner to arrange finance, works to a project's advantage. Internationally, there are certain instruments that allow public participation in project finance and these instruments range from revenue enhancements to equity guarantees. However, these instruments need to be used with an element of caution.

- Equity guarantees are a mechanism under which the public entity provides the concessionaire with an option to be bought out at a price that guarantees a minimum return on equity.
- Under debt guarantees, the public entity pays for any shortfall related to principal and interest repayments by the private partner. The Government could also guarantee re-financing of the project.



7.8.16 Revenue Estimations

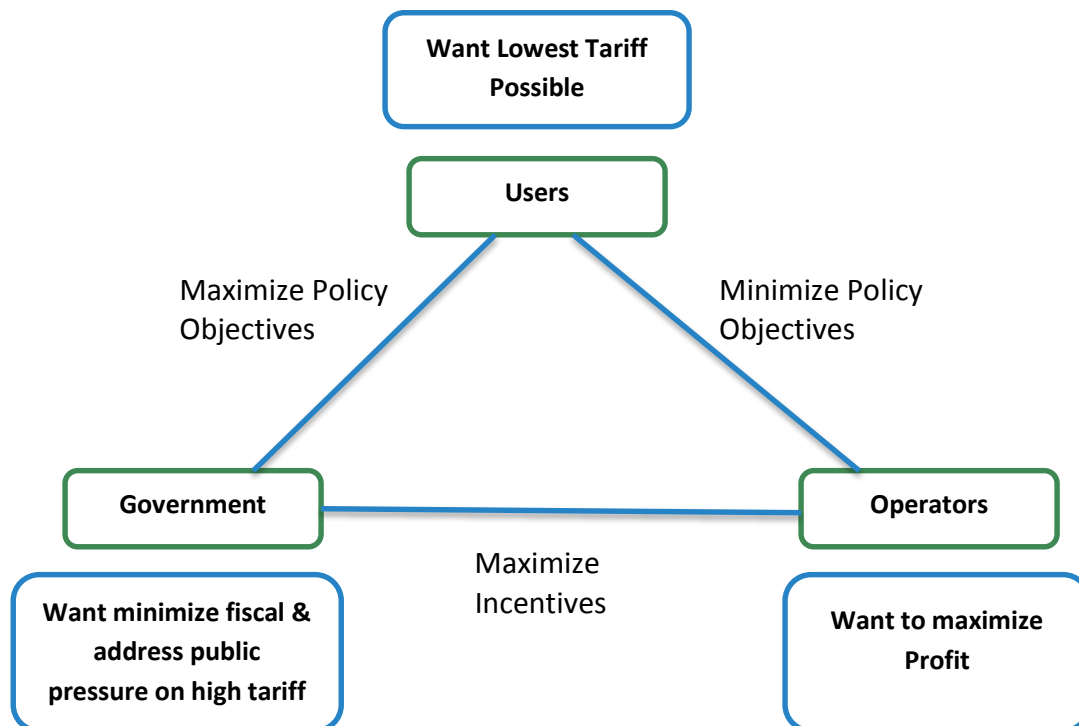
The revenues are based on the demand for the asset/service and the corresponding tariff rate. Estimation of revenues would be a fall out of the technical studies such as market study, traffic study, etc. that are carried out for the project.

Tariff Framework

One of the key challenges in a PPP project is to define the most appropriate tariff. Tariffs for services must ideally cover the full cost of service provision, including capital cost, operations and maintenance expense, and the cost of negative environmental and social externalities.

The level and structure of tariffs must ideally offer incentives to service providers to minimise costs, and to customers to consume services efficiently. When tariffs are inadequate, the financial feasibility assessment needs to identify a plan to improve cost recovery, and identify sources of financing the full cost of service provision. Different stakeholders have different expectations from the tariff.

A framework explaining the expectations of three key stakeholders is provided below.



Source: Course Material, National PPP Capacity Building Programme

Figure No. 24 – Expectations from Key Stakeholders



The following key options could be used, based on their merits, when defining a tariff rate setting strategy:

- Sector specific uniform tariff setting (e.g. highways, power, ports)
- Project specific tariff setting (e.g. port projects)
- Upfront or as bidding parameter (e.g. some of the power sector projects)

When private partners do not have the Authority to set tariffs for the projects, it increases the uncertainty of the revenue stream. A well-established tariff setting framework helps mitigate some of the risks.

The pros and cons of each of these options should be assessed by experts taking the interests of all the stakeholders into consideration while the financial model should help assess their impact, taking into account the assumed price elasticity.

A few of the strategies used in tariff setting are determining one set of user charge per target group, setting of discount/ price differentiation within the defined target group and determining price escalation over the years.

Based on demand and tariff, revenues for the project are extrapolated over the years. Revenues are calculated from all the major sources. In the case of certain projects, revenues generated from support or related activities may be higher than revenues from primary activities.

7.8.17 Financial Viability Assessment

Financial analysis usually is conducted using a cash flow model. The model projecting cash flows may be simple or very complex depending on the type and size of the project and the variables involved. Capital expenditure, revenues, expenses, terminal cash flow (if any), discount rate and general assumptions are used to calculate cash flow projections, which is the key element in financial analysis.

Since the financial feasibility of a project is assessed on the basis of proposed investments in, and projected cash flows from, the project, it is only prudent to assess the present value of future investments and cash flows to understand the net financial costs and benefits to stakeholders.

Key Financial Viability Indicators & Interpretations

The key financial viability indicators that are most commonly used are Project Net Present Value (PNPV), Equity Net Present Value (ENPV), Project Internal Rate of Return (PIRR) and Equity Internal Rate of Return (EIRR). A positive NPV for a project when discounted at weighted average cost of capital (WACC) would mean that project returns are higher than WACC.



The equation for calculation of project NPV is provided below.

$$\text{Project NPV} = -C_0 + \sum_{i=1}^T C_i + (1+r)^i$$

C_0 = initial investment for project

C = Project Cash Flow in a particular year

i = Time in years

r = Discount Rate

A financially viable project should meet all debt service requirements. PIRR is the value of the discount rate (r) in the above formulae at which the PNPV is zero. Similarly, if the project investments and project cash flows are replaced by equity investments and equity cash flows, the equation would give ENPV and EIRR.

For any project, if:

- **NPV > 0:** It implies that the project is financially feasible and that it would provide positive value to the respective capital provider.
- **NPV < 0:** It implies that the project is financially not attractive for capital providers.
- **EIRR > cost of equity:** It implies that the project is attractive for equity investors and it is expected to generate sufficient returns for equity investors.

The financial analysis is represented in terms of the cash flow statement, profit and loss statement and balance sheet.

A project could be termed financially viable (or bankable) if

1. It meets debt service obligations
2. The Project NPV and Equity NPV are positive
3. The estimated Equity IRR is more than the cost of equity

If the project is not viable on a standalone basis, the estimated support required from the Government needs to be assessed. If the support is within the acceptable range of existing Government support such as the Viability Gap Funding or other budgetary support, the project could be taken up with Government support.



7.8.18 Sensitivity and Scenario Analysis

The financial feasibility assessment for a project depends upon uncertain factors and assumptions that are an outcome of other technical studies. Therefore, it is always useful to conduct sensitivity and scenario analysis of the assessment to understand the correlation of each variable with the project's financial performance.

Although sensitivity and scenario analysis are undertaken based on assumptions, they indicate to the public and the private parties the different possible outcomes in the course of project development. Sometimes, the outcomes of these analyses also influence the structure of the project.

Sensitivity analysis determines the correlation between an input in a financial model to its resultant output. For instance, it checks the variation in the resultant PIRR for a corresponding variation in the project cost, provided all other inputs in the financial model remain unchanged. Scenario analysis involves projecting alternative future outcomes for the same project and their effect on the financial performance of the project. It includes working out a base case, a best case, which is the most optimistic one, and a worst case, which is the most pessimistic one, for the project.

7.8.19 Optimise Financial Viability

The financial viability of a project could be optimised by analysing various options such as change of scope, type of PPP structure adopted, duration of the PPP arrangement, increased tariff, provision of Government support in terms of Viability Gap Funding or other grants, unbundling a project, Government guarantees for transferred risk, risk transfer to the Government, Government inputs in operations at subsidised rates etc.

Financial outcome indicators in each of the identified cases need to be calculated and compared. Value Proposition of Projects under each of the identified options may be calculated. The option that provides the highest value proposition and best financial outcomes may be the optimal structure for the project.

A few innovative options that may be considered to optimise the financial viability of the project are:

1. Monetising land
2. Transfer of development rights
3. Development of non-project specific infrastructure to support the main project like tourism, commercial development, etc.



Monetising Land

In cases where development of the core project by itself is not financial feasible for the private partner, land parcels adjacent to the project, which promise better value in future, could be bid out for development or could be packaged along with the core project for development. Monetising the value of land has been explored in urban rail and bus transport projects where revenues from station operations subsidise the cost incurred in the operations of the core project.

Transfer Development Rights (TDR)

Issuing TDR is another means to improve the financial viability of the projects. TDR refers to making available a certain amount of additional built up area in lieu of the area relinquished or surrendered by the owner of the land, so that he can either use the extra built up area himself or transfer it to another in need of the extra built up area for an agreed sum of money. However, only urban/local Authorities should issue TDRs to land owners in lieu of cash consideration for acquisition of land. Haphazard transfers of TDRs would have an adverse impact on land use and real estate prices.

Development of Non – Core Infrastructure

It has been observed that projects pertaining to commercial development, tourism properties, wayside amenities, hotels, etc. result in better revenues to the private sector. In projects that are highly capital intensive like an urban rail project or airport development project, where it seems unlikely that revenues from only operations would offset costs, it is useful to consider the development of stand-alone, financially feasible projects like commercial complexes, shopping malls, hotels, etc. The objective is to offset or minimise the impact of negative cash flows from the operations of the core project with revenue inflows from the operations of a non-core viable alternative.

However, a decision on whether the development of a non-core viable project is packaged with the core project and awarded to a single private partner or the non-core viable project is to be developed as a separate project and the revenues generated from it used to fund the core project, has to be taken by the public entity. The decision must be backed by sound reasoning and implemented with caution.



7.8.20 Project Financial Model & Statement

Financial models are one of the most important tools used to assess the financial feasibility of PPP projects. They incorporate a range of economic, financial, and project-specific input data and present this information in pro-forma financial statements and other formats. The models generate outputs such as the financial indicators discussed in chapter 3 that help public authorities and other parties make decisions about whether and how to proceed with PPP project implementation.

The objective is to provide an understanding of:

- The purpose and utility of financial models
- Financial model inputs and assumptions
- Project financial statements
- Amortization and depreciation
- Income tax issues related to PPPs.

Financial Model Inputs

In general, the types of assumptions that are included in a PPP financial model (in addition to project details and general economic assumptions) include:

- Construction costs and other capital expenditures
- O&M costs
- Other project costs
- Various forecasted risk costs
- Traffic and revenue forecasts
- Depreciation, amortization, and taxes
- Project financing schedules
- Other revenues (including project subsidies)

Capital Expenditure

The construction cost worksheet includes the schedule of project outlays to construct the capital assets required to operate the concession. Construction cost assumptions typically are derived by engineers with knowledge of contemporary engineering and construction techniques. Project costs typically are expressed in nominal terms based on specific forecasts of inflation for the construction industry. Design, permitting, related development costs, including land and other acquisition costs, are typically rolled into the capital expenditure estimates for a PPP.



Construction costs are not the only type of capital expenditure. Interest paid during construction is considered a capital expenditure. Fees paid to legal and financial advisors as part of the project may also count as capital expenditures. These items need to be added to construction costs to determine total capital expenditures. This is important since capital expenditures can be depreciated over time, thereby reducing the amount of taxes owed by the project company.

Operations & Maintenance Cost

O&M costs include labor, routine maintenance, payments to vendors (such as telecommunications service providers), and the like. Major maintenance, or structural maintenance, is considered a capital expenditure. These costs are typically developed by planners, engineers, and experienced facilities managers. Like construction costs, O&M costs typically are expressed in nominal terms based on specific inflation forecasts for the construction and property management industries. At an early stage in project financial assessment, it may be appropriate to use a ballpark figure to determine O&M costs, such as 5 percent of capital expenditure. However, as a project is more fully assessed, the specific line item expenses need to be estimated. This is especially important when comparing public and private costs using the Value for Money Analysis approach.

Other Project Cost

Other development costs include procurement, and any other costs incurred by the public sector or the private partner that cannot be categorized as project capital expenditures or O&M. These costs are typically estimated by planners and engineers based on typical project costs of similar scale and scope and in similar geographies. Other project costs are generally expressed in nominal terms.

Risk Costs

There are a number of risks that need to be accounted for by the private sector partner in a PPP. These risks can be included in several different ways in a shadow bid estimate:

- As an implicit factor in the PPP project construction cost, O&M, and other cost assumptions.
- As an explicit expense line item associated with the cost of project delivery

Risk costs are generally expressed in nominal terms and may be inflated at rates of similar costs in the financial model.



Risks associated with construction costs and other capital expenditures are rolled up into construction cost forecasts and flow through the financial model in the same manner. Therefore, capital expenditure risks will be represented in:

- Depreciation expenses
- Capital expenditures recorded as cash outflows

Revenue

There are two main types of revenue for transportation PPPs: availability payments paid by the public authority and toll revenue. In practice, there are many other sources of revenue used to fund transportation infrastructure around the country, such as sales and property tax revenue, including those from special districts. Some of the grants used to fund PPP projects may be funded with the proceeds of bond issuance that is expected to be repaid by some of these other revenue sources.

Availability of Payments

As the name implies, availability payments pay for the availability of an asset. The term availability is well defined in project documents and is related to performance requirements that require an asset to be available for use. For example, a road that is covered in snow is not available. A lane that is closed for construction is not available. So, the full availability payment is made only when the asset is fully available.

The public authority typically makes an availability payment regardless of how much the asset is used. In this sense, if the asset is a tolled facility, the public authority accepts demand risk. However, some availability payment projects include some demand risk sharing with the private sector. One example is the case of shadow tolls that may be paid if traffic reaches certain levels or if certain types of vehicles use the road (e.g., heavy trucks that cause more damage and so increase maintenance costs). Another example is when usage is included as a performance indicator even when the revenue source is an availability payment.

The main costs that need to be covered by an availability payment are the same items that appear in the cash flow waterfall, namely:

- Operational expenses
- Debt service
- Taxes
- Capital maintenance
- Equity dividends



When upfront public subsidies or construction milestone payments are used, project debt and equity is reduced and, in turn, the required availability payment is reduced. Public authorities that pay directly for construction will have an availability payment that is similar to a long-term service contract.

The reliability of the availability payment is a function of the creditworthiness of the public authority and the performance of the project company. There is almost no financial risk associated with availability payments from AAA-rated public authority (although there may be legal, political, or regulatory risks). Since PPP agreements are performance-based contracts, the availability payment is related to project company performance. If the project company satisfies all of the performance requirements in the project agreement, then the full availability payment is made. The certainty with which the project company can guarantee its own performance is the same as the certainty with which it can predict its own revenues from the stream of availability payments. As a general rule, the maximum deductions by the public authority due to "non-availability" will still leave sufficient annual payments for the private company to meet its debt service obligations.

Facility Usage Revenues

Facility Usage revenues carry a much higher level of risk than availability payments. Facility Usage revenues depend on the level of usage of the facility and the rates charged. Both may be very sensitive to general economic conditions and other factors.

PPP financial models depend on Facility Usage and revenue (T&R) forecasts to estimate project revenues for a toll concession. Facility Usage and revenue forecasts are impacted by a number of factors, including but not limited to (1) Facility Usage rates, (2) the availability of alternative routes or modes, (3) planned competing or complementary infrastructure investments, (4) the economic and land development contexts driving demand, and (5) economic factors (e.g. general state of the economy, inflation, etc.) that might constrain the amount by which tolls can be raised. Firms specializing in travel demand and transportation network modeling are typically hired to conduct the Facility Usage and revenue study. In a PPP, the officer will likely conduct its own Facility Usage and revenue study.

There are several Modeling Options to be considered:

- A four-step network assignment model forecasting regional facility usage demand and network behavior on the PPP roadway link at discrete times of day. These forecasts are developed based on observed average behavior within a series of small geographic zones (traffic analysis zones) and using these observations to estimate demand for and usage of the wider transportation network.



- An activity-based model that forecasts an individual's or household's facility usage demand and behaviors over the course of a given day as derived from assumptions about typical activities. Assumptions are made for individuals and households based on demographic and economic attributes and transportation availability.
- Other micro-simulation techniques that model dynamic behavior at a granular level.

The choice of modeling technique depends on project scale, scope, and budget, among other factors. Many PPPs, especially those where the project company is remunerated with tolls, will want to employ the most granular level of analysis possible, as toll rates can have a major effect on the decision by drivers to use a PPP toll road or seek alternatives.

A good traffic and revenue forecast will employ a probabilistic approach to forecasting, similar to the approach for estimating distributions for cost-based risks. Some traffic and revenue assumptions might be included implicitly in forecasts or explicitly in general model assumptions. These include, primarily, toll revenue leakage and toll revenue ramp-up. The former concerns loss of toll revenue due to evasion by motorists, technical problems affecting billing, etc. The latter refers to the observed phenomenon that traffic on new infrastructure, especially toll roads, tends to slowly ramp up over several years before stabilizing.

Inflation

There are different measures of inflation. Consumer Price Index (CPI) measures the increase in the price level of a basket of goods and services over time. Construction inflation focuses only on the prices of construction materials and labor. General inflation is typically measured for an entire economy using weighted indices. Individual prices can fluctuate over time for many reasons based on demand and supply conditions.

When projecting future revenues and costs, inflation is an important consideration. The inflation rate chosen and how it is applied can greatly affect the projected profitability of a project (particularly when there are fixed costs such as interest payments or fixed revenues such as toll rate caps). In the financial model, inflation assumptions are used in several different Ways:

- An explicit rate applied to some or all project costs and revenues.
- An implicit factor in any nominal revenue or expense forecast for other project inputs.
- An implicit element of the discount rate if reported in nominal terms

Note, however, that inflation is different from individual changes in prices. Variable costs or revenues are estimated as well as possible and built into the expected costs and revenues of a project. For example, if it is known that a new government policy set to



begin 2 years after the start of a project will raise the price of steel by 5 percent; this change would be built into the cost projections for the project.

Inflation is important for long-term projects because increases in the price level erode the purchasing power of the dollar. If, for example, the contract specifies that the project company cannot raise the toll rate more than 2 percent per year and the inflation rate in the economy turns out to be 3 percent per year, the real value of the per-unit toll revenue that the project company collects each year will be falling by 1 percent. Furthermore, if the nominal costs to the project company are rising by 3 percent each year, the financial viability of the project will be in jeopardy.

The rate of inflation is also closely tied to the concept of discount rates. The treatment of inflation in a financial model depends on the level of sophistication and detail of the model. A relatively simple model might apply an explicit rate across all or most model inputs using a single inflation indicator for the entire economy.

Often, a financial model will incorporate inflation, to the extent possible, in nominal dollar forecasts for some project revenues and expenses. Prices for certain expenses, including many construction costs with volatile pricing such as fuel and steel, are often more precisely forecasted separately from the economy as a whole. Again, the CPI can provide guidance. Also, commercial publications are available to help practitioners develop or validate future-year assumptions. For example, developers typically use R.S. Means as a benchmark for construction cost and materials pricing and forecasts. It is helpful to consult engineers and economists, either in-house or contracted, with strong geography-specific and subject-matter knowledge.

Optimism Bias

Optimism bias is the tendency of parties involved in the development of financial models to overestimate income or underestimate expenses of a capital project. This tendency has been studied in academic literature for years, but the cost over-runs of numerous large mega-projects across the world has helped focus attention on this issue and possible remedies.

Flyvbjerg, considered by many to be the authority on project cost forecasting at the planning stage, suggests there are two problems: optimism bias and strategic misrepresentation. The latter is difficult to address, as it relates to the political-economy and institutional incentives to secure funding. The former is simply a psychological disposition towards overconfidence in forecasts which can be corrected for in financial modeling. His proposed remedy is called reference class forecasting, where the modeler identifies a relevant reference class based on similar past projects and compares the project with a probability distribution derived for the reference class to estimate a range of outcomes.



Governments are increasingly adopting reference class forecasting and similar processes for large public works projects. The UK has been particularly aggressive in adopting procedures for adjusting all project appraisals to account for optimism bias.

Contingency and reserve accounts are established to provide a buffer for over-optimistic forecasts. More advanced financial models derive probability distributions of the variation of key model assumptions and inputs and simulate the outcomes over numerous changes in the assumption scenarios. The result is a probability curve with a mean net present value (NPV) and a distribution mirroring historical volatility of assumptions. Depending on its complexity, the model may also produce distributions for any individual key line item in the financial model (e.g., net income in any given year).

Probabilistic approaches may be used to address optimism bias as a component of uncertainty. Techniques to build a financial model using probabilistic approaches are complex and typically require advanced knowledge of finance, probabilistic simulation, and programming.

The basic process for correcting for optimism bias as a component of uncertainty is as follows:

- Use historical knowledge of key model input values to define a mean, maximum, minimum, and probability distribution form for each.
- Enter these values into the assumptions page in the financial model.
- Link these cells to a Monte Carlo simulation software package and run the program.
- Link simulation output to forecast cells in the financial model.

Often, project decision-makers will choose to govern the concession on the assumption of a higher degree of confidence than mean input values. A typical rule of thumb is to use the values representing the 70th percentile (i.e., the cost outcome will be equal to or less than this value 70 percent of the time), which helps account for optimism bias and other uncertainties in transportation infrastructure financial model forecasts.

The most important consideration in assumptions for optimism bias is to acknowledge a process for addressing this phenomenon in a manner for which all parties to the transaction are comfortable.

Most practitioners involved in PPP decision-making are familiar with optimism bias, as the phenomenon is not limited to privately financed projects. Nonetheless, identifying optimism bias in financial model assumptions and input forecasts is challenging. Fortunately, processes have been developed to account for these biases and other



uncertainties. Developing internal expertise in probabilistic risk assessment or the use of qualified consultants can help improve the detection and mitigation of optimism bias in financial models.

Private Sector Efficiency

Value for money refers to the public sector's goal of procuring a project in a way that offers the best value for the public agency. Under certain conditions the private sector can deliver greater lifecycle value on a transportation infrastructure project. Conclusions regarding the relative value for money of PPP procurement versus an alternative approach are based on financial model assumptions and inputs that capture the impact of private sector innovation or lifecycle cost savings. These might include, for example:

- Lower design and construction cost estimates (including risk costs) feeding financial model capital expenditure forecasts.
- Lower long-term O&M cost estimates (including risk costs) feeding financial model forecasts of operating expenses

There are many arguments for why PPPs might justify some combination of higher revenues and/or lower costs for providing a certain level of service than might be expected under conventional public sector delivery. Research suggests there are three mechanisms by which private sector finance and project delivery can achieve greater efficiencies than conventional public procurement:

- Economies of scope, or the bundling of tasks such as design and construction and O&M so as to encourage lifecycle cost-minimizing decisions
- Allocating risks to parties best able to control and most cost-effectively manage them.
- Provision of contractually enforced incentives for performance

Like optimism bias, it is important to understand if and how assumptions about private sector efficiency are addressed in the financial model. These will occur primarily in several places:

Project design, construction, and O&M cost assumptions.

- Facility Usage and revenue forecasts.
- Risk assessment and adjustments.

These assumptions might be provided upfront, or be implicit in model assumptions and model input forecasts. Procurement officials and other planners and practitioners reviewing PPP financial models can apply their knowledge of typical assumptions for



similar projects developed through conventional methods and gain a rough idea about the relative aggressiveness of the bidder's assumptions regarding private sector efficiencies.

Project Finance Statement

The three main financial statements are the income statement, cash flow statement, and balance sheet. The following sections discuss each of these in turn. This section is not meant to be an authoritative guide for accounting and financial statements. Each industry and firm has its own specific financial indicators of interest and its own way of presenting and interpreting those indicators.

Income Statement

The income statement illustrates profits and losses in a given period based on the economic value of proceeds from operations and from the economic costs of employing plant, labor, and capital to secure those income streams. In essence, the income statement provides a snapshot of whether the value of goods and services produced exceeds the cost of producing them in any given year. A positive net income indicates that a project is generating greater value in sales and revenue for the facility in a given year than the economic costs associated with deploying assets to secure that income. For a Greenfield PPP, the practitioner can expect negative net income in the early years during construction before operations fully commence. Annual profits typically are expected to increase steadily once construction is complete before reaching a stable or modestly growing income stream over time.

Depreciation & Amortization

There are two basic approaches to accounting: cash-based and accrual-based. Under cash-based accounting, flows of funds are recorded as they occur. Under accrual-based accounting, assets are depreciated or amortized over their useful life. Tangible assets (like roads, bridges, and tunnels) are depreciated, and intangible assets (like tolling rights) are amortized, in both cases over prescribed periods.

Almost all India corporations use accrual accounting. Increasingly, public authorities are also using accrual accounting to more accurately reflect their finances. Accrual accounting is particularly relevant for PPP projects since the concept of lifecycle costing is one of the most important rationales for PPPs.

Accrual-based accounting helps public or private entities understand their financial position, in particular with respect to long-term assets. Special purpose vehicles also file their federal tax returns on an accrual basis, which allows depreciation expense to be recognized over a shorter period than financial accounting rules. Depreciation and



amortization involve no cash disbursements, but are considered expenses and can be deducted from taxable income to reduce required tax payments. This is relevant to PPPs because public agencies do not pay taxes; therefore, they cannot take advantage of this particular benefit of depreciation and amortization. On PPP projects, the private entities are required to pay income taxes. So, they can take advantage of depreciation and amortization thereby reducing tax payments.

In the early years of a Greenfield project, the project company typically will not have any revenues, so no taxes will typically be due from its operations. Once post-construction revenues begin, the project company may owe taxes depending on the level of revenues and how they compare to the negative items on the income statement (operating expenses, interest payments, depreciation, and amortization). Assets typically may not be depreciated until they are put into use.

The income statement includes a line item for depreciation. This amount is deducted from operating income, or earnings before interest, taxes, depreciation, and amortization (EBITDA), along with interest expenses before taxes are assessed. So, the higher the amount of depreciation and amortization, the lower the tax bill, all else being equal. Depreciation is also added from year to year and cumulative depreciation appears on the balance sheet.

A key limitation of the benefits of PPPs with respect to depreciation is the requirement of tax ownership. For transportation PPPs, assets generally remain the sole property of the public authority. Physical ownership is never transferred to the private partner; so if private partners are to take advantage of depreciation, they need to establish tax ownership. In order to establish tax ownership with a private operator of a publicly-owned facility, the concession or lease term generally must be 50 years or longer. It may be difficult for the public authority to pursue a PPP with a shorter term than the accounting useful life of the assets. This constraint is considered in developing the terms in the issuance of the PPP procurement documents.

Taxes

The income statement also determines the project company's required tax payments. As most project companies are LLCs, taxes are typically paid by the parent companies or member firms. However, it is standard practice in PPP financial modeling to estimate taxes at the project company level. Taxes are levied on income after certain deductions. Operating expenses, interest expenses, and depreciation are deducted from income before assessing taxes due. Once taxes are subtracted from earnings, the income statement displays net earnings, or profit.

Typically one can assume that the corporate tax rate will be 30% percent of net income. State corporate taxes may also typically apply based on the location of the PPP project. Other State and local taxes may apply. PPP project companies typically do not own



transportation assets and seldom have to pay property taxes on them. PPP legislation typically exempts PPP property from taxation.

Cash Flow Statement

The cash flow statement measures the financial liquidity of a project at any given period of time. This is the primary tool for tracking the actual flow of funds into and out of the project. A project must have sufficient funds in its accounts to cover capital expenses, current expenses, and payments on long-term obligations such as debt service. Lack of funds may require an infusion of additional equity or the securing of new debt, which might adversely affect the returns on investment to the project company. Whereas net income on the income statement may be negative in some years, and indeed will be expected to run negative in early years during construction, the cash flow statement can never show negative ending cash, as this signifies an insolvent project.

High net cash flows in a given year do not necessarily signify financial health. Cash flow balances may be highest at the beginning of a concession term, when project risks are highest. This is because proceeds from equity raising and debt issuance may have been credited to the project accounts already while major construction costs and other expenses have yet to be paid. Meanwhile construction, traffic, and other major risks are still high. Beyond meeting project requirements, the cash flow statement also indicates when there is sufficient cash available to establish or replace reserve funds, increase the rate of debt amortization, or to pay out dividends. Cash flow statements can be constructed in two different ways:

- *Direct Method:* Cash flows in a given year are calculated from forecasted changes to various current accounts (i.e., accounts with cash and other short-term, liquid assets). In essence, this method provides a direct measurement of cash flows coming into and leaving the project in any given year.
- *Indirect Method:* Cash flows are calculated from the income statement by removing non-cash charges (i.e., depreciation) from net earnings.

The cash flow statement allows equity investors to determine how much money will be available each year for dividend payments. These are taken from the available funds line item. Each project will differ in terms of how much of the available funds can be paid out as dividends. A variety of reserve accounts may have to be established or replenished before paying out dividends. A certain amount of cash also needs to be kept on hand, such as an amount equal to the next quarter's operational expenses. Loan and bond covenants may also restrict equity payments. For example, dividends typically are not paid during construction. Lenders may require that principal payments begin or reach a certain level before dividend payments are allowed to begin. Once equity dividends are forecast for the entire contract term, a PV of dividends and Equity IRR can



be estimated and compared to upfront equity investment requirements to determine if the project meets private investor hurdle rates of return.

Balance Sheet

The balance sheet provides a snapshot of the financial position of the project company at the end of each fiscal year. The balance sheet is a measure of the stock of value the project is creating over time in terms of assets, liabilities, and equity.

The income statement and the cash flow statement are the measures of flow each year that contribute to (or extract from) the stock of value measured on the balance sheet. The three main parts of the balance sheet are:

- Total assets or total economic resources at the project company's disposal to operate and generate revenues
- Total liabilities or all of the obligations on the part of the project company in the future to pay for the assets
- Owners' equity, which is the difference between total assets and total liabilities

Essentially, any economic value retained in a project that exceeds long-term liabilities represents equity value to the project company or the owners of the equity position in the concession. This is represented by the accounting identity Assets minus Liabilities equals Equity.

The balance sheet will always balance because Assets minus Liabilities plus Equity will always equal zero

$$A - (L + E) = 0$$

Where,

A = Asset; L = Liability; E = Equity

Dividends paid out to owners will simultaneously reduce assets (cash on hand) and equity (retained earnings). A newly constructed highway, port, airport segment will increase assets (economic value of the highway, port, airport upon which to operate and collect revenues) and liabilities (debt incurred or equity raised to finance the construction).

The important take-away is to understand how assets, liabilities, and equity are accounted for in financial statements. In corporate finance the balance sheet will reflect the book value of equity in a given project at a given period of time, helping to inform whether it is advisable to pay dividends, retain earnings, pay debt, or make additional



investments. In general, the dividend policy for project companies under project finance arrangements is very simple: pay out dividends whenever possible. In corporate finance, companies are constantly faced with a decision of whether to retain earnings to invest in new projects or to pay dividends. Under project financing, since the project company by design has only one project, it always pays dividends when it produces excess cash.

We can use the financial statements to calculate the project IRR. One way is to calculate the project IRR on the free cash flow to the project. This is found by starting with net earnings from the income statement, adding depreciation, subtracting capital expenditures from the cash flow statement, and adding interest expense multiplied the tax effect. Then, we can use the IRR function in Excel to determine the project IRR.

7.9 Economic Feasibility

Decisions to invest in projects are based on an analysis of the costs and the benefits that accrue from it. Both the private partner and public entity rely on these calculations for decision-making. It is, therefore, necessary to understand the basic principles of cost/benefits analysis for investment appraisals. The investment rationale for the private partner stems from cash flows estimated in the financial analysis:

- the economic benefits from the project
- the economic costs of the project
- the balance of these expressed in present value terms (the net economic benefit)

The basis of economic analysis is the principle of utilitarianism – maximum benefit to the maximum number of people. Benefits in economic analysis mean higher human well-being and costs mean a reduction in human well-being. The incurring of cost and the accrual of benefits, however, take place at different points in time.

While the public entity also undertakes an assessment of the financials, the investment rationale goes much beyond project boundaries and captures the cost and benefits to society at large. In fact, such analysis is usually undertaken to ascertain whether an economic case exists for an investment decision. The economic cost/benefit analysis is also termed as the economic analysis of a project.

Economic viability analysis includes an assessment of the economic benefits from, and the economic costs of, a project. The difference of these (benefits and costs as mentioned above) in present value terms, is the net economic benefit to society. Economic analysis is an integral part of project development studies and is normally undertaken before carrying out financial feasibility studies.

What distinguishes the economic viability analysis from a financial feasibility analysis is that economic viability analysis looks at the positive and negative effects of an



investment decision that it might be difficult to attribute a market price to (such as the impact on indirect employment generation and economic activity, local environment and ecosystem, project affected people, etc.) and those that may not result in cash flows to the project.

Economic costs and benefits are different from financial costs and benefits. Economic analysis is carried out on behalf of the entire society (all stakeholders) whereas financial feasibility analysis is carried out for actual cash flows to and from the public entity and private partner involved in a project.

7.9.1 Highlighting necessity of economic analysis includes the following;

1. *Prevalent market prices of inputs and outputs may not represent/indicate their social value, viz. their social opportunity cost, because some markets are socially inefficient or do not exist at all:* This would happen, for instance, in monopolistic or oligopolistic markets, where price includes a mark-up over marginal costs or in a situation where trade barriers exist that compel consumers to pay more than they would have paid elsewhere. Prices as they emerge from imperfect markets and from some public sector pricing or rationing policies may fail to reflect the opportunity cost of inputs.
2. *Financial data, while important for budgetary reasons, may be misleading as welfare indicators:* When market prices do not reflect the social opportunity cost of inputs and outputs, the usual approach is to convert them into accounting prices using appropriate conversion factors, if available, from the Planning Authority.
3. *Certain project costs and benefits are without market values:* For example, development of projects may have damaging repercussions on the environment, health and social well-being. This will require the Government to make additional investments to compensate for the damage. However, though this damage would not have a market price, it could significantly affect the success of the project.

Therefore, all direct and indirect effects of a project need to be assessed and quantified as costs and benefits for economic assessment. When market values are not available, such effects can be monetized through different techniques, in part depending on the nature of the effect considered.

7.9.2 Process for Undertaking Economic Analysis:

When trying to monetize parameters for economic analysis, there is a well-accepted technique called Contingent Valuation Mechanisms (CVM) that enables to assign numeric values on intangible variables such as, say, the loss of a unit of marshland.

There is no uniform or standard approach for conducting economic analysis of projects. Various models are used across the world for such analysis. However, the underlying



principles in the economic analysis are the same; it is the methodology that may vary. Given below are indicative steps that are involved in an economic analysis.

1. **Define objectives and scope of project**
2. **Identify options** - the widest possible range of realistic options should be identified at the earliest possible stage of the planning process. The first option to be considered is the base case of “do nothing”, i.e. what happens if the status quo is maintained? Doing nothing does not necessarily mean “spending nothing”, e.g. upgrading fire safety, where the base case in effect becomes the “minimum essential expenditure option”. The base case must be realistic. Doing nothing may involve cost penalties, loss of life or property (for example by not upgrading a facility for fire hazard or disaster) or confer positive benefits. One of the benefits of “doing something” may be the avoidance of high maintenance costs. Appraisals must report on all feasible options and clearly explain why potential options may not have been evaluated.
3. **Identify quantifiable costs:** Assumptions underlying all economic cost estimates should be made explicit in the evaluation. The degree of accuracy desirable will vary with the significance of the project, data availability and cost of obtaining missing data.
4. **Identify quantifiable benefits:** would include the following benefits:
 - Avoided costs-incremental costs which are unavoidable if nothing is done, but may be avoided if action is taken
 - Cost savings-verifiable reductions in existing levels of expenditure if a programme proceeds
 - Revenues-incremental revenues from introduction of the project
 - Benefits to project beneficiaries not reflected in revenue flows-while difficult, attempts should be made to quantify these, with assumptions and methodologies clearly explained, and
 - Residual value of asset (if any).
5. **Calculate Net Benefits:** Quantifiable economic costs and benefits over the project life need to be expressed in net present value terms. Sensitivity analysis should be undertaken to test the robustness of results under different scenarios, using different assumptions about some or all of the key variables. Agencies should note that in a constrained budgetary situation, economic performance indicators such as ENPV and Cost to Benefit Ratio measures are important considerations for budget funded projects and programs.
6. **Identify qualitative factors and summarise results** - Quantifiable costs and benefits are only part of an economic appraisal. Other aspects such as environmental considerations, social or regional impacts, resource availability, funding, distribution of benefits and



costs, etc. will also have to be taken into account in choosing between competing options and projects. Some of these may be quantifiable to some extent but where they are not, qualitative aspects of options or projects should be discussed in the appraisal. The report on the appraisal should include a clear summary of results, and indicate the preferred option.

As part of economic analysis, the observed prices or public tariffs pertaining to a project are converted into shadow prices that better reflect the social opportunity cost of the goods. The externalities and indirect/remote effect of the project are also taken into account and assigned monetary values. All costs and benefits that are associated with the project are discounted by a real social discount rate. A feature of economic analysis is the use of accounting shadow prices based on social opportunity cost using a social discount rate (SDR), instead of the observed prevailing prices, which may not represent the true cost. The results of the market analysis, and the technical, social and environmental, financial cost assessment and risk analyses are all inputs for the economic analysis. Finally, the economic performance indicators such as the economic net present value, economic rate of return and benefit/cost ratio of the project are calculated. Specialist advisers are usually a part of the team engaged to carry out the economic viability assessment.

Social Discount Rate (SDR) - The SDR is the discount rate used in the economic analysis of investment projects. It reflects the social view on how future benefits and costs should be valued against present ones. It may differ from the financial discount rate when the capital market is inefficient (for example, when there is credit rationing or asymmetric information or because of the myopia of savers and investors). SDR measures the rate at which a society would be willing to trade present consumption for future consumption. It is also referred to as the Social Time Preference Rate and is one of the most critical inputs in economic analysis.

7.9.3 Economic Cost & Benefits

The costs in an economic analysis are mostly comparable to the capital costs and the O&M costs whereas the benefits are less obviously defined. The economic benefits relate more to non-monetary impacts such as safety, efficiency, welfare and so on. The key challenge for these benefits is how to value them, which is commonly approximated by the Willingness to Pay (WTP).

A fundamental concept used in welfare economics is the willingness to pay (WTP). The amount (demand price) that an individual is willing to pay for an incremental unit of food or service measures its economic value to him/her and, hence, it's an economic benefit to the economy. Competitive markets for goods or services essentially provide data for estimating their benefits and costs. In other cases, WTP is used for measurement of benefits and costs.



Secondary or spill over costs and benefits that have an impact beyond the project itself (sometimes called externalities) – for example

- Impact of the project on the broader economy
- Valuations of non-market factors from social and environmental assessment (social and environmental externalities)

An economic multiplier is a number used to estimate economy-wide impacts of industry-specific economic changes. Multipliers are generated from numerical or statistical models of a national or regional economy. Using models, multipliers can be calculated for every business or industry sector in the economy. A multiplier is always greater than one because it is a ratio that is calculated by dividing **a)** the estimated total effect resulting from a given economic “shock” to the economy by **b)** a necessarily smaller partial effect, namely the direct project- or activity-specific effect.

Usually, some benefits and costs associated with the project do not have an observable monetary value (say, a market price). A full quantitative analysis requires the monetary value of such benefits and costs to be estimated. The adviser or analyst conducting the economic viability study has to propose and justify the valuation. This should be based on a strong and defensible methodology as the valuation of non-monetary benefits and costs can be very subjective.

Multiplier Effect

A highway, road or public transport, airport, ports, power plants, Solid Waste management project provides direct benefits to the users of the infrastructure or services provided, but can also provide benefits to other road users if it reduces congestion on existing roads. Another example of secondary economic impact is the spillover effect in terms of the improved efficiency resulting from improved infrastructure. Negative environmental externalities from a road project include increased local pollution along the corridor. However, this is assessed in the context of positive effects such as improved vehicle running efficiency due to the easing of congestion.



7.9.4 Economic Performance Indicators

After the correction of price/wage distortions and the choice of an appropriate SDR, it is possible to calculate the project's economic performance using the following indicators:

1. Economic Net Present Value (ENPV)

The ENPV is the difference between the discounted total economic benefits and costs. This captures the present value of the costs and benefits that will occur over the life of the project. It has the benefit of summarizing a lifetime of project values into a single figure and allowing an easy comparison between different projects.

2. Economic Rate of Return (ERR)

ERR indicates the rate of return which equalises the present value of the economic costs and benefits of the project. It is the rate that produces a zero value for the ENPV.

3. B/C Ratio

This is the ratio between discounted economic benefits and costs.

Formula for calculation of ENPV or ERR

$$\text{ENPV} = \sum_{i=0}^n a_i S_i = \frac{S_0}{(1+i)^0} + \frac{S_1}{(1+i)^1} + \dots + \frac{S_n}{(1+i)^n}$$

Economic Rate of Return (ERR) is the discount rate that zeroes out ENPV. It is compared with benchmark in order to evaluate Project Performance.

$$0 = \sum \frac{S_t}{(1 + \text{ERR})^t}$$

Where,

S_t is balance of cash flow (net economic benefit) at time "t"

'a' is discounting factor chosen for discounting at time "t"

ENPV is not the same as Project Net Present Value (PNPV), which is an indicator of financial feasibility. ENPV uses accounting prices or the opportunity cost of goods and services instead of imperfect market prices; and it includes, as far as possible, any social and environmental externalities. This is because the analysis is done from the point of view of society, not just the project owner.



Because externalities and shadow prices are considered, several projects with a low or negative PNPV may show a positive ENPV.

ENPV and ERR give different types of information about a project. ENPV provides the criterion to decide whether the project should proceed at all (in general, a project with a negative ENPV would not be pursued).

ERR allows a project to be compared against a required rate of return. It gives a yes or no answer about whether the project is economically viable. However, the ERR alone does not give enough information to say whether one project should be pursued ahead of another. This is a value comparison best suited to ENPV analysis.

ENPV is the most important and reliable social cost-benefit analysis indicator. Although ERR and B/C are meaningful because they are independent of the project size, they may sometimes involve problems. In particular cases, for example, the ERR may have multiple values or may not be defined.

In principle, every project with an ERR lower than the SDR or a negative ENPV must be rejected. A project with a negative economic return uses too much of socially valuable resources to achieve modest benefits for citizens.

The table given below provides a sample from over 400 major projects completed in the European Union and their combined economic internal rates of return. These economic rates of return should not be viewed as benchmarks; they are merely illustrative of the kinds of returns that might be generated.

Table No. 12 – Sector wise Economic Rate of Return (400 Projects completed in EU)

Sector / Project	Economic Internal Rate of Return
Energy	12.9
Water & Environment	15.8
Transport	17.1
Industry	18.4
Other Services	16.3
Average	16.8

Source: EC Regional Policy “Guide to Cost Benefit Analysis of Major Projects”



As per the “Capacity Development of National Capital Region Planning Board (NCRPB) Package 1 (Components A and C); Project Appraisal Manual April 2009, by ADB;

The minimum rate of return of around 12 per cent could be interpreted as economically viable taking into account benefits and costs. A general decision rule may include the following:

- Accept all independent projects (any infrastructure investment projects) and subprojects with an EIRR of at least 12 per cent;
- Review and reassess any independent projects and subprojects (non-infrastructure) with an EIRR between 10-12 per cent for which additional unvalued benefits can be demonstrated, and where these benefits are expected to exceed unvalued costs
- First reassess and generally reject projects and subprojects with an EIRR below 10 per cent.

The economic analysis report would ideally need to include the project background justifying the need for the project and its objectives, identifying the economic costs and benefits, and analysing the net economic benefit/cost of the project in terms of economic viability indicators.



7.10 Value for Money (VfM)

Value proposition of project assessment plays a central role in decisions on investment prioritization, selection, and presentation of the choice of procurement approach. It is conducted in order to ascertain whether the project being developed through a PPP framework offers good value to the public entity and ultimately to the general public. The concept of value proposition of projects is similar to the Value for Money (VfM).

7.10.1 Value for Money Assessment Process

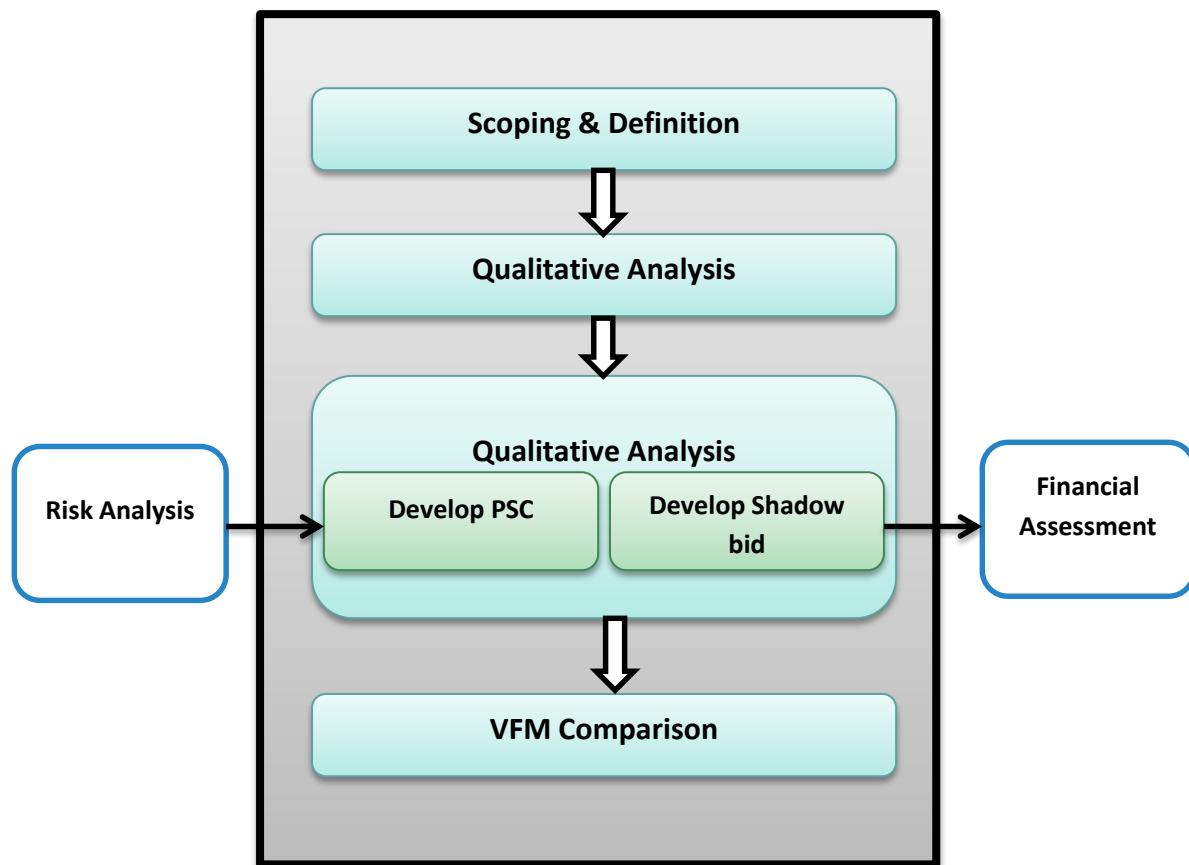


Figure No. 25 – Value for Money Assessment Process



7.10.2 Scoping & Definition

It is paramount to clearly define the scope of the project from the outset of any analysis. This requires explicitly defining: 1) the geographical scope, 2) the functional scope, and 3) the temporal scope.

Geographical Scope

Inevitably, most transportation projects will interact with – and sometimes encroach upon – other built environments. This is the nature of transportation projects, and some of the challenges these interactions create include:

- Intersections with other forms of infrastructure (road, rail, pipelines, etc.);
- Entrances and exits; and
- Construction synergies

Construction synergies provide opportunities to combine construction with other work on nearby projects, building economies of scale. Examples of these synergistic effects are combining maintenance with a nearby road network, combining the building of a new tunnel with the reconstruction of an existing tunnel, or combining the reconstruction of local roads with the construction of entrances and exits to the highway.

Functional Scope:

The second step when defining the scope is to determine which activities should be included in the VfM assessment. These include all of the activities that might be allocated to the private entity in the PPP delivery method. Functions that remain within the realm of the public entity, regardless of the delivery method, do not need to be included unless they result in differences between delivery methods when the comparison is made. Another reason to include these functions in the scope is to minimize discrepancies between cash flows in the VfM assessment and cash flows in the project financial feasibility assessment.



Table No. 13 - Functional Scope item list

Activity	Private Sector	Public Sector	Remarks
Preliminary & Final design	X		
Construction	X		
Oversight	X		
Relocation of cables & pipes	X		Relocation is straightforward, no excessive risks
Right of way acquisition		X	Public sector has already started with acquisition & will finish it before financial close
Archeological findings		X	Unmanageable by Private entity
Permits	X	X	Most permits needs to acquire by Private entity, only one Environmental permit stays with Public entity
Communication with user & general public	X	X	This will largely be a joint effort
Snow & ice removal	X		Scale of project is large enough, so subcontracting with contractors in same region is feasible
Major maintenance	X		
Routine maintenance	X		
Facility information system	X		
Incident management	X		
Facility management	X		Public sector wants to retain control of all facility management for region
Facility usage revenue	X		

Time Scope

An important third step in scope definition is the duration of the contract. This is an especially acute issue because maintenance and/or operation are included in the contract. It is consistent with the value drivers of a PPP to include at least one cycle of major maintenance in the contract. This transfers the risks of designing and building the structure to the private entity more effectively, enhancing the incentives for the private entity to improve the quality of the design and construction because future



maintenance costs are considered. Duration depends on the type of asset; the minimum duration of a PPP contract is usually 15 years.

Expected environmental changes are another factor to consider when determining the duration. In an environment where rapid change is expected—for instance in a downtown metropolitan environment—it can be optimal to limit the duration of the contract, because scoping issues are likely to arise in the future.

Availability payment-based PPP contracts typically have a life cycle of between 30 and 50 years. For contracts that include toll revenues, a separate consideration is the revenue model and the time required to reach a market-based rate of return; this may require more time and can drive a longer-term contract.

7.10.3 Qualitative Analysis

The purpose of the qualitative analysis is to identify the expected differences between a PPP solution and the conventional approach, to prepare for the monetization of these differences in the quantitative analysis. Typically, the differences are linked to costs, revenues, and risks. The qualitative differences between delivery methods addressed during brainstorming sessions are typically broader than those related only to financial cash flows. Therefore, it is important to distinguish between:

- **Financial impacts:** these are directly related to financial cash flows or can be directly reflected in the financial cash flows.
- **Non-financial impacts:** these are not related to financial cash flows, but are relevant for the comparison between delivery methods. Quality differences, organizational impact of change in delivery methods and loss of flexibility are examples of non-financial effects.
- **Public perceptions:** these are not actually differences, but stem from unfamiliarity with the PPP concept. Examples of this are perceptions that “long term contracts do not work” and that “after 30 years the project will be left in a deplorable state”.

Financial impacts are important to list because they provide the basis for the quantitative analysis. The non-financial impacts are mentioned in the final comparison, but always remain qualitative in nature. Managing public perceptions requires practitioners to possess a sufficient level of training and communication skills when working with PPP contracts. Generally speaking, the lack of knowledge about PPPs leads to tenuous misperceptions. It often proves to be very useful to discuss these public perceptions in a VfM assessment, to empower stakeholders to effectively clarify the concepts of PPP and to deal with public mistrust and misperceptions.



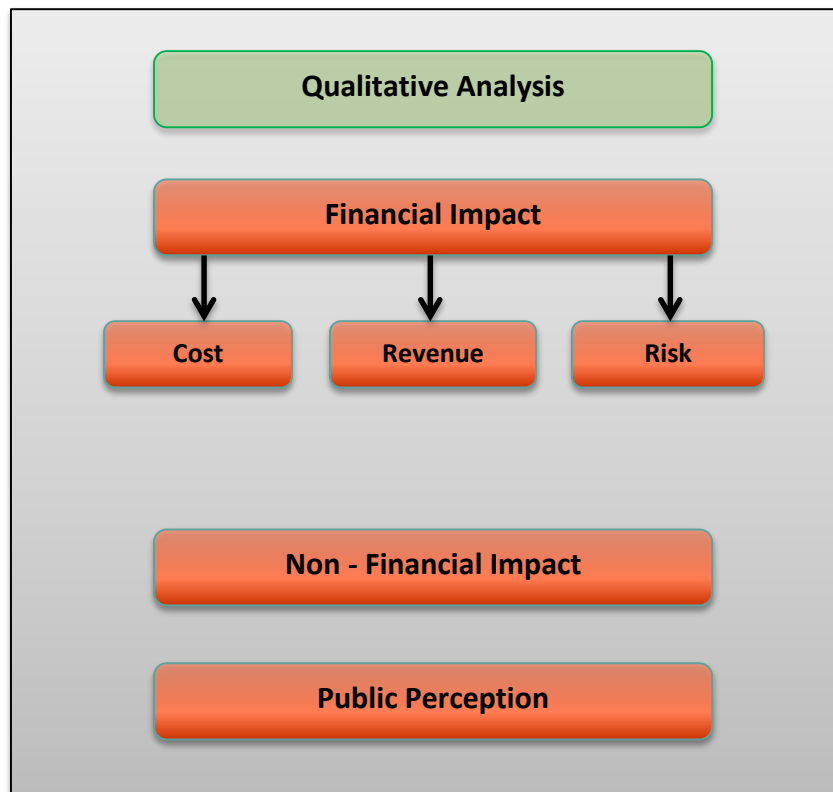


Figure No. 26 – Qualitative Analysis

All of the positive drivers of financial impacts require the proper structuring of PPPs. For example, badly structured incentives can lead to adverse effects: in the case where a long-term contract is required to optimize life cycle costs, the lengthy nature of this contract becomes a disadvantage because it limits the competition incentive for the maintenance provider.

This is why proper scope definition, risk allocation, and other structuring of the PPP contract are essential.



7.10.4 Drivers of Financial Impact

Table No. 14 - Drivers of Financial Impact

Govt. Mechanism	Conventional delivery	PPP delivery
Integration	Multiple contracts, public entity is integrator	One contract, Private entity is integrator
Specification	Input specification, determine design & engineering solution in detail	Output specification, allowing for creative solution & life cycle costing
Financial Incentives	Payment mechanism usually follows cost structure of contractor	Payment mechanism is related to output specification & therefore payments are related to performance
Competition	Depending upon public entity, portions of project can be insourced & not subjected to competitive bidding process	Competitive bidding for entire contract
Risk management	Traditionally risks are not explicit, most risks are retained by public entity	Risks are explicit & allocated according to principle of "whoever is best able to manage risk" will be responsible
Complexity	Contracts are standardized & relatively simple	Contracts are more complex & financial, legal expertise from both public & private entity

Output specifications provide the freedom for the private entity to be innovative or creative with designs or use of new materials. In practice this has led to innovations in the types of asphalt used and various other innovations that make maintenance simpler, reducing the need to close traffic lanes for repair. However, this requires specific definition of output. In practice, challenges remain for the private market to take advantage of this optimization flexibility, because they are accustomed to the public entity providing highly detailed specifications.

In PPP procurement, the combination of direct financial incentives, through payment mechanisms in the contract and competition in the procurement, catalyzes the private entity to focus on active risk management and cost reduction.

PPP contracts are more complex compared to contracts used in the conventional delivery method. The added complexity requires additional expertise from legal and financial experts. Moreover, because of the competitive bidding process, aspects such as design may be undertaken by multiple private entities instead of one public entity,



leading to additional transaction costs. These transaction costs will be higher if the public entity has no prior PPP experience or if the project is novel, because there is less opportunity to use standardized documents. Conversely, standardized specifications, contracts, and other documents – developed over time for a number of projects – reduce transaction costs. Standardization also lowers the transaction costs for the private entity.

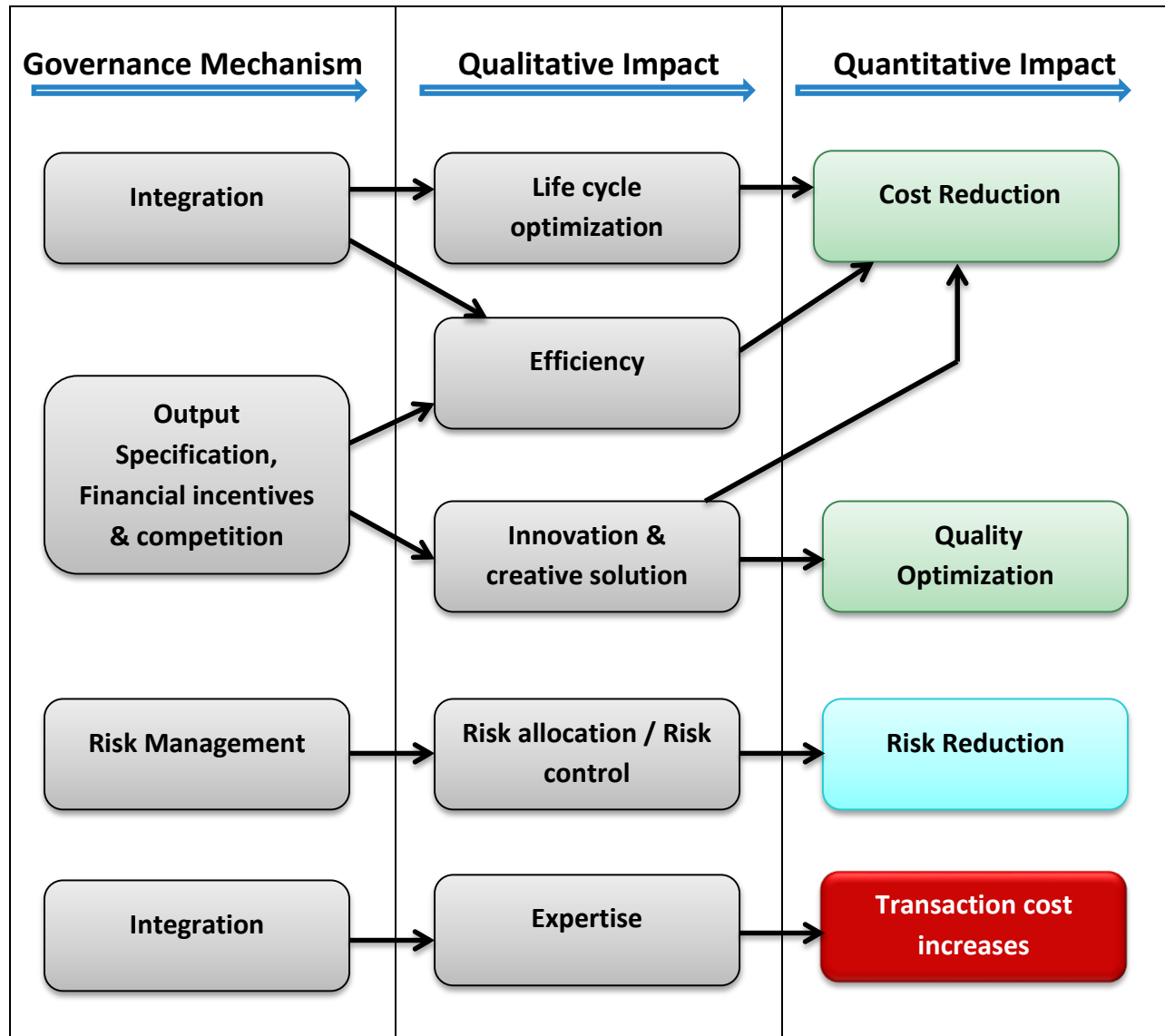


Figure No. 27 – Qualitative & Quantitative Impact on Project



7.10.5 Quantitative Analysis

Public Sector Comparator reflects all cash flows in conventional approach:

To understand the overall financial outcome of a conventional approach, the Public Sector Comparator (PSC) is developed and then used as a benchmark against which the financial consequences of the PPP delivery method will be compared.

Some helpful guidance for developing the PSC:

- The PSC is calculated on a cash flow basis rather than an accrual basis. Therefore only cash flows are included, whereas costs that do not qualify as cash flows, such as depreciation, are not included in the PSC.
- The PSC should reflect the financial consequences of a conventionally delivered project alternative as realistically as possible. This is accomplished by using cash flows reflecting the situation as if the PSC will be implemented. Realistic efficiency savings should be included. However, unfounded wishful thinking about cost savings has no place in the cash flow analysis. In addition, it is important to note that the PSC is a reflection of the expected costs and not the available budget. Finally, estimates should reflect fully loaded cost estimates for internal costs, including so-called 'hidden costs' such as overhead and pensions.
- For the PSC to provide an appropriate benchmark for the shadow bid or actual bids, it must contain a realistic and fair reflection of the value of all risks attached to delivering the project, according to the same scope and requirements that are applicable to the shadow bid. All risks should be categorized as to whether they are retained or transferable after they have been identified and valued. The PSC estimates the overall cash flows of the conventional approach, both for costs and revenues including adjustments for the value of risks.

PSC Cash Flow:

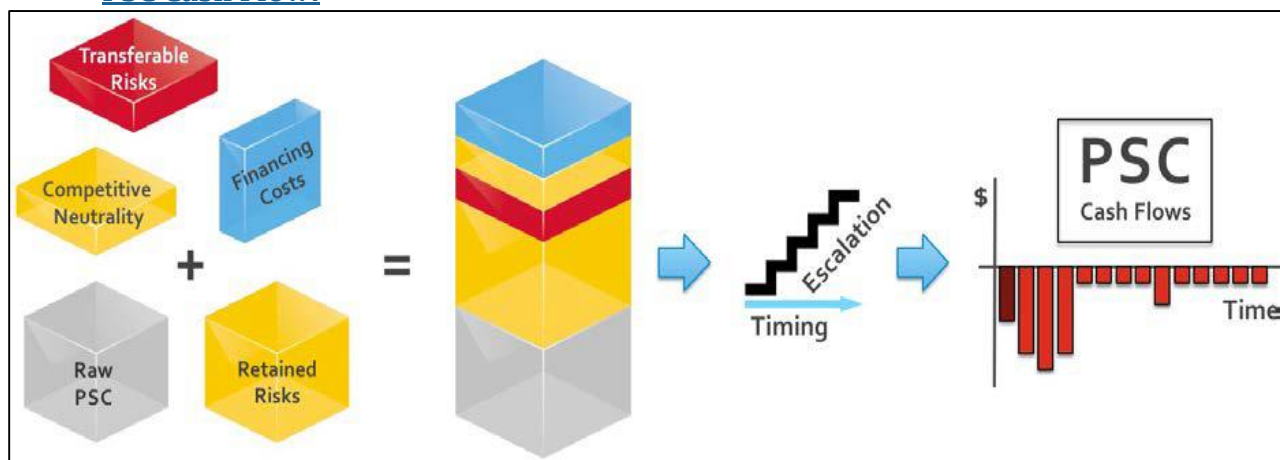


Figure No. 28 – PSC Cash Flows



Raw PSC

The raw PSC includes all investment, operating and maintenance costs, and revenues within the scope of the project. Because risks and uncertainties are addressed separately, allowances and contingencies should not be incorporated in the estimates for the raw PSC.

Cost estimates include:

- Planning and permitting
- Project administration
- Procurement (public and private)
- Design and engineering
- Routine maintenance
- Long-term (major) maintenance
- Operations
- Contract management and oversight
- Administrative and indirect costs
- **Construction**, also including:
 - Public outreach
 - Right-of-way acquisition
 - Utility relocation
 - Addressing environmental concerns and environmental mitigation
 - Third-party costs
 - Quality assurance
 - Transportation demand management
 - Transportation system management
 - Tolling system equipment and technology

Revenue estimates include:

- Toll revenues
- Other revenues, potentially including:
 - Easement fees
 - Service plaza concessions, rental, and lease revenues
 - Development rights, including cell towers and fiber optics

Public agencies are expected to have information on realistic cost estimates available based on the validation of prior projects delivered under conventional methods. It is not always easy to develop reliable cost estimates, particularly for long-term costs.



Realistic maintenance cost estimation

It is often the case that neither governments nor contractors have reliable information about maintenance expenses and/or the life cycle of the asset, two related long-term project cost issues. The challenges to generating reliable maintenance cost estimates are magnified when there are long-term quality standards contractors must meet, which is the case in a PPP contract. In public governance systems, it is not always quality standards that determine the amount of spending for maintenance programs; indeed the availability of funding also determines the level of maintenance. If funding is not available then maintenance is usually deferred. This causes quality to fall below official public maintenance standards.

In a PPP contract there are financial incentive mechanisms enforcing quality standards, often leading to higher and more consistent quality levels in terms of safety and availability. Therefore, government maintenance budgets are not a fair reflection of the real maintenance costs.

The practical ways to deal with this issue are:

- Developing maintenance cost estimates that reflect higher quality standards. This often proves to be quite challenging, because of the lack of reliable data and reference material for cost estimates under a strict incentive mechanism.
- Qualitatively addressing this discriminating factor when comparing bids to the PSC. This may result in an underestimation of the VfM, but does provide a qualitative argument for comparison in addition to the quantitative VfM assessment.

Retained Risk

Retained risks are those risks that the government bears itself and does not transfer to the market. Once all of the risks have been identified and valued, and the retained risks have been identified, each of these risks can be separately presented in the PSC.

In order to create a complete overview, it is preferable to include all retained risks. If certain risks are retained in both the conventional approach and the PPP and there are no differences in risk valuation to be expected, it is not absolutely necessary to include these risks – particularly when valuation turns out to be complicated. However, it should be noted that it would be a mistake to leave these out of a financial feasibility analysis, so it may be preferable to include them for consistency.



Transferable Risk

Transferable risks are those that the government explicitly transfers to the private entity under a PPP arrangement, but retains in a conventional contract. Some risks may not be fully transferred to the private entity in a PPP, but are instead shared to a certain degree. The value of a transferred risk is equal to the price a private entity would request for accepting that risk.

Competitive neutrality

Competitive neutrality is the adjustment for the virtual advantages or disadvantages of the conventional approach over PPP approaches, and net competitive advantages or disadvantages accruing to a government business by virtue of its public ownership. These are discussed below.

- The virtual advantages and disadvantages in the first category are virtual in nature because they are economically irrelevant from a macro perspective. Examples of this are differences in taxation (land or property taxes, local government rates exemptions, payroll taxes, corporate taxes) leading to higher costs for the PPP private entity which eventually translate into higher costs for the government. At the same time, a PPP may also lead to higher revenues if the private entity is able to charge higher toll rates than the government would.
- Net competitive advantages or disadvantages accrue to a government by virtue of its public ownership. Examples of this are increased administrative requirements, reporting requirements or material requirements/legislation/regulation (e.g. building permits). One can argue that differences in requirements lead to differences in projects and/or project scope, hampering a fair comparison.

Competitive neutrality adjustment allows the PSC and shadow bid/actual bids to be compared on an equivalent basis and neutralizes any competitive advantages or disadvantages that the public agency maintains due to its unique status.

There are two potential approaches for dealing with competitive neutrality with respect to taxes:

- Adjust for competitive neutrality for tax obligations at the state level only: for example, in the case where a state is preparing a PPP, the shadow bid/actual bid will be quantitatively adjusted for tax obligations levied on the private sector at the state level. Local and central tax obligations may be qualitatively (or even quantitatively) addressed, but not included in the adjustment. The perspective of the VfM analysis in this approach is that of the state taxpayer.



- Adjust for competitive neutrality for tax obligations at all government levels: for example, in the case where a state is preparing a PPP, the shadow bid/actual bid will be quantitatively adjusted for tax obligations levied on the private sector on the local, state and central level.

Financing costs

Many infrastructure projects carried out via conventional delivery methods are financed by bonds supported by project revenues, or supported by other specific or general public sector obligations. The extent to which financing is taken into consideration in the VfM assessment differs.

Generally, there are two approaches:

- Analysis based on operational cash flows. This analysis includes arrangement fees and underwriting fees, but not debt service.
- Analysis based on financing cash flows. This analysis includes all financing cash flows, replacing the operational cash flows that are being financed.

The **first approach** with operational cash flows can only be used if the financing itself is not a discriminating factor in the VfM comparison. The financing costs of a PPP reflect the market pricing of part of the risk of the PPP project, whereas public financing reflects only the creditworthiness of the public agency or the risk of the cash flow that is being pledged.

The operational cash flow approach can be used if there is no reason to assume that the financing costs would be different for the public agency if it were to finance a project on the basis of the same risk profile as under a PPP approach. In other words, the financing itself does not result in a relevant difference in terms of VfM.

The **second approach**, using financing cash flows, provides additional insight into budgetary consequences and ensures that most necessary inputs for the financial assessment are collected.

If the financial cash flow method is used, assumptions must be made about the financing arrangements for the project. This can be discussed with the finance department of the public agency. This department can provide inputs on:



Financing structure (direct loan, bonds):

- Interest rates and required return on capital employed, where appropriate;
- Drawdown and repayment schedules;
- Transaction fees (arrangement and advisory fees); and
- Other financing conditions such as:
 - Annual Debt Service Coverage Ratio (ADSCR);
 - Loan Life Coverage Ratio (LLCR); and
 - Project Life Coverage Ratio (PLCR)

The best way of simulating all of the financing cash flows is to build a model reflecting the financing structure. Instead of constructing a full-fledged financial model, a simple model may be used to derive the financing cash flows using operational cash flows and a weighted average cost of capital (WACC) or an average interest rate on debt.

7.10.6 **Timing and escalation**

The next step is to transform all inputs into cash flows. This means placing all of the costs, revenues, and risks on a timeline. Therefore the information required for all inputs is the timing and escalation index:

- The construction schedule, the timing of major maintenance, and the annual growth factor for toll revenues are the key inputs for the timing of the cash flows.
- For every cash flow one should determine whether escalation is expected, and if so, what the appropriate index should be.

Some further guidance with respect to determining appropriate indices:

It is best to use forward looking indicators from indices. Some of the sources for these are:

- Industry specific indices, such as the oil price index published by Energy Information Administration (EIA)
 - Regional consumer price index (CPI) publications for major metropolitan areas;
 - Forecasts prepared by the Congressional Budget Office (CBO) or other federal agencies;
 - The difference in yields between long-term government bonds, comparing those that are indexed to inflation and those that are not; and
 - CPI swaps.
- When there is no reliable projection for an index, a long-term historical average can be used as a starting point. This still requires an assessment of whether there are reasons to deviate from the historical average.



- Be careful not to make too many distinctions between different indexation categories, because that typically does not contribute to the reliability of the analysis.
- The indexation of revenues should not be higher than the (average) indexation of costs.
- The actual escalation will likely be different from the expectation, therefore it is recommended to include this as part of the sensitivity analysis

All preceding steps lead to cash flows, reflected in a financial model. Preferably, the financial model:

- Is flexible enough to deal with future changes;
- Provides graphs and indicators that facilitate decision making; and
- Reflects both the PSC and shadow bid in order to automatically update joint assumptions

Shadow bid uses PSC input, but reflects differences based on PPP approach

The shadow bid is defined as the estimated cost to the public agency if the project would be delivered under a PPP. The cost, revenue, and risk estimates in the PSC are used as starting points for the inputs in the shadow bid. The qualitative assessment, which addressed to what extent a PPP is expected to lead to differences in cost, revenue, and risk, is now translated into a quantitative assessment.

The shadow bid should cover the same scope as the PSC. In order to create a shadow bid that is comparable to the PSC, it should be adjusted for the costs, revenues, and risks that are retained by the public agency. These include transaction costs, public oversight costs, and retained risks, and they must all be taken into consideration. In fact, the shadow bid is not just a shadow bid; it is an estimation of all costs, revenues, and risks for the public agency, including the expected bid price.

In developing the shadow bid, the differences between governance mechanisms discussed in the qualitative analysis are now translated into quantitative effects.

Because we already have the PSC inputs, this part of the analysis focuses entirely on the expected differences between a PPP and the conventional approach reflected in the PSC. These may include:

- Private sector efficiencies;
- Risk adjustments;
- Differences in toll revenues;
- Higher transaction costs;
- Different tax structures; and
- Different financing structure



7.10.7 Dealing with timing difference between conventional & PPP approach

One potential difference between a conventional approach and a PPP is the timing of completion. PPP procurements typically run longer than traditional procurements. On the other hand, the financial incentives imbedded in a PPP contract often lead to timelier and earlier completion than under a conventional delivery method. Considering this, without further adjustment the potential acceleration of the project will lead to several effects:

- Lower NPV of construction costs due to lower time based (indirect) costs and lower impact of inflation;
- Higher NPV of construction costs due to the front loading of these costs;
- Higher NPV of revenues due to the front loading of revenues; and
- Higher NPV of availability payments due to the front loading of these payments

Depending on the extent to which the acceleration is valued, the NPV calculation can be neutralized for these effects. For example, if early completion leads to a higher availability payment that is not fully recovered by higher revenues, the public agency may still want to stimulate early completion because of the beneficial social effects. For comparison purposes, the government may therefore look at the different cash flows as if completion happens at the same time, or even reward early completion in the comparison.

A distinction between earlier completion and more certainty about timely completion can be made. The following are typical ways of dealing with expected differences in timing of completion:

- Require completion on the same specified date in all delivery methods, so that the scope of all delivery methods is directly comparable. The cost estimates for both the PSC and shadow bid should then reflect everything that is needed to achieve that completion date.
- Allow for differences in timing of completion, but then neutralize the NPV effects of these differences for the purpose of comparison. This is accomplished by assuming the exact same completion date in the calculations, whereas in reality the dates are different.
- Use same approach as approach 2, but combine it with a bonus for early completion, reflecting the social benefit of early completion (for example, expressed in a value per day)



If the chances of achieving any specified completion date are better in a PPP solution, that aspect can be either qualitatively discussed or quantified on the basis of a probability analysis. In the latter, the probability distribution of a potential completion date can be developed, reflecting a wider distribution for the conventional approach. On the basis of an acceptable confidence level and the value of early completion per day (based on cost savings of time-based costs and additional revenues per day), the value of this effect can be quantified.

7.10.8 Risk adjustments

The PPP delivery method features a larger transfer of risks to the private entity; therefore there will be a difference in retained risk and transferable risk between the PPP and the conventional delivery. Not only is the allocation different, but the valuation changes as well. For the risks actually transferred to the private sector, a lower valuation of these risks is expected through better risk management due to stronger financial incentives.

The extent to which that applies to the project depends on the project's characteristics as further analyzed in the qualitative analysis. The assumptions with regard to risk adjustments should always be supported by project-specific analyses. Because the private sector explicitly values risks and uncertainties - and also expresses a portion of the risks in the cost of capital - the values of these risks are visible, whereas they often remain hidden in the conventional delivery method. One should be careful not to hastily conclude that the risk transfer to the private sector is more expensive because of this transparency; checks should also be made to determine whether the market price is fair and not unrealistically high.

In PPP contracts many of the risks are transferred to the private entity. In fact, the starting point is to assume that the private entity is responsible for all risk unless the contract states differently.

Typical risks retained by the government in PPP contracts are:

- Scope changes initiated by the public agency;
- Delays caused by the government;
- Right-of-way acquisition; and
- Force Majeure

In availability payment transactions, the payment often is based on the calculated availability payment and an indexation formula. The indexation formula effectively allows the private entity to transfer the indexation risk back to the public agency.



The relief, compensation, or delay events in the PPP contract define the retained risks in greater detail. It is recommended to use this for further detailing the allocation between retained, transferred, and shared risks.

7.10.9 Facility Usage revenue differences

The starting point for determining the Facility Usage revenues in the shadow bid is the Facility Usage revenues in the PSC. In a toll concession PPP the revenue risk is transferred to the private entity. This incentivizes the private entity to maximize toll revenues. Keeping this in mind, one of the most important governance mechanisms is rate setting. The extent to which the private entity has the freedom to set toll rates largely determines the expected additional Facility Usage revenues, and this must be assessed on a project-specific basis. A PPP may also lead to smaller innovations, for example with improved access points to the managed lanes, thus helping to increase demand and revenue. In general, the expectation is that the private entity will not significantly increase toll revenues, but can sometimes make a difference. Whereas the scope of the PPP is the same as the scope of the PSC, this can lead to differences in cash flows.

7.10.10 Greater transaction costs

PPP contracts are more complicated and create additional transaction costs compared to the conventional approach. These additional costs consist of:

- Costs of determining the **output specifications** for the project. The change from defining detailed technical specifications to defining output specifications - focusing on the objectives and leaving much more room for creativity and alternative solutions - often proves challenging, time consuming, and costly.
- Costs of developing a **PPP contract**. Each project is unique and requires a project-specific PPP contract. Of course, standard contracts and guidebooks can prove very useful and save resources, but the specific tailoring is still time consuming and creates increased transaction costs. Due to the fact that the specific legal, financial, and technical expertise required is scarce and experience is limited, portions of this effort often require outsourcing.
- The **procurement** of a PPP contract is more complex and involves more communication and negotiations with the bidders. This also requires legal and financial expertise, both from the public and the private entity. As PPPs become more main stream, the cost of this expertise should decrease.
- In most PPP procurements, **more design activities** are transferred to the market. Typically, public agencies do less design and engineering in the project preparation, to



encourage efficient and novel solutions by bidders. Design and engineering solutions may even be an important part of the evaluation criteria. Also, the bidders will have to prepare designs in order to develop the reliable cost estimates they need for submitting a committed bid. Depending on the number of bidders, multiple designs will be made during the procurement, saving the public entity money on design costs. Note that the private transaction costs are only reflected in the VfM comparison to the extent that they lead to a higher expected bid or higher public costs. Uncompensated transaction costs by losing bidders from this perspective are irrelevant, although they do influence the market appetite for PPPs in general.

- PPP contracts involve **project finance**. Since the financing costs are a determining factor in any bid, bidders often spend a great deal of time and money structuring and arranging a project finance solution. Also, the financing requires legal, financial, and technical due diligence for the project and the contract. These costs are typically higher in a PPP than in a conventional financing solution.
- The governance mechanisms in the PPP contract will lead to more **active monitoring** by the private entity, but also by the financiers and insurance companies. This results in additional oversight costs. Monitoring by the public agency is also typically higher in early PPP transactions, but can become lower than in a conventional delivery method if there is enough PPP deal flow with similar projects.

Project specific estimate of additional transaction costs largely depends upon:

- The maturity of the PPP market;
- The complexity of the project; and
- The duration of the procurement

7.10.11 Different tax structure

PPPs require varied organizational and legal structures for the private entity. Typically, the private entity is a special purpose vehicle (SPV) with various subcontracts with companies carrying out components of the project, and with financing agreements reflecting the project finance structure. The organizational and legal structure of the SPV leads to additional tax obligations. On the subcontractor level there are also tax obligations, but these are similar or equal to the tax obligations in a conventional approach and are often assumed to be implicitly included in the cost estimates.

Depending on the tax treatment decision as discussed in the competitive neutrality section, the estimate of tax obligations can be either more or less significant in the VfM assessment. The precise estimation of tax obligations requires the development of a full-fledged financial bid model. This can be time-consuming and costly. As a fair approximation of the expected tax obligation, benchmark information from bids on



similar projects can be used. A simple metric reflecting the effective tax pressure in previous deals – for example using a market based pre-tax return on equity rather than a post-tax return on equity – can be a fair indication.

Calculation of indication of effective tax pressure

An indication of the effective tax pressure can be calculated as follows

1. Calculate the equity distributions on the basis of a pre-tax Equity IRR as experienced in other transactions
2. Calculate the equity distributions on the basis of a post-tax Equity IRR as experienced in other transactions
3. Deduct the cash flows as calculated under #2 from the cash flows as calculated under #1

7.10.12 Different financing structure

If the VfM assessment is based on operational cash flows (approach 1), the financing is not relevant. If the VfM assessment is based on financing cash flows (approach 2), the shadow bid should reflect the financing structure and conditions. The best way to do this is by building a simulated financial bid model. Typically, most important part of the financial bid model is financing structure, which can be extremely large & complicated.

Instead of building a full-fledged bid model, one can also use a simplified model based upon operational cash flows using a market-based weighted average cost of capital (WACC) to reflect the financing section of the bid. This approach is particularly the viable during earlier stages of the project. It still requires a calculation of the project-specific WACC, but is much easier than developing a full-fledged bid model.

It is important to realize that a substantial portion of the project risk profile is reflected in the WACC. Risks that are subcontracted are not included, but the risks that are explicitly or implicitly retained by the SPV – typically systematic risk categories (inflation, interest rate, and toll risk) and risk categories that are associated with the long-term and integrated characteristics of the contract (long-term performance risk and project coordination risks). This needs to be carefully taken into consideration to avoid double-counting, and for consistency when comparing the PSC to the shadow bid/actual bid.

For example (real case from US market):

- If the cash flows of a project include an interest rate swap, transferring the variable interest rate risk to swap counterparty will result in higher cash flows, because the interest rate will now include a premium for the swap transaction. The interest rate risk is now valued in the cash flows and should no longer be reflected in the discount rate. This means that the discount rate should now be based on a floating or variable risk base rate, not a fixed rate.



- If the WACC reflects the toll revenue risk, the toll revenue cash flow should be based upon the P50 forecast (expected value). If the P90 toll revenue forecast (which is lower) is the starting point, using a WACC reflecting the toll revenue risk would be considered double counting and would lead to an even lower NPV. This means that the discount rate should not include a risk premium for toll revenue risks, if P90 toll revenue forecasts are included in the cash flows.

Market-based WACC

What is needed for determining a good estimate of a market-based WACC

Project-specific information:

- Capital Expenditures (CAPEX) and construction schedule;
- Operations and Maintenance (O&M) costs and the timing of major maintenance; and
- Repayment schedule (based on revenue projections)

Market-based information:

- Expected financing structure and facilities;
- Duration of financing facilities;
- Interest rates for respective facilities; and
- Required return on equity

On the basis of this information, a financing expert determines the expected overall WACC of the project (reflecting changes in capital structure over time) by building a simple Microsoft Excel model, which in turn can be used to calculate the bid. A way to validate this approach is to determine the WACC for an existing bid in this simplified manner and then compare the actual bid price received to the calculated bid price with this estimated WACC.

The WACC should exclude any taxes, meaning that it should be based only on a post-tax Equity IRR that does not take into account any benefits of the tax shield arising from interest expenses. In the shadow bid, the taxes still to be included are in a separate cash flow.

7.10.13 Shadow Bid Cash Flows

The calculation of the expected private bid focuses on the scope of activities and risks of the private entity. The bid – either a periodic availability payment or a different payment structure – can be calculated by determining which payments are needed to meet all of the costs of capital obligations.



There are different ways to calculate this:

- Goal seeking of a bid price those results in the required Equity internal rate of return (IRR);
- Goal seeking of a bid price that results in a Project IRR equal to the overall project WACC; and
- Goal seeking of a bid price those results in an NPV of zero, if discounted on the basis of the overall project WACC.

7.10.14 VFM Comparison

Ensure that the PSC can be compared to the shadow bid

To make a fair VFM comparison between the PSC and the shadow bid (or an actual bid), it is important to undertake an “apples to apples” comparison. Most importantly, it is essential to do the following:

- The shadow (or actual) bid should be adjusted for the risks and costs retained by the public agency;
- The appropriate competitive neutrality adjustments should be applied; and
- The project scope and risk profile should be reflected in both the PSC and shadow bid.

As indicated before, both the PSC and shadow bid may require continuous updates because of changes to the scope and risk profile throughout the project’s preparation and procurement. It is important that the comparison remains fair; for example this means that the PSC is not adjusted for innovations and specific solutions that the PPP bidders come up with (innovations that were never considered in the conventional approach).

In order to control the change process and prevent the VFM assessment from becoming a “black-box”, agencies can develop a change protocol when the first VFM assessment is conducted. A change protocol defines the list of issues that the PSC and shadow bid can be adjusted for after the initial assessment.

Examples include:

- Changes in scope as reflected in the PPP contract;
- Changes in risk allocation as reflected in the PPP contract;
- Changes in discount rates and WACC, due to changes in financial markets; and
- Errors and omissions



A related issue is to decide whether the VfM assessment will be used for decision-making purposes at that specific point in the procurement process, or if it should be used as a pure VfM assessment based on the overall project, regardless of timing. The following textbox elaborates the relevance and consequences of this distinction.

7.10.15 **There are two potential discount rates in a VfM assessment:**

1. Risk free discount rate

This discount rate is often based on financing costs of government or municipal bonds. If this discount rate is used in a PSC, project risks are not included in the discount rate and are accounted for in the project cash flows. In this context, “risk free” means “not including project risks,” i.e., the discount rate reflects the risk associated with the creditworthiness of the public agency. This discount rate is recognizable and very easy to determine. The challenge in using this discount rate is that the project-specific risks in a PPP approach that are typically included in the risk premium (as equivalently reflected in the WACC) must now be explicitly priced in a different way.

2. Discount rate with project-specific risk premium

A discount rate with a project-specific risk premium reflects the risk profile of the cash flows. In project finance deals the financing costs reflect the risk profile of a project, which is why this discount rate is market-based. To use market-based information on the cost of capital one should carefully analyze the way the private bidder structures its organization and allocates and values risks (see the following textbox). This discount rate is in line with the private sector approach to risk valuation. The challenge in using this discount rate is that determining a reliable rate is more difficult, and can result in extensive debate or criticism of this methodology.

In the PSC, systematic risks, long-term-performance risks, and project coordination risks are typically retained by the public agency. Across the world different jurisdictions have found four ways of dealing with these categories of risks, resulting in the use of different discount rates.

Special Purpose Vehicle and Weighted Average Cost of Capital

In a PPP transaction, the government transfers a set of tasks and risks to a Special Purpose Vehicle (SPV), a project entity that is established for the sole purpose of entering into a PPP contract with the public agency and delivering the services as described in the contract. Risk pricing follows the organizational structure of a PPP SPV. Most of the risks are typically subcontracted out by the SPV and are therefore reflected in the cash flows of the bid. Some of the risks are explicitly or implicitly retained by the SPV (for example, through caps on liabilities in subcontracts). These risks not only



include the typical systematic risk categories (e.g., inflation, interest rate, and toll revenue risk) but also other risks that cannot be subcontracted and that are associated with the lengthy and integrated characteristics of the contract: long-term performance risk and project coordination risks. The financiers -- both debt and equity -- incorporate these risks in their required rates of return, as reflected in the project's weighted average cost of capital (WACC). This WACC will be higher than the government's discount rate, because there are more and greater risks to the SPV that are accounted for. The precise risk allocation needs to be carefully taken into consideration to avoid double-counting and to provide consistency when comparing the PSC to the shadow bid/actual bid.

Approach 1: Value the risks in the cash flows

Valuing risks in the cash flows of the PSC means using the appropriate theoretical and market-based valuation methods to incorporate all risks in the cash flows of the PSC, not in the discount rate. In the shadow bid the appropriate cost of capital will be used to reflect the value of the same risks. The Net Present Value (NPV) of both cash flows – PSC and shadow bid – are calculated on the basis of a risk-free discount rate.

Considerations:

The advantage of this method is that - in theory – it is straightforward and easy to understand. However in practice the valuation often proves to be very complicated, particularly with regard to the valuation of typical SPV coordination and interface risks - categories associated with the long-term and integrated characteristics of the contract. This can threaten a fair comparison with the shadow bid.

Approach 2: Use a market-based discount rate

In this approach the risks in this category are valued in the PSC by applying a market-based discount rate for the NPV calculation. This uses a fair estimate of an appropriate discount rate reflecting SPV risks for discounting all cash flows, based on market information on the weighted average costs of capital (WACC) of similar projects. Since these similar projects include both costs and revenues, the use of a single discount rate – as opposed to multiple discount rates for separate cash flows – may be justified. In the shadow bid the appropriate cost of capital will be used to reflect the value of similar risks. The discount rate that is based on the WACC is also used for calculating the NPV of the shadow bid.

Considerations:

This approach is more difficult to understand and explain than approach 1. However, the advantage of this approach is that there is market-based information available for risk pricing, and the risks are priced in the same way in both the PSC and the shadow bid, making them directly comparable. Using this approach with solely negative cash



flows (as in an availability payment project) may lead to counterintuitive results: a higher discount rate leads to a better outcome. Also, this effect hampers the link with the financial viability assessment. Additionally, public costs and costs of risks retained by the public agency under the PPP option may be inadvertently (and inappropriately) discounted using the higher WACC-based discount rate, so special care must be taken to ensure that this does not occur.

Approach 3: Calculate a virtual insurance premium

The risks in this approach are valued in the cash flows of the PSC by applying a “virtual insurance premium”. This is determined by calculating the difference between the cost of capital on the basis of the applicable public financing interest rate, and the cost of capital based on a market-based WACC, expressed in constant cash flows over the life time of the project. In the **shadow bid** the appropriate cost of capital is used to reflect the value of the same risks. The NPV of both cash flows – the PSC and the shadow bid – are calculated on the basis of a risk-free discount rate.

Considerations:

The advantage of this approach is that the concept of an insurance premium is easy to explain. The assumptions can be based upon the same market based information as in the second approach, making the shadow bid and PSC directly comparable. A disadvantage is that the insurance premium clearly is not a reflection of a real cash flow, which can – despite the familiar concept – lead to less recognition of this approach by users and stakeholders.

Approach 4: Use a negative risk premium

In this approach the risks in this category are valued in the PSC by applying a negative, yet market-based risk premium for the NPV calculation. The risk premium is defined as the difference between 1) a fair estimate of an appropriate discount rate reflecting SPV risks for discounting all cash flows, based on market information on similar projects, and 2) a risk free discount rate. In the shadow bid the appropriate cost of capital will be used to reflect the value of similar risks, leading to higher cash flows, which will be translated into an NPV using the risk free discount rate.

Considerations:

The advantage of this approach is that for a purely negative cash flow project, the NPV calculation based on this negative risk premium leads to results that are intuitively right (higher risk leads to a less attractive NPV). This addresses the issue with approach 2 relating to counterintuitive results. The assumptions can be based upon the same market-based information as in the second approach, making the shadow bid and PSC directly comparable. Disadvantages are that the use of two different discount rates (i.e., one for the NPV of the PSC, and another for the NPV of shadow bid) may be confusing.



Whatever the choice of approach, it needs to be both consistent and err on the side of simplicity of explanation:

- If governments are making decisions on multiple projects, the discount rate should be chosen in the same way for all projects
- VfM assessment should facilitate the decision-making process between delivery methods, and do so in a transparent way. VfM should not be a black box that only financial experts can understand, because the VfM assessment is also an important communications tool for explaining the concept of value for money to the general public. In this regard the government should consider which approach it can best explain.

As there will always be some uncertainty surrounding the appropriate discount rate, and variations in the discount rate can significantly affect the outcomes of the VfM assessment, outcomes may be presented for a bandwidth of potential discount rates. Not representing this uncertainty may create false precision in the results.

The VfM assessment supports decision making on delivery method preference, but does so based upon a series of assumptions made with incomplete knowledge at a specific point in time.

The net present value calculation results in a single value. However, in real life there is uncertainty about assumptions, which is why a **sensitivity analysis is recommended**. The sensitivity analysis does not replace the risk assessment, because the PSC and shadow bid should still reflect a valuation of all risks and uncertainties. A sensitivity analysis demonstrates the robustness of the PSC to potential changes in the key input variables, facilitating a better understanding of the meaning of the outcomes.

By running these sensitivities a range of realistic outcomes can be determined. This output can then be presented as a bandwidth rather than a precise outcome.



7.11 Checklist for Implementation Schedule

No.	Information to covered in Implementation Schedule	Included?
1	In – Principle clearance timeline	
1a	First draft of tender document & other key project document	
1b	Application for in – principle clearance for the PPP	
2	Pre – qualification & final document preparation timeline	
2a	Issue RFQ	
2b	Pre – qualification of bidders	
2c	Final draft of tender document & feedback on bid documents from bidder for complex / new sector projects	
3	Application for final approval of PPP	
4	Procurement & Award timeline	
4a	Issue RFP, allowing adequate time to respond to bidder queries	
4b	Evaluation of bids	
4c	Negotiations & awards	
5	Technical & Financial closure timeline	
5a	Detailed technical studies & planning	
5b	Obtaining clearances	
5c	Arranging & finalizing finance	
5d	Concessionaire event of default	
6	Engineering, procurement and construction (EPC) activities and timeline (for projects that involve a capital expenditure component)	
6a	Detailing each major milestone through the EPC process	
7	Post – construction activities	
7a	Such as surveys & commissioning facilities	
8	Expected date for commencement of operations	
9	Major milestones in Operating lifecycle of project	



7.12 First Draft of Key Project Document

The first draft of key project documents should be prepared prior to the application for In-principle Clearance. These would typically include a draft of the concession agreement, as well as drafts of the first-stage bid documents (EOI and/or RFQ depending on the type of procurement process selected).

The draft project documents will support the In-principle Clearance application by providing additional detail to the clearance authority. These rough drafts will also be needed in advance of issuing the EOI and/or RFQ.

The structure and critical details of the draft documents will flow from the findings in the feasibility study. An RFQ will typically include the following:

Description of key project details, including:

- Description of the project scope and objectives, with a focus on the services to be provided including indication of performance levels
- Envisaged PPP mode and financing mechanism
- Payment mechanism (e.g. user charges, government payment, other source, or a combination)
- Project timeframe and indicative schedule

Details of the procurement, including:

- Qualifying criteria for the evaluation and selection of shortlisted bidders
- Process for submission and evaluation
- Details of pre-submission conference or meeting and of other opportunities to ask questions or seek clarifications
- Indicative procurement schedule
- Other general instructions to applicants
- Application forms

An EOI would also include enough description of the project so that potential bidders are able to assess whether they would be interested. However, in contrast with the RFQ, at the EOI stage it would usually not be necessary to include details of the procurement procedures.



The standard clauses in a Concession Agreement include:

- Contract date and key dates in the concession life (including termination)
- Obligations, rights and restrictions on the private partner (concessionaire), including a description of the services to be provided and performance obligations
- Obligations and rights of the public partner
- Mechanisms for payment, including the rights (if any) of the concessionaire to gather direct or indirect revenue from the project
- Rules and procedures for making changes to the scope during the life of the project
- Requirements and procedures for auditing and monitoring performance
- Penalties in case of non-performance
- Step-in and substitution rights
- What happens at the end of the project (termination) including, if appropriate, transferring assets to the public sector
- What happens if the project is terminated early
- Arrangements for dispute resolution
- Other standard clauses such as change in law, force majeure etc.

The details of the EOI / RFQ and the concession agreement will depend on the particular details of the project. However, as indicated by the lists above, there are broadly standard contents that are common across projects. This makes it possible to start with a model document and add project-specific details to this as required.

Getting the Concession Agreement right is critical to a successful PPP project. The CA is the main contractual document for the PPP. It spells out the rights, responsibilities and obligations of all parties. This makes it vital not just as a bidding document but as the foundation for the management of the contract throughout the life of the PPP. For this reason, the process of preparing to manage the PPP contract begins at this time in Phase 2 and continues when the Concession Agreement is finalised in Phase 3.

In some sectors in India the relevant Authority has prepared standard model documents for PPPs. For example, model concession agreements have been prepared for highways and ports. Model documents have the advantage of streamlining the document preparation process, providing a standard risk allocation framework, and benefiting from past experience and best practice. In some cases projects that have used the relevant model agreement are able to progress more quickly through the approvals process.

Drafting project documents is a specialist task and advisors would ordinarily be engaged to do this. Where model agreements are used they may be adapted in-house by the Sponsor if it has the necessary expertise. However, even in this case it may still be preferable to seek external advice, particularly if the project is complex or innovative





Section – 4

Phase 3 - Procurement,
Final Approval & Award

8 Procurement, Final Approval & Award

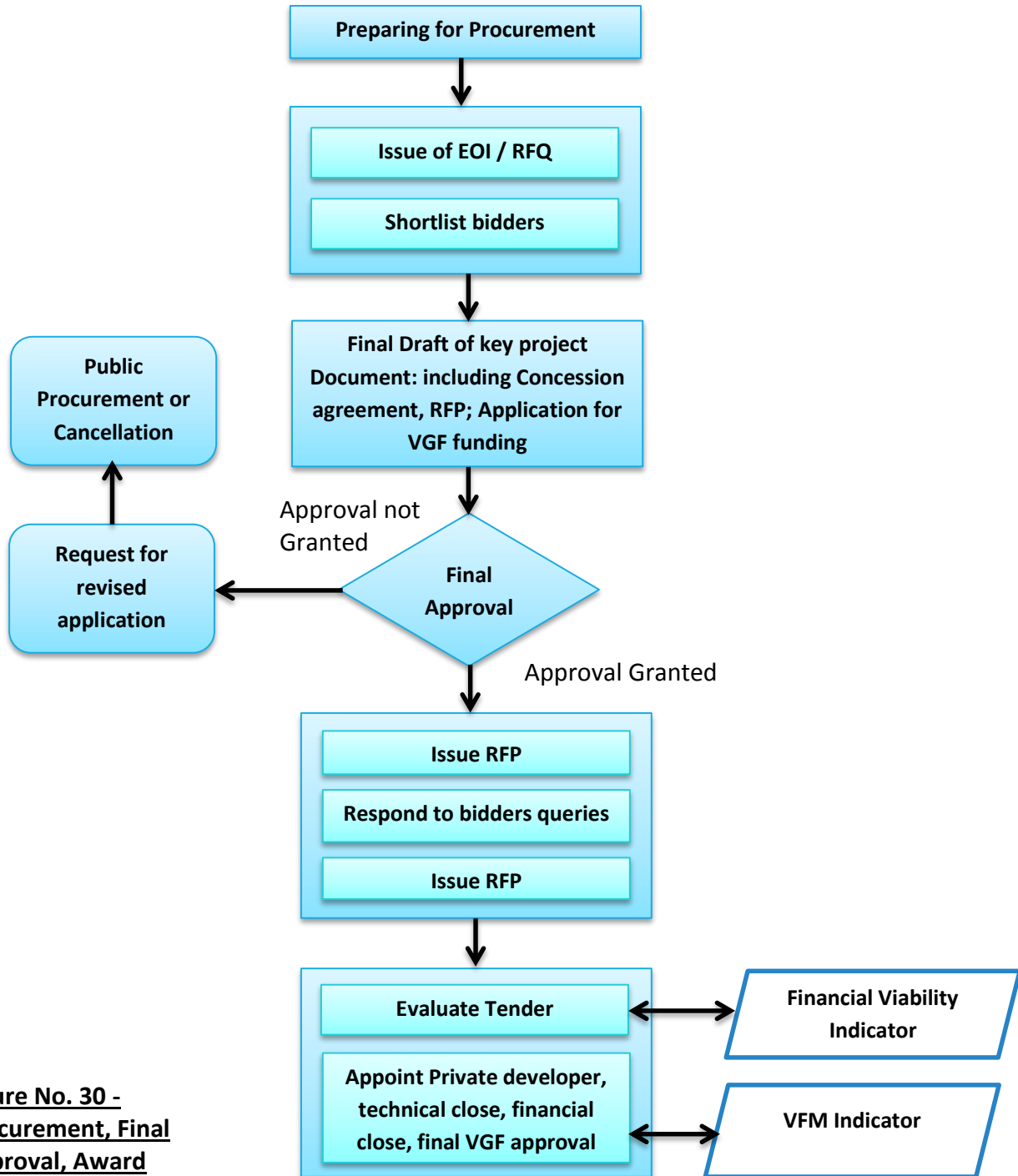


Figure No. 30 - Procurement, Final Approval, Award



8.1 Pre – Procurement Activities

Pre-procurement activities include all the activities that need to be conducted by the public entity prior to the bid process for procurement of private partner is initiated. Ideally, these activities are to be carried out after the project has been structured so that its contours are set for the procurement of services to be provided by a private partner.

Pre-procurement activities are those activities which are expected to be undertaken usually after the project structure is confirmed. An indicative list of these activities includes:

- Land Acquisition, Right of Way and Shifting of Utilities
- Administrative approvals – Permissions from State Government, Cabinet approvals, Permission from GOI, etc.
- Familiarity with Government Schemes – VGF, IIPDF, etc.
- Clearances & Permits – From statutory and regulatory Authorities
- Inter-departmental coordination as per requirement

Each of the pre-procurement activity mentioned in the box above is to be fulfilled by the public entity. The sequence in which they are to be carried out may vary based on the project specifics. It is useful to start these activities concurrently.

There are many bid processes which have been challenged in the courts due to lack of land acquisition, funding arrangements, obtaining administrative approvals and other clearances for the project/ procurement process.

Certain of these activities need to be carried out prior to the bid process, simultaneously with the bid process, or afterwards.





Figure No. 31 – Pre Procurement Activities

At this stage of the project development process, the public entity would need to also make an assessment and provide for committed & contingent liabilities that may arise out the proposed PPP arrangement. In such cases, before inclusion of the contingent liabilities section in the agreement, it is prudent that the public entity has obtained all necessary approvals from appropriate Authority in this regard.

The public entity must also ensure that all stakeholders associated with project are clear with respect to the objectives and outcome of the project. Effective communication strategy must be deployed to spread adequate awareness and knowledge about the project.

Land Acquisition, Right of Way and Shifting of Utilities

Land is the most critical component for project implementation and it defines the project itself. Governments may find it difficult to get project partners and lenders for their projects where it has not completed acquisition of a substantial proportion of the land required.

The significance of acquisition of land (for development of project under PPP framework) by the public entity prior to commencement of the bidding process has been supported by the Government of India. The Model Concession Agreement for development of National Highways (Infrastructure Sector) under PPP framework, issued by the Government of India includes transfer of right of way to the private partner as a condition precedent of the concession agreement. It states transfer of not less than 90



percent of the total right of way required for the project from the public entity to the private partner.

One of the key factors that determine approval of Public Private Partnership Approval Committee (PPPAC) for development of PPP projects includes the extent of land availability (usually must not be less than 60% of the total land requirement) with the public entity for purposes of project development.

Acquisition of land affects people's lives. A few of the reasons why it attracts resistance among different quarters are:

- Social impact on people
- Economic impact - loss of livelihood
- Damage to the environment

8.1.1 Process of Land Acquisition

The land acquisition process includes an assessment of the land required for a project, notification and eventual acquisition, and the ability of the Government or the line Department to fulfill its obligation to provide land without any encumbrance or encroachments. Shifting of utilities from the project site and the acquisition of right of way for project development are also part of the process.

Ideally, land acquisition for projects such as development of roads, water supply network, power distribution network, etc. must be completed ahead of bidding so as not to impede the project development process. Currently, the Central Legislation Land Acquisition Act 1894 is used by the union Government as well as State Governments primarily to acquire land for a public purpose.

Following protests and controversies over land acquisition, the Government of India introduced an enactment for land acquisition, the "Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act", 2013 (RFCTLARR Act) in September 2013.

Objective of the enactment is to acquire land for public purpose under a humane, participative, informed and transparent process and to provide just and fair compensation to the affected families. Public Purpose is defined under the enactment and includes strategic purposes relating to naval, military, air force and armed forces of the Union, including central paramilitary forces or any work vital to national security or defence of India or State police, safety of the people, for infrastructure projects, project for project affected people, project for housing for such income groups, as may be specified from time to time by the appropriate Government.



The enactment clearly sets out the procedure to be adopted for acquisition of land with respect to development of projects under PPP framework. The flowchart given below sets out the key steps involved in acquisition of land for development of projects under PPP framework.

As set out in the flowchart given above, the entire process of land acquisition could be dealt in two stages; viz. (i) Preliminary Notification Stage which pertains to land acquisition and (ii) Notification Stage which involves Land Acquisition and the Rehabilitation & Resettlement (R&R) Scheme.

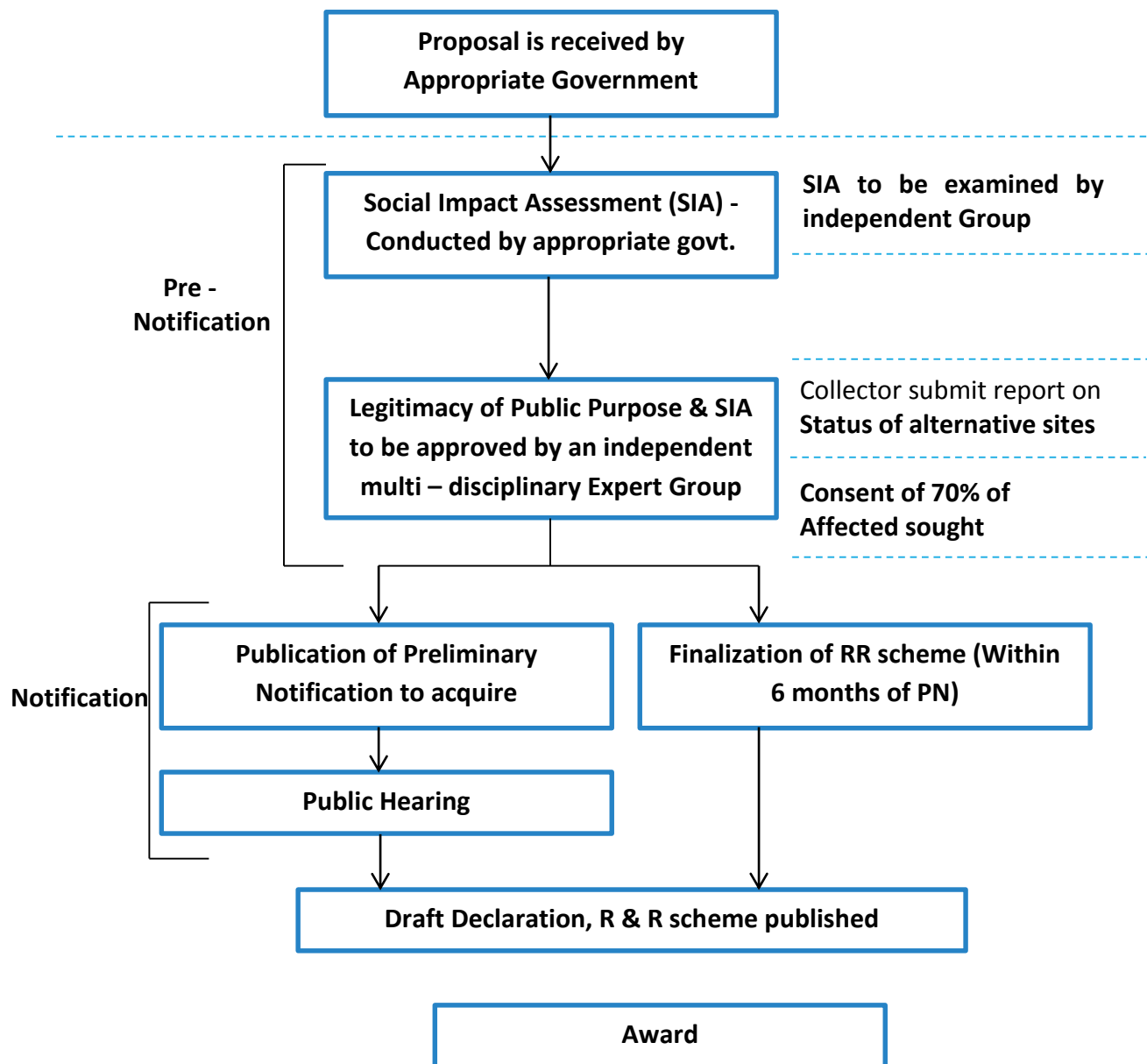


Figure No. 32 – Process of Land Acquisition



Stage 1 – Publication of Preliminary Notification for Land Acquisition

To acquire land for purposes of development of projects under PPP framework; the public entity would need to submit a proposal to the Appropriate Government. A few of the key clauses pertaining to the publication of preliminary notification are set out herein below

1. Section 4(1) of the RFCTLARR Act, 2013, states that -

Whenever the Appropriate Government intends to acquire land for public purpose, it shall consult the concerned Panchayat, Municipality or Municipal Corporation, as the case may be, at village level or ward level at affected area, , at village level or ward level at affected area, and carry out a Social Impact Assessment study in consultation with them, in such manner and from such date as specified by such Government by notification

2. Section 4(2) of the RFCTLARR Act, 2013, states that -

The notification issued by the Appropriate Government for commencement of consultation and the Social Impact Assessment study under Section 4(1), shall be made available in the local language to the Panchayat, Municipality or Municipal Corporation, as the case may be and in the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil and shall be published in the affected areas, in such manner as may be prescribed, and uploaded on the website of the Appropriate Government.

Provided that the Appropriate Government shall ensure that adequate representation has been given to the representatives of the Panchayat, Gram Sabha, Municipality or Municipal Corporation, as the case may be at the stage of carrying out the Social Impact Assessment Study

Provided further that the Appropriate Government shall ensure the completion of the Social Impact Assessment study within a period of six months from its date of commencement.

3. Section 4(4) of the RFCTLARR Act, 2013, states that -

The Social Impact Assessment study referred to under Section 4(1) shall amongst other matter, include all the following, namely –

- Assessment to whether the proposed acquisition serves public purpose
- Estimation of affected families and the number of families among them likely to be displaced



- Extent of lands, public and private, houses, settlements, and other common properties likely to be affected by the proposed acquisition
- Whether the extent of land proposed for acquisition is the absolute bare minimum extent needed for the project
- Whether land acquisition at an alternate place has been considered and found not feasible
- Study of social impacts of the project, and the nature and cost of addressing them and the impact of these costs on the overall costs of the project vis-à-vis the benefits of the project.

Provided that an Environment Impact Assessment study, if any, shall be carried out simultaneously and shall not be contingent upon the completion of the Social Impact Assessment study.

The Appropriate Government shall also ensure that the Social Impact Assessment report is evaluated by an independent multi-disciplinary Expert Group. The Appropriate Government must also ensure that, there is a legitimate and bona fide Public Purpose for the proposed acquisition which necessitates the acquisition of the land identified and the potential benefits and the Public Purpose shall outweigh the social costs and adverse social impact.

4. Section 11(1) of the RFCTLARR Act, 2013, states that -

Whenever it appears to the Appropriate Government that land in any area is required or likely to be required for any public purpose, a notification (preliminary notification) to that effect along with details of the land to be acquired in rural and urban areas shall be published in the following manner

- in the Official Gazette
- in two daily newspapers circulating in the locality of such area of which one shall be in the regional language
- in the local language in the Panchayat, Municipality or Municipal Corporation as the case may be and in the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil;
- uploaded on the website of the Appropriate Government
- in the affected areas, in such manner as may be prescribed



5. Section 15(1) of the RFCTLARR Act, 2013, states that -

Any person interested in any land which has been notified under Section 11(1) of the enactment, as being required or likely to be required for a public purpose, may within sixty days from the date of the publication of the preliminary notification, object to

- the area and suitability of land proposed to be acquired,
- justification offered for Public Purpose and the
- Findings of the Social Impact Assessment report.

Stage 2 – Publication of Notification, Land Acquisition, R&R Scheme

The enactment makes it mandatory to devise a rehabilitation and resettlement scheme where the extent of land being acquired is equal to or more than 100 acres. A few of the key clauses of the enactment are presented herein below:

1. Section 16(1) of the RFCTLARR Act, 2013, states that -

Upon publication of the preliminary notification under Section 11(1) by the Collector, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families, in such manner and within such time as may be prescribed, and which shall include –

- Particulars of lands and immovable properties being acquired of each affected family;
- Livelihoods lost in respect of land losers and landless whose livelihoods are primarily dependent on the lands being acquired
- A list of public utilities and Government buildings which are affected or likely to be affected, where resettlement of affected families is involved
- Details of the amenities and infrastructural facilities which are affected or likely to be affected, where resettlement of affected families is involved
- Details of any common property resources being acquired

Meantime, a public hearing would be conducted to understand the concerns of all stakeholders involved especially the affected families. The Administrator upon completion of the public hearing shall submit the draft R&R scheme along with the proceedings of the public hearing to the Collector. The Collector shall review the draft scheme for R&R scheme and submit the same to the Commissioner, Rehabilitation and Resettlement for approval of the scheme.



The R&R scheme would also be required to be published in the lines of publication of the preliminary notification discussed above. The Commissioner shall cause the approved R&R scheme to be made available in the local language to the Panchyat, Municipality or Municipal Corporation as the case may be.

2. Section 19(1) of the RFCTLARR Act, 2013, states that -

When the Appropriate Government is satisfied, after considering any report, if any made under Section 15, that any particular land is needed for a public purpose, a declaration shall be made that effect along with a declaration of an area to be identified as the “resettlement area” for the purposes of rehabilitation and resettlement of the affected families, under the hand and seal of a Secretary to such Government or of any other officer duly authorised to certify its orders and different declarations may be made from time to time in respect of different parcels of any land covered by the same preliminary notification irrespective of whether one report or different reports has or have been made (wherever required).

3. Section 20 of the RFCTLARR Act, 2013, states that -

The Collector shall thereupon cause the land, unless it has been already marked out under Section 12, to be marked out and measured, and if no plan has been made thereof, a plan to be made of the same.

4. Section 21 (1) of the RFCTLARR Act, 2013, states that -

The Collector shall publish the public notice on his website and cause public notice to be given at convenient places on or near the land to be taken, stating that the Government intends to take possession of the land, and that claims to compensations and rehabilitation and resettlement for all interests in such land may be made to him.

5. Section 25 of the RFCTLARR Act, 2013, states that -

The Collector shall make an award within a period of twelve months from the date of publication of the declaration under section 19 and if no award is made within that period, the entire proceedings for the acquisition of the land shall lapse:

- Provided that if the Appropriate Government shall have the power to extend the period of twelve months if in its opinion, circumstances exist justifying the same
- Provided further that any such decision to extend the period shall be recorded in writing and the same shall be notified and be uploaded on the website of the authority concerned.



The Collector having determined the total amount of compensation to be paid, shall arrive at the final award and issue individual awards detailing the particulars of compensation to each of the affected family. The Collector shall take possession of land after ensuring that full payment of compensation as well as rehabilitation and resettlement entitlements are paid or tendered to the entitled persons within a period of three months for the compensation and a period of six months for the monetary part of rehabilitation and resettlement entitlements.

8.1.2 Need for Consent of Affected Families to be obtained for Land Acquisition

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 mandates Appropriate Government to obtain the consent of Affected Families prior to land acquisition. Prior to passing an order for land acquisition;

- where the land is being acquired for purposes of development of project under PPP framework then; consent must be obtained from at least 70% of the Affected Families
- Where land acquisition is for “private projects”, consent must be obtained from at least of 80% of the Affected Families.

8.1.3 Delays in Land Acquisition

The land acquisition process includes meeting the claims of many stakeholders such as the Affected Families who are to be relocated from the project site, people who stay in the vicinity of the project site, the public entity, environment protection groups, social welfare groups, the private partner and Ministries such as the Ministry of Environment and Forests, the Revenue Department, the Pollution Control Boards, etc. The delays/challenges which occur include:

- Delay in the start of the land acquisition process
- Time consumed in obtaining consent of the Affected Families
- Court cases/litigations – restraining orders/stay orders, etc.
- Rehabilitation and resettlement issues
- Clearing of titles and encumbrances over the land

Since the process of land acquisition is time consuming, it is important to start the acquisition of land at the earliest - once the extent of land required and the location have been finalised at project structuring stage and the project is ready to be bid out.

In cases where the project site is under Government ownership but not under the ownership of the particular Department, it is advisable for the public entity to get the



title of the land transferred in its name through inter-departmental transfer of ownership of land.

8.1.4 Right of Way

No project can be implemented by the private partner without the transfer of Right of Way from the public entity. MCA for development of National Highways (Infra Sector) defines Right of Way as:

Right of Way means the constructive possession of the site, together with all way leaves, easements, unrestricted access and other rights of way necessary for construction, operation and maintenance of the project in accordance with the agreement.

8.1.5 Shifting of Utilities

Projects may encounter existing utilities either on the site or in the vicinity. Their presence may hamper project execution and will require relocating. Shifting of utilities will need to be carried out before the bidding process for the project begins so that, when the private partner has been selected, the right of way pertaining to vacant land is transferred by the public entity. The utilities that need moving vary from underground pipelines – water, storm water drain, underground drainage – to electric lines/ telephone lines/ poles/ buildings, etc. Approval of the respective line Departments such as Urban Development Department, Water Resources Department, etc. that are in charge of such utilities is to be sought prior to shifting of utilities from the project site.

If the public entity requires the private partner to make arrangements for shifting utilities at its own cost, it is advisable that the public entity facilitates the matter without delay.

8.1.6 Provision of Utilities

As part of the project structuring activities and discussions with stakeholders, it should be agreed that certain utilities will be made available to the private partner up to the battery limits of the project site. These are a sample of the utilities such as water supply, power supply, waste water management, telecom lines, solid waste management collection and transport, etc. that the private partner may require for project execution:

The Governments of Gujarat and Haryana have introduced legislation to enable the public entity to lay out underground utilities related to project development.

Sometimes, depending on the project structure, the private partner will need to make its own arrangements for the provision of utilities for the project. If so, all the approvals, clearances and permits that need to be obtained will be handled by the private partner, along with the costs.



8.1.7 Administrative Approvals

Administrative approvals are those approvals that have to be taken by the public entity prior to taking any decision on project development/procurement. The administrative approvals and processes differ, not just between the States and the Centre but even between two State Governments.

Administrative approvals may depend upon the project size and scope – extent of land and purpose of project, project cost and jurisdiction – district/ State in which the project is proposed and whether it is located inter-district or inter-state. Administrative approvals are required to be obtained for most of the projects proposed for development under PPP framework, depending upon the project cost, size and scope. The public entity might need to obtain administrative approvals under two heads - administrative approvals for State PPP projects and, administrative approval for central sector projects.

In inter-state projects, administrative approvals from both States, in addition to central Government approvals, will be required.

Administrative Approvals for State level PPP Project

Most State Governments have devised mechanisms and processes for obtaining necessary administrative approvals for development of projects under PPP framework. Usually, depending on the estimated project cost of development; the appropriate Authority from which the approval is to be obtained by the public entity varies.

Administrative approvals usually are sought at two stages of project development; viz.

- prior to commencement of procurement process and,
- Upon selection of the successful bidder and before issuing Letter of Award to such bidder.

Administrative Approval for Central Sector PPP Project

At the central level, the Cabinet Committee on Economic Affairs (CCEA) in 2005 approved the process of approving of Public Private Partnership (PPP) projects. Subsequently, a Public Private Partnership Approval Committee (PPPAC) was set up comprising the following:

- Secretary, Department of Economic Affairs (in the Chair)
- Secretary, Planning Commission
- Secretary, Department of Expenditure
- Secretary, Department of Legal Affairs and
- Secretary of the Department sponsoring a project



The Committee is aided by the Department of Economic Affairs, Ministry of Finance, for servicing the proposals. The Committee may co-opt experts as necessary.

Department of Economic Affairs, Ministry of Finance, vide Notification No. 10/32/2006-Inf dated April 2, 2007 has modified the approval of PPPAC projects. The modified guidelines set out the following criteria for approval of PPP projects sponsored by Central Government Ministries, statutory authorities or other entities under their administrative control;

- For projects, wherein the estimated project cost is greater than Rs.100 Crores but less than Rs.250 Crores, the Committee shall comprise of Secretary, Department of Economic Affairs, and Secretary of Ministry sponsoring the scheme.

For detailed information on the process, please refer to Guidelines - Formulation, Appraisal and Approval of Public Private Partnership projects, published by the Secretariat for the Committee on Infrastructure, Government of India and Modification in Delegation of powers for Formulation, Appraisal and Approval in respect of Infra projects, published by the Department of Economic Affairs, Government of India.

In addition to the above, each public entity has its own rules of governance and administrative set-ups. Prior to the procurement of any project under the PPP framework, based on the rules applicable to the respective department, an approach towards getting approvals needs to be adopted.

8.1.8 Approvals & Clearances

There are several clearances/approvals which are required at different stages of the project cycle by both the developer as well as the Government. MCA for development of Infra Sector (National Highway, Ports as released by Govt. of India) require that the parties to the agreement to obtain whatever clearances or approvals are required. The term "Conditions Precedent" refers to the obligations of the concerned parties which, if not fulfilled, render the rest of the agreement ineffective or unenforceable.

The key approvals/clearances to be obtained by the public entity include the environmental clearance, forest clearance, clearance from the railway Authorities, a no objection certificate and consent letters from the State Pollution Control Board under the Water and Air Pollution Control Acts etc. The non-compliance of „Conditions Precedent“ by any of the parties within the stipulated time may result in termination of the agreement.

Depending upon the nature of the project, the public entity is required to obtain clearances under various legislations such as the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and



Control of Pollution) Act, 1981, the Forest (Conservation) Act, 1980, the Wildlife (Protection) Act, 1972, the EIA Notification, 1994, and the CRZ Notification, 1991 etc. A few other key clearances which the contracting Authority is required to obtain with regard to specific sectors are listed below;

- Where the project to be implemented is in a coastal region – clearance from the Ministry of Environment and Forests (MOEF) as per the Coastal Regulation Zone Notification 2011 issued under the Environment (Protection) Act, 1986
- Where the implementation of infrastructure projects requires a diversion of forest land - clearances from the State Forest Department/ MOEF as per the Forest (Conservation) Act, 1980
- If the road being developed passes through a railway line – clearance from the railway Authority

8.1.9 Inter Departmental Co-ordination

It is necessary for the public entity to coordinate with other line Ministries during the project development/procurement process. The need for inter-department coordination is particularly noticeable in the development of urban rail systems across the country. Development of urban rails systems inter alia would include activities such as land acquisition and shifting of utilities along the proposed alignment; coordination with the traffic police, station development, integration of the urban rail system with other modes of transport, etc. This means that the public entity would need to coordinate with line Departments such as the urban local bodies, development Authorities (for purposes of land acquisition, conformance with development bye laws, issue of transfer of development rights, etc.), other para-statal such as water supply boards, electricity boards (for shifting of utilities); and so on.

Inter-departmental coordination is a case of development of a tourism property is also discussed herein below; For example, in cases of development of a tourism property on a land parcel which belongs to the Revenue Department. The Department of Tourism, which is the line Department, will need to coordinate with the Revenue Department for a transfer of the title of the land. The Tourism Department will also need to coordinate with the Department of Forests if it intends to organise, say, wildlife safaris for tourists staying at the proposed property.

For the smooth and timely development of a project and of the procurement process, it is necessary for the public entity to carry out the activities which have been discussed in this module. Starting these activities well in time will avoid the delays that are inevitable if they are undertaken later.



8.2 Choosing Best Suited Procurement Method

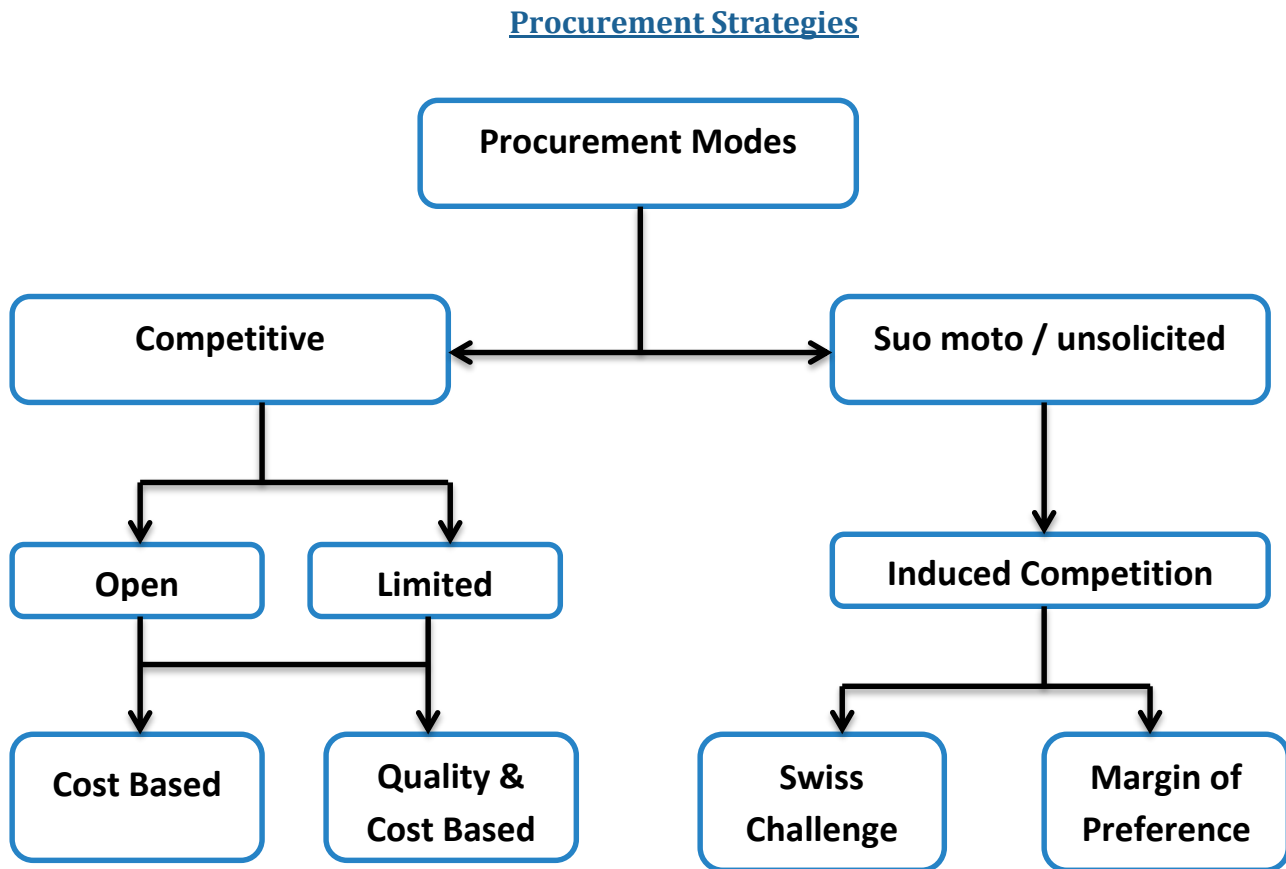


Figure No. 29 – Procurement Strategies

Competitive Procurement

Competitive procurement strategies are the most efficient strategy for large contracts and for when a large number of prospective bidders is expected. Competitive bidding is usually preferred for PPP projects.

There are several alternative competitive bidding strategies available to suit the circumstances of the particular project. The approaches differ according to the breadth of bidders that they target. They include:



International Competitive Bidding (ICB)

ICB opens the procurement process to the widest potential market of bidders. Firms from around the world are invited to bid with equal opportunity.

Procuring internationally involves greater administrative and advertising cost than more local bidding strategies, such as those at the national level. For this reason, ICB tends to be the best suited procurement strategies when:

- The contract value is large, and
- The project requires specialized technical inputs which might only be available from leading firms internationally.

Because the benefits of ICB increase with project scale it is common for a threshold contract value to be set as a decision criterion. In this case ICB would typically only be used when the contract value is greater than this threshold.

National Competitive Bidding (NCB)

National bidding is less intensive than ICB. National bidding is suited to procurement of PPPs which, by their nature or scope, are unlikely to be attractive to foreign firms. This would tend to be the case where:

- The contract values are small
- The project is scattered geographically or spread over time
- The project is labour intensive

These factors imply the project can be developed locally at prices below the international market, and this would tend to give an advantage to domestic firms. In these cases the advantages of ICB are reduced and they are likely to be outweighed by the extra administrative and financial burden, making procurement at the national level more appropriate. It should be noted that national firms may still choose to include international expertise in their bid if they see fit.

Limited Competitive Bidding (International and Domestic)

Limited International Bidding (LIB) is essentially ICB by direct invitation to a pre-qualified panel of firms without open advertisement. It may be an appropriate strategy for procurement where:

- The contract values are small
- There are only a limited number of developers
- Other exceptional reasons may justify departure from full ICB procedures.



Under LIB, the procurer seeks bids from a select list of known potential developers broad enough to assure competitive prices. Domestic preferences are not applicable in the evaluation of bids under LIB. In all respects, other than advertisements and preferences, ICB procedures would still apply.

Suo Moto / Unsolicited bids

In some cases, a potential PPP project might be brought to the public sector's attention through an unsolicited proposal from a private sector developer. Such proposals reduce the competitive process completely and expose the public sponsor to the risks associated with uncompetitive procurement. In these cases alternate procurement options based on 'induced competition' are often used to try to reintroduce some competitive pressure to the process. However, these approaches, known as the Swiss Challenge or Margin of Preference strategies, are still not strictly competitive.

Some of the Indian States, such as Andhra Pradesh, Bihar, Punjab, Gujarat and Karnataka permit unsolicited proposals under specific circumstances. Specific circumstances may be referred to the individual PPP legislations / policies of the respective states.

The VGF guidelines, however, explicitly state that a private sector company shall be eligible for VGF only if it selected on the basis of open competitive bidding.

Swiss Challenge

Swiss Challenge is a procurement strategy used specifically when the government authority receives an unsolicited proposal for a project. The private entity submitting the unsolicited proposal is termed as the Original Project Proponent (OPP). The government evaluates the proposal submitted by the OPP and, if it finds merit in the proposal, it invites other parties to submit competing proposals. The other parties are expected to match or better the terms of the OPP's proposal. In turn, and to compensate for its effort in bringing the original proposal, the OPP is given a chance to match or better any competing proposal at par with the original.

The Swiss Challenge system enables the public sector to introduce some competitive pressure, thereby avoiding some of the non-competitive concerns raised by unsolicited proposals. The private sector is invited to match or better the OPP's proposal through innovation, quality and efficiency. Despite this, the system is not entirely competitive since it is difficult to avoid a bias in the evaluation towards the OPP. Moreover, there could be some reluctance by competitors to make their best effort since they would expect the OPP to have an advantage. This could be because the OPP has more information than its competitors. Swiss Challenge might also not meet the conditions for procurement prescribed by relevant legislations. Both the World Bank and the Asian



Development Bank, for instance, while recognizing the importance of likely innovation through the encouragement of unsolicited proposals, do not allow such procedures under their published procurement guidelines.

Margin of Preference

Margin of preference is also a procurement strategy used in response to unsolicited proposals. Under this approach the OPP is given a theoretical benefit during the bid evaluation, compensating him for the effort it has put in for developing the project. In this approach after the OPP has submitted its proposal, the government authority invites bids from competing suppliers. During the bid evaluation process, the OPP is evaluated with a theoretical margin of preference. This strategy has been prevalent in South Korea and Chile.

8.3 Design of Procurement Process

Before the project sponsor can prepare the procurement plan for a competitive bidding process it has to finalize two essential components of the procurement process. These are:

- Basis for bid evaluation: Quality-cum-Cost-Based Selection (QCBS), Quality Based Selection, or Least Cost Method
- Type of procurement process: Single-stage bidding, or multi-stage bidding

8.3.1 Basis for bid evaluation

The final selection of the preferred bidder is based on the evaluation of the bids. This can be on the basis of:

- **Quality cum Cost-Based Selection (QCBS)** – Evaluation based on the cost committed by the bidder and the technical qualification of the bidder
- **Quality-Based Selection (QBS)** – Evaluation based on the technical qualification of the bidder
- **Least Cost Method (LCM)** – Evaluation based on the cost of the completed asset or cost of service committed by the bidder

Quality cum Cost Based Selection (QCBS) is typically preferred for International Competitive Bidding. QCBS is suitable for transport infrastructure projects and contracts for rolling stock in urban transport PPPs (such as BRTS), where it is desirable that the bidders possess a certain amount of technical skills and previous construction or



operational experience. For the roads and urban transport sectors the project team should by default consider the QCBS approach for selection.

Quality Based Selection (QBS) is suitable specifically in situations where the technical input required is highly specialised and the concern for technical quality dominates the concern for lowest cost.

The Least Cost Method (LCM) is suitable specifically in situations where the requirement is basic or of a commodity nature or is highly standardised, with limited requisite technical input and nothing to differentiate the quality of competing developers. LCM might be used for basic services like cleaning and maintenance.

8.3.2 Types of procurement process

There are a range of procurement processes that can be implemented by the project team. The choice is essentially between a single stage process or a multi-stage process.

Single Stage Process

A single stage process comprises a Request for Proposal (RFP) only. An RFP document is issued to interested bidders inviting them to participate in the bid process. The RFP is the formal bid document issued by the Sponsor and includes the project details and draft concession agreement.

A single-stage process is appropriate for smaller projects when there is a well-known and relatively small group of private entities that are likely to bid, and when the project scope and service delivery options can be clearly specified in advance.

Multi Stage Process

A multi-stage process has distinct Request for Qualification and Request for Proposal stages to short-list bidders and to seek their financial quotes. The Ministry of Finance, Government of India has mandated the adoption of a two-stage bidding process for central sector PPP projects. A multi-stage process can have the following stages:

- Expression of Interest (EOI) stage – to identify a list of interested firms
- Request for Qualification (RFQ) stage – to identify a shortlist of qualified bidders
- Request for Technical Proposals (RTP) - Only in case of exceptionally complex projects where the sponsor determines that the bidders must submit their technical proposals/ plans at the RFQ stage, either along with the initial applications or at an intermediate stage preceding the RFP stage.
- Request for Proposals (RFP) stage – to invite comprehensive technical and financial proposals from shortlisted bidders and to select the preferred bidder



The RFP may be preceded by an Expression of Interest (EOI), a Request for Qualification (RFQ) or sometimes both. The choice of whether to include EOI and / or RFQ depends on how much uncertainty there is about the project definition and about the bidders that are likely to be interested and qualified.

8.3.3 Table No. 15 - Factors to consider when choosing a Procurement Option

Procurement Options	Factors to Consider	
	How well defined is the Project?	How well defined are bidders? How much work will proposal require?
Single Stage : RFP	Project scope is clear Service options have been well-defined	Number of interested bidders is limited Potential bidders are known and identified In this case it is not necessary to identify interested bidders or to reduce their number
Multi-stage option 1: RFQ + RFP (with or without RTP)	Project scope is not clear, extensive discussions are needed to finalize the service option	Potential bidders are known and identified, but Number of interested bidders is large Considerable effort required by bidders to submit proposals In this case RFQ is useful to reduce number of bidders.
Multi-stage option 2: EOI + RFP (with or without RTP)	Project scope is not clear, extensive discussions are needed to finalise the service option	Number of interested bidders likely to be limited, but Potential bidders not yet well known or identified Considerable effort required by bidders to submit proposals In this case EOI is useful to identify interested bidders.
Multi-stage option 3: EOI + RFQ + RFP (with or without RTP)	Project scope is not clear, extensive discussions are needed to finalise the service option	Uncertainty about the level of interest in the project – unknown if interest is limited or large Potential bidders not yet well known or identified Considerable effort required by bidders to submit proposals In this case EOI is useful to identify interested bidders and level of interest; RFQ is useful to reduce the number of bidders if necessary.



An EOI is used to identify firms that are interested in bidding and that are available to bid for a project. It is a 'market sounding' exercise that can be used by Sponsoring Authorities to test the level of interest and availability of potential partners and to identify a preliminary list of firms who will be sent RFQs or RFPs. Typically no evaluation is carried out on an EOI.

The result of the EOI stage is a list of all interested firms.

An RFQ is used to narrow down the list of qualified firms that will be invited to bid. A key difference from an EOI is that the RFQ submissions are evaluated and firms are eliminated on the basis of pre-determined qualifying criteria. The aim is to reduce the number of potential bidders to only those who are technically and financially qualified and those possessing requisite skill sets for implementation of the project.

The result of the RFQ stage is shortlist of bidders. These potential bidders are then invited to submit their proposals for the project at the RFP stage.

An RFP invites technical and financial proposals from interested entities (in case it follows an EOI) or qualified entities (in case it follows an RFQ) or from the market in general (in case of a single stage process).

8.4 Preparing for Procurement

8.4.1 Forming Procurement & Evaluation team

The Sponsoring Authority should select and form a team of people who will carry out and manage the procurement process.

A Project Team will have been formed early in the PPP process (see Phase 1) and may have been expanded for the detailed analysis in Phase 2. This team may now be further adapted to become the procurement and evaluation team to carry out Phase 3.

The procurement and evaluation (P&E) team should have expertise covering financial, legal, technical, operational and commercial aspects of the project. The team should also have managerial capability to lead the procurement process.

It is natural for the Project Officer to lead the P&E team if this person has the experience and skills needed to manage the procurement process. The team should include individuals from within the Sponsoring Authority and may also include external advisors where expertise is not available internally. The team can further engage external technical advisors for specific tasks as needed.



The P&E team will have the following roles, using external advisors as needed:

- Provide overall management of the procurement process
- Prepare the EOI notice and / or RFQ document
- Provide a contact point for communications with interested parties
- Evaluate EOI and / or RFQ submissions
- Develop RFP documents
- Provide a contact point for communications with bidders
- Evaluate bid submissions and select preferred bidder
- Finalise the contract with preferred bidder

Each member of the P&E team must be required to declare that they have no conflict of interest in the project and to disclose any conflict that arises during the procurement process. The same must also be true of any advisors engaged during the process.

8.4.2 Reviewing & Updating Project Information

At the start of the procurement phase it is worth reviewing the project information developed during Phase 2. This will be especially useful if there has been a delay since receiving In-principle Approval and if new people have joined the Sponsor's project team.

The project information will include:

- Description of services required
- Detailed technical scope
- Economic and financial appraisals of the project
- Environmental and social safeguard information
- Risk allocation and PPP mode
- Project implementation schedule
- Selected procurement strategy and process
- First drafts of the EOI notice / RFQ document and concession agreement

A decision on the procurement strategy and type of procurement process will have been made in Phase 2. First drafts of the EOI notice and / or RFQ document and concession agreement will also have been developed. Phase 3 will build from these decisions and document drafts.

The In-principle Approval will have been given on the basis of the project information from Phase 2. If the Clearance committee requested any changes to the project details then these updates should now be made. The implementation schedule should also be reviewed and updated if the timeline has changed.



Substantive changes to the project description that was agreed by the Clearance committee, particularly to the scope and risk allocation, should not now be made. If changes are required these would need to be brought to the attention of the Approving Authority and justified.

8.4.3 Appointing an Independent Monitor

The sponsor agency may consider appointing an independent monitor to oversee the process and to ensure the transparency of the project tendering and public budget allocation processes. This person should be able to critically and objectively evaluate the process and comment on inadequacies and potential conflicts of interest as they arise. The use of an independent monitor is a good practice to adopt, particularly for financially large projects.

To carry out this role he or she should have an independent position in relation to the Sponsoring Authority. The independent monitor should, ideally be a representative from the Ministry of Finance or from the Ministry of Law or from an independent audit firm.

The role of the independent monitor will be to monitor and record the conduct of the participants and the proceedings particularly during the tendering and procurement and contract finalisation stages. The independent monitor will review all documentation and attend all internal and external meetings. The independent monitor would not approve any decision or document, but only certify that the proceedings had been conducted with the desired standard of transparency and accountability.

The independent monitor would report directly to the Approving Authority that is empowered to make the Final Approval decision. The Monitor should submit an independent report to the Approving Authority to verify that activities were conducted as per acceptable practices.

The independent monitor's assessment of the tender process should be an important input into the approval process. The monitor would also provide advice on tender procedures to the procurement and evaluation team.

8.5 Procurement Process

The increasing complexities in projects coupled with governance exigencies has made it paramount for the procurement process to be carried out in a fair and transparent manner. The contours of the procurement process typically need to be finalised during the project structuring stage and the actual process for selection of a private partner starts only after the project structuring exercise is completed and the administrative approvals have been obtained.



Procurement processes are governed by the business and financial rules that need to be adhered to by the public entity. A transparent, fair and competent procurement process would go a long way in establishing the project's credentials and building trust in a PPP project.

The procurement process is preceded by the project structuring stage and is followed by the post award contract management stage. The procurement process involves preparation of bid documents depending upon project specifics and the process for selection of a private partner for the project. This stage culminates in the issue of a Letter of Award (LoA) to the private partner.

It is appropriate to start with the procurement process only when the bid documents for the project are prepared.

8.5.1 Objectives of Procurement Process

- To lower cost associated with the selection of a private partner
- To provide fair opportunities to eligible participants to compete
- To bring transparency and legal certainty to procurement
- To optimise delivery of public services
- To ensure efficient allocation and use of public funds

The public entity, prior to starting the procurement process, needs to ensure that the following matters are ascertained and/or the following exercises are undertaken with respect to a given project.

- Technical feasibility, financial feasibility and test for legal compliance of the project is complete;
- Project assumptions have been discussed and finalised;
- Risks and responsibilities have been identified and allocated;
- Critical issues have been identified and addressed;
- Project delivers value proposition, i.e., efficient and cost-effective delivery of services;
- Project is bankable;
- Public entity initiating the process has power to award the project;
- Public entity has an encumbrance-free title over the land/project asset or at least is committed and takes necessary steps in this regard to make the land free of encumbrances available in a timely manner for project development;
- Funding sources have been identified; and
- Appropriate administrative approvals have been obtained

Once these basic pre-requisites for the procurement process have been fulfilled, the next step is to choose a procurement strategy. To ensure the success of any PPP project, it is critical that a transparent strategy suitable for the type of contract is selected. The



procurement strategy or bid structure that is adopted must be transparent, open, competitive, free, fair, as well as cost and time effective.

The public entity must always strive to ensure that the procurement process adopted for any project/service delivery is fair, transparent, unbiased, brings in accountability, efficiency, and is compliant with the legal and regulatory framework of the country.

8.5.2 Procurement Guidelines by Chief Vigilance Commission & Other State Governments

- The Central Vigilance Commission (CVC), Government of India from time to time has issued guidelines and circulars that govern public procurement of goods and services. In line with the CVC guidelines, several States such as Karnataka, Gujarat, Uttarakhand, etc. have also issued procurement laws, rules and guidelines that govern public procurement in respective States. It is imperative that the public entity must comply with CVC guidelines and State specific procurement laws/ guidelines, if any; for public procurement. All CVC guidelines for public procurement of goods, works and services are available for download in the link: http://cvc.nic.in/proc_works.htm
- Since, the inception of CVC in the year 1964, its Technical Wing namely Chief Technical Examiner's (CTE) Organisation as has been discharging its duties in the form of intensive examination of public procurement contracts, under the guidance of CVC. The Organisation has also published guidelines on intensive examination being carried out by CTE's Organisation in the form of a booklet titled "Intensive Examination of Works" (Guidelines). In 2014, revised Guidelines on Intensive Examination of Procurement and Other Contracts were published for the benefit of public entities.
- CVC Act 2003 empowers the Commission to call for reports, returns and statements from all Ministries/ Departments/Corporations/Central Undertakings so as to enable the Commission to exercise general check and supervision over the vigilance and anti-corruption work in the Ministries/Departments/ Undertakings. Chief Vigilance Officers of various organisations covered under the jurisdiction of the Commission are required to furnish Quarterly Progress Reports (QPRs) in respect of ongoing contracts for the quarter by 15th day of the month following the quarter. Even though, CTE's Organisation may examine Contracts of any magnitude, yet considering limitation of resources, it generally undertakes examination of Contracts of larger value only. Circular No. 15/07/12 (issued vide Letter No.98-VGL-25/18 dated 30.07.2012), states the monetary limit for reporting the Procurement Contracts with in QPRs. It states that any PPP procurement, the monetary limit (cost/ revenue value) of which is Rs.5 Crores or above need to be mentioned a part of QPR.



8.6 Expression of Interest (EOI)

An Expression of Interest (EOI) is often included in the procurement process for projects where the number and identity of potential bidders is not well known. The purpose of an EOI is to give the Sponsor an idea of how much interest and availability there is among private firms.

An EOI is a kind of 'market sounding' exercise in which the Sponsor tests how many service providers there are in the market at that time. This information can then be used to prepare the RFQ and / or RFP documents. The decision to include an EOI will have been made when the procurement process options were assessed.

An EOI is not required for all projects and often the procurement process will skip straight to the RFQ stage. The decision to include the EOI should be based on an assessment of the need for further market sounding against the cost of the EOI process.

Since there is some overlap in the information collected in an EOI and RFQ these two stages are often merged into an EOI-cum-RFQ. This simply combines the contents of the two stages and conducts them together. The objective of an EOI-cum-RFQ is to both test the level of interest among firms and to evaluate firms to reduce the number of applicants to a shortlist.

Note, the Central Government has mandated a 2 stage bidding process for Central Sector PPP projects in India, i.e., Request for Qualification and Request for Proposals stage.

Marketing the project contributes significantly towards attracting better private sector participation in the bid process for the project. It is useful to discuss the project with prospective bidders and understand their issues and concerns in participating in the procurement process prior to submission of their bids for the project.

In situations where the public entity is not sure about the market's likely interest in taking up the project, it may decide to go in for an „expression of interest (Eoi)“ stage preceding the Request for Qualification (RFQ) stage. However, Eoi must not be used to either shortlist or disqualify any entity from participating in the RFQ stage. The main objective of the Eoi is to guide the public entity to make an informed decision based on likely market interest. The Eoi need not include the same details as provided in the RFQ. The emphasis has to be on providing information to the private parties on the proposed project and not on soliciting full bids or proprietary information from private parties.



8.6.1 Contents of EOI

An EOI notice is a relatively short and simple document. The notice should include the following information about the project and EOI process:

Description of key project details, including:

- Description of the project scope and objectives, with a focus on the services to be provided including indication of performance levels
- Envisaged PPP mode and financing mechanism
- Payment mechanism (e.g. user charges, government payment, other source, or a combination)
- Project timeframe and indicative schedule

Details of the EOI process, including:

- Developer eligibility and required qualifications, capacity and experience
- Instructions for answering the EOI, including information required and deadline
- Details of information conference or meeting and of other opportunities to ask questions or seek clarifications
- EOI forms (as annexes)

8.6.2 Process for Expression of Interest

The EOI process would typically include the following steps:

- Preparation of the EOI
- Public notification and issuing the EOI notice
- Allowing for questions from interested parties
- Receipt of EOI submissions
- Assessment of level of interest and compilation of list of interested firms

Preparation of EOI Notice

The EOI notice contains the description of the project and the request for expressions of interest. It should be prepared to contain at least the contents given in the previous section. This will be guided by the project details and procurement plans determined in Phase 2 and updated at the start of Phase 3.



The notice does not need to be long and it is better if the required responses also are not very large:

- The level of project detail should be just enough to allow firms to judge whether they have the skills, experience and resources needed for the project.
- The level of effort needed to respond to the EOI should be kept to a minimum in order to minimise the cost to the Sponsor of conducting the process and to private firms of responding.

Interested parties must be given sufficient time to consider the EOI notice, form a team if they decide to express interest as a consortium, respond with any questions or requests for clarification, and to prepare and submit their EOIs.

When setting the timeframe the Sponsor should take account of the size and complexity of the project (large and complex projects are more likely to require consortia to be formed while responses to simpler projects may be made much quicker). If the timeframe is made too short some interested parties may not respond. On the other hand, EOI is the simplest stage in the process and allowing undue time will only delay procurement.

It is typical to allow around one month from first advertisement to the closing date for EOI submissions. A deadline should also be set for seeking clarifications.

Public Notification & issuing the EOI

The EOI notice should be advertised on the website of the Sponsoring Authority as well as the PPP Cell or similar organisation. Advertisements should also be placed in major newspapers as appropriate to the size of the procurement (for example, whether it is a local, national or international procurement).

The notice itself can be made available via an appropriate website or in hardcopy from the Sponsor at the expense of the party making the request.

Questions from Interested Parties

An arrangement should be in place to allow for questions and feedback from interested parties. At the EOI stage this can be an email address that will be monitored and responded to by the P&E team. A telephone number, for the Project Officer for example, may also be provided.

The Sponsor may find some of the thoughts and opinions expressed by interested parties useful in refining the project documents.



Arrangements for receipt of EOI submissions

The Sponsor may accept EOI submissions through a website, if the facility is available. Submissions might also be accepted by email to a dedicated and secure mailbox. Electronic submissions have the advantages of being fast and reducing cost to the responding parties. Sufficient security and safeguards should be put in place. If electronic submissions are not permitted the EOI notice must indicate an address and responsible person where hardcopy submissions are to be sent.

Compilation of list of Interested Firms

Once EOI submissions have been received the P&E team will compile a list of all interested firms or consortia of firms. This will include basic contact information including addresses and name of main contact person at each lead firm.

The interested firms on the list will then receive RFQs in the qualifying stage.

A preliminary evaluation of the number of firms active in the market should have been made during the Feasibility study. It should be unlikely that there wouldn't be enough interest shown at the EOI stage.

8.6.3 Request for Qualification

Government of India has issued model RFQ documents to facilitate the procurement process in few of the infrastructure sectors. The purpose of the model RFQ document is to enable public entities" to draft project-specific RFQ documents for pre-qualification and short-list bidders in a manner that is fair, transparent, and inexpensive.

The Request for Qualification (RFQ) is used in multi-stage bidding to select a shortlist of qualified bidders. The RFQ is often the first formal stage in the procurement process, although it may follow an EOI when that is deemed necessary.

An RFQ is used to narrow down the list of potential bidders to only those who are technically and financially qualified and those possessing requisite skill sets for implementation of the project. These shortlisted firms are then invited to submit bids for the project at the RFP stage.

By reducing the number of bidders the overall cost of the bid process is lowered. This cost is faced by both the bidders, who have to prepare the bids, and by the Sponsor who has to evaluate them.



Reducing the group of qualified bidders can also encourage stronger bids. The selected bidders will be better able to assess their chances of winning amongst a small group. They are then likely to invest greater effort in the bid process.

There should be at least rough drafts of most critical project documents in advance of issuing the RFQ. These should have been prepared in Phase 2 before the application for In-principle Clearance. If these drafts have not been prepared in advance the criteria for the RFQ and shortlisting could be faulty and this would result in a lengthy delay between shortlisting and issuing the RFP. Final drafts will be prepared following the qualification stage.

The rationale for short-listing firms is that only those firms that are capable to undertake the project are considered for evaluation in the procurement process. It also rests on the fact that if this is not done, a large number of firms are likely to be selected and firms with lower capability, in their competition with established firms, are likely to undercut and offer irrationally low financial bids compared to their better qualified counterparts. This could affect the quality of service that may eventually come to be offered, since an enterprise with lower capacity might have been selected due to its irrationally low bid submission. As per the overview of the framework given for Model RFQ document issued by Ministry of Finance, Government of India, it is an international best practice to short-list about three to four bidders for the final stage of procurement process. Considering this factor and also recognising that, restricting the list of shortlisted bidder to the best available bidders improves the chances of successful PPP operation, a short-listing of about six to seven pre-qualified bidders has been specified in the Model RFQ to secure high quality and competitive financial bids.

Contents of RFQ

An RFQ is a more detailed document than an EOI. It should include the following information about the project and qualification procedure:

Description of key project details, including:

- Description of the project scope and objectives, with a focus on the services to be provided including indication of performance levels
- Skills, expertise and experience required to meet these objectives
- Envisaged PPP mode and financing mechanism
- Payment mechanism (eg, user charges, government payment, other source, or a combination)
- Project timeframe and indicative schedule
- A draft of the Concession Agreement can be included, perhaps as an annex.



Details of the qualification requirements and procurement process, including:

- Qualifying criteria for the evaluation and selection of shortlisted bidders
- Details of pre-submission conference or meeting and of other opportunities to ask questions or seek clarifications
- Process for submission and evaluation
- Indicative procurement schedule
- Specific legal requirements or restrictions associated with the RFQ or the project
- Other general instructions to applicants
- Application forms (as annexes)

The first draft of the Concession Agreement will have been prepared at the In-principle Approval stage and may have been developed further in time for the RFQ.

In case of exceptionally complex projects where the Sponsor feels that a technical proposal or plan will be required, a Request for Technical Proposal (RTP) may be issued instead at the qualifications stage. This can be either along with the initial applications or at an intermediate stage.

The RTP would specify in detail the requirements for technical qualification and would form a part of the pre-qualification process. Only the Applicants who have been pre-qualified would be invited to participate in submission of Bids at the RFP Stage.

Qualifying Criteria

The qualifying criteria used to evaluate the responses to the RFQ should be:

- Based on the project requirements
- Selected before the RFQ is prepared
- Comparable among firms
- Related to a scoring system
- Clearly stated in the RFQ itself

The criteria will reflect the technical, financial and other requirements of the particular project. They will need to be chosen specifically for the project. The requirements sections of the RFQ can then be written to specify that the responses provide information needed to meet the qualifying criteria.



Qualifying criteria may include:

1. Technical qualifications:

- Experience with similar projects, in terms of service outputs and project size and complexity
- Experience with PPPs in similar projects and generally
- Relevant experience locally and internationally
- Specific technical capabilities of the firm or consortium
- Experience working together (if firms are forming a consortium)

2. Financial qualifications:

- Ability to raise sufficient funding for the project and in the form required
- Consortium structure, including minimum equity contribution of lead firm and evidence of binding agreement among the members

3. Evidence of no conflict of Interest

The RFQ may also request brief comments on the project scope and structure in order to evaluate the firm or consortium's understanding of the requirements.

A scoring system would be developed to allow the firms to be ranked. The Independent Monitor should review the criteria and the scoring system.

Different approaches can be taken to deciding the scoring system. Scores may be set for each qualifying criterion, with the scores chosen to reflect the relative importance of each criterion. In other cases, a minimum cut-off may be attached to some criteria (such as firm size or minimum equity stake) and scores attached to remaining criteria for comparison of firms that meet the cut-off.

Both the criteria and the scoring system should be explicitly stated in the RFQ. This will allow potential bidders to judge whether they are sufficiently qualified for the project and to focus their responses on what the Sponsor wants.



8.6.4 RFQ Process

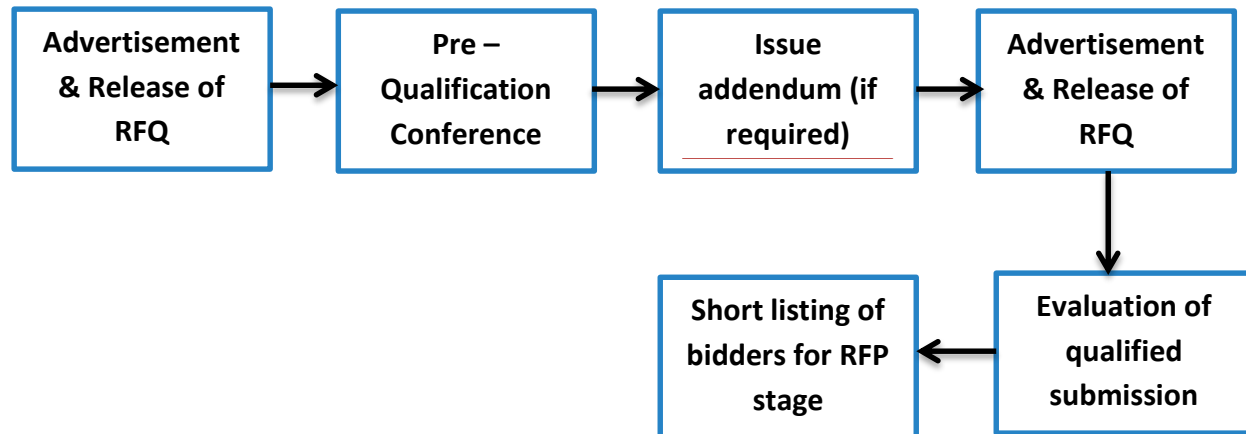


Figure No. 33 – RFQ Process

Notice Inviting Tender & Release of RFQ

The publication of the Notice Inviting Tender (NIT) is a step through which potential developers are informed officially about the project. In publishing the NIT, the public entity, apart from following the internal rules in this regard, must also follow the mode and manner set out in the procurement laws applicable to their respective jurisdiction. Normally, any NIT of the tender document needs to be published in the State or district tender bulletin as well as the Indian Trade Journal.

NIT would need to provide following key information related to tender process:

- minimum time for submission of bids;
- date of sale of the tender document;
- last date and time of sale of the tender document and receipt of tender;
- place or the website from which the tender document can be obtained; and
- Amount of earnest money deposit/bid security to be deposited.

Pre – qualification Conference

The pre-qualification conference is organised after the issue of tender documents like RFQ, RFP, etc. The purpose of pre-qualification is to provide clarification to the interested bidders on their understanding of the project, submission of proposal and to obtain feedback and understand their concerns on any issue relating to the implementation of the project or the qualification criteria provided in the tender document. The public entity may, at its discretion and based on the complexity of the project, arrange one or multiple rounds of the pre-qualification conference. Based on the suggestions gathered from the pre-qualification conference, the public entity may revise the tender documents, where appropriate.



Issue of Addendum

The public entity may, at any time before the last date specified for submission of proposal/qualification, modify the tender documents by issuing an addendum or corrigendum. The modification in tender documents may be made by the public entity either on its own initiative or as a result of any clarification or comment made by the bidders during the pre-bid meeting.

The addendum has to be communicated to all the bidders who have purchased the bidding document. It has to be published in the same dailies, trade journals, business publications, other periodicals and websites in which the advertisement for the project was published.

The addendum issued forms part of the tender document and must be treated as if it were provided originally in the tender document. If the addendum necessitates an extension of the period for bidders to prepare their bids, the public entity has to extend the due date prescribed for submission of the proposal. Generally, in the case of significant amendments, at least 15 days must be provided between the date of amendment and the application due date while in the case of minor amendments, at least seven days must be provided. The public entity cannot make any modification in the bidding document after the bid due date.

Qualification Document Submission

All applicants interested in submitting their applications for the project have to submit their application before the application due date and time and in the manner and form as prescribed in the bid document. Applications submitted after the application due date are liable to be rejected by the public entity. Though, applicants can modify, substitute or withdraw their Qualification Submissions (Applications) only within the deadline prescribed in the bid document.

Evaluation of Qualification Submission

The public entity must evaluate all applications received within the applications due date according to the evaluation process laid down in RFQ. The public entity has to ensure that the applications received for a project are kept valid throughout the procurement process. The public entity may seek extension of the application validity period if the evaluation process is likely to take longer than the period prescribed as the application validity period. The public entity is free to consult any bidder to receive the clarifications or additional information needed to evaluate the submissions. However, the public entity cannot seek additional information except where such information is required to supplement or authenticate qualification submissions.



Short listing Bidders for RFP Stage

The last step in the RFQ stage is to shortlist the bidders who meet the qualification criteria set out in the bidding document for the RFP stage. The public entity may constitute an evaluation committee which could provide necessary assistance to the public entity in short listing the bidders.

8.7 Requests for Proposal (RFP)

The purpose of the RFP process is to obtain financial offers from the bidders pre-qualified at the RFQ stage. As part of the RFP document, the procuring Authority needs to provide the feasibility report and draft agreement to all pre-qualified bidders.

The feasibility report is generally provided as a preliminary reference and its contents are not binding on the project Authority. The bidders, while submitting their financial bid, are expected to conduct their own due diligence. The feasibility report generally provides information about the market and technical features of the project, soil investigation or geotechnical report (if applicable), revenue source etc. The draft agreement must document the risk allocated between the parties and the duration of the agreement. Unlike the terms provided in the Project Information Memorandum (PIM), the terms in the draft agreement are binding on the procuring Authority and have an overriding effect over anything to the contrary contained in the RFP.

If a single stage procurement process is adopted by the public entity, it would issue only RFP to interested entities to submit their bids. In such cases, the procurement process would involve multiple stages of evaluations comprising qualification submissions evaluation (of technical and financial capacities), technical proposal evaluation (optional) and financial bid evaluation. At each stage, bidders are shortlisted for evaluation in the next stage. More on the technical proposal stage is set out later in this module. In the case of a two stage procurement process, the RFP involves only the financial bid evaluation with or without the technical proposal evaluation. In this case, the qualification submissions evaluation of technical and financial capacities of the bidder would have been completed in the RFQ stage.

The financial bids for PPP projects in the RFP stage should normally be invited by way of a single objective bidding parameter. The bid parameter is ideally an outcome of the project structuring exercise. The risk sharing among the parties to the arrangement determining the mode of PPP also provides the public entity with the most optimum choice of the bidding parameter.



Depending on the project structure which is finally determined for project development, the public entity may consider the following criteria in its selection process:

- Lowest present value of financial support requested by the bidder – in projects that involve the development of infrastructure projects under PPP framework for all sectors that are identified under the Financial Support for PPPs in Infrastructure scheme.
- Lowest quantum of land required to complete the project
- Lowest present value of asset-based support from the Government
- Highest share (or present value of) of revenue – in projects that involve the development of tourism properties/ hotel properties/ convention centers, etc.
- Lowest unit value or present value of payments by Government – lowest unit value offered by the bidder or the lowest discount sought by the bidder as a bid parameter, is used in the development of renewable energy projects where the bidder is expected to quote the lowest power purchase tariff/ discount the bidder sought from the public entity.
- Highest upfront payment (or present value of upfront payment) offered by the bidder – in projects that involve the development of tourism properties/hotel properties, etc.
- Highest present value of future payment offered by the bidder
- Lowest agreement period
- Lowest unit value or present value of user fees
- Highest premium on (or present value of) equity shares offered
- Lowest annuity payment sought from the Government – in projects that are financially not viable, often seen in water supply projects, development of roads, etc.
- Highest periodical payment offered by the bidder – in projects like the development of commercial property/ markets, tourism properties, etc.
- Highest revenue share – in projects that involve the development of container terminals/ berths in ports

The bid parameter for the project is a critical component in the bidding documents and it is determined during the project structuring stage. There can be only one bid parameter for a project.

The various steps followed in the RFP process are given below. The steps to be followed in this regard are similar to the RFQ process. After the evaluation of the financial proposal submitted as part of the bid under the RFP stage, the public entity declares the preferred bidder (the bidder who quotes the best bid) to whom the letter of award/letter of acceptance (LoA) is issued, inviting the bidder to execute the agreement.



8.7.1 Process of RFP

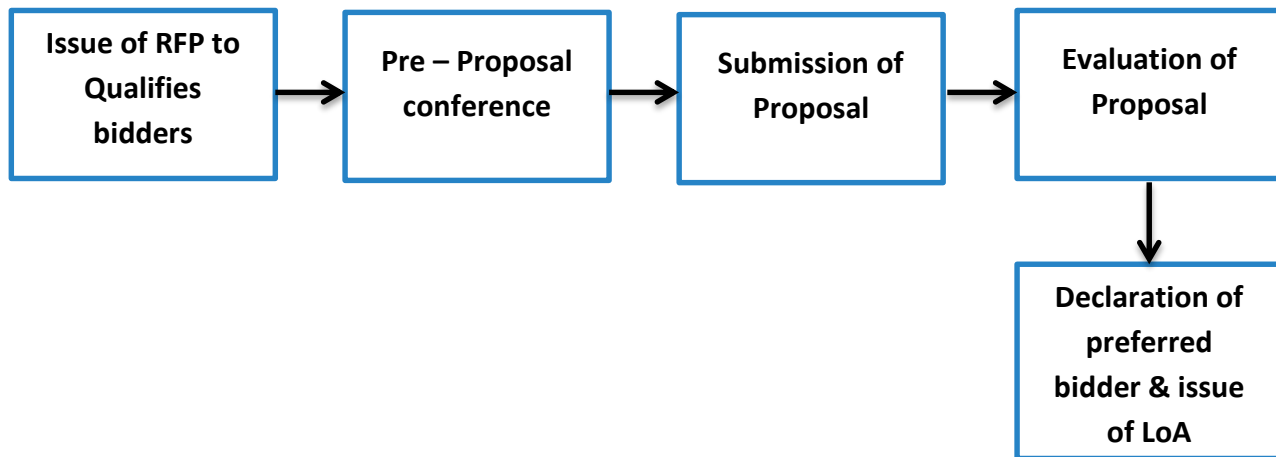


Figure No. 34 – RFP Process

Interaction With Short – listed bidders

During the RFP phase there will be a number of avenues to provide short-listed bidders with opportunities to obtain additional information and address queries, which are outlined below.

Data Room

The efficiency of the process can be enhanced by making available to short-listed bidders all relevant information the Procuring Agency has that may aid in the preparation of a response to the RFP. Such information, including any analysis of legislative and regulatory impacts, feasibility studies, land use considerations, geological information, demand estimates and the like, should be made available, with appropriate disclaimers, in a data room.

This data room may be a physical room and/or an electronic equivalent. Alternatively, the information could simply be provided to bidders as part of the RFP documentation. Short-listed bidders should be advised of the information available and of administrative arrangements for access to and use of the data.

Query Process

Short-listed bidders will be able to ask questions of the Project Director through a formal process. Questions should be submitted to the Project Director who in turn will provide responses as soon as practicable.



Interactive Tender Process

Shortly after the release of the RFP, the Procuring Agency may elect to conduct a single briefing with all short-listed bidders, outlining content and the intent of the RFP, providing guidance on key project issues and emphasising key messages.

Governments should also use an interactive tender process that involves holding a series of individual interactive workshops with short-listed bidders during the RFP bid phase.

An interactive tender process provides short-listed bidders with an opportunity to discuss the development of their concepts and designs and to seek clarification and feedback in the context of the government's output requirements, before lodging proposals. The workshops will also minimise the risk of any misunderstanding of the government's requirements.

The objective is to improve the quality of bid submissions and ultimately deliver better outcomes for the public, through clear communication of the government's requirements to ultimately influence the overall quality of proposals received from short-listed bidders.

Critical to the success of workshops is the level of preparation and willingness to be interactive. An efficient approach is to have the same people attending the workshops from both the bidding party and the Procuring Agency. In certain projects, design may be a key focus of the interactive process, and therefore early scheduling of master planning and design workshops is desirable. An interactive tender process typically involves a series of presentations and workshops. The workshops are resource intensive. Each will normally involve representatives of both the project team and a short-listed bidder. The workshops are held with individual bidders to enable open communication of the individual intellectual property.

An interactive tender process is appropriate where there is a high level of interface risk between the government (as operators) and the private sector infrastructure providers and/or where there is a potential for misinterpretation of the RFP requirements. A good example is in social infrastructure projects, where the infrastructure is generally designed and constructed by the private sector but substantially operated and managed by the public sector. In this instance, it is in both the governments and the bidder's interest to ensure that the proposed design appropriately addresses the functionality requirements.

The RFP should specify the procedures, timetable and protocols for the interactive tender process. Protocols or ground rules for the workshops should be established and provided to short-listed bidders before the workshops. Short-listed bidders should notify government in writing of their acceptance of the procedures and protocols.



8.7.2 Contents of RFP

The RFP is the comprehensive request for proposals from shortlisted firms or consortia. It is the most important communication to bidders of the Sponsor's requirements. The RFP would typically include several sections detailing the essential aspects of the project and the bid, for example:

General instructions to bidders, including:

- Introduction and overview of the RFP itself, detailing its contents and purpose
- Instructions to bidders, including details of the minimum submission requirements, required format for financial bids, and submission procedures
- Details of pre-bid meetings, site visits and data room
- Requirements for Bid Security or contract performance security

Detailed description of the **project scope and required service outputs** based on the specifications developed in the feasibility study, including:

- Output-focused specification
- Site-specific details
- Financing requirements
- Environmental and social safeguard requirements

Detailed description of the **commercial framework** for the project, including:

- Payment mechanisms
- Risk allocation
- Performance standards covering all stages in the life of the PPP
- Penalties for under-performance

Draft Concession Agreement specifying the commercial framework in legal terms, including:

- The intended risk allocation
- Roles, rights, responsibilities and restrictions of all parties
- Key schedules to the Agreement, including
 - Site description
 - Specifications and standards
 - Required tests and inspections, and procedures for testing, independent inspections, and reporting
 - Schedule of user fees/ tariff rates
 - Financial arrangements, such as performance security, escrow accounts
 - Substitution agreement (in case of financial default by the concessionaire)
- Criteria for bid evaluation



The outputs specification should be output-focused, not input-focused. The ability to utilize private-sector expertise and innovation is one of the key benefits of the PPP route. Bidders should be allowed the freedom to propose their own delivery solutions within the broad scope of the identified delivery option (i.e. asset-based, new or existing, etc.)

8.7.3 RFP Evaluation Phase

An evaluation panel will undertake a full assessment of the detailed RFP responses submitted by short-listed bidders against the evaluation criteria and will aim to recommend a preferred bidder.

Bids should be evaluated in line with the evaluation criteria detailed in the RFP and in accordance with the details of the evaluation plan.

Evaluation Team

As with the EOI phase, an evaluation plan should be developed, before the lodgments of RFP responses. Typically at this time a decision is made on the appropriate structure of the evaluation team. It is common for separate teams to be established to assess the service delivery, design solution and commercial elements of proposals. However, for less complex projects it may be appropriate to establish only one evaluation team which will develop a methodology to ensure all elements are properly assessed.

RFP Evaluation

The purpose of the evaluation plan is to provide an evaluation framework that details a clear process for evaluating proposals, the evaluation methodology, the approvals process and the evaluation team structure.

While there are a number of important factors to consider in evaluation, the key focus should be on the value for money provided by the proposal. This should be assessed in terms of both the quantitative and qualitative aspects.

Value for Money

The PSC is used as a quantitative benchmark against which to assess the bids. Proposals are assessed against the PSC to determine whether they offer value for money based on the quantitative analysis. However, this quantitative assessment is only one component of the evaluation process.



Every evaluation will consider a range of quantitative and qualitative factors. The PSC is the key management tool in the quantitative assessment of value for money during the procurement process and the evaluation and comparison of bids. However, a complete value for money assessment requires consideration of qualitative factors along with the quantitative assessment. Therefore, identifying the best outcome requires a flexible valuation process and therefore consideration of the qualitative factors associated with the bidders' proposals that have not been explicitly valued.

8.7.4 Bid Clarifications & presentations

The magnitude of information supplied as part of a proposal is likely to generate a range of issues that require clarification with individual short-listed bidders. These questions or issues should be documented and reviewed by the Project Director before being forwarded to the short-listed bidder. The Short-listed bidder should provide responses in writing. A formal meeting to discuss the responses may be appropriate and this meeting should be confined to the issues already raised. Care needs to be taken not to convey information on any other proposal.

Depending on the nature of the project, it may be appropriate to invite short-listed bidders to make presentations on the key parts of their RFP responses. If this opportunity is made available, it must be extended to all short-listed bidders. Presentations should observe procedures set out in the probity plan and may take place only after all RFP responses have been lodged. This timing also provides the project team with some time to review the RFP responses and identify any issues that they would like short-listed bidders to clarify. The Probity Practitioner should receive advance notice of presentations.

These presentations should cover the key aspects of their RFP response and clarify matters identified in writing by the Project Director. This reduces the risk of misinterpretation and allows the project team to get a better feel for the basis on which the RFP response has been developed and understand specific aspects in more depth before the detailed evaluation process begins.

8.7.5 Technical Proposal Stage

A technical proposal may be sought along with the financial bid to ensure price competition when the number of bidders is expected to be low, and to optimise cost and effort, when the PPP project does not merit a separate stage of request for technical proposal.



The general rule is not to seek any technical proposal from the interested bidder during the bidding stage (also referred to as RFP stage) as it leads to difficulties in evaluating diverse proposals on a common set of parameters. The GOI recommends the public entity to set the technical parameters and to seek only the financial bid at the RFP stage.

However, in the case of exceptionally complex PPP projects where the public entity wants to assure itself that the qualified applicants understand its requirements fully, it may seek technical proposals. Such technical proposals are invited along with the financial bids in two separate covers: the technical proposals are opened and evaluated at an intermediate stage before the opening and evaluation of financial bids. In cases where a technical proposal is sought under the RFP stage, the evaluation of technical proposal must be in the form of a pass or fail test, and only submissions that pass the minimum technical criteria should be invited to submit a bid in the RFP stage.

8.7.6 Evaluation Report

The evaluation process must be the subject of a detailed report(s). The format of these reports should be specified in the evaluation plan which is agreed before proposals are received. Where the evaluation panel is supported by a range of sub-panels, separate evaluation reports would normally be compiled by each sub-panel.

The evaluation process and report should also include a confirmation from the Probity Practitioner that the evaluation process was undertaken in accordance with the evaluation plan and probity plan. This report should confirm that the probity plan has been followed and that all processes have been conducted fairly and equitably. It would be expected that any issue of concern to the Probity Practitioner would have been communicated to the Project Steering Committee at the time the issue arose.

8.8 Selection of Preferred Bidder

Based on the evaluation process, the evaluation panel, in consultation with the Project Steering Committee, should nominate a single preferred bidder as soon as practicable.

If a single preferred bidder cannot be identified after the evaluation phase but the Project Steering Committee believes a value for money solution can be achieved, the Project Steering Committee may agree to an alternative approach to resolve a preferred bidder through:

- short-listing two bidders and undertaking a best and final offer (BAFO); or
- Short-listing two bidders and undertaking a structured negotiation process where a greater level of interaction is required to address the outstanding issues.



8.8.1 Structured Negotiation Process

In certain circumstances it may be preferable to undertake negotiations concurrently with two or more bidders prior to finalizing the evaluation process and selecting a preferred bidder, rather than undertaking a BAFO.

Pre-selection negotiations should be used where the evaluation panel believes that greater interaction than is usually present in a BAFO is required with bidders to develop their proposals to a standard which justifies their appointment as preferred bidder.

These circumstances usually arise when a higher level of interaction than would be present in a BAFO is required with bidders to resolve the outstanding issues. This level of interaction may be required because of the nature of the issue (design, commercial or otherwise) and will require interactive discussion.

To maintain competitive tension and minimise bid costs, pre-selection negotiations should be undertaken within a tightly defined timeframe.

Negotiations should address all areas of deficiency in a bidder's proposal (design, construction, services, financial and contractual).

Given the high level of interaction during the pre-selection negotiations, agencies may elect to negotiate with each bidder on different risk allocation and contractual terms, reflecting the issues which are most important to that bidder. Advice should be sought from the Probity Practitioner on the proposed process.

8.8.2 Best & Final Offer (BAFO)

Ideally, after the outcome of the evaluation process, a preferred bidder is selected. If a single preferred bidder cannot be identified but the Project Steering Committee believes a value for money solution can still be achieved, a BAFO may be used. Providing a value for money outcome can still be achieved, BAFOs may be appropriate to use when:

- costs submitted by all bidders are too high; or
- a preferred bidder cannot be clearly determined based on the evaluation of RFP
- responses against the evaluation criteria in the RFP; or
- All RFP responses are deficient in one or more areas.



To minimise costs to the private sector and government:

- only those bidders believed capable of delivering the desired results should be invited to participate in the BAFO;
- the BAFO should be completed within a short, well-defined period; and
- agencies should request only one BAFO

The bidders selected for the BAFO process should be provided with detailed questions relating to their proposals and/or informed of the deficient parts of their proposal. The bidders are then given the opportunity to revise their bids and eliminate any unacceptable conditions contained in their original proposals. The amended sections are then re-evaluated and rescored according to the evaluation process defined in the RFP.

8.8.3 Government Approval

Government approval may be required before:

- proceeding with a preferred bidder to the final negotiation phase where there is a clear preferred bidder following the evaluation phase; or
- Undertaking a BAFO or structured negotiation phase where it is decided to further shortlist in order to select a preferred bidder.

The application to government for approval should detail key features of the proposal and highlight the extent to which the bids have achieved value for money against the PSC benchmark and the qualitative criteria.

When seeking approval for a BAFO or structured negotiation phase, the application to government should outline a framework for the finalisation of outstanding issues as part of the negotiation phase. Depending on the policies approved by government at the expression of interest and request for proposal stages, specific approval for a BAFO may not be required. However, this should be clarified when considering a BAFO process. Consideration should be given to whether any public announcement is appropriate at this stage or at the conclusion of negotiations.

8.8.4 Procuring Consultants in PPP Project

Apart from the selection of the private partner for a PPP project, the procurement process also needs to be followed for the selection of consultants whose services may be required by the public entity to assist in carrying out project development activities. The selection of consultants with expertise in various fields – technical, commercial, and legal, financial, managerial – may be required at different times on a need basis. The services of a technical consultant and financial consultant are required during the



project feasibility and structuring stage; transaction advisors and legal consultants" services are required during the procurement stage and the services of an independent engineer are required during the implementation and monitoring stage. Accordingly, the procurement process for identifying each of these consultants must be initiated by the public entity at the appropriate stages, depending on need.

Ministry of Finance, Government of India has issued Model RFP for selection of financial consultants and transaction advisors vide Ref:24(32)/PF-II/09 dated March 2010. A "quality cost-based selection" (QCBS) method is set out for selection of consultants in the above mentioned Model RFP for selection of financial consultants and transaction advisors. Under QCBS, weight is given to both technical and financial capacity before arriving at a combined score. The bidder securing the highest combined score is selected as the preferred bidder.





Section – 5

Phase 4 – Contract Management & Monitoring

9 Contract Management & Monitoring

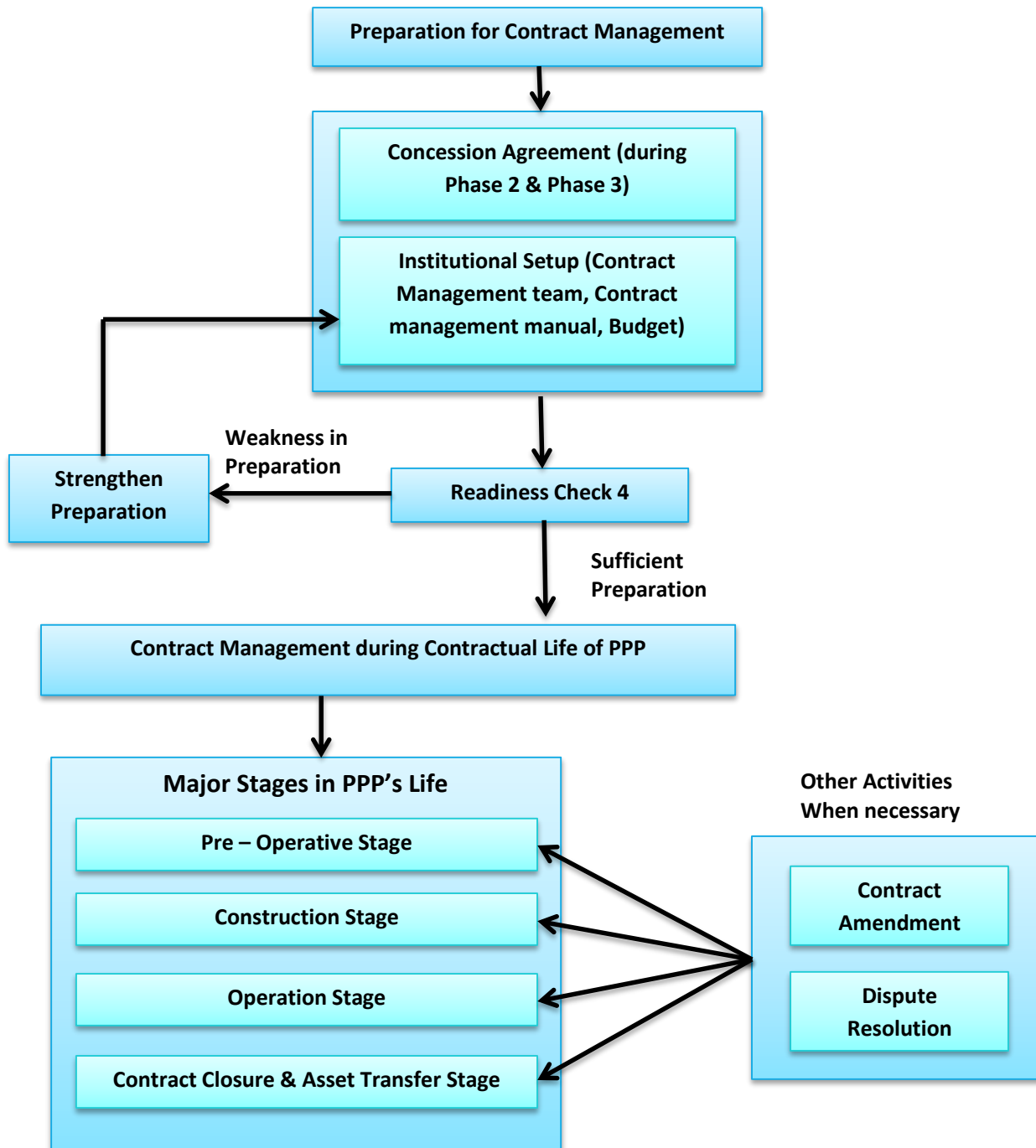


Figure No. 35 – Contract Management & Monitoring (Flow Chart)



9.1 Introduction to Post- Award Contract Management in Infrastructure Sector PPP Concessions

9.1.1 Defining Post – award Contract Management in PPP Project

Public Private Partnerships (PPPs) have gained immense importance in India in the last decade. Much of the India's success in rapid development of its infrastructure capabilities can be attributed to PPP projects undertaken by the Government of India (GOI).

For any PPP project to commence, a Concession Agreement (CA) is signed between two parties i.e. the Authority and the Private Party/ Concessionaire. Each of these parties is assigned a set rights and obligations under the terms of Agreement. Consequently, the parties are entitled to not only avail their rights but also obligated to perform their duties in a time bound manner and jointly accomplish the project objectives.

The Post- Award period in any PPP Project, commences upon Award of Concession/ Project (i.e. from the Date of issue of Letter of Award to the Successful Bidder) and ends after the completion of the Project and expiry/ termination of Concession Agreement.

“Post- Award Contract Management denotes all those activities that are required to be undertaken by the Authority to administer, manage, govern and execute the project from time of Award of project up till its termination.”

Moreover, key objective of PPP Contract Management is to ensure that the PPP project meets its objective on continuous basis, while managing risks proactively and maintaining cordial working relationships and partnerships among various stakeholders.

9.1.2 Understanding Project Lifecycle Stages for Post- Award Contract Management

PPP projects are generally long tenure in nature and undergo a full lifecycle, right from the Authority inviting applications from the interested Private Parties and terminating with its handover to the Authority upon expiry of Concession Period/ termination of Concession Agreement, in case of early terminations. In any typical Highway, Port, Airport, SWM, Power plant PPP concession, there are a number of stages through which a project undergoes.

Among these 5 stages, post-award stage commence upon issuance of Letter of Award (LOA) to the successful bidder, which triggers the signing of Concession Agreement and consequently the Development Period.



Infra Sector Project PPP Lifecycle

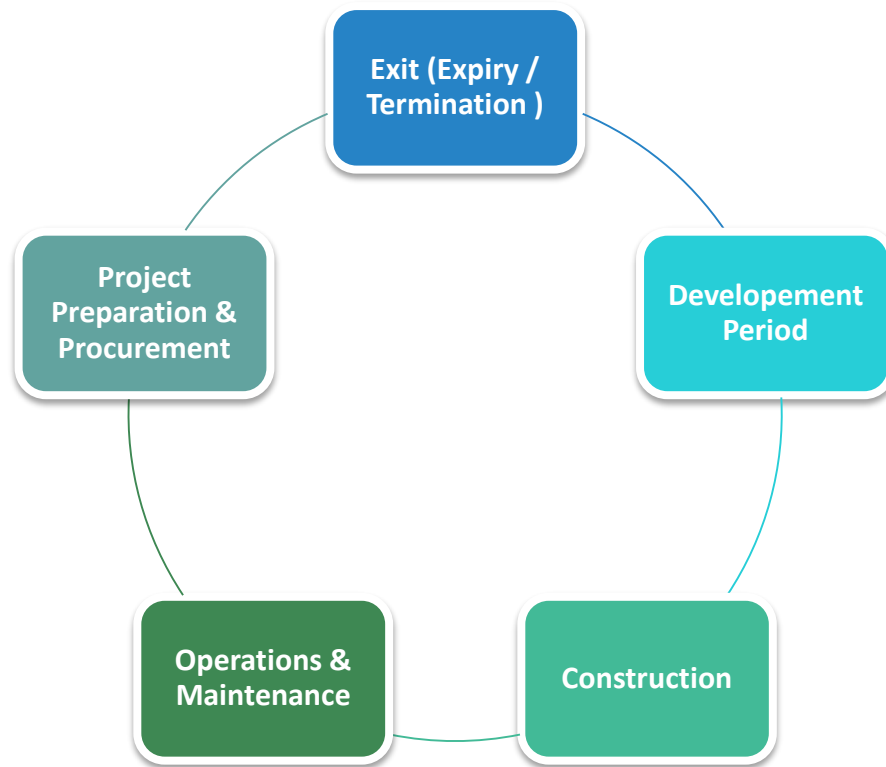


Figure No. 36 – Infra Sector Project PPP Lifecycle

9.1.3 Post Award Stages

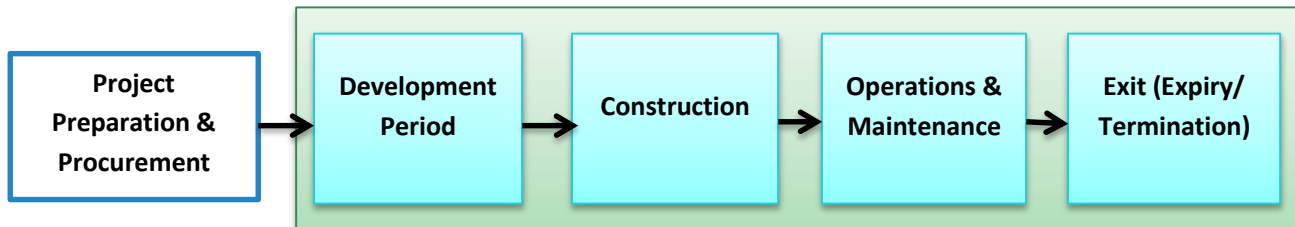


Figure No. 37 – Post Award Stages

All the four stages of Infra Sector project are marked by a timeline comprising a start and an end date. In each of these stages, a number of activities are required to be undertaken by the various officials within the Authority ranging from routine activities, rare event management to dispute management.

Post- Award Contract Management for Infra sector PPP Concessions has been designed to provide guidance on various activities required to be undertaken by officials within the Authority at different stages of project lifecycle. Thus, before execution of any such activities begins, it is important to take note of what all is contained in this manual, to understand criticality of development of this manual and objectives it desires to serve.



1. Need of Post- Award Contract Management Manual for Infra Sector Concessions

It has been observed that after the concession agreement is signed, many issues crop up during the project execution stages which lead to major overhauls and stalling of projects. In such a scenario, contract management in post-award phase of a PPP project becomes equally important as the management of pre-award phase and many a times it becomes more complex because of various reasons like, long time-period, impact of pre-award phase, number of stakeholders etc.

For managing each activity in this phase, it is important that a clear understanding is developed by the Authority responsible for executing and supervising the concession agreement on the Governments' behalf. In India, there exist authorities at National as well as state level. It is important that both these types of Authorities manage the project activities actively so that major issues are avoided and those already existing can be resolved in a timely manner. Moreover, it is also important for each of the Authority members to understand their obligations and duties for each activity and act accordingly.

2. Post- Award Contract Management for Infra Sector PPP Concessions

Post- award contract management commences from appointing a dedicated team within the Authority, having clear understanding of roles and responsibilities to be played in a Infra concession execution. This team further establishes all guiding rules and principles for effective management of the Infra concession through development of a contract management plan. Finally, the team executes all contract management actions including routine as well as rare event management in reference to the plan.

9.2 Post – Award Contract Management Mainly Consist of:

1. Setting up Contract Management Team

- Appointment of Contract Manager
- Identify officials for each of the 3 levels i.e.
 - Operational Level (Field & HQ)**
 - Supervisory Level (Field & HQ)**
 - Decision Making Level**
- Setting up PPP Project Monitoring Unit (PMU) & Project Review Unit (PRU)

2. Development of Contract Management Plan

- Stage wise contract management activities i.e. development, construction, Operations & maintenance & Exit
- Ongoing review plan



3. Managing the Concession

- Stake holder & Lifecycle stage wise Active Post award Contract Management
- Managing rare events
- Managing Issues & Disputes

4. Performance Monitoring & Review

- KPI monitoring – Stakeholder wise
- KPI monitoring – Stage wise

5. Reporting & Escalation Mechanism

- Status reporting & review within Authority
- Escalation mechanism in case of default

6. Risk Management

- Risk mitigation & monitoring

7. Other Important Contract Management Activities

- Contract Management team training & Development
- Relationship Management
- Knowledge Management

9.3 Key Elements of Post- Award Contract Management for Infra Sector Concessions

9.3.1 Setting up Contract Management Team

- Appointment of Contract Manager
- Identify officials for each of the 3 levels i.e.

Operational Level (Field & HQ)

Supervisory Level (Field & HQ)

Decision Making Level

- Setting up PPP Project Monitoring Unit (PMU) & Project Review Unit (PRU)

The contract management team plays an important role in managing the entire gamut of activities in a Infra project execution, seeking cooperation from the concessionaire & other stakeholders and smooth transition & exit formalities. Hence care must be taken to appoint and evaluate each profile based on the required skillset for each role.



The process of setting up a contract management team consists of:

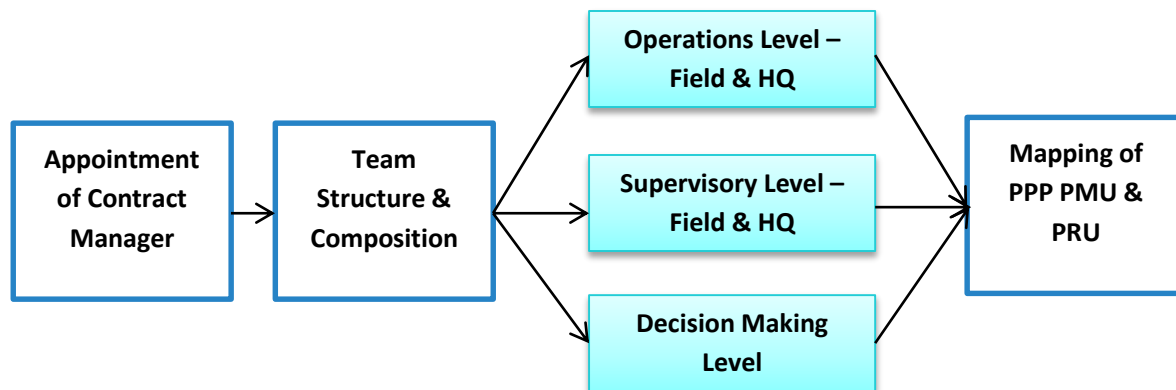


Figure No. 38 – Setting up Contract Management Team

Thus, members of Contract Management Team from each level within the Authority have to be clearly appointed keeping in mind their roles and responsibilities and ensuring that each one of them is apprised of his/ her duties in a clear and transparent manner. The process of identification and setting up of the team begins from appointing the contract manager who plays a critical role in coordinating with each team member and is the overall in- charge of the project.

1. Appointment of Contract Manager

The Contract Manager (Project Director/ Field Officer at Operations Level) has direct responsibility for the project execution and contract administration. He/she is the first point of contact for all project related issues and coordinates with other officials within the Authority's institutional structure.

Since the Contract Manager is appointed during the procurement stage itself, immense care is needed to ensure that the right person is appointed. The key personnel from the Authority's side during the operational phase of the PPP project will be the Contract Manager. Hence, he/ she will represent the Authority's interests and ensure that service quality is in sync with the contract terms.

2. Team Structure & Composition

After the Contract Manager is selected, the next task in the series of Transition planning activities is defining the team requirements, its structure and composition. The Contract Manager must communicate the requirements for the contract management team and its operations to the Chairman at Decision Making Level, along with details of roles and responsibilities of each member of the team. The Chairman may then delegate responsibilities to each Member at Decision Making Level.



The size of the team is required to be decided based on:

- Size of Project
- Complexity of Project Activities
- Risks estimated & their Potential consequences
- Amount of regular duties each of the appointed official is required to fill

Usually, not more than 2-3 representatives from each level, Operations, Supervisory and Decision Making need to be appointed as a part of the team.

Operations Level Authority

- Field Officer – Project Director (PD)/ Divisional general manager (DGM) as Contract Manager
- HQ Officer – General Manager (GM) - Technical

Responsibilities:

- Project Execution duties – all post award phase activities
- Escalates issues to Supervisory Level
- Communicate with Stakeholders & conduct review meetings
- Initiator of dispute resolution
- Execution of Transition & Exit plan

Supervisory Level Authority

- HQ Officer – Senior Manager/ Chief General Manager (CGM) representing Technical, Financial, Legal departments
- Field Officer – Regional office/ State office Manager
- Senior members from other departments

Responsibilities:

- Review all disputes escalated by Operations Level
- Escalation of issues & Disputes to Decision making level
- Co – ordinate with other related parties
- Conduct quarterly review meetings with stakeholders

Decision Making Level Authority

- Government Representatives/ Members
- Chairman
- Board Comprising of Ministry Level executives as well



Responsibilities:

- Approvals in rare event management
- All approvals on financial matters
- All approvals needed by supervisory level
- Decisions on escalated issues & disputes by Supervisory Level

9.3.2 Developing Contract Management Plan

- Stage wise contract management activities i.e. Development, Construction, O & M, Exit
- Ongoing review plan

A Contract Management Plan is necessary for a comprehensive understanding of procedures of approaching each contract management activity in a Infra project concession. It needs to be designed with great care so that all aspects of contract management are covered in it and Authority officials can grasp all its nuances with ease. This makes a contract management plan is one of the most important documents for any Authority to run the project well.

After the Contract management team is appointment, the first step to be undertaken it is the development of the contract management plan. The process includes:

- Need assessment for Contract Management Plan
- As-is analysis for Contract Management System
- Draft the plan
- Develop & implement contract management tools & processes

The main content in any Contract Management Plan includes:

- Stage – wise contract management activities
- Performance & Risk Management
- Managing issues & disputes
- Rare event management

After the contract management plan is designed it is also necessary that it is reviewed and updated from time-to-time to ensure it remains most relevant for implementation. Changes or updates to the project which have a possible impact on contract management (both positive and negative), must be documented as they occur. Appropriate modifications must be made in the contract management plan to reflect the new scenario. Persons or teams responsible for tracking and implementing each change must be identified.



9.4 Managing Infra Project PPP Concession

- Stakeholder & Lifecycle stage-wise Active Post award contract management
- Managing Rare events
- Managing issues & disputes

Managing Infra Project PPP Concessions is a complex task with management of multiple activities throughout the project lifecycle. Also, each official within the Authority needs to undertake a set of tasks and report to the senior member in time in case of any default or discrepancy in the same.

9.4.1 Key Milestones to be achieved in Infra Sector PPP Concessions

Table No. 16 – Key Milestones to be achieved in Infra Sector PPP Concession

Development Period *(From Issuance of Letter of Award up till Appointment date)*

Activities	Key Dates
Signing of Concession Agreement	Within 45 days of issuance of LOA
Submission of Performance Security	Within 180 days of CA signing date
Financial Closure	Within 180 days of CA signing date
Condition Precedent	Within 180 days of CA signing date
Appointment Date	Within 180 days of CA signing date
Handing over entire ROW	Within 90 days of CA signing date

Construction Stage

Activities	Key Dates
Release of Performance Security	After 1 year from Appointed date
Construction Completion Date	Within 192 days from Appointed date or any other day specified in CA
Commercial Operation Date	After Completion of Construction



Operations & Maintenance Stage

Activities	Key Dates
Traffic Sampling for continuous period of 7 days	<ul style="list-style-type: none"> • One year prior to the target date • On the target date • 1 year from Target date
Target Date	After 10 years from Appointment date
Construction of additional Toll way if any	On or after 12 th Anniversary of the Appointment date

Exit Stage

Activities	Key Dates
Termination Notice	At least 180 days before Termination Date
Termination Date	After expiry of Concession Period or any date mutually agreed by both parties
Termination Payment	Within 15 days of termination date

In each of these stages, there are a number of activities which are to be taken up by the Authority officials to ensure that the project is executed smoothly without any major hitches. Apart from the Authority, there will also be representatives from the Concessionaires' SPV and other related parties such as the Independent Engineer. This makes the task of monitoring and reviewing the performance of these parties essential and hence it is very important that the Authority officials have a sound understanding of all activities, timelines and escalation mechanisms to be followed in case of default.

9.5 Key Activities in a Infra Sector Project Concession Lifecycle Stages

During any Infra Sector Project PPP Concession, as mentioned before, Post- Award Activities are spread over from the Development Period up till the Exit stage. There are few activities which are spread across the entire project lifecycle too. Also, for each stage each official within the Authority is assigned a certain set of tasks and he/ she is accountable for them. This section lists down all major activities to be taken by each Authority official for each post- award project lifecycle stage.



9.5.1 Development Period *(from Letter of Award Issuance to Appointment Date)*

This stage leads up to contract execution, starting from the Date of issuance of Letter of Award (LOA) up till the Appointed Date of a Infra project. In the Development stage, the major activities which the Authority is responsible for are:

Activities to be undertaken by Operations Level – HQ Officer

- Signing of Concession Agreement
- Receipt & Verification of Performance Security
- Execution of Various agreement
- Written Consent from Authority before changing Financial Agreement
- Covenant
- Maintenance of Project

Activities to be undertaken by Operations Level – Field Officer

- Handing over ROW
- Approval of general arrangement drawings
- Environmental Clearance
- Utility Shifting
- Utilities, associated roads & trees

Activities to be undertaken by Supervisory Level – Field Technical Officer

- Review monthly status report of ongoing project
- Provide inputs for Project execution
- Report issues to decision making level – Technical officer in 1 day

Activities to be undertaken by Supervisory Level – HQ Finance Officer

- Damage for delay by Authority
- Fulfillment of Concessionaire's Condition Precedent
- Financial Closure
- Condition Precedent & Declaration of Appointed date

Activities to be undertaken by Supervisory Level – HQ Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for Project execution
- Report issues to Decision making level – Technical officer in 1 day



Activities to be undertaken by Decision Making Level – Technical Officer

- Review monthly status report of ongoing project
- Provide inputs for Project Execution
- Report issues to Board / Chairman in 5 days

Activities to be undertaken by Decision Making Level – Finance Officer

- Review monthly status report of ongoing project
- Provide inputs for Project Execution
- Report issues to Board / Chairman in 5 days

In each of these activities, both the Authority and the Concessionaire need to adhere to timelines and work in tandem so that all conditions before construction are met on time. It has often been observed in Indian projects that delays in acquisition of land and meeting other condition precedents form the root cause of all the further delays in timely completion of projects causing user inconvenience. If such issues are proactively managed before the signing of Concession Agreement and clauses for any delay are added as a part of the Concession Agreement, such issues can be avoided to a great extent.

9.5.2 Construction Stage

The construction stage begins from the time construction starts on the date of commencement of construction through the commissioning process to the completion of construction as specified in the terms and conditions of concession agreement. The activities over which the Authority has to observe control over in the Construction Stage are:

Activities to be undertaken by Operations Level – Field Officer

- Handing over ROW
- Construction of Project
- Milestone
- Monitoring of Construction
- Completion Certificate

Activities to be undertaken by Operations Level – HQ Officer

- Release of Performance Security
- Release of Grant



Activities to be undertaken by Supervisory Level – Field Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for Project Execution
- Report issues to Decision Making Level – Technical officer in 1 day

Activities to be undertaken by Supervisory Level – HQ Technical Officer

- Review monthly status report of ongoing project
- Provide inputs for Project execution
- Report issues to Decision Making Level – Technical Officer in 1 day

Activities to be undertaken by Decision Making Level – Technical Officer

- Review monthly status report of ongoing project
- Provide inputs for Project execution
- Report issues to Board/ Chairman in 5 days of default, if any

In all these activities, it is very important that the Authority oversees the entire construction process with detail so that responsibility shirking or adherence to quality construction standards by the Concessionaire is maintained. The Independent Engineer needs to monitor the construction activities on regular basis and submit progress report to the field officers on time so that necessary actions can be taken to prevent major delays. Completion certificate should be issued only after satisfactory work is observed during inspection.

9.5.3 Operations & Maintenance Stage

This stage extends for the longest portion of the contract life-cycle. It covers the provision and use of the contracted services during the remaining life of the concession. During the Operations & Maintenance stage, the following set of activities requires active supervision for the Authority officials:

Activities to be undertaken by Operations Level – HQ Officer

- User fee
- Revenue Shortfall Loan
- Effect of Variation in Traffic Growth Rate
- Construction of additional tollway
- Insurance



Activities to be undertaken by Operations Level – Field Officer

- Replacement of Operations & maintenance Contractor
- Construction of Service lane
- Operations & maintenance activities
- Safety requirements
- Monitoring of Operations & Maintenance activities
- Traffic regulations
- Traffic Census & estimations

Activities to be undertaken by Supervisory Level – HQ Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Decision Making Level – Technical officer in 1 day

Activities to be undertaken by Supervisory Level – Field Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Decision Making Level – Technical officer in 1 day

Activities to be undertaken by Decision Making Level – Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Decision Making Level – Technical officer in 1 day

The operations & maintenance stage is extremely critical for any project as it forms the longest period of any concession period and is the stage when the users of the infra facility actually experience the convenience or the inconvenience due the newly constructed asset. The Authority should exercise highly précised supervision and control over these activities and take strict actions against any defaults by the Concessionaire. In case the actual traffic is observed to be higher than the existing capacity, it is important that timely construction of new toll ways and up gradation of existing ones in line with new technology is done so that users are not inconvenienced due to it. Also the toll charges need to be set in line with the existing market conditions.



9.5.4 Exit Stage

Activities to be undertaken by Operations Level – HQ Officer

- Divestment of Rights & Interests

Activities to be undertaken by Operations Level – Technical Officer

- Liabilities of Defects after Termination

Activities to be undertaken by Supervisory Level – HQ Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Decision Making Level – Technical officer in 1 day

Activities to be undertaken by Supervisory Level – Field Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Decision Making Level – Technical officer in 1 day

Activities to be undertaken by Decision Making Level – Technical Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Board/ Chairman in 5 days of default, if any

At the time of exit, there are two things Authority needs to ensure, smooth asset handover and service continuity. It is important that the “No Objection Certificate” is issued only when the project asset is handed over in good condition by the Concessionaire to the Authority and due compensation for all defects has been accounted for. There are also situations when an untimely termination of a project might take place. In such a scenario, it is important that the compensation to be paid by either party is calculated and received on time and a new partner for the pending completion is sought by the Authority.



9.5.5 Contract management activities throughout the Project lifecycle

There are few activities that include all those tasks to be taken up by the Authority officials and the Concessionaire's team throughout the project execution lifecycle. Such activities include:

Activities to be undertaken by Operations Level – HQ Officer

- Independent Engineer
- Disclosure
- Addressing Public Grievances

Activities to be undertaken by Supervisory Level – Finance Officer

- Account & Audit
- Appointment of Auditor

Activities to be undertaken by Decision Making Level – HQ Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Board/ Chairman in 5 days of default, if any

Activities to be undertaken by Decision Making Level – Finance Officer

- Review monthly status report of ongoing projects
- Provide inputs for project execution
- Report issue to Board/ Chairman in 5 days of default, if any

It is important that such activities are managed well as they have a direct impact on the entire project lifecycle. It must be ensured rare issues are given immediate attention and priority as they can have dire consequences in case not resolved timely. Also, not addressing public grievances in a timely manner may lead to huge damage on the Concessionaire's as well as Govt.'s reputation. Hence, immense care must be taken to avoid these issues becoming a dispute.



9.5.6 Performance Monitoring & Review

- KPI Monitoring – Stakeholder wise
- KPI Monitoring – Stage wise

Performance Monitoring & Review is also an important activity from Contract management perspective as it establishes the accountability among stakeholders and increases transparency.

All major stakeholders in PPP concession include:

- Concessionaire
- Independent Engineer
- Safety Engineer
- Financial Consultant

9.5.7 Reporting & Escalation Mechanism

- Reporting & Review within authority
- Escalation mechanism in cases of default

For each contract management activity, reporting forms an important part as review of current status and performance of a project is essential for the project execution to progress well as per the timelines. In case of any default, the relevant Authority official needs to escalate it to the appropriate senior level Authority in time for timely action and resolution. Thus, for such reporting, registers and status reports need to be maintained on regular basis.

9.5.8 Risk Management

- Risk mitigation & monitoring

Any Infra Project faces many potential risks. It is important for the authority to proactively and actively manage these risks. The process of risk management involves identification, mitigation and monitoring of risks. It needs to be ensured that the threshold levels are never breached and sound mitigation and management strategies are developed to prevent dire consequences.



9.5.9 Other Important Contract Management Activities

- Contract Management team Training & Development
- Relationship Management – Forums for relationship management
- Knowledge Management

Apart from the activities mentioned above, there are other important activities from contract management perspective, which include training the Authority officials from time to time to keep their skill set updated for effective contract management, establishing sound relationships with the stakeholders in a project and establishing Knowledge Management policies which provide disclosure policies, knowledge management systems and list of registers to be maintained.

9.6 Contract Management Activities in Development Stage (from Letter of Award issuance till Appointed Date)

For the purpose of contract management, Development Period commences from the date of issuance of Letter of Award (LOA) and continues till the declaration of Appointed Date (generally the date from which the concession period starts). During the Development Period various key activities are undertaken within the Authority for which different level of officials are made responsible as per the Project Contract Management Plan.

9.6.1 Activities undertaken by Operation Level (HQ)

1. Signing of the Concession Agreement

The various activities need to undertake before Signing of the Concession Agreement. Some of the key activities need to be undertaken by Operation Level (HQ) in this regard are provided below:

- Issue a reminder letter to Successful Bidder, in case the Successful Bidder does not submit the LOA acceptance Letter within the stipulated time line as specified in the Bidding Documents.
- Initiate the forces for forfeiture of Bid Security submitted by the Successful Bidder in case of default on acceptance of LOA by Successful Bidder related to signing of the Concession Agreement.



- Seek the submission of draft SPV formation documents from the Successful Bidder. To seek comments on the draft SPV formation documents (as submitted by Successful Bidder) from legal/ financial Consultant and communicate the same to the Successful Bidder.
- Receive the final SPV formation documents along with certificate of incorporation and initiate the process for execution of the Concession Agreement.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

2. Receipt & Verification of Performance Activity

Once, the Concessionaire submit the Performance Security in form of the Bank Guarantee, the Authority needs to verify the same from the Bank from which the Bank Guarantee is issued. Some of the key activities undertaken by the Operation Level (HQ) in this regard are provided below:

- Verify the Bank Guarantee from issuing bank branch and its supervisory branch.
- After verification of Bank Guarantee, issue an acknowledgement to the Concessionaire
- In case of non-submission of Bank Guarantee within a stipulated time line as mentioned in the Concession Agreement, proceed for encashment of Bid Security
- Report to supervisor level (HQ) and decision making level within one day of default, if any

3. Execution of Various Agreements

Prior to declaration of Appointed Date various Agreements (i.e. Escrow Agreement, Substitution Agreement etc.) need to be executed between the Concessionaire, Authority and Other Stakeholders such as Lenders, Escrow Agent etc. Such Agreements are to be signed by the Operation Level (HQ). Some of the key activities involved in this process are provided below:

- In case the draft Agreements submitted by Concessionaire have not been reviewed by other department or legal / financial consultant, seek the opinion from legal/financial consultant prior to execution of any Agreement.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any



4. Written Consent from the Authority before making any Change in the Financing Agreement:

The Concessionaire needs to take a written consent from the Authority before making any addition, replacement or amendments to any of the Financing Agreements. Some of the key activities undertaken by the Operation Level (HQ) in this regard are provided below:

- To seek comments on Financing Agreements (as submitted by the Concessionaire) from legal/ financial Consultant and communicate the same to the Concessionaire.
- After verification of the revised documents, issue an approval letter for the changes requested by Concessionaire.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

5. Covenant

As per the provision of the Concession Agreement, Project Agreements contains provisions that entitle the Authority to step into such agreement, in its sole discretion, in substitution of the Concessionaire in the event of Termination or Suspension. Some of the key activities undertaken by Operation Level (HQ) in the event of Termination or Suspension are:

- To evaluate the project with respect to the substitution
- Secure necessary approvals
- Implement the right of substitution
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

6. Maintenance of Infra Project

As per the provision of the Concession Agreement, the Authority shall maintain the Project as compared to its condition 7 days prior to the last date for submission of the Bid. Some of the key activities undertaken by the Operation Level (HQ) in this regard are provided below:

- To ask for the financial quote for maintaining the project from various contractors through open tender process
- Review the financial quotations received from the interested parties and finalize the same.



- If maintenance is done by the Concessionaire, request the Independent Engineer to determine the cost of the same.
- Reimburse/process the cost determined by the Independent Engineer to the Concessionaire
- Report to the supervisor level (HQ) & decision making level within one days of default, if any

7. Appointment of Safety Consultant

As per the provision of the Concession Agreement, the Authority to appoint one or more Safety Consultant for carrying out safety audit at the design stage of the Project Within 90 days of signing of Agreement. Some of the key activities undertaken by the Operation Level (HQ) in this regard are provided below:

- To call the proposal from various agency by open tender process
- To evaluate the proposals and finalise the selection of Safety Consultant
- Report to the supervisor level (HQ) and decision making level

9.6.2 Activities undertaken by Operation Level (Field):

1. Handing over the Right of Way (ROW)

As per the provision of the Concession Agreement the Authority has to provide at least 80% of ROW before the declaration of Appointed Date. During the Land Acquisition process various officials/ agencies are involved such as Competent Authority of Land Acquisition (CALA), Revenue Department (State Govt.), dedicated officer for Land Acquisition within the Authority etc. Some of the key activities to be undertaken by the Operation Level (field) in the process of making sure the at least 80% of ROW, are provided below:

- To make sure the availability of at least 80% Right of Way (ROW) before the Appointed Date
- Coordination with Competent Authority of Land Acquisition (CALA), Revenue Department (State) etc.
- Report to the supervisor (field) level & decision making level within 5 days of default, if any



2. Approval of General Arrangement Drawings (GAD)

As per the provision of the Concession Agreement the Authority to procure approval of the Railway authorities in the form of a general arrangement drawing to construct road over bridges / under bridges at level crossings on the Project before the declaration of Appointed Date. Some of the key activities undertaken by the Operation Level (field) in this regard are provided below:

- To procure the approval of the Railway authorities in the form of a general arrangement drawing to construct road over bridges / under bridges at level crossings on the Project
- Request to the Railway Authority for GAD approval
- To send a notice to the Concessionaire to extend the GAD approval by 6 months, if required
- Report to the supervisor level (field) & decision making level within 5 days of default, if any

3. Environmental Clearance

As per the provision of the Concession Agreement, the Authority has to procure all Applicable Permits relating to environmental protection and conservation of the Site. Some of the key activities undertaken by the Operation Level (field) in this regard are provided below:

- To procure all Applicable Permits relating to environmental protection and conservation of the Site
- To send a notice to the Concessionaire to extend the Applicable Permits by 6 months, if required
- Request to the competent authority for environmental clearance approval
- Report to the supervisor level (field) & decision making level within 5 days of default, if any

4. Utility Shifting

As per the provision of the Concession Agreement, the Authority has to make the appropriate arrangement for Utility Shifting. Some of the key activities undertaken by the Operation Level (field) in this regard are provided below:

- To make the appropriate arrangement of Utility shifting
- To ask for the financial quotation for utility shifting from interested parties through open tender
- To seek necessary financial approval based on the sanctioned value
- Report to the supervisor level (field) and decision making level



5. Utilities, Associated Roads & Trees

As per the provision of the Concession Agreement, the Authority to provide adequate assistance, right of way for diversions if any and bear the cost as applicable in the Concession Agreement etc. during the development of the project. Some of the key activities undertaken by the Operation Level (field) in this regard is provided below:

- To make the appropriate arrangement, in case of any written request from the Concessionaire
- To Process the invoices for reimbursement of cost, which is required to be borne by the Authority, as per the terms of the Concession Agreement
- To assist the Concessionaire in obtaining the Applicable Permits
- To seek necessary financial approval based on the sanctioned value
- Report to the supervisor level (field) & decision making level within one day of default, if any

6. Obligations related to Project Agreements

As per the provision of the Concession Agreement, the Concessionaire to submit the drafts of all Project Agreements, or any amendments or replacements thereto to the Authority for its review and comments. The Responsibilities of the Operation Level (field) in this regard is provided below:

- To issue an acknowledgement to the Concessionaire
- To review the documents submitted by the Concessionaire and suggest the changes, if any
- Seek the response of above and acknowledge the revised communication
- Report to the supervisor level (field) and decision making level within one day default, if any

9.6.3 **Activities undertaken by Supervisory Level (HQ) - Finance:**

1. Damage for delay by the Authority:

As per the provision of the Concession Agreement the Damage for delay has to be paid by the Authority in case of delay in fulfilling the Condition Precedent as specified in the Concession Period. Although, various level of official are involved in the process of fulfilling the Condition Precedent. However, damage for delay is processed by Supervisory Level (HQ) – Finance. Some of the key activities undertaken by the Supervisory Level (HQ) - Finance in this regard are provided below:



- To review the request received from the Concessionaire for Damage for delay by the Authority
- To negotiate with the Concessionaire for the Damage payment
- To Initiate the Damage claim process for Delays
- Report and escalate to the decision making level within one day of default, if any

2. Condition Precedent - Concessionaire

In the process of fulfilling the Condition Precedent the Concessionaire does the Communication at various levels within the Authority. Some of the key activities undertaken by the Supervisory Level (HQ) - Finance in this regard are provided below:

- To seek comments on the draft Escrow & Substitution Agreement (as submitted by Concessionaire) from legal/ financial Consultant and communicate the same to the Concessionaire.
- To issue a letter to the Concessionaire regarding approval / acceptance of the Escrow & Substitution Agreement
- To review the supporting documents of the Applicable permits and representations & warranties as submitted by Concessionaire.
- Issue an acknowledgement letter the Concessionaire after receiving any documents with respect to the Condition Precedent.
- Report to the decision making level within one day of default, if any

3. Financial Closure

Prior to declaration of the Appointed Date the Concessionaire needs to achieve the Financial Closure. Declaration of Financial Closure is also the part of the Condition Precedent of the Concessionaire. Some of the key activities undertaken by the Supervisory Level (HQ) - Finance in this regard are provided below:

- To seek comments on the Financial Closure documents (as submitted by Concessionaire) from legal/ financial Consultant and communicate the same to the Concessionaire.
- To issue a letter to the Concessionaire regarding approval / acceptance of the Financing Agreement
- In case of Delay in Financial Close, Initiate the Damage claim for Delays
- In case failure to achieve Financial Close, initiate the termination process as per the Concession Agreement.
- To encash the Bid Security and appropriate the proceeds thereof as Damages ☐ Report to the decision making level within one day of default, if any



4. Condition Precedent and declaration of Appointed Date

After fulfilling the Condition Precedent by each party (i.e. Authority and Concessionaire) the Authority may declare the Appointed Date. Some of the key activities undertaken by the Supervisory Level (HQ) - Finance in this regard are provided below:

- To inform/ notify in writing to Concessionaire at least once in a month about the status / progress of the Condition Precedent for which Authority is responsible
- To issue acknowledgement to Concessionaire after receiving the status of Condition Precedent from the Concessionaire
- To seek comments on the Condition Precedent documents (as submitted by Concessionaire) from legal/ financial Consultant and communicate the same to the Concessionaire.
- To issue a letter to the Concessionaire regarding approval / acceptance of the Financing Agreement
- If both the parties are fulfilling all of the Condition Precedents, declare the Appointed Date
- In case of delay, initiate the Damage claim for Delays and appropriate of Performance Security
- In case Concessionaire fails to cure its default within the cure period, initiate the termination process as further action as per the Concession Agreement.
- Report to the decision making level within one day of default, if any

9.6.4 **Activities undertaken by Supervisory Level (HQ) - Technical**

1. The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any



9.6.5 Activities undertaken by Supervisory Level (field) - Technical

The Supervisory Level (field) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (field).
- To review all the files/documents forwarded by Operation Level (field)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.6.6 Activities undertaken by Decision Making Level (Technical)

Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (HQ) and Supervisory Level (Field).
- To review all the files/documents forwarded by Supervisory Level (HQ) and Supervisory Level (Field).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.6.7 Activities undertaken by Decision Making Level (Finance)

The Decision making Level (Finance) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (Finance)
- To review all the files/documents forwarded by Supervisory Level (Finance).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any



9.7 Contract Management Activities in Construction stage (from Appointed Date till declaration of COD)

For the purpose of contract management, Construction Period commences from the Appointed Date and continues till the Completion of the Construction (generally the date from which the Commercial Operation Date (COD) starts). During the Construction Period various key activities are undertaken within the Authority for which different level of officials are made responsible as per the Project Contract Management Plan.

9.7.1 Activities undertaken by Operation Level (Head Quarters or HQ):

1. Release of Performance Security

Before releasing the Performance Security some key aspects need to be looked into. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Verify the documentary evidence submitted by Concessionaire with respect to the capital expenditure in the Project.
- If the Concessionaire is fulfilling the required criteria as per the Concession Agreement, Authority may release the Performance Security.
- Report to the supervisor level (HQ) and decision making level within one day of default, if any

2. Release of Grant

Highest Premium or Lowest Grant is the bidding parameter for the selection of Successful Bidder. In case of the Successful Bidder is quoted the Grant, the Authority will disburse the Grant during the Construction period as per the provisions of the Concession Agreement. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Review the request received from the Concessionaire for disbursement of grant
- Initiate the grant disbursement process.
- Circulate/ forward correspondence to the related parties
- Report to the supervisor level (field) and decision making level within one day of default, if any



9.7.2 Activities undertaken by Operation Level (Field)

During the Construction Period, the Operation Level (field) would be responsible for following key activities:

1. Handing over of Right of Way (ROW)

As per the Concession Agreement, the Authority has to fulfill some key obligations during construction period. Handing over of ROW is one of those key obligations. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Review the request received from the Concessionaire with respect to remaining ROW, if any
- Coordinate with the line department to make sure the availability of ROW.
- Make sure 100% of ROW is provided within 90 days of Appointed Date
- In case the Authority does not hand over the 100% of ROW within 90 days of Appointed Date, Operation Level (field) would calculate the damages as per the provisions of the Concession Agreement.
- If Concessionaire requests for payment of damages, Operation Level (field) officer would process it.
- Report to the supervisor level (field) & decision making level within one day of default, if any

2. Construction of Infra Project

As per the provisions of the Concession Agreement, the Concessionaire and Independent Engineer submit drawings and all related reports to the Authority. The Authority has the right but not the obligation to review such reports. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Review the drawings and reports submitted by the Concessionaire and Independent Engineer.
- Provide the comments on such reports to the Concessionaire / Independent Engineer, if any
- Report to the supervisor level (field) & decision making level within one day of default, if any



3. Milestones

As per provisions of the Concession Agreement, the Concessionaire is to meet the project milestone as specified in the Schedule G of the Concession Agreement. In case of any delay the Authority is to respond as per the provisions of the Concession Agreement. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Review the project progress report submitted by Independent Engineer.
- In case the Concessionaire does not meet the milestone within specified period. Operation Level (field) to issue a notice to the Concessionaire is to pay damages for delay.
- Calculate damages as per the provisions of the Concession Agreement.
- In case the Concessionaire does not complete the Project within 270 days from schedule completion date, the Operation Level (field) may initiate the Termination process.
- Report to the supervisory level (field) & decision making level within one day of default, if any

4. Monitoring of Construction

Some of the key activities undertaken by Operation Level (field) for monitoring of Construction are provided below:

- Process the reimbursement of the half of the cost incurred in the Test as certified by the Independent Engineer.
- In case Independent Engineer recommend to the Authority for Suspension of any construction work, Operation Level (field) may issue a notice to the Concessionaire is to suspend the construction work.
- After remedial measures from Concessionaire, and the independent Engineer recommendation the Operation Level (field) may process to revoke such suspension or instruct the Concessionaire is to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Authority.
- Report to the supervisor level (field) & decision making level within one day of default, if any



5. Completion Certificate

Some of the key activities undertaken by Operation Level (field) for monitoring of Construction are provided below:

- During the Test for issuing the Completion certificate, the Operation Level (field) may designate Authority's representative to witness the Test.
- In case the Concessionaire does not complete the Punch list, Operation Level (field) may process for the recovery of damages from the Performance Security as specified in the Concession Agreement.
- In case the Concessionaire does not complete the Punch list items within the specified period from the start of the payment of damages, Operation Level (field) may process the Termination of the Agreement.
- Review the report submitted by Independent Engineer (in case Infra Project or any part thereof does not conform to the provisions of the Agreement).
- Process the own inspection based on the report submitted by Independent Engineer.
- In case of any deficiency in the Infra Project, Operation Level (field) may notify to the Concessionaire
- Report to the supervisor level (field) & decision making level within one day of default, if any

9.7.3 **Activities undertaken by Supervisory Level (HQ) - Technical**

The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report & escalate to the decision making level (Technical) within 1 day of default, if any

9.7.4 **Activities undertaken by Supervisory Level (field) - Technical:**

The Supervisory Level (field) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (field).
- To review all the files/documents forwarded by Operation Level (field)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any



9.7.5 Activities undertaken by Decision making Level (Technical):

The Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (HQ) and Supervisory Level (Field).
- To review all the files/documents forwarded by Supervisory Level (HQ) and Supervisory Level (Field).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.8 Contract Management Activities in Operations & Maintenance Period (From Commercial Operation Date (COD) till end of the Concession)

For the purpose of contract management, Operation & Maintenance Period commences from the Commercial Operation Date (COD) and continues till the Completion of the Concession Period. During the Operation & Maintenance Period various key activities are undertaken within the Authority for which different level of officials are made responsible as per the Project Contract Management Plan.

9.8.1 Activities undertaken by Operation Level (HQ)

During the Operation & Maintenance Period, the Operation Level (HQ) would be responsible for following key activities:

1. User Fee

As per the provisions of the Concession Agreement, the concerned ministry would issue an official fee notification. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Initiate the process for issuance of fee notification
- Report to the supervisor level (HQ) & decision making level within one day of default, if any



2. Revenue Shortfall Loan

As per the provisions of the Concession Agreement, the Authority may provide a Revenue Shortfall Loan to the Concessionaire. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Review the request received from the Concessionaire regarding Revenue Shortfall Loan.
- Process for the release of the loan, if required
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

3. Effect of Variation in Traffic growth rate

As per the provisions of the Concession Agreement, the Authority may increase or decrease the Concession period based on the variation in traffic growth rate. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Arrange for traffic survey for continuous period of 7 days.
- Start the process for engagement of traffic survey consultant through open bidding process.
- Based on the traffic survey report, decrease or increase the Concession period, as required
- After receiving the notice from the Concessionaire as per the provisions of the Concession Agreement, the Operation Level (HQ) may waive the reduction in Concession Period and recover the Concession Fee.
- If the average daily traffic of PCUs exceeds the designed capacity of the Project in any accounting year, the Operation Level (HQ) may begin the process for the preparation of a DPR to augment the capacity of the Project.
- Operation Level (HQ) may engage a DPR consultant through competitive bidding process for preparation of DPR
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

4. Construction of Additional Tollway

As per the provisions of the Concession Agreement, if the additional toll way would be opened during the Concession Period, the Concession period may be adjusted as per the provisions of the Concession Agreement provisions of the Concession Agreement. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:



- Send a notice to the Concessionaire prior to opening of additional toll way as per the provisions of the Concession Agreement provisions of the Concession Agreement. ☐ Process for the compensation to the Concessionaire, if any
- Ensure that the applicable toll rate on additional toll way is as per the provisions of the Concession Agreement provisions of the Concession Agreement.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

9.8.2 Activities undertaken by Operation Level (field):

During the Operation & Maintenance Period, the Operation Level (field) would be responsible for following key activities:

1. Replacement of O & M Contractor

As per the provisions of the Concession Agreement, prior approval from the Authority is required for Selection or replacement of an O&M Contractor and execution of the O&M Contract. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Review the documents submitted by Concessionaire ☐ Convey its decision without any delay
- Report to the supervisor level (field) & decision making level within one day of default, if any

2. Construction of Service Road

The Authority can at any time after the 8th anniversary of the Appointed Date, construct at its own cost, a service road. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Initiate the process for the construction of the Service Road
- Send the requirements and related information to Headquarter level
- Report to the supervisor level (field) and decision making level

3. Operations & Maintenance

As per the provisions of the Concession Agreement, the Concessionaire is responsible for the Operation & Maintenance of the Project. In case Concessionaire does not meet such requirements, the Authority may collect the damages from the Concessionaire based on the Independent Engineer report in this regard. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:



- Review the Inspection report and estimated damages submitted by Independent Engineer.
- In case the Concessionaire does not commence the remedial measures within the specified period, the Operation Level (field) to initiate the process to undertake the remedial measures by the Authority.
- The cost of the remedial measures along with damages as specified in the Concession Agreement would be recovered from the Escrow Account.
- Ensure that no barriers or diversions are erected or placed ☐ Report to the supervisor level (field) & decision making level within one day of default, if any

4. Safety Requirement

As per the provisions of the Concession Agreement, Safety Consultant submits the safety audit report to the Authority and Authority take further action based on such report. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Forward one copy of the Audit report to the Concessionaire and one copy to the Independent Engineer
- Process the cost & expenses on works and services not covered, which are to be borne from out of dedicated Safety Fund owned and operated by the Authority
- Report to the supervisor level (field) & decision making level within one day of default, if any

5. Monitoring of Operations & Maintenance

As per the provisions of the Concession Agreement, the Independent Engineer monitors the Operation & Maintenance of Project. In case Concessionaire does not maintain the project as per the provisions of the Concession Agreement, the Authority may recover the damages from the Concessionaire based on the Independent Engineer report in this regard. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Process the reimbursement of cost incurred by Concessionaire for Test as per the provisions of the Concession Agreement and to the extent certified by Independent Engineer.
- Process to recover the payments for damages from the Concessionaire
- Report to the supervisor level (field) & decision making level within one day of default, if any



6. Facility Usage Census & Sampling

Time-to-time the Authority may undertake a detailed traffic survey. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Initiate the process of detailed traffic survey or ask the Concessionaire to do the same
- Inspect relevant records submitted by the Concessionaire
- Report to the supervisor level (field) & decision making level within one day of default, if any

9.8.3 **Activities undertaken by Supervisory Level (HQ) - Technical**

The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.8.4 **Activities undertaken by Supervisory Level (field) - Technical:**

The Supervisory Level (field) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (field).
- To review all the files/documents forwarded by Operation Level (field)
- To provide the required inputs in the project execution
- Report & escalate to the decision making level (Technical) within 1 day of default, if any

9.8.5 **Activities undertaken by Decision Making Level (Technical)**

The Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (HQ) and Supervisory Level (Field).



- To review all the files/documents forwarded by Supervisory Level (HQ) and Supervisory Level (Field).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.9 Contract Management Activities during Exit Stage (From Termination Date till Final settlement)

For the purpose of contract management, Exit Stage commences from the Termination Date and continues till the final settlement. During the Exit stage various key activities are undertaken within the Authority for which different level of officials are made responsible as per the Project Contract Management Plan.

Also, any concession may end either at the natural end of the contract period or on mid-way on account of certain events. On such termination, the concessionaire is responsible for completing contract responsibilities and handing over the Assets back to the Authority. The Authority, on the other hand, is responsible for ensuring service continuity for Users. This section outlines plans to manage asset handover and service continuity.

9.9.1 Activities undertaken by Operation Level (Head Quarters or HQ):

During the Construction Period, the Operation Level (HQ) would be responsible for following key activities:

Divestment of Right & Interest

For divestment of right and interest, following key activities are to be undertaken by the Operation Level (HQ):

- Make sure that both parties are meeting their respective obligations.
- Make sure the smooth transfer of the Project in accordance with the provisions of this Agreement so as to protect safety of and avoid undue delay or inconvenience to the Users.
- After fulfillment of all Divestment Requirements, the Operation Level (HQ) may issue Vesting Certificate.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any



9.9.2 Activities undertaken by Operation Level (field)

During the Construction Period, the Operation Level (field) would be responsible for following key activities:

1. Defect Liability after Termination

Concessionaire is responsible for all defects and deficiencies in the Project for a specified period after Termination. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

- Make sure that the Project is rectified and repaired for a specified period after Termination
- In case the Concessionaire fails to rectify, the Operation Level (field) may make the arrangement for rectify the same.
- Operation Level (field) may process for recovery of repair cost from the Escrow Account or Bank Guarantee as applicable as per the Concession Agreement.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

9.9.3 Activities undertaken by Supervisory Level (HQ) - Technical

The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.9.4 Activities undertaken by Supervisory Level (field) - Technical

The Supervisory Level (field) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (field).
- To review all the files/documents forwarded by Operation Level (field)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any



9.9.5 Activities undertaken by Decision making Level (Technical)

The Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (HQ) and Supervisory Level (Field).
- To review all the files/documents forwarded by Supervisory Level (HQ) and Supervisory Level (Field).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.9.6 Asset Handover Plan

For BOT contracts, assets must be transferred back to the Authority at contract termination. The Authority must plan for the same sufficiently in advance, in coordination with the Concessionaire and Independent Engineer, to ensure the handover process is completed by the contract termination date. The table below presents an indicative asset handover plan. This must incorporate any additional termination requirements specified by the Concession agreement or mutually agreed to by the parties.

Table No. 17 – Asset Handover Plan

Activity	Responsible Person/ Team	Supervisor Person/ Team	Deadline
Major maintenance/ replacement required	Concessionaire	Operational Level Authority, Independent Engineer	As per contractually agreed timelines
Finalizing Asset Register	Concessionaire	Operational Level Authority, Independent Engineer	1 year before Contract Termination
Testing & Inspection	Independent Engineer	Operational Level Authority	90 days before Contract termination
Certification	Independent Engineer	Operational Level Authority	90 days before Contract termination
Handover or operations record	Operations Level Authority	N/A	30 days before Contract termination
Legal Transfer of Asset Ownership	Legal Consultant	Operations Level & Supervisory Level Authority	0 - 30 days after Contract termination



9.9.7 Service Continuity Plan

Planning for service continuity involves a two-step process:

1. Step 1 - Assessing ability of existing Infra facility to serve market requirements

The condition of the existing highway and the market requirements need to be ascertained and compared to judge whether the existing highway can fulfill current market needs.

Table No. 18 – Service Continuity Plan (1)

Category	Factor	Unit	Value/ Remark (Illustrative)
Condition of Infra Facility	Residual Life of pavement	Years	10 years
	Residual life of key structures	Years	6 years
	Quality of Asset	N/A	Good
	Maintenance requirement	N/A	Medium
Market Requirements	Usage Level	No. of usages	usages per day
	Alternative Facilities	N/A	None
	Other market needs	N/A	None

Authority personnel at Operations Level must carry out such analysis and present a summary to L2. This will call for a detailed technical / engineering study and traffic study will be required for this analysis. This activity must be done at least 1 year before contract termination to allow sufficient time for ensuring service continuity.

2. Step 2 – Analyse & choose amongst options

Based on analysis in Step 1, L2 must analyze and choose amongst various options. A recommendation must be placed before L3. L3 must take the final decision. This process must be done at least 10 months to 1 year in advance of contract termination.

The table below presents various likely scenarios and illustrative recommended action under each scenario.



Table No. 19 – Service Continuity Plan (2)

#	Scenario		Recommended action (Illustrative)
	Can existing Infra facility serve market requirements?	PPP Suitable?	
2	Yes	Yes	Fresh OMT Contract
3	Yes	No	Outsource O & M
4	No	Yes	Fresh BOT contract
5	No	No	EPC/ Item rate contract

Step 1 above will help conclude whether the Infra facility can serve market requirements. For PPP suitability a pre-feasibility analysis must be carried out by appointing a financial consultant. Additional aspects may also affect the decision for service continuity. These will depend on the nature and complexity of the project and any special termination requirements of the Concession agreement. These must also be taken into account.

9.10 Contract Management Activities throughout the Project Life Cycle (From Appointed Date till Final settlement)

During the Project Life cycle various key activities are undertaken within the Authority for which different level of officials are made responsible as per the Project Contract Management Plan. This chapter provides a roadmap for post-award management activities throughout the project life cycle.

9.10.1 Activities undertaken by Operation Level (Head Quarters or HQ):

During the Project Life cycle, the Operation Level (HQ) would be responsible for following key activities:

1. Independent Engineer

As per the provisions of the Concession Agreement various activities are involved at Authority's end for Appointment of Independent Engineer. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Issue an EOI for selection of Independent Engineer.
- Undertake the evaluation of EOI received from the interested parties and shortlist the 10 firms based on the predetermined criteria.
- Send the aforesaid list to the Concessionaire for Scrutiny and comments, if any



- After considering the all relevant factors of the comments received from the Concessionaire, finalise and constitute a panel of 10 firms and convey its decision to the Concessionaire.
- From the shortlisted firm ask for the technical and financial offers
- Evaluate the technical and financial score and finalise the Independent Engineer.
- On termination or expiry of the tenure of Independent Engineer, renew or appoint the Independent Engineer for next turn as per the provisions of the Concession Agreement.
- Process for reimbursement of the remuneration/cost/ expense of Independent Engineer as per the provisions of the Concession Agreement.
- Submit the Statement of Expenditure to the Concessionaire.
- Hold a tripartite meeting with the Concessionaire and Independent Engineer, in case the Concessionaire submits a representation for termination of Independent Engineer.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

2. Disclosure

As per the provisions of the Concession Agreement, Authority shall be entitled to direct the Concessionaire, from time to time, to withhold the disclosure of Protected Documents. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Direct the Concessionaire is to protect the documents to any person as per the provisions of the Concession Agreement
- Report to the Supervisory level (HQ) & decision making level within one day of default, if any

3. Addressing Public Grievances

As per the provisions of the Concession Agreement, Concessionaire shall maintain a public relations office at each of the Toll Plazas where it shall keep a Complaint Register open to public access at all times for recording of complaints by any person. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Advise the Concessionaire to take action as appropriate for a fair and just redressal of any grievance.
- Report to the Supervisory level (HQ) & decision making level within one day of default, if any



9.10.2 Activities undertaken by Supervisory Level (finance)

During the Project Life cycle, the Supervisory Level (finance) would be responsible for following key activities:

1. Accounts & Audit

As per the provisions of the Concession Agreement, Concessionaire is to Maintain books of accounts recording all its receipts. The Authority is to inspect the records of the Concessionaire and require copies of relevant extracts of books of accounts. Some of the key activities undertaken by Supervisor Level (finance) in this regard are provided below:

- Inspect and verify the books of accounts of the Concessionaire.
- In case of any discrepancy, communicate the same to the Concessionaire and make sure it is rectified
- Report to the decision making level (finance) and decision making level within one day of default, if any

2. Appointment of Auditor

As per the provisions of the Concession Agreement various activities are involved at Authority's end for Appointment of Auditor. Some of the key activities undertaken by Supervisory Level (finance) in this regard are provided below:

- Invite offers from all reputable firms of Chartered Accountants who fulfill the eligibility criteria.
- Scrutinize and evaluate the proposal submitted by interest firms as per the provisions of the Concession Agreement
- Shortlist the 10 firms as per the evaluated score of each firm.
- Send the aforesaid list to the Concessionaire for Scrutiny and comments, if any
- After considering the all relevant factors of the comments received from the Concessionaire, finalise and constitute a panel of 10 firms and convey its decision to the Concessionaire.
- Make a new panel of Auditors after 5 years as specified in the Concession Agreement.
- Report to the decision making level (finance) and decision making level within one day of default, if any



9.10.3 Activities undertaken by Supervisory Level (HQ) - Technical

The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.10.4 Activities undertaken by Decision making Level (Technical)

The Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (HQ) and Supervisory Level (Field).
- To review all the files/documents forwarded by Supervisory Level (HQ) and Supervisory Level (Field).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.10.5 Activities undertaken by Decision making Level (Finance)

The Decision making Level (Finance) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (Finance)
- To review all the files/documents forwarded by Supervisory Level (Finance).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any



9.11 Performance Monitoring & Review

Performance of the concessionaire and other related parties should be regularly monitored and reported by the contract manager to ensure the project remains within the pre-planned cost levels and timelines. In case a performance monitoring and rating system exists in the organization, the results of such regular monitoring shall be additionally sent to officials designated for that purpose.

KPIs here have been separately identified for each stakeholder, i.e. the concessionaire, independent engineer, safety consultant and financial consultant for all major activities within a project lifecycle.

9.11.1 Concessionaire

For any project to function smoothly, concessionaires' performance needs to be monitored regularly. As the Concessionaire forms the main party with whom the contract is signed and who holds the major obligations of executing the agreement apart from the Authority, it is important that its performance is tracked on regular basis to spot defaults and situation that might later become a cause of stalling of the project early in the project execution lifecycle. This section presents stage wise analysis of KPIs which can help in evaluating the concessionaires' performance. It also designates the responsibility of monitoring them to an Authority official along with clear guidelines on his/her duties with regards to monitoring it.

As described above, there are majorly four stages in any project execution lifecycle: Development Period Stage, Construction Stage, Operations & Maintenance Stage and Exit Stage. In all these four stages, monitoring the concessionaires' performance against the set standards, calls for a detailed review by the officer- in charge from the Authorities' side. Major parameters to be evaluated from the Authorities' point of view are throughout the lifecycle are:

- **Time Line – Actual Vs. Targeted Date**
- **Project Cost**
- **Quality of Services**
- **Safety Considerations**
- **Communication and Responsiveness**
- **Project and Contract Management**

In each of these parameters, what needs to be taken care of is that the value of concessionaires' performance in a parameter, matches the indicator value of the parameter to a reasonable extent and in the stipulated time. Discrepancies, if any, and beyond the control of the Authority in- charge need to be escalated to the next level on timely basis so that necessary action can be taken on the same. To illustrate this idea, the monitoring and review process of the Performance standard on Project Cost has been described in the below flowchart:



Concessionaires' Performance Monitoring for Project Cost

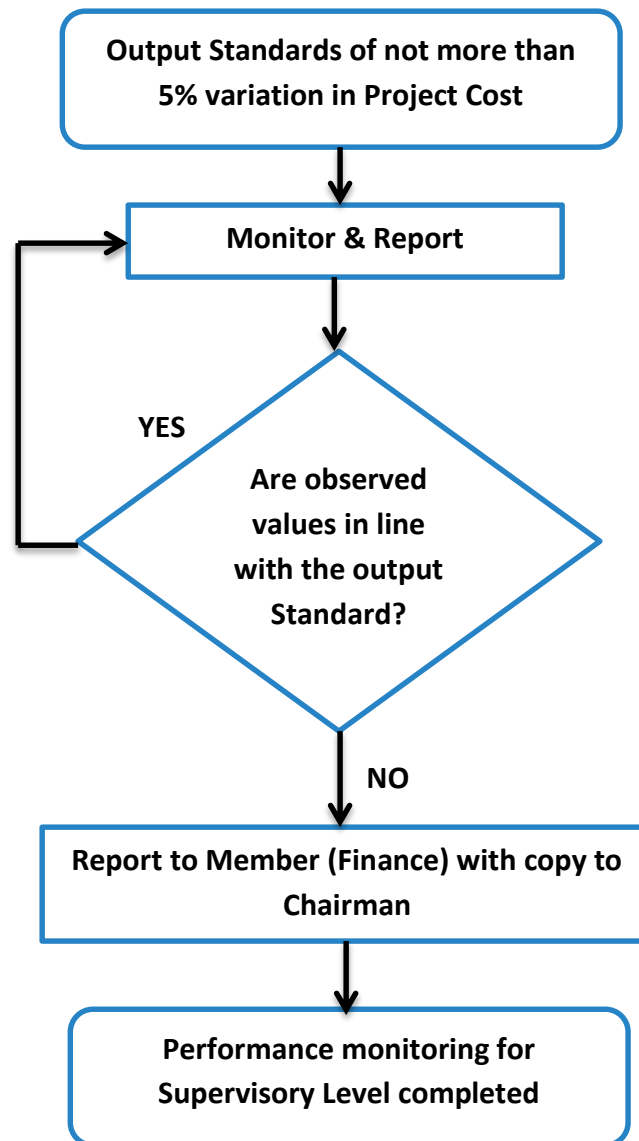


Figure No.39 – Concessionaire's Performance Monitoring for Project Cost

9.11.2 Independent Engineer

The Independent Engineer has a major role to play in ensuring that the project progress is in line with the set timelines, the quality of infrastructure developed by the Concessionaire is as per the desired standards and discrepancies/issues, if any, have been flagged and brought to the notice of the Authority officials in a timely manner. Major performance parameters to be monitored for reviewing Independent Engineers' performance are:

- **Independent Engineer KPIs throughout the Lifecycle**
- **Time Line – Actual Vs. Targeted Date**
- **Quality of Services**



- Communication and Responsiveness
- Project and Contract Management

Independent Engineers' Performance Monitoring for Project & Contract Management

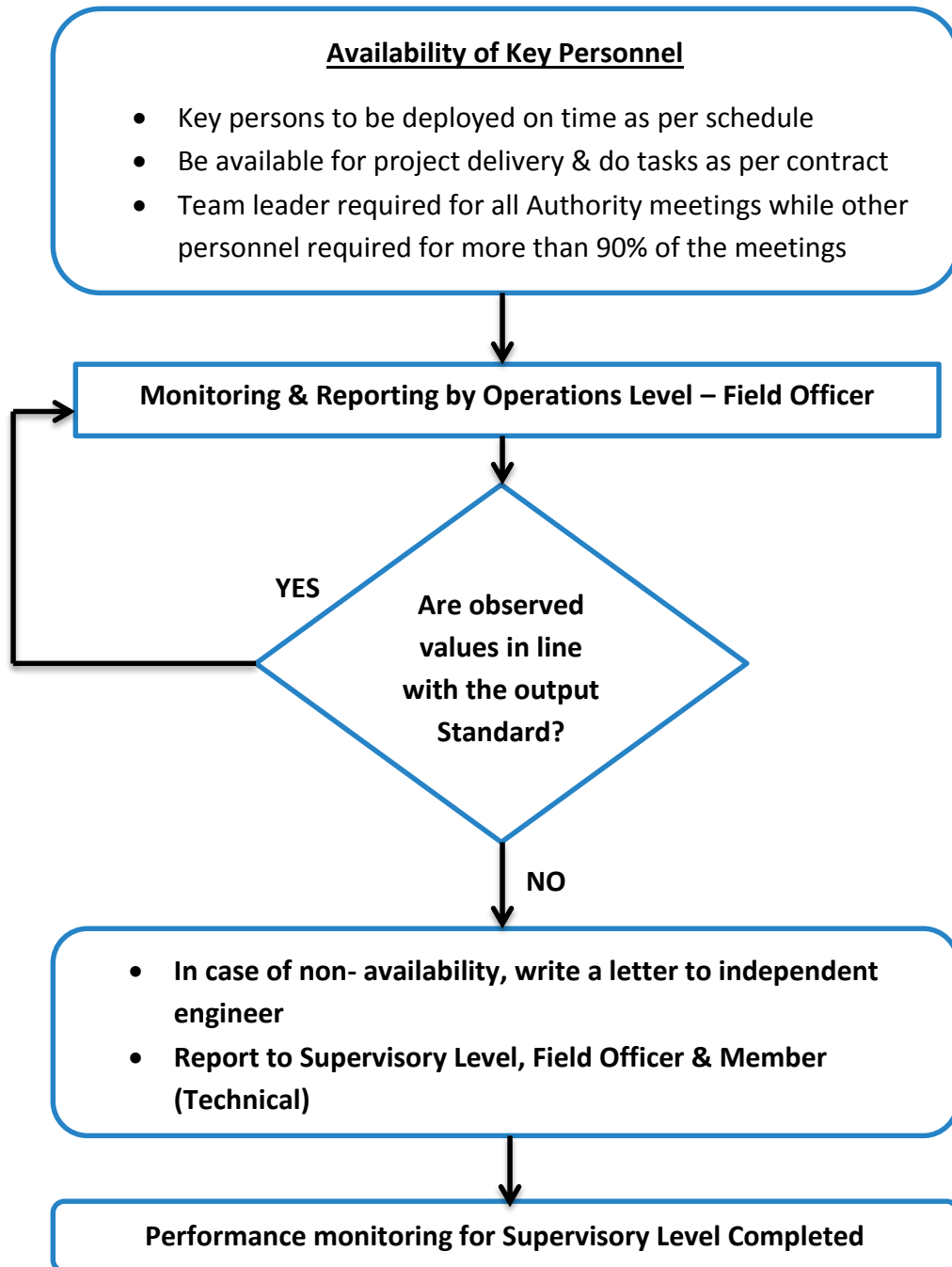


Figure No. 40

Independent Engineers Performance Monitoring for Project & Contract Management



9.11.3 Safety Consultant

Safety Consultant is another important related party that is responsible for safeguarding that the quality & safety requirements from a project and ensuring that any potential or actual defects observed, are brought to the notice of the Authority in timely manner.

- Time Line – Actual Vs. Targeted Date
- Quality of Services
- Project and Contract Management

Safety Consultants' Performance Monitoring for Timeline, Actual v/s Targeted

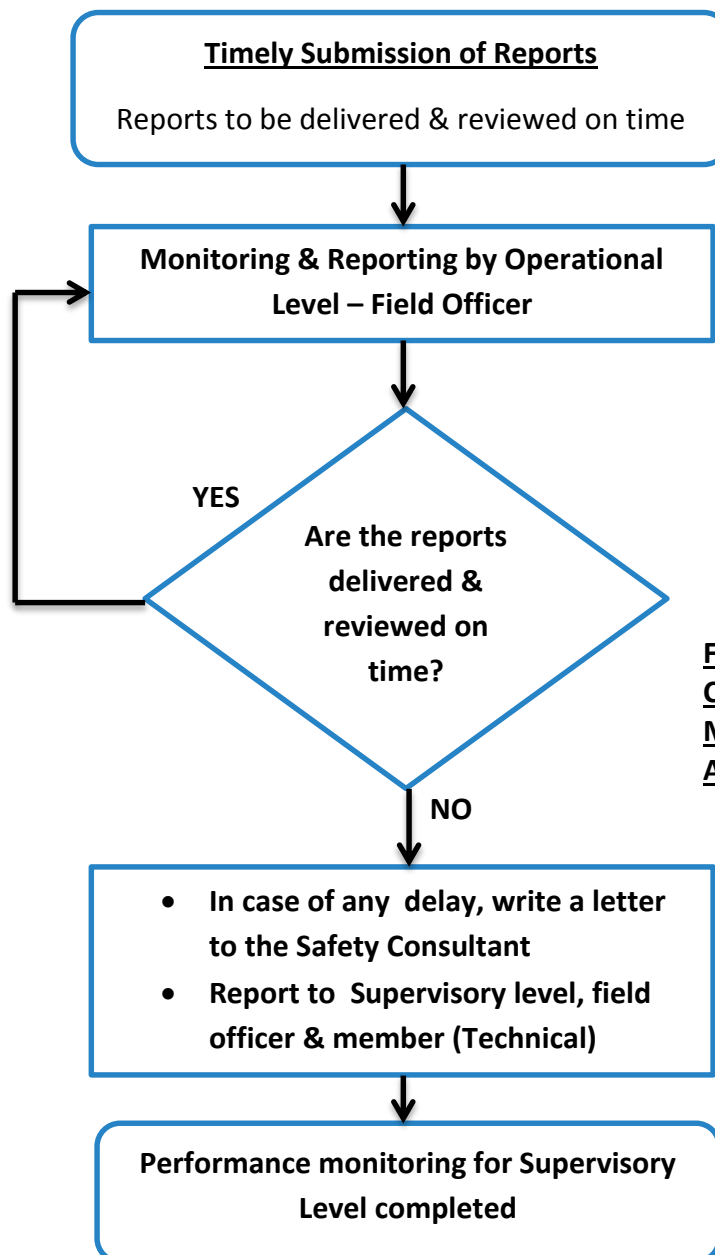


Figure No. 41 - Safety Consultants' Performance Monitoring for Timeline, Actual v/s Targeted



9.11.4 Financial Consultant

Financial Consultant has a significant role in reporting and taking care of all financial matters related to a project. They review all the financing documents submitted by the Concessionaire and hence provide verdict on whether the Concessionaire has submitted accurate documents with zero errors.

- Time Line – Actual Vs. Targeted Date
- Quality of Service
- Project & Contract Management

Financial Consultants' Performance Monitoring for Quality of Services

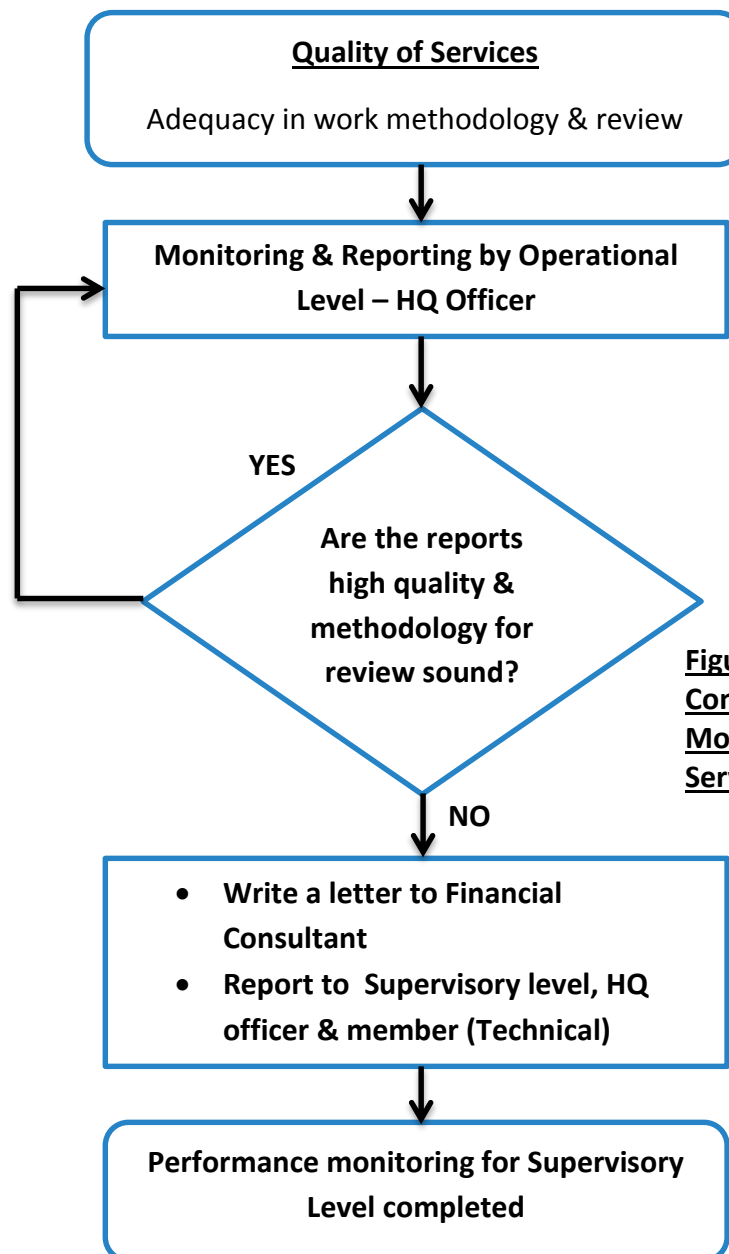


Figure No. 42 - Financial Consultants' Performance Monitoring for Quality of Services



9.12 Regular Reporting & Escalation Mechanism

In any Infra Project concession, even if management and monitoring of each project activity is done actively, it has been observed that no such activity is complete without regular and timely reporting of these activities by the Authority officials at higher levels. Moreover, it is critical from the project execution viewpoint that any issue which crops up is escalated in a timely fashion to the higher Authority level for fast, suitable and timely action. This chapter describes how project status reporting, review and escalation activities are to be done within all levels, Operations Level, Supervisory Level and Decision Making Level of the Authority and performance is reported on regular basis to ensure smooth functioning of the concession.

9.12.1 Regular Reporting & Review

Regular reporting has to be done on a regular basis to apprise higher levels in Authority of the project status and key issues as well as seek necessary approvals. Also, the supervisory levels must review the information provided to them to provide suggestions and intervene at appropriate times to ensure that the project remains on track.

Operation Level to Supervisory Level Reporting

The objective of Operations Level to Supervisory Level reporting is to apprise Supervisory Level of the project progress and seek support for key decisions or approvals. The Operations Level to Supervisory Level reporting includes Status reporting, Performance reporting and other reporting. Within each category, the following reports must be prepared at Operations Level and submitted to Supervisory Level for review on a monthly basis. Supervisory Level members should then meet on a monthly basis to review submissions from Operations Level and take appropriate action on the same.

1. Status Reporting

A. Project Progress

Stage (Illustrative)	Sub- Stage (Illustrative)	Completed? (Illustrative)	Remarks (Illustrative)
Development	Land Acquisition	Yes	
	Environmental Clearances	No	
	Other clearances	Yes	
	Appointment of related parties	Yes	
	Utility Shifting	Yes	
	Financial Closure	Yes	
	Drawings & design approval	Yes	
	Appointed date declaration	Yes	



Construction	Additional Land Procurement	Yes	
	Commencement of construction	No	
	Completion of Construction	No	
	Testing & Certification	No	
	Completion of punch list	No	
	Declaration of Commercial Operation Date (COD)	No	
Operations & Maintenance	Appointment of O & M Consultant	No	
	Ongoing Operations & Maintenance	No	
	End of Operations & Maintenance	No	
Termination	Testing & Certification	No	
	Major maintenance / Asset replacement	No	
	Asset transfer	No	
	Contract Terminal	No	
	Service continuity	No	

B. Status of Activities which are Authority's Responsibility (Illustrative)

Activity	Status	Responsible person/ team	Original Completion date	Actual completion date / Target date	Reason for Delay (if any)	Plan of action to complete activity	Support need for Supervisory level / decision making if any
Right of Way	Complete	Operations Level	Apr, 2017	May, 2017	Admin delays	N/A	N/A
Land Acquisition	Complete	Operations Level	Apr, 2018	May, 2019	Public claims & disputes	N/A	N/A
Environmental Clearance	Ongoing	Operations Level	May, 2019	Sept, 2020	Claims & NGO activism	Escalate	Decision making
Railway approvals	Complete	Operations Level	Sept, 2017	Aug, 2017	N/A	N/A	N/A



C. Status of Activities which are Concessionaire's Responsibility (Illustrative)

Activity	Status	Responsible person/ team	Original Completion date	Actual completion date / Target date	Reason for Delay (if any)	Plan of action to complete activity	Support need for Supervisory level / decision making if any
Performance Security	Complete	Operations Level			N/A	N/A	N/A
Escrow agreement	Complete	Supervisory Level			N/A	N/A	N/A
Substitution Agreement	Complete	Supervisory Level			N/A		
Representation & warranties	Complete	Supervisory Level			N/A	N/A	N/A
Legal Opinion of Concessionaire authority	Complete	Operations Level			N/A	N/A	N/A
Shifting of Utilities	Complete	Operations Level			N/A	N/A	N/A
Financial Closure	Complete	Supervisory Level			Financial risk	N/A	N/A
Statutory approvals / clearances	Complete	Operations Level			N/A	N/A	N/A
Drawings/ Designs	Complete	Operations Level			N/A	N/A	N/A
Asset Handover	Not Started	Operations Level			N/A	N/A	N/A



D. Status of Action Plan finalized in previous period's report **(Illustrative)**

Activity	Status	Responsible person/ team	Original Completion date	Actual completion date / Target date	Reason for Delay (if any)	Plan of action to complete activity	Support need for Supervisory level / decision making if any
Escalation of environmental issue	Complete	Decision Making Level			N/A	N/A	N/A

2. Performance Reporting

Apart from Service Performance, regular performance reporting must also include reports on financial health of SPV, risk levels, payment reports and observations of the independent engineer / safety consultant

- **Service Performance** – report must be prepared as illustrated in section on Key Performance Indicators
- **Receipt & Payment mechanism and escrow account operations** – A periodic receipt - payment report must be generated including the following details **(Illustrative)**

Date	Receipt Payment Description	Amount	Adjustment	Adjustment Amount	Responsible Person/ team	Further action required (if any)
May, 2017	Premium	INR 20 cr.	N/A	NIL	Operations Level	N/A
June, 2017	Annuity	INR 35 cr.	Penalties for service suspension	INR 5 cr.	Operations Level	N/A

- **Independent Engineer's / Safety Consultant's observations** – Based on a review of the Independent Engineer's or Safety Consultant's report, key observations or remarks raised by them which calls for attention from the headquarters must be forwarded by Operations Level to the headquarters at respective higher levels.



3. Other Reporting

- **Issues or disputes identified** – Specific issues or disputes that arise in the contract which cannot be resolved at Operations Level must be forwarded to Supervisory Level. Additionally, issues or disputes that are settled at the Operations Level itself but are significant enough to merit Supervisory Level's attention must also be reported.
- **Contract Management concerns** – While planning for contract administration or while undertaking an ongoing review of the contract, the Operations Level team may identify concerns which may cause potential time or cost overruns in the future. Such concerns, to the extent identified in advance, must also be reported at Supervisory Level appropriately.

Supervisory Level to Decision Making Level Reporting

The objective of Supervisory Level to Decision Making Level reporting is to appraise Decision Making Level of key issues/ challenges in contract administration and of activities that require their approval and/ or intervention. Supervisory Level to Decision Making Level reporting also consists of Status reports, Performance reports and other reports. These reports must be submitted at-least on a quarterly basis. Decision Making Level members must then meet each quarter to review the submissions from Supervisory Level and take appropriate action on the same. In case of emergency, the status/ performance must be reported not later than 3 days from the date of its occurrence for immediate action and approvals. The following sections provide templates for generation of the stated reports and illustrations to complete the templates. These templates must be suitably modified as per respective Concession Agreements and project specifications.

1. Status Reporting

A. Project Status and approvals required (Illustrated)

Stage	Sub - Stage	Decision Making Level approvals required at this stage	Deadline for Approval	Remarks
Development	Environmental Clearances	N/A	N/A	Decision making intervention required with ministry
Construction	Commencement of Construction	N/A	N/A	Not commenced Pending environmental clearances



Additional support required from Decision Making Level for Operations Level and Supervisory Level tasks – Reports should also list type of support required from Decision Making Level, apart from approvals identified above, for completing responsibilities of Operations Level and Supervisory Level.

2. Performance Reporting

- **Concessionaire non-performance** – Non-performance on the part of the concessionaire, as identified by KPI reporting, which may cause significant cost or time overruns in the project must be reported. The following is a template to be completed from the KPI report submitted by Operations Level to Supervisory Level. **(Illustrative)**

KPI	Threshold	Actual Variance	Reason for Non - Performance	Action plan to control performance	Responsible Person / team
Avg. number of defects per km	5	7	Use of inferior quality material for few matches	Re – lay defective patches	Operations Level

- **Additional concerns** – Based on other performance tracking, payment issues (if applicable), key observations of the independent engineer or safety consultant must be reported to Decision Making Level. The following is a template for the same. **(Illustrative)**

Concern	Reason for Concern	Action plan to control performances	Responsible person / team
Use of defective material	Independent engineers report highlights defective road patches	Use of alternative material suppliers	

3. Other Reporting

Issues or disputes identified – Specific issues or disputes that arise in the contract which cannot be resolved at Supervisory Level must be communicated to Decision Making Level immediately. Additionally, issues or disputes that are settled at the Operations Level or Supervisory Level itself but are significant enough to merit Decision Making Level's attention must also be reported.



9.12.2 Escalation in Case of Default

In case any of the parties do not fulfill the requirement of Concession Agreement, the same needs to be escalated at the appropriate level within the Authority. The escalation is required in the following conditions:

- Default at the end of the Concessionaire or the other parties such as Independent Engineer, Safety Consultant, Escrow Agent, Senior Lenders etc.
- Default within the Authority

For both these scenarios, the escalation mechanisms are defined as follows:

Escalation in case of default by concessionaire or other parties:

Initiator / Designated official	Report to	Time Line for action
Operations Level – General Manager (Tech)	Supervisory Level - Supervisory Level- Headquarter Officer (T) with copy to Decision Making Level - Member (T) for guidance	Within 5 days of default
Operations Level – Project Director	Supervisory Level - Regional Officer with copy to Member (T) for guidance	Within 5 days of default
Supervisory Level – Chief Level General Manager	Decision Making Level - Member (F) with copy to Chairman	Within 5 days of default

Escalation in case of default within the Authority

Initiator / Designated official	Actions to be taken	Time Line for action
Operations Level – General Manager (Tech)	Supervisory Level- Headquarter Officer (T) to take the necessary action to expedite the work / activities and report to the Decision Making Level - Member (T)	Within 5 days of default
Operations Level – Project Director	Supervisory Level, Field Officer to take the necessary action to expedite the work / activities and report to the Decision Making Level - Member (T)	Within 5 days of default



Supervisory Level – Chief Level General Manager	Decision Making Level – Member (F) to take the necessary action to expedite the work / activities and report to the Chairman	Within 5 days of default
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It should be noted that at each level of Authority, escalation should be done within the timeline so that the next level of Authority gets sufficient time to review and take appropriate action on the same or escalate it to higher level. In case, the issues are not resolved even at the Decision Making Level Authority, they maybe escalated further up to the PPP PRU as an exception and undergo dispute resolution procedure.

9.13 Managing Issues & Disputes

It has often been observed there are mismatches between the expectations of the Authority and the Concessionaire and other related parties which lead to issues and disputes arising time and again which stall the project progress and may lead to unending delays in the project execution causing great inconvenience to the users and damaging the Authority's and the Government's reputation. Hence, timely resolution of any dispute is imperative to ensure that user interests are protected always and Authority is able to achieve the project milestones in time.

9.13.1 Managing Issues

The private party must maintain an issues register on a regular basis to identify and track all service delivery issues that arise and the manner in which they are dealt with. The Government Authority is responsible for regular review of the register to ensure that issues are addressed and closed within a reasonable amount of time. The Authority must also provide necessary support to the private party to do so. Operations Level Authority must review the issues register on a monthly basis. Major Service delivery issues must be reported to and reviewed by the Supervisory level and Decision Making Level officers within the Authority. A review report must be maintained by the Operations Level officers to record each of their reviews. A report template is shown hereunder. **(Illustrated)**

Review Date	Reviewed by	Major issues during period	Actions taken on issues	Status of issues	Issues to be escalated
Mar, 2014	Operations Level	<ul style="list-style-type: none"> • Potholes on portion of road; • 2 toll booths not operational 	Both issues addressed and closed within 10 days	Not Pending	N/A
		Portion of road caved	Not resolved till date – traffic being diverted causing significant jams	Pending	To be escalated to L2.



9.13.2 Dispute Resolution Mechanism

Designing a comprehensive dispute resolution mechanism is an uphill task which requires keeping in mind that the interests of all stakeholders are served in the best possible manner and an amicable timely solution is also achieved. The Authority officials should focus on designing the mechanism in a manner such that prior to resorting to any legal action, disputes are solved through mediation or conciliation & closed well in time. It is a common observation that disputes pending in courts take much more time for resolution compared to the ones solved through discussions between the parties. Also, as the intensity of dispute increases, the relationships between the stakeholders are also damaged & long term negative effects can be seen.

As per the provisions of the Concession Agreements / contracts, the settlement of disputes is to be undertaken through conciliation methods first that involve the Independent Engineer, followed by Dispute Resolution Board (DRB) / Dispute Resolution Expert (DRE) mechanism and finally by Arbitral Tribunals (ATs) as per the Arbitration and Conciliation Act, 1996. Hence, keeping in mind all this, a step by step approach to Dispute resolution has been clearly defined in the Concession Agreement (CA).

Also, the awards of ATs are often challenged before the Courts of Law and the delays in settlement of claims result into huge financial liabilities on the Authority. Thus, recognizing the need for improving the dispute resolution mechanism, Independent Settlement Advisory Committee (ISAC) should be formed; that has the following three steps:

Independent Settlement Advisory Committee (ISAC)

- Initial negotiation carried out by a Committee of 3 Supervisory Level- Headquarter Officers nominated by the Chairman. Subsequently, the matter is placed before an ISAC consisting of a retired High Court Judge and 2 other Members having sufficient experience in administration / finance and technical field.
- The ISAC can agree with the 3 Supervisory Level- Headquarter Officers Committee or if need be, can call the Concessionaire / contractor for clarifications / negotiations.
- The recommendations of the ISAC to be placed before the NHAI Board for approval. If no negotiable settlement is arrived, the matter shall continue to be pursued legally as per contract.



9.13.3 Dispute Resolution Tracker for Effective Management

Along with this, a Dispute Resolution Tracker should also be maintained to track all disputes and ensure that they are resolved as soon as possible. An indicative template for Dispute Resolution Tracker is presented below which must be modified as per the Authority's requirements (**Illustrative**)

Dispute	Background of dispute	Possible Consequence	Responsible person / team	Dispute resolution procedure adopted	Deadlines	Trigger to escalate dispute to next level
Change in scope requiring additional structures	Lack of robust technical studies	Delay in Construction & increase in Project cost	Operations Level	Inter – Party discussions		Dispute no resolved within 3 inter - party meeting
Need to redo drawings	Inability to acquire certain portion of land	Delay in construction & increase in project cost	Operations Level	Mediation		Dispute not resolved within 5 mediation meetings

9.14 Risk Management

There are many risks in Infra sector project concession might be prone to during the project lifecycle such as delays in land acquisition, change of scope, risks pertaining to lower usage than expected etc. Such risks if not mitigated and controlled in a timely manner, may take a grave form or occur very frequently and becomes reasons for disputes as observed often.

Hence, risk management forms a critical activity from the contract management perspective and needs special attention by the Authority officials. The Authority needs to develop a comprehensive risk management plan for the project so that proactive as well as active management of risks is done on regular basis. This must be modified as per the requirements of the project and Authority.



9.14.1 Risk Mitigation & Monitoring

Table No. 20 – Risk Mitigation & Monitoring

Category	Risk	Threshold	Likelihood	Impact	Responsible Authority	Frequency of Monitoring	Mitigation Strategy	Action plan in case risk materializes
Contractually allocated risk	Site Risk	Over 2% of site area is affected	Medium	Time & cost overrun	Operation Level – Field officer	Fortnightly	Detailed investigative studies through expert technical consultants at the pre-award stage	Plan alternative sites and begin acquisition at the earliest
	Land acquisition risk	Over 2 % cost escalation or delay over 3 months	High	Time & cost overrun	Operations Level – Field officer / CALA	Monthly	Detailed title searches and investigation of land records at the pre-award stage. Greater public involvement and transparency in procedures	Escalate issues, evaluate & execute alternatives
	Statutory clearances risk	Delay over 1 month	Medium	Time overrun	Supervisory level field officer	Fortnightly	Advanced planning & better coordination between Govt. entities	Escalate issue and seek higher authority support
Contractually allocated risk	Environmental Risk	Delay over 1 month	High	Time & cost overrun; Risk premium quoted by concessionaire	Supervisory Level – Field officer	Fortnightly	Detailed studies into site contamination at the pre-award stage, regular environment audits	Cost-benefit analysis of alternative sites, evaluate option of bearing additional costs
	Traffic Risk	2.5 % of projected traffic	High	Fall in revenue	Operations Level – HQ officer (Tech)	Monthly	Allocating risk to private party through Toll contracts as opposed to Annuity contracts; Developing alternative revenue sources	Increase concession period, provide alternative revenue streams



Residual Risk	Design & Engineering risk	Deviation from design & safety standards by over 5%	Low	Time overrun; Fall in service or safety standard	Operations Level – HQ officer (Tech)	Fortnightly	Stricter inspections by independent engineer, performance guarantees, provisions for penalties	Claim damages, evaluate changing Concessionaire
	Construction Risk	Delay over 1 month	Medium	Time overrun; Fall in service or safety standard	Operations Level – Field officer	Monthly	Stricter inspections by independent engineer, performance guarantees, provisions for penalties & liquidated damages	Claim damages, evaluate changing Concessionaire
	O & M Risk	Over 2% of site area is affected	Medium	Time & cost overrun	Operation Level – Field officer	Monthly	Stricter inspections by independent engineer, performance guarantees, provisions for penalties & liquidated damages	Claim damages, evaluate changing Concessionaire
	Financial Risk	Different for each key ratio	High	Restructuring, refinancing, renegotiation, termination	Supervisory Level- Headquarter Officer (F)	Monthly	Higher eligibility requirements at the time of bidding, financial covenants, collaterals, guarantees; Hedging through financial products	Claim damages, evaluate changing Concessionaire
	Concessionaire Managerial risk	Change in personnel with substantial decision making authority	High	Restructuring, renegotiation, termination	Supervisory Level- Headquarter Officer (T)	Monthly	Higher eligibility requirements at the time of bidding, lock-in requirements for a certain time period	Evaluate changing Concessionaire
	Take back risk	Delay beyond pre-fixed Response Timelines by x days (varies depending on type of delay)	Medium	Time overrun; Penalties	Supervisory Level- Headquarter Officer (T)	Monthly	Robust processes, competent contract management team and strict adherence to timelines	Train / replace contract management team personnel



Contract Variation Risk	Change in scope	Different for each factor	Medium	Time & cost overrun; Restructuring, renegotiation, termination	Operation Level – HQ officer (Tech)	Quarterly	Detailed market studies at the pre-award stage through expert consultants	Minimize impact through transparency and detailed planning
	Change in Law or Policy	Potential impact of over 5% cost escalation, over 5% reduction in revenue or delay over 1 month	High	Time & cost overruns, revenue reduction Additional approvals required	Operation Level – HQ officer (Tech)	Quarterly	Increasing awareness of possible changes and planning ahead for responding to changes, if they occur	Minimize impact through transparency and detailed planning
Unidentified or Unresolved Risks	Force Majeure	N/A	High	Multiple (depending on event)	Supervisory Level – HQ officer (Tech)	Quarterly	Insurance; Having disaster recovery and business continuity plans in place	Minimize impact through transparency and detailed planning
	Social Risk	Substantially negative user perception	Medium	Time & cost overrun; Restructuring, renegotiation, termination	Operation Level – HQ officer (Tech)	Monthly	Wider public communications, greater transparency, more user surveys at the development stage	Deeper engagement with public and community interest groups



9.15 Handling Rare Events

There are many risks a project faces pertaining to change in policy, force majeure events such as natural calamities which are unexpected and untimely or premature terminations of project due to unforeseen circumstances. Such events occur rarely, but when they do, they leave a huge impact on the project leaving the progress stalled for a long period and causing huge inconvenience to all stakeholders.

9.15.1 Activities Undertaken by Operations Level

During the Construction Period, the Operation Level (HQ) would be responsible for following key activities:

Changes in Law

Since Infra Project concessions are generally long term in nature ranging from 15- 20 years, there may be situations when a legal amendment or new law is passed after the signing of the contract which might have an impact on the project progress. In such a scenario, the impact of the change in law observed is calculated on the project and the residual payment is made by either the Authority or the Concessionaire to the other one to compensate for it. If the Authority/ Concessionaire, do not wish to provide monetary compensation, a reduction/ extension in concession period may be calculated which will lead to the same Net Present Value (NPV) of the project as was at the time of signing the contract. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- To issue a notice to the Concessionaire regarding Change in Law, if any
- To review the request submitted by the Concessionaire regarding Change in Law
- To arrange a meeting with Concessionaire for mutually agreed arrangement.
- To send all related documents to the Financial/ Legal Consultant for review & comments and also to estimate the variation in NPV as per the provision of Concession Agreement.
- To process the payment to the Concessionaire against Change in Law as per the provision of the Concession Agreement, if any.
- To send a notice to the Concessionaire for recovery of payment against Change in Law as per the provision of the Concession Agreement, if any
- Report to the supervisor level (HQ) & decision making level within one day of default, if any



Force Majeure

An extraordinary event or circumstance which is beyond the control of either of the parties is referred to as Force Majeure events. Events such as wars, riots, or natural calamities like earthquake, floods, hurricane etc. are beyond the control of either party. Such unavoidable accidents, impact the project under consideration and ability of the parties to meet their obligation under the contract. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- To issue a notice to the Concessionaire to report occurrence of Force Majeure, if any
- To assess the impact on Concession period and allocation of cost upon occurrence of Force Majeure event
- To process for the required adjustment in the Concession Period or any other timeline, as required.
- If Force Majeure is for more than 365 days, Operation Level (HQ) may issue a notice to the Concessionaire for termination.
- In case Concessionaire issues a notice for termination, Operation Level (HQ) may make a representation on behalf of the Authority to the Concessionaire in this regard.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

Compensation for Breach of Agreement

In endeavor to enforce the clauses of the agreement and implement the contract effectively, both the signing parties of the contract i.e. concessionaire and authority are bound to compensate for any breach as per the contract terms. Compensation to be paid would be arrived at post evaluation of default and corresponding raise of demand from the affected party. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- To review the documents submitted by Concessionaire with respect to the breach of Agreement.
- Process for the compensation against the breach of the Agreement
- To raise compensation demand for material default, supported by necessary particulars.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

Assignment & Charge Creation Request

Concession agreement signed by the Concessionaire and the Authority, entitle the Concessionaire to assign or subcontract work in selected instances only. If the Concessionaire wants to assign or hire a sub-contractor for tasks not mentioned in the concession agreement, approval from authority is required and requests for the same



need to be created. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- To review the request submitted by Concessionaire and may decline the consent without assigning any reason, if required
- Process to assign and/ or transfer any of its rights and benefits and/or obligations under this Agreement
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

Indemnity Claim

During the tenure of the concession agreement, various claims could arise due to interaction with numerous stakeholders as part of the project. In lieu to settle the arising claims, consent of both parties to settle arising claims is required whereby a defined process to be followed. Disputes arising in the process are to be settled as per the framework defined in the concession agreement. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- In case receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity, Operation Level (HQ) would notify to the Concessionaire.
- To process the payment against claim or demand after approval from the Concessionaire. In case the Authority, any notice from the Concessionaire regarding claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity, the Operation Level (HQ) would review such claims or demands.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

Suspension of Concessionaire's Rights

In case of Concessionaires' default, the Authority may suspend all rights of the Concessionaire and will collect all fees and revenues on behalf of the Concessionaire. Some of the key activities undertaken by Operation Level (HQ) in this regard are provided below:

- Issue an notice to the Concessionaire for Suspension of Rights
- To suspend the all rights of the Concessionaire and process to exercise such rights by Authority or authorize any other person to exercise or perform the same on behalf of the Authority as per the provision of the Concession Agreement during suspension.
- To process to revoke the suspension as per the provision of the Concession Agreement.
- Upon occurrence of a Concessionaire Default, Operation Level (HQ) to inform lender about intention to issue termination notice



- In case of substitution, to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project as per the provision of the Concession Agreement.
- In case substitution does not occurs within the specified period, Operation Level (HQ) may process for termination of the Concession Agreement
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

Termination

In case of Concessionaires' default, the Authority may suspend all rights of the Concessionaire and will collect all fees and revenues on behalf of the Concessionaire. Some of the key activities undertaken by Operation Level (HQ) in this regard is provided below:

- To inform the Concessionaire about Authority's intention to issue Termination Notice and request the Concessionaire to make a representation within a specified time.
- To inform the Lender's representative about Authority's intention to issue Termination Notice and request the Senior Lenders to make a representation within a specified time.
- After receiving the Representation from Concessionaire and the Lender's representative, to take the adequate action as per the provision of the Concession Agreement.
- To issue a termination notice, upon occurrence of Concessionaire default.
- In case of the Authority default and after receiving an intimation of termination notice from Concessionaire, Operation Level (HQ) would make representation to the Concessionaire.
- To process for the termination payment, in case of termination.
- After termination of the Project, Operation Level (HQ) would start the process to take possession and control of the Project and all materials and plants about the site as per the provision of the Concession Agreement.
- Report to the supervisor level (HQ) & decision making level within one day of default, if any

9.15.2 Activities undertaken by Operation Level (field)

In the process of managing the Rare Events, the Operation Level (field) would be responsible for following key activities:

Change of Scope

A Change of Scope event occurs when a change is proposed in the scope of activities to be undertaken as a part of the project is proposed by the Authority or the Concessionaire that could not be estimated at the time of contract signing. In such a scenario, the payments for the additional/ reduced scope of work are made by either



the Authority or Concessionaire to the other one. Some of the key activities undertaken by Operation Level (field) in this regard are provided below:

Change of Scope – Proposed by Authority

- To Issue a notice to the Concessionaire to consider Change of Scope, if Authority felt necessary.
- To issue a notice to the Concessionaire specifying in reasonable detail the works and services contemplated thereunder
- To convey preferred option to the Concessionaire and make efforts to agree upon the time and costs for implementation thereof with assistance of the Independent Engineer.
- To execute the Change of Scope Agreement with the Concessionaire
- To issue an order requiring the Concessionaire to proceed with the performance thereof.
- Report to the supervisor level (field) & decision making level within one day of default, if any

Change of Scope- Proposed by Concessionaire

- May accept the Change of Scope suggested by the Concessionaire or suggest the modification or inform the Concessionaire in writing of its reasons for not accepting Change of Scope.
- In case the Authority accepts the Change of Scope, Operation Level (field) would issue a notice to the Concessionaire specifying in reasonable detail the works and services contemplated thereunder.
- To convey preferred option to the Concessionaire and make efforts to agree upon the time and costs for implementation thereof with assistance of the Independent Engineer.
- To execute the Change of Scope Agreement with the Concessionaire
- To issue an order requiring the Concessionaire to proceed with the performance thereof.
- Report to the supervisor level (field) & decision making level within one day of default, if any

Payment for Change of Scope

- To start the process to make the advance payment to the Concessionaire as per the provision of the Concession Agreement.
- To process for the disbursement of bill as per the provision of the Concession Agreement
- Report to the supervisor level (field) & decision making level within one day of default, if any



9.15.3 Activities undertaken by Supervisory Level (finance)

In the process of managing the Rare Events, the Supervisory Level (finance) would be responsible for following key activities:

Financial Restructuring & Novation Requests

At the time of financial closure, equity and debt holders are defined by the Concessionaire to the Authority, post which any changes in the financial structure should be communicated to the authority. Change in financial structure like change in equity stakes of the members who are part of the SPV or debt refinancing leading to change in bank extending credit and amount of debt raised should be in line with the clauses as specified in the concession agreement. If any changes beyond the scope defined in the agreement are to be made, requests for the same need to be put to the Authority by the Concessionaire. Some of the key activities undertaken by Supervisory Level (finance) in this regard are provided below:

- To send all Legal document (as submitted by Successful Bidder) to the legal/ financial Consultant for review & comment.
- After receiving the opinion from legal/financial consultant, Authority to communicate the same to the Successful Bidder
- To issue a letter to the Concessionaire and approved the documents subject to the incorporation of comments in the documents
- Report to the decision making level (finance) within one day of default, if any

Equity Transfer

Some of the key activities undertaken by Supervisory Level (finance) in this regard are provided below:

- To send all Legal document (as submitted by Successful Bidder) to the legal/ financial Consultant for review & comment. After receiving the opinion from legal/financial consultant, Authority to communicate the same to the Successful Bidder
- To issue a letter to the Concessionaire and approved the documents subject to the incorporation of comments in the documents
- Report to the decision making level (finance) and decision making level within one day of default, if any



9.15.4 Activities undertaken by Supervisory Level (HQ) – Technical

The Supervisory Level (HQ) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (HQ).
- To review all the files/documents forwarded by Operation Level (HQ)
- To provide the required inputs in the project execution
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.15.5 Activities undertaken by Supervisory Level (field) - Technical

The Supervisory Level (field) - Technical would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Operation Level (field).
- To review all the files/documents forwarded by Operation Level (field)
- To provide the required inputs in the project execution
- Escalate the issues within 5 days of default, if any
- Report and escalate to the decision making level (Technical) within one day of default, if any

9.15.6 Activities undertaken by Decision making Level (Finance)

The Decision making Level (Finance) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (Finance)
- To review all the files/documents forwarded by Supervisory Level (Finance).
- To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any



9.15.7 Activities undertaken by Decision making Level (Technical):

The Decision making Level (Technical) would be responsible for following key activities:

- To ask for the monthly status reports of the all ongoing projects from the concerned Supervisory Level (Technical)
- To review all the files/documents forwarded by Supervisory Level (Technical). To take the required decision as and when required
- Report and escalate to the Board / Chairman within 5 days of default, if any

9.16 Other Important Activities for Post- Award Contract Management

Knowledge Management and Information Dissemination form an important of managing all documented assets of the project which can be used for future reference.

9.16.1 Identification of Training Requirements

The Contract Management team at each level (Operations Level, Supervisory Level and Decision Making Level) needs to be provided appropriate training to ensure they execute their roles with necessary efficiency and effectiveness. it must include a general overview on contract management, trained in general project management skills, specific aspects of contract management as well as nuances of particular industry sectors that they operate in.

Type	Course	Contents	Level	Frequency	Pedagogy	Procurement
General	Fundamentals of Contract management	<ul style="list-style-type: none"> • What is Contract Management • Overview of Contract Management Guidelines • Key issues in Contract Management • Policy / Guidance for Contract Management 	Operations Level, Supervisory Level, Decision Making Level	One-time	Lecture/ E-learning	Internal
	Project Management	<ul style="list-style-type: none"> • General overview of Project Management • Project Management tools and techniques 	Operations Level, Supervisory Level	One-time	Team Project	Internal



	Commercial and financial skills for PPPs	<ul style="list-style-type: none"> • Understanding of PPP contract • Commercial aspects of PPP contracts • Financial modeling • Value-for-money assessment • Public sector comparator 	Operations Level, Supervisory Level, Decision Making Level	One-time	Lecture/ E-learning	Internal
	Negotiation Skills	<ul style="list-style-type: none"> • General negotiation skills 	Operations Level, Supervisory Level, Decision Making Level	One-time	Case studies / Team projects	External
Technical	Developing Contract management Plan	<ul style="list-style-type: none"> • Overview of contents of various plans • How to prepare the plans • How to update plans 	Operations Level, Supervisory Level	One-time	Case Studies/ Team Project	External
	Performance Monitoring	<ul style="list-style-type: none"> • Information collection and analysis • Helpdesk systems • KPI generation and reporting • Regular reporting and review • Knowledge Management 	Operations Level, Supervisory Level	One-time	Case Studies/ Team Project	External
	Risk Management	<ul style="list-style-type: none"> • Risk identification • Risk mitigation • Risk monitoring 	Operations Level, Supervisory Level	One-time	Case studies/ Projects	External
	Relationship management & dispute resolution	<ul style="list-style-type: none"> • Type of stakeholders involved • Partnership protocols • Issue management & escalation procedures • Dispute resolution 	Operations Level, Supervisory Level, Decision Making Level	One-time	Case Studies/ Team Project	Internal
	Change management & Contingency Planning	<ul style="list-style-type: none"> • Types of changes/ contingencies • Planning for management of changes & contingencies 	Operations Level, Supervisory Level, Decision Making Level	One-time	Case Studies/ Team Project	Internal
Sector Specific	Issues Specific to particular sector	<ul style="list-style-type: none"> • Sector specific issues/ risks/ concerns • Sector updates • International sector updates 	Operations Level, Supervisory Level, Decision Making Level	Bi-annual	Seminar	External



Depending upon the skill level of resources on the team, the contract manager must decide who should undergo which training module. Also, certain projects may have added complexity or nuances which may call for additional training courses. The Contract Management Plan must ensure that every person on the contract management team undergoes the courses mandatory for his/her level. A control process to ensure this must be in place.

Apart from identifying type of courses, the contract manager must also finalize the training method (pedagogy). Alternatives can be case studies, team projects, lectures, e-learning or seminars. Also, the source of training must be decided that is whether an internal resource will impart the training or whether an externally procured trainer shall do so.

9.16.2 Establishing regular review forums for relationship management

To ensure a close and cordial relationship between the Government Authority, Concessionaire and other related parties, a formal forum structure must be established at all three levels (to match the Authority's institutional structure) and meetings must be conducted regularly to gain regular updates on project progress as well as discuss ideas and issues pertaining to the project execution. The constitution of each level, roles and responsibilities, and meeting frequencies must be fixed in advance. An illustration of such a formal forum structure is given below.

Level	Authority	Purpose	Constitution	Responsibilities	Meeting Frequency
Operations Level	Project Operations Level forum	Day to day co-ordination with concessionaire	<ul style="list-style-type: none"> Authority Contract Manager (Operations Level- Field Officer) Authority Assistant (Operations Level) Independent Engineer Concessionaire Contract Manager Concessionaire Assistant 	<ul style="list-style-type: none"> Ensure close coordination between Authority and Concessionaire Discuss and close issues and small disputes that arise from time-to-time 	Weekly
Supervisory Level	Project Supervisory Level forum	Middle management co-ordination with concessionaire	<ul style="list-style-type: none"> Authority Senior Manager (Supervisory Level) Authority Contract Manager (Operations Level) Concessionaire Senior Manager Concessionaire Contract Manager 	<ul style="list-style-type: none"> To discuss and resolve issues that arise from review of reports by Authority at Supervisory Level Forum for Concessionaire to voice opinion & discuss any concerns relating to contract Plan for contract administration 	Monthly
Decision Making Level	Decision Making Level forum	Ensure close strategic relationship with concessionaire	<ul style="list-style-type: none"> Authority Director (Decision Making Level) Authority Contract Manager (Operations Level) Concessionaire Director Concessionaire Contract Manager 	<ul style="list-style-type: none"> To voice strategic concerns that the Authority or Concessionaire may have regarding the contract To discuss and resolve issues which have substantial impact on the contract 	Quarterly



Through these forums it can be ensured that the relationship between the Authority & the Concessionaire is well maintained and issues, if any are first resolved amicably rather than resorting to formal resolution procedures. As per the project requirements, representatives from infra facility users can also be included in these forums to seek their opinions on project & solve their grievances, if any.

9.16.3 Knowledge Management Plan

A comprehensive knowledge management and information dissemination plan should be developed as part of increasing efficiency and effectiveness of contract management system. Knowledge management and information dissemination will include:

- Public disclosures
- Online and other IT systems for knowledge management
- Knowledge Management Policy

9.16.4 Public Disclosure

The authority should mandate the private party involved maintaining a database of important documents available for access to the general public and other stakeholders involved thereby targeting to increase seamless flow of information and transparency. Back-up copies of documents and resources accessible should be maintained enabling multiple accesses to resources and ensuring sturdiness of database. Those documents that must be included in the category of "Specified Documents" include:

- Concession Agreement
- Maintenance Manual
- Maintenance Program
- Maintenance Requirement
- Safety Guidelines

Implementation of a knowledge management system by the private party involved in the agreement would assist the Authority in meeting its own accountability requirements and build a robust transparent system.

To protect interest of the Authority and the private party, access to critical documents should be limited and thereby not disclosed as part of the knowledge system. Such documents are termed as "Protected Documents". Access to such documents should be routed through a channel developed whereby request to access is monitored and evaluated by the key stakeholders involved in that particular project only. Also, it should be ensured that withholding such documents is in line with the Right to Information Act, 2005. To release any such document on conditional basis, approval must be sought from the Decision Making Level Authority.



9.16.5 Online & Other IT Systems for Knowledge Management

Technology can be leveraged to a great extent these days to manage all documents. Some of the key applications which must be a part of the knowledge management system within and outside the Authority are:

Within the Authority

- *Performance Review System*- The system should display all KPIs and their current status with respect to a Concessionaire's performance in a particular project. Also, it should be able to generate reports and send the data on fortnightly, monthly and quarterly basis to Operations Level, Supervisory Level and Decision Making Level levels within the Authority where exceptions in KPIs may be highlighted. The access to this system should be at all levels.
- *Monthly Management Information system*- It should capture all transactions related to a project on daily basis and generates a report regularly for the review of the Authority officials. This is of major use to the Operations Level and Supervisory Level field officials on regular basis and for Headquarter level officials to review it.
- *File Tracking System (FTS)* – FTS must record physical file movement in Head Quarter and to some extent in Regional Offices also. This system should be accessible by all officials.

Between Authority & Other Stakeholders

- *Computerized Project Information System (CPIS)* – CPIS is a computerized system to manage and monitor status of Infra Projects and provide an online and real time monitoring facility of report generation for the on-going projects using web based portal of the Authority, if any. The data required to generate these reports is has to be entered online by the respective Project Implementation Units.
- *Revenue Information System* - This application should have a list of all the infra facilities in the country on the internet. An electronic & cash Revenue Information system, will allow highway users to get information about all the Infra facility in the country. A particular infra facility can be searched using the name or location.
- *PPP Project Information System (PPP PIS)* - This system should include all information about current and part PPP Projects, their progress, reports from the Independent Engineer and other stakeholders on the project health. It should provide complete information on a project through project specific websites with a section on those projects, which have defaulted many times and have created major inconvenience to users.



After the entire knowledge has been retrieved, stored and uploaded in a structured manner, it should be updated at regular intervals so that all the decisions are taken up with latest information on current health of the progress of a project.

9.16.6 Knowledge Management Policy

It is essential that all knowledge which is generated in form of communications and documents generated for internal use are preserved in a coherent manner within the Authority. Also, how the flow of information happens within the Authority is also a critical part of Information Dissemination Plan. At all three levels, Operations Level, Supervisory Level & Decision Making Level, information flow should be in accordance with the requirements and mapped to the roles and responsibilities of the officials at that level.

A policy on reviewing all the applications and systems developed as a part of the plan, and escalation within the Authority should be set. **This policy should include:**

- All protocols within the authority Levels
- All compliance requirements to be met in documentation such as following IFRS accounting principles
- Training and user manuals as appendix to assist users in operation of these systems

This policy should be created by the Contract Manager after consultation with all stakeholders and their respective need and requirement.

Along with all this, a Knowledge Management Register also needs to be maintained where all key details regarding all knowledge databases and systems

Sr. No.	Knowledge Data source/ Application	Brief description on usability	Authorities with access to it	Contact Person in case of issues faced



9.16.7 List of registers & reports

The following is a list of registers and reports to be maintained for Contract Management. These registers / reports must be maintained by the Operations Level team and forwarded to Supervisory Level and Decision Making Level officials as required.

Register/ Report	Coverage
KPI report	KPIs for each stakeholder
Service performance register	Indicators for service level obligations of the concessionaire
Status report on Project stage	Project stage & sub - stage
Status report on Activities which are Authorities responsibility	Status of fulfillment of Authorities obligations
Status report on Activities which are Concessionaires responsibility	Status of fulfillment of Concessionaires obligations
Status report on action plan finalized in previous period report	Status of previous period action plan
Risk register	Identify & monitor risk
Issue tracker	Track service delivery issues
Dispute tracker	Track status of resolving disputes
Ongoing review register	Track changes/ updates
Complaints register	Track public grievances & related action taken

The following registers and reports must be maintained by the Concessionaire and submitted to the Authority from time-to-time. These registers / reports should be reviewed by the appropriate person at the Authority and necessary action must be taken on the same.

Register/ Report	Contents	Frequency of submission	Submitted to	Action plan of authority
Issue register	List service delivery issues & actions taken to resolve them	Monthly	Operations Level	Identify major issues, update issue tracker & escalate issues, if necessary
Complaints register	Track public grievances & related actions taken	Monthly	Operations Level	Identify major complaints & escalate if necessary



9.17 Financial Closure

On execution of the contract between the private partner and the public entity, one of the key activities that the private partner undertakes is to achieve financial closure for the project. Activities that lead to financial closure include identifying and organizing the sources of finance for project development. MCA for development of Infra Sector Project (National Highways, Ports) sets out achieving financial close as one of the conditions precedents to be fulfilled by the private partner.

In this regard, the term “financial close” is often used by the public entity and the private partner, the fulfillment of which means that the private partner has made provisions for the disbursement of funds for project implementation.

Why is Financial Close Relevant?

Perspective of the Public Entity

- To ensure that the private partner has made all suitable arrangements for disbursement of funds required for the project
- To understand the presence of pre-disbursement conditions (if any) prescribed by the lenders

Perspective of the Lenders

- To get a clear picture about the revenue model of the project
- To understand the debt service capability
- To understand the acceptability or bankability of the risk sharing framework

Perspective of the Private Partner

- To be ensured of the financial support & commitment of lenders toward project

9.17.1 Defining Financial Closure

“The fulfillment of all conditions precedent to the initial availability of funds under the financial agreements”

Financial close occurs when all the project and financing agreements have been signed and all the required conditions mentioned in them have been met. It enables funds (debt, equity, grant etc.) to be available so that the implementation of the project may start with immediate effect. In simple words, financial close means that the funds for the project have been arranged.

Financial Close includes a set of agreements being executed that are supported by various other legal documents (such as declarations, undertakings, etc.).



The diagram given below demonstrates the several arrangements between public entity, private partner and other entities that have a bearing on achieving the financial close.

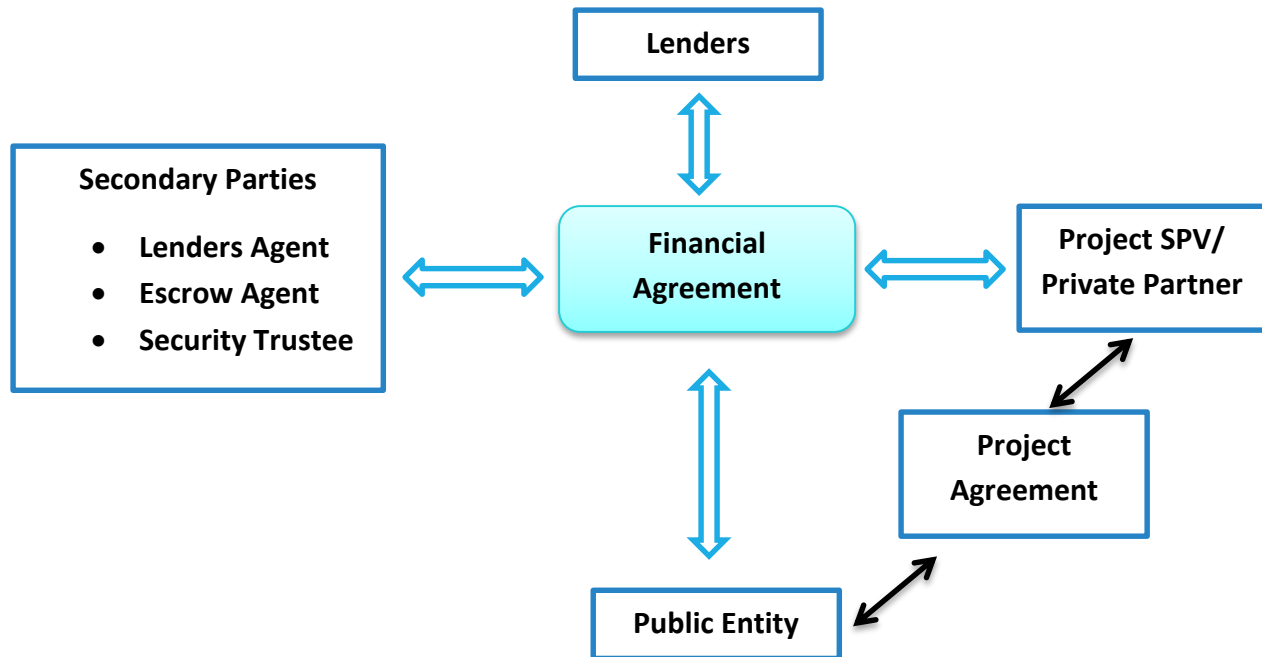


Figure No. 43 – Parties Involved in Financial Close

The primary parties involved in the process of financial close are the public entity, the private partner and the lenders.

From the perspective of the public entity, it is important to know whether the private partner has tied up all the funds required to undertake the project. Therefore, achievement of financial close by the private partner is considered as a condition precedent in the PPP arrangement.

The financial close is also linked to some of the key terms/conditions of the concession agreements such as:

- *Appointed Date/Commencement Date/Date of Award of Concession* - For instance, the date of the start of the concession (in the case of a concession agreement), depends on the date of achievement of financial close and conditions precedent. This is a key date in the project timelines as the start period of a concession is mostly linked to this date.
- *Total Project Cost (TPC)* - The definition of the TPC may also be linked to the cost approved in the financial package or the financial close. This definition in turn is used to finalize the termination payments.



In many PPP arrangements, in the event of termination, the public entity may be liable to protect the lenders' interests to varying extent. In such cases, it is in the interest of the public entity to understand the quantum of debt financing that the private partner has availed off and the terms of such borrowing.

- *From the private partner's perspective*, achieving financial closure means that all the funds required for the project in terms of both equity and debt are tied up.
- *From the lender's perspective*, they will commit their funds (debt) to the project only after the necessary due diligence has been completed. The promoter's ability to execute the agreement and fund the equity will also be assessed. Further, other conditions precedent, if any, to be fulfilled by the public entity and the private partner are also verified.

In addition to the primary parties, there are several other parties that are involved during the execution of the financing agreements depending on the nature of the project and the requirement of such services. The role of these parties begins only after the financing agreements have been executed and financial closure has been achieved. The secondary parties commonly involved and their roles are listed below.

- *Lender's Agent*: Lender's Agent is a party who is identified to act on behalf of all the lenders to a project. Generally, a Lender's Agent Agreement is executed between the Lenders which set out the rights and duties of the Lenders' Agent.
- *Escrow Agent*: The Escrow Agreement is executed between the concessionaire, the Authority, lenders and the escrow bank. This agreement generally provides for the role of the escrow bank as a trustee, its obligations, and the process to be followed for deposits and withdrawals from the escrow account of the project.
- *Security Trustee*: A security trustee is identified through a Security Trustee Agreement that specifies the activities of the security trustee acting as the trustee for the lenders.

9.17.2 Process of Financial Close

The equity in the project is brought in primarily by the private partner and financial investor, if any. The majority stakes in the project are normally held by the private partner who, while submitting a bid for the project, has usually made a commitment to financing it.

The necessary documentary proof should be submitted by each party to the other, demonstrating the fulfillment of each of the conditions precedent. If the approval of any conditions precedent is subject to conditions, all such conditions should have been fulfilled.



The financial investor could form a part of the project either during the bidding stage or after the project has been awarded. If the financial investor is part of the consortium which bids for the project, then by virtue of being the bidder, it will also commit funds (equity contribution) for the project. If the financial investor invests in the project after the selection of the private partner, it will need to buy out the equity stake of the private partner in the project to the extent provided for in the agreement. However, in both cases, the financial investor will undertake sufficient due diligence prior to making equity investments in the project.

In cases where financial closure is linked to the conditions precedent, the lenders/ banks also emphasize the need for the conditions precedent to be fulfilled in order to disburse the first tranche of funding. The debt component of the cost is brought in by a single lender or a consortium of lenders. In such cases, the process normally followed by the private partner to secure a term loan for the project is set out below:

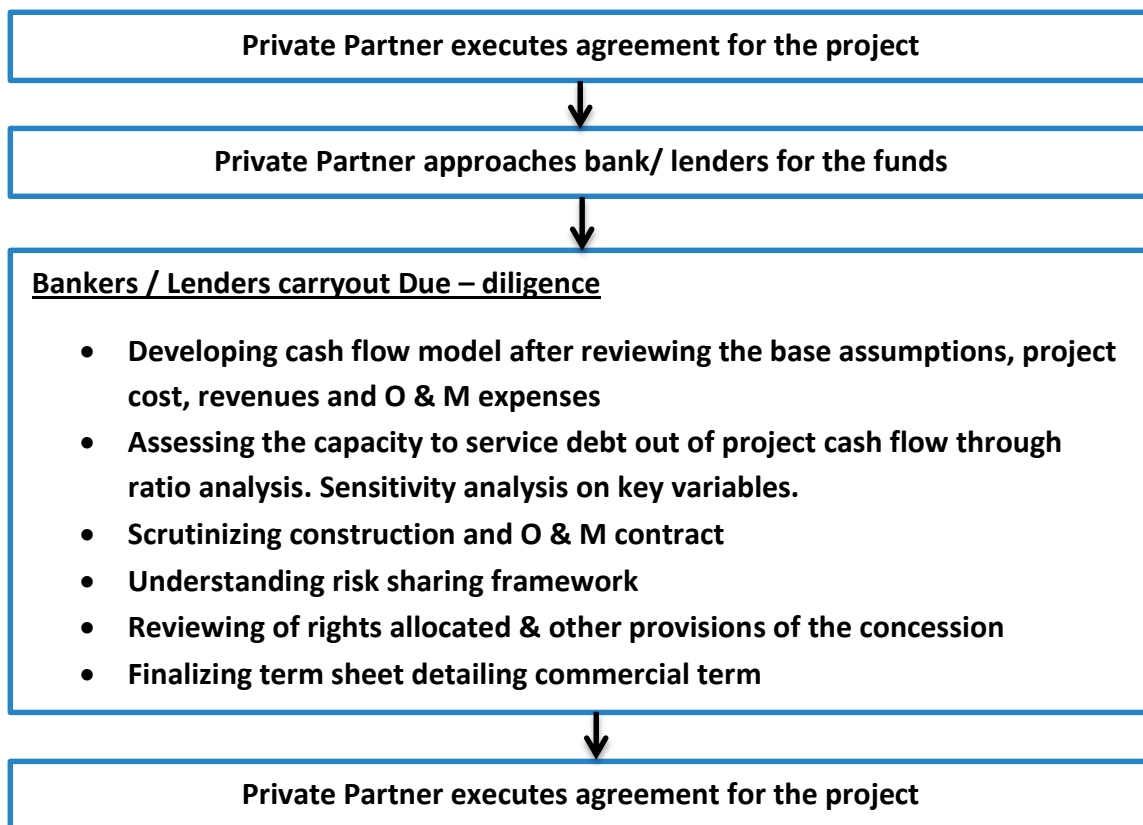


Figure No. 44 – Process to obtain Secure Term Loan for Project



9.17.3 Financial Agreement

For the debt component of the project funded by the banks/ lenders, a number of agreements are executed between the private partner and the lenders/bankers.

Financing Agreements are the agreements executed by the private partner on the financial assistance to be provided by the Senior Lenders by way of loans, guarantees, subscription to non-convertible debentures and other debt instruments including loan agreements, guarantees, notes, debentures, bonds and other debt instruments, security agreements, and other documents relating to the financing (including refinancing) of the TPC.

A common set of financing agreements that need to be executed are listed below.

- *Rupee Term Loan Agreement* - is an agreement to be executed between the private partner, the senior lenders, the lender's agent and security trustee. This agreement generally provides for the commercial terms on which loans have been approved for the project. The pre-commitment conditions and pre-disbursement conditions for the release of funds specified in this agreement should have been fulfilled to achieve financial closure. It is to be noted that multiple lenders may have one or separate rupee term loan agreement with the concessionaire and security trustee.
- *Substitution Agreement* – is an agreement executed between the private partner, the public entity and the lenders or lender's agent (also known as lenders' representative). This agreement generally provides for the rights covered under the event of substitution of the private partner in favour of lenders, events which would trigger substitution, procedure of substitution etc.
- *Inter Creditor Agreement* – is an agreement executed between the Lenders, Lender's Agent and the Security Trustee. The agreement sets out the terms and conditions for sharing the proceeds of the security/monies available for distribution among these parties.
- *Lender's Agent Agreement* – is an agreement executed between the Lenders, Borrower and the Lender's Agent. The agreement generally sets out the duties of the Lender's Agent which is acting on behalf of the Lenders.
- *Security Trustee Agreement* – is an agreement to be executed among the Concessionaire, Lenders, Lender's Agent and the Security Trustee. The agreement specifies the activities of the Security Trustee acting as the trustee for the Lenders.



9.17.4 Escrow Agreement

It is an agreement to be executed between the private partner, the public entity, lender's agent and escrow bank. This agreement generally provides for the role of the escrow bank as a trustee, the details of deposits and the withdrawals from the escrow account of the project, the obligations of escrow bank, and the opening and termination of the escrow agreement etc. The Escrow Agreement provides for the execution of a supplementary escrow agreement between the lender's representative and the private partner for details that are not generally covered under the escrow agreement.

9.17.5 Achieving Financial Close

Financial close is achieved when the private partner has arranged the required funds for implementing the project and has a commitment from the lenders that all the requirements for the financing and the initial disbursement of funds have been fulfilled. In short, financial close means that the private partner has access to funds for development of the project. In order to achieve financial close, the private partner should have submitted the financing agreements and a proof of fulfillment of all conditions precedents by both the public entity and the private partner, if required to the lenders/ bankers. **Financial close is relevant whether or not the project is to be developed through a PPP format.**

9.17.6 Review of Contents of Final Letter from Lender

The public entity will need to review the following in the final letter issued by lenders declaring their readiness to disburse the first tranche of funds:

- Whether the private partner has immediate access to the funds?
- Whether any pre-disbursement conditions are mentioned in the letter? If so, all the pre-disbursement conditions indicated in the letter should have been fulfilled.

Usually, a final letter from the lenders stating the concessionaire's immediate access to funds and fulfillment of all pre-disbursement conditions signals financial close.

As per the Sourcebook for PPPs in TEN-Transport from the European PPP Expertise Centre, the pre-disbursement conditions typically include:

- Permits and planning approvals secured;
- Key land acquisition steps achieved;
- Clarification of remaining design issues;
- Finalization and signing of any remaining key project and financing documents;
- All funding approvals in place





Section – 6
Exit Strategy

10 Exit Strategy

10.1 Phasing down over time:

- Company reduces activity level/financing level over time—may be in preparation for phasing out or transferring responsibility
- Special challenges include: timing; sensitizing target population; maintaining benefit stream; building capacity
- organization taking over responsibilities; viability of activity with reduced company support; managing reputational risks

10.2 Transfer of responsibility (handover)

- Successor institution identified that will continue providing activity or service
- Company assists successor institution in securing needed resources and delivery or management capacity
- Special challenges include: timing and transition; capacity building; whether scope, scale and quality of activities can
- continue; viability of handover; managing reputational risks to company if handover is unsuccessful

10.3 Phasing Out

- Company discontinues support and involvement
- No new sponsor is identified (or needed) to continue the activity
- Special challenges include: impacts on target population; safety net considerations; reputational risks from abrupt or poorly planned and managed exit

10.4 Strategy Points

- In Phasing down, contractor company should reduce the level of activity in O & M, finance.
- While reducing the activity Contractor Company should start training the PSCDCL staff members. They can't directly phase down on daily activities without giving training & until PSCDCL's staff can't operate whole functions by themselves.
- All the necessary documents should be handed over to PSCDCL at the time of transfer of responsibility.



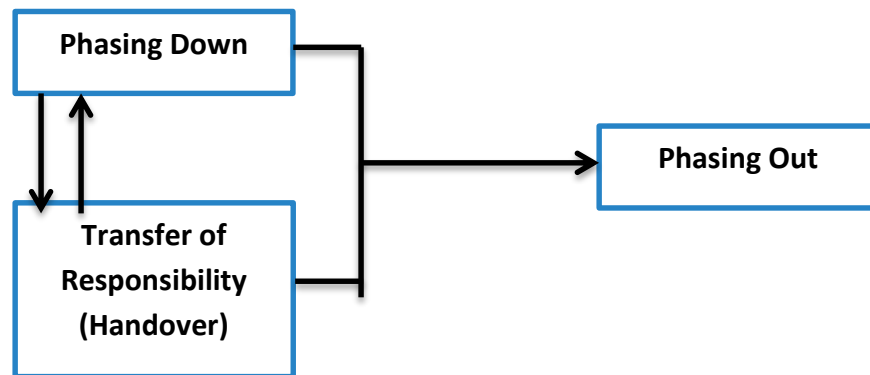


Figure No. 45 – Exit Strategy

Points

- Phasing down & Transfer of Responsibility (Handover) will be taking place simultaneously.
- As Contractor will be Phasing down his operations in step by step process, all those responsibilities will be handed over to PSCDCL over the period of time.
- Phasing out will be stage after Phasing down & handover is done properly

10.5 Steps for Phasing down & Handover will include:

10.5.1 Training of the new staff

- Training should be provided for all areas of Operation – daily operation, maintenance schedule & procedure
- All Operation manuals should be submitted to PSCDCL, Operations manual should explain all procedures in detail
- All financial information should be handed over with all necessary explanations, if required detailed document should be prepared explaining all special cases & treatments in accounting.
- All marketing contacts information & initial introduction for concern parties should be done by contractor.
- Human resource personnel should be given all activities information, payment processing, and list of all employees which should also contain list of past employees.
- All above training should include two parts i.e. classroom training & on the job training. In 'on the job training' new employees will come to know exact working of all departments & systems.



10.5.2 Co – working of PSCDCL new employees & Contractor employees in handover phase

- At the start of handover to all contractor employees will be running the operations
- Co – working will be part of 'On the Job' training, in this contractor employees will work with new employees
- As the training of PSCDCL employees gets completed, contractor can gradually start reducing employees from different department
- In this period PSCDCL employees will get 'on the job' training by contractor employees.
- Contractor will provide all the necessary documentation to PSCDCL of all departments.

10.5.3 Phasing Out

- Contractor will remove all his employees except some personnel from every department to solve issues in initial phase of operation run by PSCDCL.
- These employees will at work site for the period as agreed in Concessionaire agreement.
- Even after this period is over some contractor employees will be available over the telephone & for odd work site visit for the agreed period.

10.6 Alternative Strategy Instead of Phasing Out

- Training the new employees, problem solving of the project in future is difficult & time consuming task.
- PSCDCL can retain all the employees from contractor except the Management team that Control will be taken over by PSCDCL.
- In this we avoid training of new employees, time & money spent for training
- Only Project employees, employer will change to PSCDCL other things will remain as it is as all the policies are developed with assistance & clearance from PSDCL
- Operation will run seamless as employees will not change. All operations queries will get solve without any delay in operation.
- All the decision making management will get replaced with PSCDCL management.



10.7 Documentation

10.7.1 Risk Register (Risk Log)

Risk register should contain the following information as it will provide vital information in future cases, as to manage & mitigate the risk.

Risk Identification

- Risk Category
- Risk Description
- Risk Id
- Current Status of risk

Risk Analysis

- Project Impact
- Risk Area
- Probability of risk occurrence
- Consequences

Risk Evaluation

- Risk Rank
- Risk Trigger

Risk Mitigation

- Prevention Plan
- Response Strategy
- Contingency Plan
- Risk Owner
- Residual Risk

10.7.2 Issue Log

Issue log is important document to analyse the past issues & prevent occurrence of similar kind of issues in future.

Project must have different issue log for every department. At the end of every month issues from departmental issue log should be consolidated in one master issue log.

Issue log must contain

- Department
- Issue
- Issue type
- Description
- Priority (High, Medium, Low)



- Category
- Reported by
- Assigned to (to solve)
- Expected Resolution date
- Escalation required
- Actions taken (steps)
- Date Resolved
- Resolution/ Comment

10.7.3 Financial resources

Financial resources concern the ability of the business to "finance" its chosen strategy. For example, a strategy that requires significant investment in new products, distribution channels, production capacity and working capital will place great strain on the business finances. Such a strategy needs to be very carefully managed from a finance point-of-view. An audit of financial resources would include assessment of the following factors:

Existing Finance Fund

- Cash Balances
- Bank overdraft
- Bank & other loan
- Shareholder's capital
- Working Capital (e.g. Stock, debtor) already invested in the business
- Creditors (Suppliers, Govt.)

Ability to raise new fund

- Strength & reputation of management team & overall business
- Strength of relationship with existing investors & lenders
- Attractiveness of the market in which the business operates (i.e. is it a market that attracts investment generally)
- Listing on the Stock Exchange? If not, is it realistic possibility?

10.7.4 Human Resources

The heart of the issue with Human Resources is the skills-base of the business. What skills does the business already possess? Are they sufficient to meet the needs of the chosen strategy? Could the skills-base be flexed / stretched to meet the new requirements? An audit of human resources would include assessment of the following factors:



Existing Staffing Procedures

- No. of staff by function, location, grade, experience, qualification, remuneration
- Existing rate of staff loss (attrition rate)
- Overall standard of training & specific training standard in key role
- Assessment of key 'intangibles' - e.g. moral, business culture

Future planes for HR resources

- What changes to the organisation of the business are included in the strategy (e.g. change of location, new locations, and new products)?
- What incremental Human resources are required?
- How should they be sourced? (Alternatives include new employment, outsourcing, joint venture etc.)

10.7.5 Physical Resources

The category of physical resources covers wide range of operational resources concerned with the physical capability to deliver a strategy. These include:

Production Facilities

- Location of existing production facilities; capacity; investment & maintenance
- Current production processes – quality; method & organisation
- Extent to which production requirements of the strategy can be delivered by existing facilities

Marketing Strategy

- Marketing Management process
- Distribution channel

Information Technology

- IT Systems – Integration with customers & Suppliers

10.7.6 Change Request throughout the Project

Change Request form submitted by Submitter:

1. Project Name
2. Change No
3. Change Requestor
4. Change Category
 - Schedule
 - Cost
 - Scope
 - Requirement/ Deliverables
 - Testing/ Quality
 - Resources



5. Does this change affect
 - Corrective action
 - Preventive action
 - Defect repair
 - Updates
 - Other
6. Describe the Change being requested
7. Describe the reason for change
8. Priority (Low, Medium, High, Mandatory)
9. Describe all alternatives considered
10. Describe any technical changes required to implement the change
11. Describe Risks to be considered for this change
12. Estimate resources & cost needed to Implement this Change
13. Describe Implications to Quality

Change Request Initial Analysis - Project Manager

1. Hour impact
2. Days impact
3. Schedule impact
4. Cost impact
5. Comments
6. Recommendations

Change Request Control Board - Decision

1. Decision
 - Approved
 - Approved with conditions
 - Rejected
 - More info
2. Reason for Rejection
3. Decision Date
4. Decision explanation
5. Conditions



10.7.7 Financial Reports & Processes

Financial Statements

1. Balance Sheet
2. Income Statement
3. Cash Flow Statement
4. Statement of Changes in equity

Asset log, reserve & surplus management

Depreciation Schedule

Bank statements (reconciled)

EMI schedule (if any)

Financial Planning & analysis (Budgeting, forecasting)

Variance Analysis, Sensitivity Analysis, Scenario Analysis

Various SOP's for financial processes to be followed

1. Payment authorization
2. Order supplies & services
3. Cheque writing & signing
4. Handling of cash
5. Salaries, Payroll & freelancers
6. Income
7. Bank accounts
8. Expense account
9. Budget setting
10. Financial monitoring & audit
11. Role of treasurer
12. Role of Management regarding finance
13. Role of Financial controller

10.7.8 Financial Management Manual

Board Members Financial Responsibilities

- The executive committee
- Finance & audit committees
- Annual operation plan
- Approval of the budget
- General controls



- Reserves
- Conflict of interest
- Financial responsibilities
- Grants

Expenditure items

- Staff responsibilities
- Estimates & tendering
- Approvals for Capital expenditure
- Purchase orders & invoices
- Bank mandates & Cheque signatories
- Credit Cards
- Petty Cash
- Building Projects

Income

- Treasury Management: invoicing, debt collection, income collection, borrowing
- Income from fees
- Gifts, Donations & In – kind
- Grants & contracts
- Costing & recovery of overheads
- Deficits & surpluses

Controls on Financial Accounting

- Chart of accounts
- Retention of Financial records
- Taxes & returns
- Audits
- Reconciling cash book to bank
- Reconciling expense ledger
- Reconciling income ledger
- Reconciling payroll control
- Investment Portfolio
- Regulations (CRA etc.)



Exercising Budgetary Control

- Budget preparation & control
- Resource allocation
- Powers to budget amend budgets & spend reserve
- Budget reporting
- Budget deficit & surpluses

Human Resources

- Staff complement
- Staff salaries
- Staff regarding
- Reimbursement of expenses
- Contracts of employment
- Benefits
- Casual staff & consultancy
- Severance, early – retirement & other non – recurring payments

Physical Assets

- Computer equipment
- Computer software & data
- Land, building & leases
- Other equipment
- Merchandise, stocks & stores
- Insurances

10.7.9 Project Status Report

Project Status Report will be prepared Monthly, Quarterly and Yearly.

Project Status Report should contain following:

- Project Name
- Project Manager
- Report Date
- Report Period

- **Management Summary**

Provide the condensed summary of key indicators, critical issues, critical risks, trends & similar factor. List the significant tasks completed & milestones reached, serious risks controlled & serious risks newly identified, significant issues resolved or new issues that



arose, quality plan status, significant deviations from plan & other major project changes or progress report since previous status report.

- Defined milestones completed
 - Defined task completed
 - Total estimated project hours used
 - Ahead or behind schedule by (hours)
 - Known defects
 - Staff members on project
 - Contingency hours remaining
- **Schedule**
 - Initial estimated completion date
 - Previous estimated completion date
 - Current estimated completion date
- **Key Milestones Table**
 - Title
 - Planned Completion date
 - Previous forecast completion date
 - Current forecast completion date
 - Actual completion date
- **Effort**

Provide explanation for significant discrepancies. Describe impact of these discrepancies on estimates of remainder of the project.

 - Life cycle activity
 - This reporting period - Planned effort (in hours), Actual effort (in hours)
 - Project to date - Planned effort (in hours), Actual effort (in hours)
- **Cost**

Provide the planned and actual cost spent on all project activities since the previous status report and the planned and actual cost for the project to date. Provide an explanation for significant discrepancies. Describe the impact of these discrepancies on estimates for the remainder of the project.

 - Life cycle activity
 - This reporting period – Planned cost, Actual cost
 - Project to date – Planned cost, Actual cost



- **Top Five Risks**

List the top five risks (those having highest risk exposure) on the risk list & status of mitigation or contingency plans to respond to the risk. Escalate any risk that require senior management action.

- **Open Issues**

List the major issues that are not yet resolved or have newly appeared. Indicate target dates for resolving the major issues. Include issues arising from quality assurance or configuration management audits, hardware, and staff or other resource issues. Indicate which issues require attention from senior management.

- **Action Items**

List the major pending action items that were completed since the last status report and new major action items that have been identified since that report.

- **Defects**

Present the total number of defects discovered to date, the number currently open, and the number closed. Identify any potential show-stopping defects. Consider classifying the defects by how they were discovered (testing, peer review, or other) or by severity. Tracking charts showing defect counts in the various categories as a function of time are helpful for making trends evident. Records of the effort expended on defect detection and defect correction are also valuable, to help the project assess its cost of quality and judge where process changes would be cost-effective.

- **Financial Status**

- Invoiced to date – For last month, Actual project to date (includes last month), Client paid to date
- Overdue Invoices – Invoice no, amount, date sent
- Total Contract value – Planned total, forecast total (planned + agreed changes)

- **Change Request History**

- Title
- Amount (impact)
- Schedule change (if any)
- Status (in review, agreed, withdrawn)
- Comments



10.7.10 Lesson Learned

Part - 1

Background

Formally conducted lesson learned sessions are traditionally held during the project close-out, near the completion of project. However, lesson learned may be identified & documented at any point during the project's life cycle. The purpose of documenting lessons learned is to share & use knowledge derived from experience to:

- Promote the recurrence of desired outcome
- Preclude the recurrence of undesirable outcomes

As a practice lesson learned includes process necessary for identification, documentation, validation, & dissemination of lessons learned. Utilization & incorporation of those processes includes identification of applicable lesson learned, documentation of lesson learned, archiving lesson learned, distribution to appropriate personnel, identifications of actions that will be taken as a result of the lesson learned & follow up to ensure that appropriate actions were taken.

Overview

Lesson learned document should contain cause of issue, reasoning behind, any corrective actions to address those issues. When thinking about how to effectively document lesson learned, consider these types of questions:

- What was learned about the project in general?
- What was learned about project management?
- What was learned about communication?
- What was learned about budgeting?
- What was learned about procurement?
- What was learned about working with sponsors?
- What was learned about working with customers?
- What was learned about what went well?
- What was learned about what needs to change?
- How will/ was this incorporated into the project?

Lesson learned should draw on both positive experiences – good ideas that improve project efficiency or save money & negative experiences – lesson learned only after an undesirable outcome has already occurred. Every document lesson learned should contain at least these general elements:



- Project information & contact information for additional detail
- A clear statement of the lesson
- A background summary of how lesson was learned
- Benefits of using the lesson & suggestion how the lesson may be used in the future

At any point during the project life cycle, the project team & key stakeholders may identify lessons. The lesson learned are compiled, formalized, & store through the project's duration. Upon project completion a lesson learned session is conducted focuses on identifying project success & project failure, & includes recommendation to improve future performances of project.

The lesson learned session is typically a meeting that includes:

- Project team
- Selected stakeholder representation including external project oversight, auditors & QA
- Project support staff

Participants in lesson learned sessions typically discuss questions similar to following:

- Did the delivered product meet the specified requirements & goal of the project?
- Was the customer satisfied with end product? If not, why not?
- Where cost budgets met? If not, why not?
- Was the schedule met? If not, why not?
- Were risk identified & mitigated? If not, why not?
- Did the project management methodology work? If not, why not?
- What could be done to improve the process?
- What bottlenecks or hurdles was experience that impacted the project?
- What procedures should be implemented in future projects?
- What can be done in future to facilitate the success?
- What changes would assist in speeding up future projects while increasing communication?

Lessons learned & comments regarding project assessment should be documented, archived, presented & openly discussed with intent of eliminating the occurrence of avoidable issues on future project.

The ultimate purpose of documented lesson learned is to provide future project teams with information that can increase effectiveness, efficiency & to build on the experience that has been earned by each completed project. If documented & disseminated



properly, lessons learned provide a powerful method of sharing ideas for improving work processes, operations, quality, safety, & cost effectiveness etc. & helps improve management decision making & worker performance through every phase of project. They also help to validate some of the tougher times endured during project lifecycle & helps future Project Managers avoid similar difficulties.

Best Practices

- Include all experiences – Lesson learned should draw on both positive & negative experiences
- Act Quickly – Obtain feedback as quickly as possible to avoid people forgetting the challenges faced during the project
- Document – Store lesson learned throughout the project in a central repository
- Make accessible – Make lesson learned accessible to other project
- Archive Lessons – Lessons learned should be archived as historical project data & incorporate into the organizations lessons learned
- Disseminate Lesson – Disseminate lesson learned to the project management community
- Reuse Lessons – Reuse lessons learned from the past projects to help better manage current project
- Involve stakeholder – Involve all the project participants & stakeholder in lesson learned process
- Solicit feedback – Conduct post project survey to solicit the feedback on the project from project team, customers, & stakeholders who were well acquainted with the management of the project
- Identify Lesson learned – Convene a lesson learned session to promote the success of future project
- Archive data - Archive all project data in a central repository. Include best practices, lesson learned, & any other relevant project documentation

Practice Activities

- Identify lesson learned
- At the project end learned & corrective actions taken in central project repository
- Disseminate lesson learned into organization lesson learned
- Archive project lesson learned along with historical project data



Part - 2

Introduction

Capturing lessons learned is an integral part of every project and serves several purposes. While the finalization of a formal lessons learned document is completed during the project closeout process, capturing lessons learned should occur throughout the project lifecycle to ensure all information is documented in a timely and accurate manner. The lessons learned document serves as a valuable tool for use by other project managers within an organization who are assigned similar projects. This document should not only describe what went wrong during a project and suggestions to avoid similar occurrences in the future, but it should also describe what went well and how similar projects may benefit from this information. This document should be communicated to the project sponsor and Project Management Office (PMO) for inclusion in the organizational assets and archives as part of the lessons learned database. If the organization does not have a PMO then other, formal means of communicating the lessons learned should be utilized to ensure all project managers are included.

Lesson Learned Approach

The lessons learned approach describes how the document will be created, what it will consist of, and how lessons will be categorized. It is important that the lessons learned approach is covered in the initial stages of project planning. The reason for this is that a methodology along with an appropriate set of tools should be established to capture these lessons throughout the project's lifecycle. A project journal is one example of a tool to capture these lessons. If no thought is given to lessons learned until project closeout then it is likely that many lessons and details will be omitted from the document. The contents of the lessons learned document should also be determined ahead of time. They should be detailed enough to provide value for future use and the contents should be consistent with other lessons learned documents or organizational standards. The categorization of lessons learned is another consideration. Many organizations categorize lessons by project lifecycle phase or by the knowledge area that the lesson applies to.

Lessons Learned from this Project

The lessons learned must be communicated in a consistent manner. In addition to the categorization and description of the lesson, it is important to state what the impact was and provide a recommendation for project managers to consider on future projects.



Lessons Learned Knowledge base/ Database

The Lesson Learned Knowledge Base contains historical information from previous projects. It is part of the organizational project assets and provides a valuable source of information to be used by similar projects in the future. All project lessons learned and other historical information need to be transferred to this knowledge/database in order to provide one centralized repository for ease of use. This should also include information on issues and risks as well as techniques that worked well which can be applied to future projects. Most lessons learned knowledge/databases contain large amounts of information, so it is important that there is a system for cataloging this information.

Lesson Learned applied from previous Project

The lessons learned document might also state which historical lessons learned were used on this project. This information not only shows the value of the documentation of such lessons, but it also shows which lessons are consistently applied by other similar projects. It is important to reference not only what the lesson was but from which project it was associated with.

Process Improvement Recommendations

It is important that once lessons learned are collected and documented that the organization approves and implement any process improvements identified. It is important for organizations to strive for continuous improvement and this portion of the lessons learned process is an integral step.

10.7.11 Leased Properties & Equipment's

- All the leased contract documents should be maintained from the start of project
- All the leased Payment should be settle on time.
- All documents should be arranged as per the date of lease expiry & in respective property & equipment category.
- Excel sheet should be maintained & updated regularly which should contain following information:
 - Lease starting date & Lease expiry date
 - Name of party (vendor) from whom property or equipment is leased
 - Address of property leased, type of property leased
 - Equipment details – make, age of equipment, any maintenance required



10.7.12 All Permits taken from concern authorities with their renewal date & procedures

- All permits taken from various concern authorities
- Permits should be sorted as per various departments
- All the permits copies should be scanned & stored on cloud
- Data can be maintained as following:
 - Name of the permit
 - Name of the authority
 - Department in company
 - Permit issue date
 - Permit renewal date
 - Permit issuance procedure (this procedure can be used for different project)
 - Permit issuance procedure should also contain documents required, reports / studies to be submitted
 - Permit renewal procedure

10.7.13 Daily, Weekly, Monthly, Yearly Maintenance Schedule

- Maintenance schedule will be different for manufacturing plant, facility, services, machine
- Daily, weekly, monthly, yearly maintenance schedule will be generally different & areas of maintenance will differ.
- Maintenance schedule should contain following:
 - General inspection of plant, machinery, services
 - List the work that need to be done
 - People you need to contact for the jobs
 - Research – Inspection by people contacted for job, cost & time estimate from each, also research online, call for the tender & award to lowest bidder
 - Time estimate for each job
 - Actual time when job will be done with dates
 - The budget estimate for each job (add 10% for any last minute changes)
 - Sort the list (urgent task at the top & moving down to list important ones)



10.7.14 All Project audit & Internal Audit Reports

All the project management knowledge areas should be evaluated for success, shortcomings, comments & recommendations

Project Management Knowledge areas:

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Human resource Management
- Project Communication Management
- Project Risk Management
- Project Procurement Management
- Other matters

Project Integration Management

A subset of project management that includes the processes required to ensure that the various elements of the project are properly coordinated. It consists of:

- Project plan development—integrating and coordinating all project plans to create a consistent, coherent document.
- Project plan execution—carrying out the project plan by performing the activities included therein.
- Integrated change control—coordinating changes across the entire project.

Project Scope Management

A subset of project management that includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It consists of:

- Initiation - authorizing the project or phase.
- Scope planning - developing a written scope statement as the basis for future project decisions.
- Scope definition - subdividing the major project deliverables into smaller, more manageable components.
- Scope verification - formalizing acceptance of the project scope.



- Scope change control - controlling changes to project scope.

Project Time Management

A subset of project management that includes the processes required to ensure timely completion of the project. It consists of:

- Activity definition - identifying the specific activities that must be performed to produce the various project deliverables.
- Activity sequencing - identifying and documenting interactivity dependencies.
- Activity duration estimating - estimating the number of work periods that will be needed to complete individual activities.
- Schedule development - analyzing activity sequences, activity durations, and resource requirements to create the project schedule.
- Schedule control - controlling changes to the project schedule.

Project Cost Management

A subset of project management that includes the processes required to ensure that the project is completed within the approved budget. It consists of:

- Resource planning - determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- Cost estimating - developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- Cost budgeting - allocating the overall cost estimate to individual work activities.
- Cost control - controlling changes to the project budget.

Project Quality Management

A subset of project management that includes the processes required to ensure that the project will satisfy the needs for which it was undertaken. It consists of:

- Quality planning - identifying which quality standards are relevant to the project and determining how to satisfy them.
- Quality assurance - evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- Quality control - monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.



Project Human Resource Management

A subset of project management that includes the processes required to make the most effective use of the people involved with the project. It consists of:

- Organizational planning - identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
- Staff acquisition - getting the needed human resources assigned to and working on the project.
- Team development - developing individual and group skills to enhance project performance.

Project Communication Management

A subset of project management that includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information.

Communication takes at least 90% of a Project Manager's time! It consists of:

- Communications planning - determining the information and communications needs of the stakeholders: who needs what information, when they will need it, and how it will be given to them.
- Information distribution - making needed information available to project stakeholders in a timely manner.
- Performance reporting - collecting and disseminating performance information. This includes status reporting, progress measurement, and forecasting.
- Administrative closure - generating, gathering, and disseminating information to formalize phase or project completion.

Project Risk Management

Risk management is the systematic process of identifying, analyzing, and responding to project risks. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives. It includes:

- Risk management planning - deciding how to approach and plan the risk management activities for a project.
- Risk identification - determining which risks might affect the project and document their characteristics.



- Qualitative risk analysis - performing a qualitative analysis of risks and conditions to prioritize their effects on project objectives.
- Quantitative risk analysis - measuring the probability and consequences of risks and estimating their implications for project objectives.
- Risk response planning - developing procedures and techniques to enhance opportunities and reduce threats from risks to the project's objectives.
- Risk monitoring and control - monitoring residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project life cycle.

Project Procurement Management

A subset of project management that includes the processes required to acquire goods and services to attain project scope from outside the performing organization. It consists of:

- Procurement planning - determining what to procure and when.
- Solicitation planning - documenting product requirements and identifying potential sources.
- Solicitation - obtaining quotations, bids, offers, or proposals, as appropriate.
- Source selection - choosing from among potential sellers.
- Contract administration - managing the relationship with the seller.
- Contract closeout - completion and settlement of the contract, including resolution of any open items.

10.7.15 Post Project Evaluation (After construction period & after end of maintenance, operations contract is over)

Project Summary

This section should provide a summary of the project which was completed. It is important that this summary captures the scope of the project and contains enough detail to provide a full understanding of the project. Since this document will communicate what went right and wrong with the project, as well as lessons learned and recommendations for future projects, it is imperative that this section provide enough background information to base the details in the rest of the document on.

Project Team & Staffing

This section provides information about who the project team consisted of. This usually includes names, titles, project role, and contact information. This information is useful when questions may arise on future projects which are similar in nature. It also



provides a useful list of points of contact should more information be needed on lessons learned from the project.

Introductory Notes - A brief note indicating the project which is being evaluated, who commissioned the report (e.g. the Project Board, Departmental Steering Committee), those who produced the report, and anyone who helped with technical or user advice, or who played a part in its production, e.g. providing quality review. Those who attended the Benefit Review Meeting should be identified.

Background - A brief description of the user organisation, its aims and structure, and the reasons for the required business change

Project - A brief description of the project, its terms of reference (including the main objectives), and an outline of its progress, identifying those who played major roles, e.g. SRO, Project Manager, Senior User.

PPR Conduct - An outline of the terms of reference for the PPR, the methodology used (e.g. interviewing a random sample of users), documentation available etc.

PPR Scope & Constraints - A record of the scope of the PPR exercise and any constraints which might have been imposed or encountered.

Project Deliverables (Planned vs. Actual)

This section describes the expected outcomes of the project as it was originally planned and compares these outcomes against the actual outcomes. This is beneficial in defining any occurrences of scope creep or whether a project may not have been completed as planned. This is helpful information for lessons learned and for future project teams conducting similar projects.

Detailed Findings

Monetary Costs & Benefits - To include comment on whether the costing assumptions and estimates of targeted benefits made at the project's inception proved realistic; a comparison of estimated and actual cost savings and efficiency improvements

NPV Calculations - The estimated NPV in the Business Case should be compared with the actual NPV and reasons given for any variance.

Non-Monetary Costs & Benefits - Each of the benefits projected in the Business Case should be examined to determine how fully they have been realised, with reasons given for any variance.



Unexpected Benefits - Any benefits which have emerged from the use of the system which were not predicted in the Business Case should be outlined.

Disbenefits - Any Disbenefits, expected or unexpected, should be outlined, along with an estimate of their impact on the business.

Transition to Operation

This section describes the transition of the project to operations upon completion. This section should include any difficulties or challenges faced during this transition. This section should also highlight what went right during the transition so future projects may reference and use best practices to improve project performance.

Project Cost

This section should describe how the planned or budgeted costs for the project compare with the actual costs. Costs may be affected by scope creep, poor planning, schedule delays, progressive elaboration, or many other factors. This section should highlight whether or not costs were controlled adequately and if there were additional or excessive costs the reasons should be stated. It is important to communicate why costs were met or may have been higher than planned so future projects can benefit from this information in building a more effective project management methodology within the organization.

Project Schedule

This section describes the project's planned schedule or timeline and how the project measured against this plan. This information is helpful in identifying and understanding what may have contributed to project delays or allowed the project to complete early or on time. This can then be used by the team members on future projects or be referenced by other project teams for use on future projects. Archiving project information during the project closure phase is one of the best ways for an organization to improve its project management methodologies and effectiveness.

Recommendations

This section should highlight any recommendations and lessons learned which would be of use on future projects. This is a valuable part of the project closeout phase and organizational project archives. In the project planning phase one of the first steps is to research organizational archives to identify useful information for planning and executing a project. These recommendations and lessons learned are one of the most important pieces of project success in any effective project management group.



10.7.16 Various Security Measures taken

Construction Site Security

Policies & strategies

- Safety awareness training
- Company policy & strategy
- Physical & electronic device security

General Site Security

- Material theft & Security
 - **Logistics** - The amount of stock left on sites should be kept to an absolute minimum. Unattended materials present an opportunity for thieves, vandals and arsonists. Best-practice stock logistics can help. Just-in-time delivery scheduling could be employed, delivery times could alternate and there should always be someone trustworthy to accept the delivery. If materials have to be ordered in bulk, these should be stored in a security compound or an area where theft will be noticed quickly.
 - **Outbuildings** - Often these buildings contain items that can be helpful for would-be thieves, arsonists and vandals. Ladders, for example, can be used to gain access to roofs; petrol in plant can be used to start and spread fire; and portable tools can be used to break into other areas. Outbuildings are usually inherently weak due to their construction e.g. timber walls. Any temporary outbuilding within the site needs to be securely locked.
Ladders should be secured using good-quality chains and padlocks to prevent illicit use. If the building is not strong enough, then valuable items, or those that could prove helpful to a thief or arsonist, should be stored elsewhere. Security containers should be used to store high-value materials, plant and tools if they can't be removed from the site overnight
 - **Site Office** - Try to position the site office in an area that minimizes access for the opportunist thief. External doors and windows should be in a good state of repair, while good quality locks should be fitted and checked regularly to ensure they function correctly. Vulnerable windows and doors should be fitted with bars and shutters. Use indelible marking techniques on office equipment — stamping, etching, engraving, sandblast, acid pens or ultraviolet lacquer.
 - **Metal Theft** - Opportunist thieves are now stripping materials, especially metals, from existing structures. In such situations, consequential loss can occur, for



example, following the theft of lead roof flashings, when water ingress causes substantial further damage.

Barbed wire secured along the edge of roofs can help prevent access to areas where metals are present within the fabric of buildings. Physical security measures need to be visible, accompanied by appropriate warning signs and deployed at least 2.5m above the ground to give the greatest chance of avoiding any legal liability.

Anti-climb spikes or anti-climb paint can be fitted to down pipes to inhibit access. Consider such measures where metals are present, especially the ferrous metals copper, lead, tin and related alloys like brass and bronze. Care should even be taken to protect areas where non-ferrous aluminum, stainless- and mild steel are present.

- **Cable Theft** - Thieves have been known to cut through live electricity cables and mains to get at metals which they can sell on. MEMs Power. Generation service is making use of the indelible marking technology SmartWater™, and using it in conjunction with their bespoke remote telemetry and tracking system. This can provide an extremely effective recovery and prosecution tool, but again, to get any deterrent effect, it's important that warning notices are displayed.

Non - Plant (general site) security

A site operator's reluctance to improve general site security is usually because of cost, especially with many contractors operating at very low margins. However, uninsured costs following an incident are often greater than the cost of improving site security in the first place, so neglecting to do so proves to be a false economy.

- **Security Patrols**

Consider the use of security patrols or manned guarding undertaken by approved security personnel licensed under the Private Security Act. The SIA and NSI are prominent among several official guarding schemes providing details of approved local security companies.

However, you must remember to assess the risks to security staff when considering the adequacy of other security measures and in particular assess the risks from lone working and implement suitable measures to control those risks.



- **Perimeter Protection**

Boundaries need to be strong enough and high enough (2.4m) to keep intruders out. Security fencing is the best form of perimeter protection, although opaque fencing should be avoided as, once scaled, this may provide a screen to hide criminal activity

Where security precautions are in place, notices should be displayed around the perimeter warning this is the case. These should provide enough information to act as a deterrent without providing details which could be used to vandalize the security measures. Note that if CCTV is installed, notices must be displayed or the imagery cannot be used as evidence.

Ideally, access should be controlled for all sites. Visitors should sign in with any 'reception area' ideally situated near the main gate – the fewer known access points, the lower the risk of illicit entry.

Ensure that stored materials are not stacked against walls or fences. This prevents their use as a climbing aid for access, and from being set alight from outside the boundary. Ideally materials should be stored in a secure container.

- **External Lighting**

Providing external lighting on the site can also deter potential intruders, especially where the site is overlooked by other nearby property. This is particularly important in vulnerable areas.

Lighting needs to be installed as high up as possible. Where lighting itself is obviously vulnerable to attack it needs to be adequately protected against physical damage. Armored cable should be used if malicious damage is a risk. Simple time switches can be used or, alternatively use lighting fitted with motion sensors to reveal intruders.

- **CCTV**

At the outset, it's important to consider what the CCTV system is there to achieve. It can offer a deterrent against malicious damage, arson, or theft attacks. It can also help provide prosecution evidence for the police.

These intentions will determine the type of system and equipment required. For example, cameras can be concealed or highly visible. The more visible the camera is; the higher its deterrent value. The less visible the camera is; the more likely it is to escape vandalism and survive with its testimony intact.



Examples of the types of system available are listed below:

- Pre-event analysis – Systems that allow personnel to observe live movements as visitors arrive and leave the site during the day.
 - Active CCTV/PA systems which allow staff at a control center to speak to intruders and inform them that police have been called are also a useful deterrent.

 - In recent years mobile CCTV towers have also become available providing ease of installation and relocation. The units make maximum use of wireless communications technology, minimising disruptive cable runs and ideal for temporary requirements due to the elimination of ground works requirements.
 - Post-event analysis – involves the recording of images. It enables viewing of the events that took place while the site was left unattended.
-
- **Remote Alarm**

Remote monitored alarm systems can be set up to be triggered by the breaking of an infra-red beam, with monitoring station-, key holder- or direct response from the police. Cheaper than static guards, they offer good site coverage and out-of-hours protection. Whole systems can be hired in and these can even include speakers so that intruders can be challenged.

 - **Security Areas**

Secure areas should be created, ideally off site or in areas on-site that have enhanced physical protection. Access to secure areas should be inhibited using physical barriers such as concrete blocks and telescopic collapsible barriers.

Flammable liquids and gas containers should be stored inside secure areas. They are a target because they can be stolen, used as an accelerant to start fires or even to break locks to commit further theft or vandalism.

 - **Locks**

Wherever possible, locks should comply with current British standards. However, even the best locks do not stand a chance against some items of plant e.g. butane torches and heavy plant. Anticipate such plant being used against locks. Mitigate the risk by removing from the site keys for secure areas and plant that could be used to break into these secure areas.



- **Security Manager**

It is important that one person is made responsible for security. They can delegate responsibility for certain aspects to others, but they need to retain overall control and accountability.

Assuming a proportion of site crime is committed by people with links to the industry, the site supervisor has a large responsibility for minimising the risk of theft. They can make a big difference towards reducing the problem if they:

- make informed hiring decisions
- exercise care with whom they entrust possession of keys and key information
- arrange best-practice staff logistics, for example: review and regularly change arrangements like delivery times, and run staff incentives and penalties for good and poor security practices
- promote an all-round culture of security alertness and consciousness throughout site management

- **Scaffolding**

Scaffolding provides a potential access point onto the roof of a building. Special care needs to be taken and the following additional security measures put in place:

- Corrugated iron sheeting should be bolted to the base of the scaffold, to a height of 3.5m, to deter climbers
- Remove ladders to a secure place at the end of each day
- Ask local people to keep an eye on the property
- Alternatively, the scaffolding can be protected by an intruder alarm with automatic alarm signaling to an alarm receiving Centre

- **Staff Awareness**

Good control of staff and vehicles on site is essential and it is important that security measures are discussed at the top level and that all senior staff fully understand the implications of poor security.

- Make individual members of staff personally responsible for equipment they use. If equipment is lost through negligence or carelessness, disciplinary action could be considered
- Security staff should regularly check and search all employees, their lockers and contractors' vehicles
- Employees' private vehicles should be kept off the site
- Make sure that everyone on site knows the company policy on crime management and is familiar with site security procedures



- Everyone should be told they are expected to report suspicious incidents and that everything they say will be treated in the strictest confidence
- Consider carefully and remember who has access to keys for storage of plant

Arson & Malicious Damage

When planning site security, it's important to bear in mind that, unlike an accidental fire, it is the arsonist's deliberate intention to set fire to buildings or items of plant, and to cause damage.

They will be looking at ways to maximize the damage. This may include the use of an accelerant, such as petrol, or starting fires in more than one place. That's why reviewing and changing security arrangements, as the site circumstances change, is very important.

Undertake a fire risk assessment for the site. As part of this risk assessment, plans should take into account:

- The way in which an arsonist could start a fire
- What the effect would be
- How to reduce or prevent the risk.

Check to see if vandalism is a problem in the site's locality. Note that the majority of arson attacks take place between 7pm and 7am. Locate any vulnerable areas around the site e.g. areas out of sight.

Identify and eradicate any obvious fire hazards if they are present e.g. waste material inflammable liquids etc. Prevent rubbish from building up, indoors and outdoors. The Fire Code of Practice provides more info.

Wheelie bins are often set alight. Lock lids to any external wheelie bins. Where possible, store wheelie bins away from buildings, ideally in their own locked compartment, or with a chain secured with a padlock to a post in the ground.

Any external general litter-type bins should be emptied several times each day. Check the strength of locks, window-bars, doors and windows to ensure they are materially strong enough.

Check that intruder alarms cover all areas and that they are regularly maintained. Chain and padlock small items together (or to a secure structure). Store plant and machinery within view of guards or CCTV.



Data Security

- Antivirus & anti- malware
- Firewalls – protecting network by monitoring & controlling incoming & outgoing network traffic
- Software Updates
- Laptop & mobile security procedures
- Regular backups
- Vulnerability & penetration testing
- Access control
- Encryption
- Auditing

10.7.17 Maintenance, Repair & Operation SOP

Daily, weekly, monthly, half yearly, yearly maintenance will have different SOP's

SOP structure will depend upon nature of the project.

10.7.18 Operation Manual

- Introduction – Purpose
- System Description
 - Key features
 - Inventory
 - Environment – describing machines, software, operational activities & other resources needed
 - System Operations – describing every equipment & system operations step by step, how it works, how to operate
- Product Installation
 - First time users – specific instructions that may be unique to first time user
 - Access control - describing required access controls and privileges necessary for proper system installation or provide a reference to where it is stored
 - Installation - Enter information describing specific installation procedures or provide a reference to where it is stored
 - Configuration - information describing default and custom configuration, configuration options, and their associated definitions or provide a reference to where it is stored
 - Starting the system
 - Stopping the system
 - Suspending the system



- System Usage - describing proper usage of the system and system functionality
- System Management
 - Change management - information describing the system's change management process, any tools used to support it and mechanisms for related communications
 - Configuration Management - information describing the system's configuration management process, any tools used to support it and mechanisms for related communications
 - Release Management - information describing the system's release management process, any tools used to support it and mechanisms for related communications
 - Security administration - information about how to properly secure the system. Describe administrative options, messages, and their associated definitions
 - System administration - information about how to properly administer the system. Describe administrative options, messages, and their associated definitions
 - System maintenance - information describing how system maintenance will be managed
 - Database administration & maintenance - information describing how database administration and maintenance will be managed
 - Backup & recovery - information describing how system backup and recovery will be managed or provide a reference to where it is stored. Include Procedures and sequences describing backup routines, media type, storage locations, and schedules.
 - Service Management - information describing key contacts and associated contact information
 - Roles & responsibilities - information describing roles and responsibilities
 - Regulatory requirement - information describing regulatory and policies compliance requirements
 - FAQ's - information requiring frequently asked questions and associated answers



10.7.19 Communication Management Plan

Introduction

The purpose of the Communications Management Plan is to define the communication requirements for the project and how information will be distributed. The Communications Management Plan defines the following:

- What information will be communicated—to include the level of detail and format
- How the information will be communicated—in meetings, email, telephone, web portal, etc.
- When information will be distributed—the frequency of project communications both formal and informal
- Who is responsible for communicating project information
- Communication requirements for all project stakeholders
- What resources the project allocates for communication
- How any sensitive or confidential information is communicated and who must authorize this
- How changes in communication or the communication process are managed
- The flow of project communications
- Any constraints, internal or external, which affect project communications
- Any standard templates, formats, or documents the project must use for communicating
- An escalation process for resolving any communication-based conflicts or issues

Communication Management Approach

Approximately 80% of a Project Manager's time is spent communicating. Think about it – as a Project Manager you are spending most of your time measuring and reporting on the performance of the project, composing and reading emails, conducting meetings, writing the project plan, meeting with team members, overseeing work being performed, meeting with clients over lunch and many more activities related to your projects.

You should give considerable thought to how you want to manage communications on this project. By having a solid communications management approach you'll find that many project management problems can be avoided. In this section give an overview of your communications management approach.



Communication Management Constraints

All projects are subject to limitations and constraints as they must be within scope and adhere to budget, scheduling, and resource requirements. Project planning and documentation are no exception to this rule. There may also be legislative, regulatory, technology, or organizational policy requirements which must be followed as part of communications management. These constraints must be clearly understood and communicated to all stakeholders. While communications management is arguably one of the most important aspects of project management, it must be done in an effective manner and within the constraints of the allocated budget, time, and resources.

Stakeholder Communication Requirements

Most projects consist of a broad range of stakeholders all of whom may have differing interests and influence on the project. As such, it is important for project teams to determine the communication requirements of these stakeholders in order to more effectively communicate project information. There are a number of methods for determining stakeholder communication requirements; however, it is imperative that they are completely understood in order to effectively manage their interest, expectations, and influence and ensure a successful project.

Customer

You should identify the customer if the project is the result of a solicitation. In such a case, the customer will be involved in reviewing prototypes, approval of designs and implementation stages and acceptance of the final project the project generates.

Communication Methods & Technology

Many times, the methods and technologies used to communicate are just as important of a consideration as the information being communicated. Imagine a large project with many stakeholders who all have different technological capabilities. Some may have access to a share drive while others do not. Some may have access to video teleconferencing and others only have telephone and email capabilities. In order to be effective, project information must be communicated to everyone involved by some method using available technology. Determining communication methods and what technologies are available should be part of determining stakeholder communication requirements.



Communication Flow Chart

Flowcharts provide a visual representation of a process or processes which often allow a better understanding of how the process is intended to work. Project communications may be extremely complex depending on the size and scope of the project and the number of stakeholders. A flowchart provides all stakeholders with a better understanding of the steps involved with the distribution of all project communications.

Communication Standard

Standardization is a proven way to simplify the complexities of project management communications. Many organizations develop and use standard templates or formats for the various communication tools used throughout projects. Standard templates and formats may be applied to certain types of project meetings or specific types of communication (i.e. emails, status reports, etc.). By using standardization, organizations can help ensure that its project teams and stakeholders have a thorough understanding of what is expected and achieve consistent and effective communications.

In addition to standard templates and/or formats, organizations may standardize file naming or sharing conventions. An organization may use SharePoint or some other type of Web Portal/Network tool (blogs, message boards, etc.) as a standard platform from which to share information and communicate. Additionally, an organization may have standard file naming conventions for their stored data on their internal share drives. Many of these tools and new technologies are used in today's projects with team members and stakeholders often spread over wide geographic areas. Standardization provides a level of simplicity to an organization's communication platforms and improves effectiveness and efficiency.

All Communication Channels are documented

- Vendors for all the services
- Maintenance specialist
- Safety contact list updated



10.7.20 List of past big problems & how they were solved

Problems occurred in the past

- Area or destination of the problem
- Cause of problem
- How much time did it take to identify problem? If time was more than anticipated then why it took so much time to identify problem?
- Problem was caused by human error or machine malfunction or combination of both
- If same problem has occurred twice? If yes, then what preventive actions were taken to avoid occurrence of same problem in future
- Occurrence of problem is related to any seasonal changes? Any stressed situations regarding production dead line?
- How problem was solved? Approach to solve the problem?
- If possible, step by step process how the problem was diagnosed & solved?



10.8 Clauses for Exit & Service Transfer Agreement

General

Where the AUTHORITY intends to continue equivalent or substantially similar services to the Services after termination or expiry, either by performing them itself (or by means of a Replacement Contractor), the CONTRACTOR shall ensure the smooth transition to the Replacement Contractor and shall co-operate with the AUTHORITY or the Replacement Contractor as required in order to fulfill the obligations under this Schedule.

The CONTRACTOR shall co-operate fully with the AUTHORITY (and any potential Replacement Contractors tendering for any re-competition for the Services), including enabling the transfer of responsibility for the provision of the Services previously performed by the CONTRACTOR to be achieved with the minimum of disruption to the extent that this is within the CONTRACTOR's reasonable control. In particular:

- during any re-competition run by the AUTHORITY and in anticipation of the expiry or termination of the Agreement and irrespective of the identity of any potential or actual Replacement Contractor, the CONTRACTOR shall comply with all reasonable requests by the AUTHORITY to provide information relating to the operation of the Services, including but not limited to, hardware and software used, inter-working, coordinating on cut-over, access to and provision of all performance reports, agreed procedures, and any other relevant (non-financial) information (including the configurations set up for the AUTHORITY and procedures used by the CONTRACTOR for handling Data) reasonably necessary to achieve an effective transition provided always that the AUTHORITY shall use its reasonable endeavors to answer all queries from such actual or potential Replacement Contractors in the first instance and provided further that:
 - the CONTRACTOR shall not be obliged to provide any information concerning the costs of delivery of the Services or any part thereof or disclose the financial records of the CONTRACTOR to any such party;
 - the CONTRACTOR shall not be obliged to disclose any such information for use by an actual or potential Replacement Contractor unless such a party shall have entered into a confidentiality agreement
 - the CONTRACTOR shall provide sufficient information to comply with the reasonable requests of the AUTHORITY to enable an effective tendering process to take place but shall not be required to provide information or material which the CONTRACTOR may not disclose as a matter of law.



In assisting the AUTHORITY and/or the Replacement Contractor to transfer the Services the following commercial approach shall apply:

- Where the CONTRACTOR does not have to utilize resources in addition to those normally used to deliver the Services prior to termination or expiry, the CONTRACTOR shall make no additional Charges. The AUTHORITY may reasonably request that support and materials already in place to provide the Services may be redeployed onto work required to effect the Services transfer provided always that where the AUTHORITY agrees in advance that such redeployment will prevent the CONTRACTOR from meeting any Service Levels, achieving any other key dates or from providing any specific deliverables to the AUTHORITY, the AUTHORITY shall not be entitled to claim any Service Credits or other remedy for failure to meet that Service Level, achieve that key date or provide that deliverable and the AUTHORITY will pay for any such support and materials at the appropriate rate
- where any support and materials necessary to undertake the transfer work or any costs incurred by the CONTRACTOR are additional to those in place as part of the proper provision of the Services the AUTHORITY shall pay the CONTRACTOR for staff time agreed in advance at the pre-decided rates and for materials and other costs at a reasonable price which shall be agreed with the AUTHORITY in advance

If so required by the AUTHORITY, on the provision of no less than one (1) months' notice in writing, the CONTRACTOR shall continue to provide the Services or an agreed part of the Services for a period not less than one (1) month and not exceeding twelve (12) months beyond the date of termination or expiry of the Agreement. In such event the AUTHORITY shall reimburse the CONTRACTOR for such elements of the Services as are provided beyond the date of termination or expiry date of the Agreement on the basis that:

- materials and other costs will be charged at a reasonable price which shall be agreed in advance between the Parties; and/or
- staff time agreed in advance between the Parties will be charged at the CONTRACTOR's rates in decided at the time of termination or expiry

The AUTHORITY may only exercise the right set out in above paragraph on two (2) occasions, subject to the provision of no less than two weeks' notice for the second occasion on which the right is exercised. For the avoidance of doubt, the cumulative period of any extension shall be no greater than the period of twelve (12) months beyond the date of termination or expiry of the Agreement.



If required, the CONTRACTOR shall provide to the AUTHORITY an analysis of the volumetric (or other measure(s) of usage) of the Services to the extent reasonably necessary to enable the AUTHORITY to plan migration of such workload to a Replacement Contractor provided always that this analysis involves providing performance data already delivered to the AUTHORITY as part of the performance monitoring regime.

If so required by the AUTHORITY, the CONTRACTOR shall make available Key Personnel who have been involved in the provision of the Services as the Parties may agree to assist the AUTHORITY or a Replacement Contractor (as appropriate) in the continued support of the Services beyond the expiry or termination of the Agreement, in which event the AUTHORITY shall pay for the services of such Key Personnel on a time and materials basis at the rates specified

The CONTRACTOR shall co-operate with the AUTHORITY during the handover to a Replacement Contractor and such co-operation shall extend to, but shall not be limited to, inter-working, co-ordinating on cut-over and access to and provision of all operational and performance documents, reports, summaries produced by the CONTRACTOR for the AUTHORITY, including the configurations set up for the AUTHORITY and any and all information to be provided by the CONTRACTOR to the AUTHORITY under any other term of this Agreement necessary to achieve an effective transition without disruption to routine operational requirements.

Transfer of Configuration Management Database

Three (3) months prior to expiry or within one (1) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY a full, accurate and up to date cut of content from the Configuration Management Database (or equivalent) used to store details of Configurable Items and Configuration Management data for all products used to support delivery of the Services.

Transfer of Assets

- Three months prior to expiry or within one week of notice of termination of the Agreement the CONTRACTOR shall deliver to the AUTHORITY the Asset Register comprising:
 - a list of all Assets eligible for transfer to the AUTHORITY; and
 - A list identifying all other Assets, (other than human resources, skills and know-how), that are ineligible for transfer but which are essential to the delivery of the Services. The purpose of each component and the reason for ineligibility for transfer shall be included in the list.



- Within one month of receiving the Asset Register as described above, the AUTHORITY shall notify the CONTRACTOR of the Assets it requires to be transferred, (the “Required Assets”), and the AUTHORITY and the CONTRACTOR shall provide for the approval of the AUTHORITY a draft plan for the Asset transfer.
- **In the event that the Required Assets are not located on AUTHORITY premises:**
 - the CONTRACTOR shall be responsible for the dismantling and packing of the Required Assets and to ensure their availability for collection by the AUTHORITY or its authorised representative by the date agreed for this;
 - any charges levied by the CONTRACTOR for the Required Assets not owned by the AUTHORITY shall be fair and reasonable in relation to the condition of the Assets and the then fair market value; and
 - For the avoidance of doubt, the AUTHORITY will not be responsible for the Assets.
- The CONTRACTOR warrants that the Required Assets and any components thereof transferred to the AUTHORITY or Replacement Contractor benefit from any remaining manufacturer’s warranty relating to the Required Assets at that time, always provided such warranties are transferable to a third party.

Transfer of Software Licenses

- Three (3) months prior to expiry or within one (1) weeks’ notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY all licenses for Software used in the provision of Services which were purchased by the AUTHORITY.
- On notice of termination of this Agreement the CONTRACTOR shall, within one (1) week of such notice, deliver to the AUTHORITY details of all licenses for CONTRACTOR Software and CONTRACTOR Third Party Software used in the provision of the Services, including the terms of the software license agreements. For the avoidance of doubt, the AUTHORITY shall be responsible for any costs incurred in the transfer of licenses from the CONTRACTOR to the AUTHORITY or to a Replacement Contractor provided such costs shall be agreed in advance. Where transfer is not possible or not economically viable the Parties will discuss alternative licensing arrangements.



- Within one (1) month of receiving the software license information as described above, the AUTHORITY shall notify the CONTRACTOR of the licenses it wishes to be transferred, and the CONTRACTOR shall provide for the approval of the AUTHORITY a draft plan for license transfer, covering novation of agreements with relevant software providers, as required. Where novation is not possible or not economically viable the Parties will discuss alternative licensing arrangements.

Transfer of Gateway Software

- Three (3) months prior to expiry or within one (1) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver, or otherwise certify in writing that it has delivered, to the AUTHORITY a full, accurate and up to date version of the Gateway Software including up to date versions and latest releases of, but not limited to:
 - Source Code (with source tree) and associated documentation;
 - application architecture documentation and diagrams;
 - release documentation for functional, technical and interface specifications;
 - a plan with allocated resources to handover code and design to new development and test teams (this should include architectural design and code 'walk-through');
 - Gateway specific development tools e.g. the SOAP client tool;
 - Source Code and supporting documentation for testing framework tool and performance tool;
 - test director database;
 - test results for the latest full runs of the testing framework tool and performance tool on each environment; and
 - A Gateway specific test harness (ATF and performance tool).

Transfer of Documentation

Three (3) months prior to expiry or within one (1) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY a full, accurate and up-to-date set of Documentation that relates to any element of the Services as defined in Schedule 2 (Services).

Transfer of Service Management Process

Three months prior to expiry or within two (2) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY:



- a plan for the handover and continuous delivery of the Service Desk function and allocate the required resources;
- full and up to date, both historical and outstanding Service Desk ticket data including, but not limited to:
 - Incidents;
 - Problems;
 - Service Request;
 - Changes;
 - Service Level Reporting Data;
- AUTHORITY's Customer contact details;
- a list and topology of all tools and products associated with the provision of the Gateway and the Services;
- full content of software builds and server configuration details for software deployment and management; and
- Monitoring software tools and configuration.

Transfer of Knowledge Base

Three (3) months prior to expiry or within one (1) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY a full, accurate and up to date cut of content from the knowledge base (or equivalent) used to troubleshoot issues arising with the Services but shall not be required to provide information or material which the CONTRACTOR may not disclose as a matter of law.

Transfer of Service Builds

Three (3) months prior to expiry or within one (1) weeks' notice of termination of this Agreement the CONTRACTOR shall deliver to the AUTHORITY a full, accurate and up to date version of the following, as a minimum:

- archive of records including:
 - Questionnaire Packs;
 - project plans and sign off;
 - Acceptance Criteria; and
 - Post Implementation Reviews.
- List of the AUTHORITY's Customers contacts;
- programme plan of all work in progress currently accepted and those in progress;
- latest version of Gateway core documentation set;



- Source Code (if appropriate) and all documentation to support the services build tool (currently called "Services Gateway") with any documentation for 'workarounds' that have taken place;
- Source Code, application architecture documentation/diagram and other documentation for Payment Engine;
- Source Code, application architecture documentation/diagram and other documentation for Helpdesk; and
- Project plan and resource required to hand Service Build capability over to the new team.

Transfer of Data

- In the event of expiry or termination of this Agreement the CONTRACTOR shall cease to use the AUTHORITY Data and, at the request of the AUTHORITY, shall destroy all such copies of the AUTHORITY Data then in its possession to the extent specified by the AUTHORITY.
- Except where, pursuant to paragraph 14.1 above, the AUTHORITY has instructed the CONTRACTOR to destroy such AUTHORITY Data as is held and controlled by the CONTRACTOR, three (3) months prior to expiry or within one (1) month of termination of this Agreement, the CONTRACTOR shall deliver to the AUTHORITY:
 - an inventory of the AUTHORITY Data held and controlled by the CONTRACTOR, plus any other data required to support the Services; and/or
 - A draft plan for the transfer of the AUTHORITY Data held and controlled by the CONTRACTOR and any other available data to be transferred.

Training Services on Transfer

- The CONTRACTOR shall comply with the AUTHORITY's reasonable request to assist in the identification and specification of any training requirements following expiry or termination. The purpose of such training shall be to enable the AUTHORITY or a Replacement Contractor to adopt, integrate and utilize the Data and Assets transferred and to deliver an equivalent service to that previously provided by the CONTRACTOR.
- The provision of any training services and/or deliverables and the charges for such services and/or deliverables shall be agreed in advance



- the CONTRACTOR shall produce for the AUTHORITY's consideration and approval three (3) months prior to expiry or within fifteen (15) Working Days of issue of notice of termination:
 - a training strategy, which details the required courses and their objectives;
 - training materials (including assessment criteria); and
 - A training plan of the required training events.
- The CONTRACTOR shall schedule all necessary resources to fulfil the training plan, and deliver the training as agreed with the AUTHORITY.

Transfer Support Activities

- Six (6) months prior to expiry or within fifteen (15) Working Days of issue of notice of termination, the CONTRACTOR shall assist the AUTHORITY or Replacement Contractor to develop a viable exit transition plan which shall contain details of the tasks and responsibilities required to enable the transition from the Services provided under this Agreement to the Replacement Contractor or the AUTHORITY, as the case may be.
- The exit transition plan shall be in a format (eg: Microsoft Project) to be agreed with the AUTHORITY and shall include, but not be limited to:
 - a timetable of events;
 - resources;
 - assumptions;
 - activities;
 - responsibilities; and
 - Risks.
- The CONTRACTOR shall supply to the AUTHORITY or a Replacement Contractor Gateway specific materials including but not limited to:
 - Change Request log;
 - entire back-up history; and
 - Dump of database contents including the Asset Register, problem management system and operating procedures. For the avoidance of doubt this shall not include proprietary software tools of the CONTRACTOR which are used for project management purposes generally within the CONTRACTOR's business.



- The CONTRACTOR shall supply to the AUTHORITY or a Replacement Contractor proposals for the retention of Key Personnel for the duration of the transition period.
- On the date of expiry the CONTRACTOR shall provide to the AUTHORITY refreshed versions of the materials which shall reflect the position as at the date of expiry.
- The CONTRACTOR shall provide to the AUTHORITY or to any Replacement Contractor within fifteen (15) Working Days of expiry or termination a full and complete copy of the Incident log book and all associated documentation recorded by the CONTRACTOR during the three (3) months prior to the date of expiry or termination.
- The CONTRACTOR shall provide for the approval of the AUTHORITY a draft plan to transfer or complete work-in-progress at the date of expiry or termination.

Use of Authority Premises

- Prior to expiry or on notice of termination of this Agreement, the CONTRACTOR shall provide for the approval of the AUTHORITY a draft plan specifying the necessary steps to be taken by both the CONTRACTOR and the AUTHORITY to ensure that the AUTHORITY's Premises are vacated by the CONTRACTOR
- Unless otherwise agreed, the CONTRACTOR shall be responsible for all costs associated with the CONTRACTOR's vacation of the AUTHORITY's Premises, removal of equipment and furnishings, redeployment of CONTRACTOR Personnel, termination of arrangements with Subcontractors and service contractors and restoration of the AUTHORITY Premises to their original condition (subject to a reasonable allowance for wear and tear).

Transfer Regulations

- The CONTRACTOR agrees to satisfy all of its obligations up to the Transfer Date with respect to all outgoings and accrued liabilities in respect of the Employees involved in performing the CONTRACTOR's obligations under this Agreement.
- The CONTRACTOR shall six (6) months before the expiry of this Agreement or the expiry of any extended period or as soon as reasonably practicable after either party has served notice to terminate this Agreement ("Relevant Period"), deliver up, or use best endeavors to procure the delivery up, to the AUTHORITY or such other person as the AUTHORITY may nominate (providing that the AUTHORITY procures that such other person shall keep the information confidential and shall not pass it to any third party



other than for the purpose of taking legal or financial advice), such information concerning the number, identity, terms of employment (including job title and job description), and the percentage of their working time that they are concerned with the Services during the preceding twelve (12) months of any individuals employed or engaged in the provision of the Services by the CONTRACTOR or any Subcontractor (as at the date of the provision of the information). The AUTHORITY may communicate any such information to any person intending to tender to execute works of the nature of the Services (providing that the AUTHORITY procures that such person or persons shall keep the information confidential and shall not pass it to any third party other than for the purpose of taking legal or financial advice). The CONTRACTOR shall warrant the accuracy of any such information relating to the CONTRACTOR in all respects as at the date of disclosure. The CONTRACTOR shall within reason enable and assist the AUTHORITY and such persons as the AUTHORITY may determine to communicate with and meet those employees and their trade union or other employee representatives. If any obligation under this clause would cause the CONTRACTOR to breach any legal obligation (including any obligation under the Data Protection Act 1998) or do any unlawful act, the CONTRACTOR shall do such things as are reasonably practicable to comply with its obligations under this clause without breaching any legal obligation or doing any unlawful act, including, if relevant, providing information in an anonymised form.

- During any Relevant Period, the CONTRACTOR shall not without the AUTHORITY's prior written consent (which shall not be unreasonably withheld), and shall use best endeavors to procure that no other employer (other than the AUTHORITY) shall materially vary the contracts of employment of (except to honour any pre-agreed obligation), redeploy (except at the request of the individual), or terminate the employment of any of the Employees who are wholly or mainly employed in the provision of the Services (except in a case of gross misconduct or serious poor performance, for which, for the avoidance of doubt, the CONTRACTOR shall not require the AUTHORITY's prior written consent in order to terminate the relevant Employee's employment) or (except to fill a vacancy or to meet the relevant Service Levels) recruit any person for employment in connection with, or assign any additional employee who will spend the whole or a majority of their time allocated to all or any of the Services.
- No later than fourteen (14) days following the Transfer Date, the CONTRACTOR shall provide to the AUTHORITY (who may then provide to any Replacement Contractor) updated payroll information following the final payroll run details in respect of the Assigned Employees.



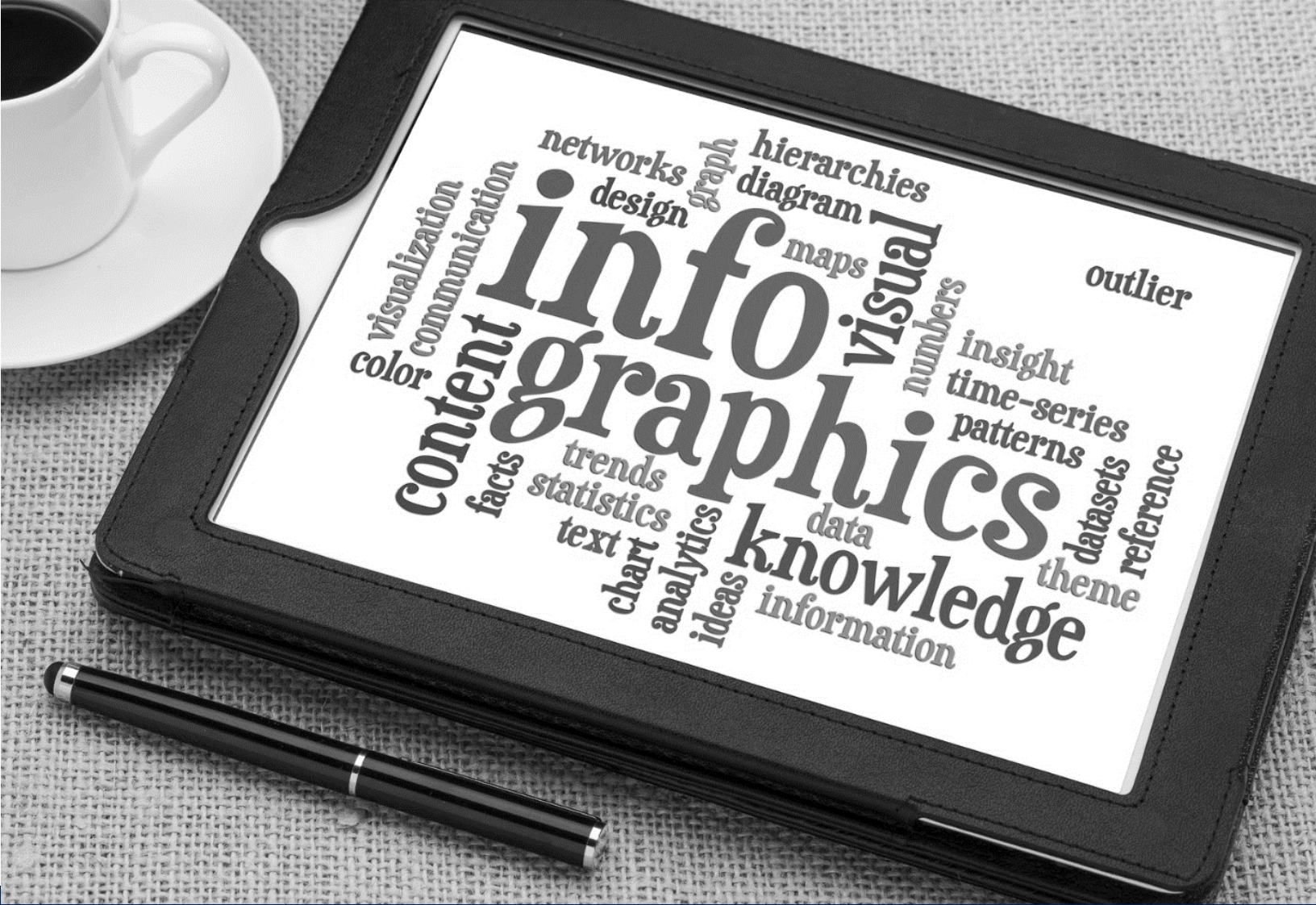
Government Furnished Equipment

This section of the plan describes the transition of any equipment for a scenario where the customer is a government entity and provides the contractor with government property. This property may include hardware such as laptops/PCs, software bundles or add-ons, portable electronic devices (PEDs), and security badges. Typically, GFE will be turned back over to the government customer during a transition and may or may not be re-issued to the new contractor.

Incumbent Owned Equipment

Equipment owned by the incumbent contractor will usually remain with them when they transition off of the contract. However, there may be instances where incumbent owned equipment supports customer applications and services. This section should state that incumbent owned equipment will remain with the incumbent - and identify options where this equipment may be available for purchase by the new contractor or customer for their use (i.e. application server and application for helpdesk, etc.).





Section – 7
ANNEXURES
&
BIBLIOGRAPHY

Annexure - 1

ENVIRONMENT IMPACT ASSESSMENT

An Environmental Impact Assessment (EIA) report is often a key requirement as part of the process of gaining Environmental Clearance (EC). The EIA report can be a 'Stand Alone' document or can form a part of the DPR or Feasibility Report as the case may be.

The generic structure of an EIA in India is outlined in Appendix III of the MoEF EIA Notification, which defines the EC process. Further general (non-India specific) information on EIAs is available in the World Bank's Operational Policy.

The various particular factors to be considered for EIA are sector specific. However, in general, the following are common to EIAs prepared for all sectors.

- **Project description:** Describes the proposed project and its geographic, ecological, social and temporal context, including any off-site investments that may be required. Indicates the need for any resettlement or social development plan.
- **Baseline Data:** Describes relevant physical, biological and socioeconomic conditions, including all changes anticipated before the project commences, within an area around the project site. Under current regulations in India this is a radius of 10 or 25km of the site, depending on whether the site is in the vicinity of sensitive areas such as National Parks, sanctuaries, or archaeological monuments. Additionally takes into account current and proposed development activities within the project area but not directly connected to the project.
- **Environmental Impacts:** Predicts and assesses the project's likely positive and negative impacts in quantitative terms to the extent possible. Identifies mitigation measures and any negative environmental impact that cannot be mitigated. Explores opportunities for environmental enhancement.
- **Analysis of alternatives:** Systematically compares feasible alternatives to the proposed projects site, technology, design and operation including the "without project" situation in terms of their potential environmental impacts, the feasibility of mitigating these impacts, their capital and recurrent costs, their suitability under local conditions and abatement.
- **Environmental Monitoring Programme and Environmental Management Plan:** Describes mitigation, monitoring and institutional measures to be taken during construction and operation to eliminate adverse impacts, offset them, or reduce them to the acceptable levels.



- Description of project costs and benefits
- Consultation: Record of consultation meetings, including consultations for obtaining the informed views of the project affected people (PAPs), local NGOs and regulatory agencies. Disclosure also of the consultants that were engaged during the study.
- Summary and conclusions covering the justification for the project and the approach to mitigating adverse effects.

Environmental Clearance

The process and requirements for Environmental Clearance, including definitions of whether projects are required to get clearance at the Central or State level, are covered in the Ministry of Environment and Forests' (MoEF) EIA Notification. Further information is available from the Ministry's EIA Manual.

The Main Features of EIA Notification are summarised below:

Categorization of Project & activities

The Notification broadly categorizes all projects and activities as either Category A or Category B. This categorisation depends on the size of the project and the degree of potential impacts on human health and natural and man-made resources. The specific thresholds for categorising projects are provided in the Schedule to the Notification.

All Categories A projects require a 'Prior Environmental Clearance' (EC) from MoEF.

- **Category A** projects include all physical infrastructures whose size and cost is greater than certain minimum levels as defined in the Schedule. Environmental Clearances for these projects are granted at the Central level. Physical infrastructure includes projects in the ports, highways, water and sanitation, urban transport, and solid waste management sectors.

All new Infrastructures are classified as Category A. In addition, expansion of Social & commercial infrastructure, National Highways greater than 30 KM, ports, power plants, water & sanitation involving additional Right of Way (ROW), involving land acquisition and passing through more than one State are categorized as Category A.

- **Category B** covers projects with lesser size or capacity, and smaller impacts than Category A. Environmental Clearances for Category B projects are granted at the State level. Each State has a dedicated department or Board as, required by law, which would grant the Clearance.

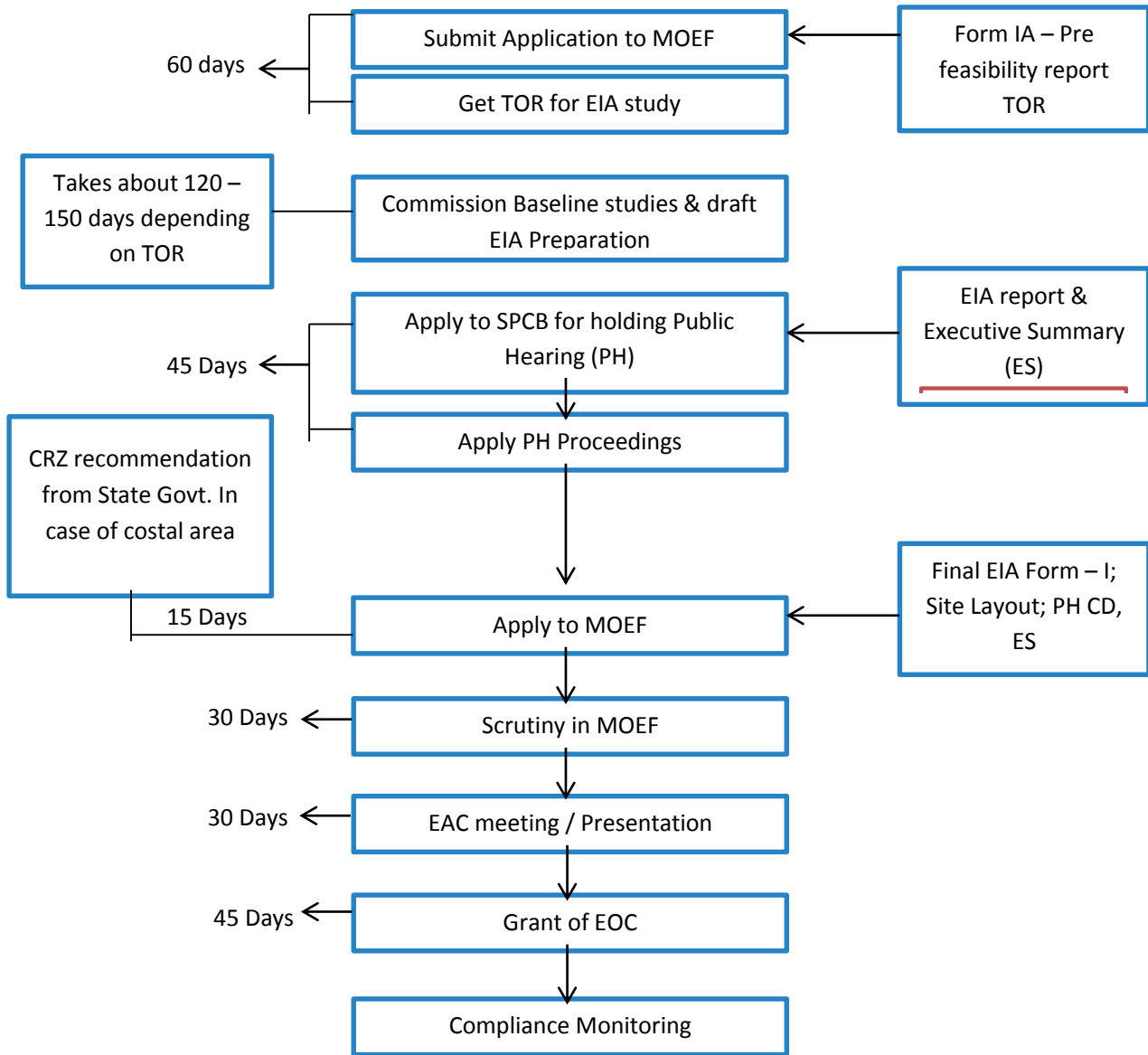
The actual size definitions depend on the sector or project type. For example in the case of ports, projects with handling capacity of more than 5 MTPA come under Category A, while those with less than 5 MTPA are Category B.



Projects can be new works, the expansion and modernisation of existing projects, and changes in the product mix of existing projects.

Note, all Railway Projects, with no exception, are totally exempted from seeking Environmental Clearance under Government regulations. It should be noted however that some external funding agencies, such as JBIC, may require an EIA as part of the feasibility study or DPR.

Environmental Clearance Process



TOR (Term of reference); CRZ (Coastal Regulation Zone); SPCB (State Pollution Control Board); EAC (Environmental Appraisal Committee); EC (Environmental Clearance); CD (Compact disk)



EC Process for New Projects

The environmental clearance process for new projects consists of four stages, some of which may not be required for all projects. These four stages in sequential order are:

- Stage (1) Screening (Only for Category 'B' projects and activities)
- Stage (2) Scoping
- Stage (3) Public Consultation
- Stage (4) Appraisal

Screening Stage

At the screening stage, which only applies for Category B projects, the State level Expert Appraisal Committee (SEAC) reviews the application (Form 1) to determine whether the project requires further environmental studies for preparation of an EIA report. This decision also depends on the nature and location of the project. Projects are then further categorised according to whether they require an EIA (Category B1) or not (Category B2).

Scoping Stage

At the scoping stage, detailed and comprehensive Terms of Reference (TOR) addressing all relevant environmental concerns for the preparation of an EIA report are determined. This is carried out by the Expert Appraisal Committee (EAC) for Category A projects and by the State-level Expert Appraisal Committee (SEAC) for Category B1 projects. Scoping is not required for B2 projects.

Public Consultation Stage

This stage involves consultation with project affected persons on the effects of the project. Public consultation is required for all Category A and Category B1 projects, with some exceptions including projects involving the expansion of Roads and Highways which do not involve any further acquisition of land.

The concerns heard during the public consultation process must be addressed in the EIA report and in the Environmental Management Plan.

Appraisal Stage

This stage sees the overall and detailed scrutiny of the final EIA report, which will have been presented to EAC or SEAC. The EAC or SEAC considers the environmental aspects of the project and makes a recommendation to the Regulatory Authority on whether prior EC should be granted or not.



EC Process for Existing Project

In the case of expansion, modernisation or changes to the product mix for existing projects the EAC or SEAC will decide on the requirements for EIA and public consultation.

Applying for Environmental Clearance

An application seeking an EC must be made in the prescribed Form 1 which is provided in the Notification. This must be made before commencing any construction activity, or preparation of land, at the site by the applicant. The applicant must include a copy of the pre-feasibility report with the application.

In view of the above it can take up to a year (12 months) to get an EC for an infrastructure project. Project sponsors should plan to allow this much time in the PPP project cycle.

In addition to the EC, some permits like 'Consents under Water and Air Acts' for the projects have to be obtained from the concerned State Governments where the projects are located. This can be pursued in a parallel process, and will usually take less time than the EC process itself.

Checklist of information required in Form 1 of the EIA Notification

No.	Information required in Form 1	Collected? (yes, no)
1	Basic Project Information (name, location etc.)	
2	Details of activity related to the project	
2a	Actions causing physical changes in the locality	
2b	The projects use of natural resources	
2c	Associated substances or materials that could be hazardous or harmful	
2d	Production of Solid waste	
2e	Release of Pollutants into air, ground & waterways	
2f	Generation of noise, vibration, emission of light & heat	
2g	Risk of accidents	
2h	Factors that could lead to community impacts or consequential effects	
3	Details of environmentally sensitive within certain distance of project	
4	Proposed TOR for EIA study	



Annexure - 2

SOCIAL IMPACT ASSESSMENT

Social Impact Assessment (SIA) is a process that provides a framework for prioritizing, gathering, analyzing, and incorporating social information and participation into the design and delivery of developmental interventions. It ensures that development interventions are:

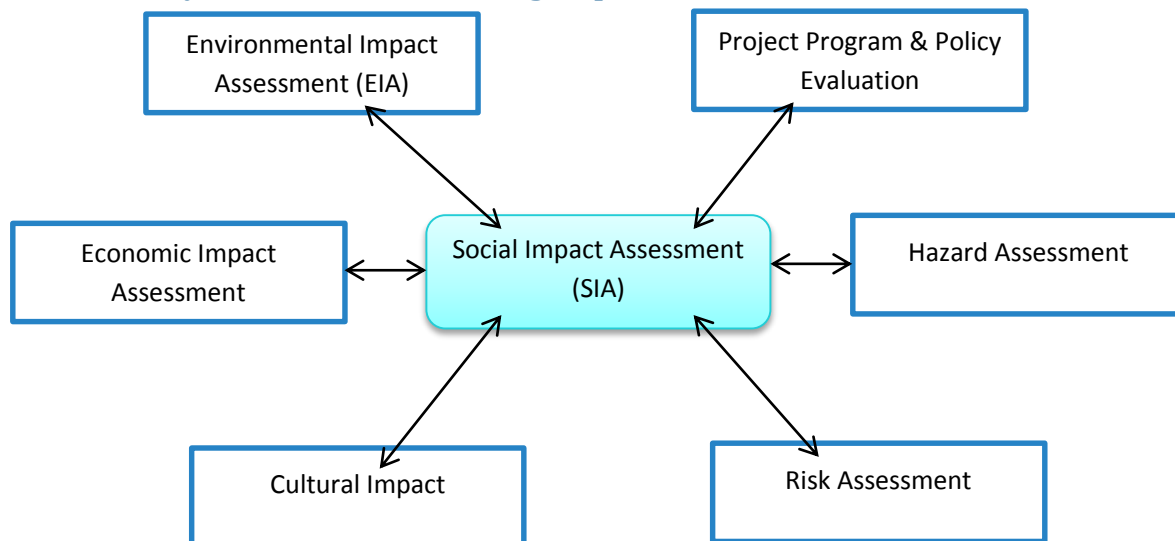
- Informed and take into account the key relevant social issues
- Incorporate a participation strategy for involving a wide range of stakeholders.

At the micro-level SIA impacts on individuals. At the meso-level SIA impacts on collectives, e.g. groups of people, institutions, and organizations. At Macro-level SIA impacts on social macro-systems, e.g. national and international political and legal systems.

Stages in Social Impact Assessment

- Describe the relevant human environment/ area of influence and baseline conditions
- Develop an effective public plan to involve all potentially affected members of the public
- Describe the proposed action or policy change and reasonable alternatives
- Scoping to identify the full range of probable social impacts
- Screening to determine the boundaries of the SIA
- Predicting Responses to Impacts
- Develop Monitoring Plan & Mitigation Measures

Ideally the SIA should an Integral part of other assessments as shown below



National Resettlement & Rehabilitation Policy 2007

(Gazette Notify: F.No.26011/412007-LRD)

Infrastructure sector projects often require the exercise of legal powers by the state under the principle of eminent domain for acquisition of private property. This can lead to involuntary displacement of people, depriving them of their land, livelihood and shelter and these have traumatic, psychological and socio-cultural consequences on the affected population which call for protecting their rights.

The National Resettlement & Rehabilitation Policy provides for the rehabilitation and resettlement of persons affected by the acquisition of land for projects of public purpose or involuntary displacement due to any other reason, and for matters connected therewith or incidental thereto. The Policy extends to whole of India except J&K.

The Policy recognizes R&R issues formulated with the active participation of the affected persons with benefits beyond monetary compensation. It also recognizes the plight of those who do not have legal or recognized rights over the land on which they are critically dependent for their subsistence. The adverse impact on affected families - economic, environmental, social and cultural- needs to be assessed in a participatory and transparent manner. Government should inter alia, as stipulated by the policy, take into consideration the alternatives that will:

- Minimise the displacement of people due to the acquisition of land for the project
- Minimise the total area of land to be acquired for the project, and
- Minimise the acquisition of agricultural land for non-agricultural use in the project.

The options assessment may be in terms of the alternative project plans, potentially suitable sites, technological choices available, or a combination of these. Suitable institutional mechanism should (as stipulated by the policy) be developed and adopted for carrying out the task in a transparent manner.

Social Impact Assessment of Project

The appropriate Government shall ensure that a social impact assessment study (SIA) is carried out whenever it is desired to undertake a new project or the expansion of an existing project that will involve involuntary displacement of four hundred or more families en masse in plain areas, or two hundred or more families en masse in tribal or hilly areas, DDBs (Desert Development Blocks) or areas mentioned in the Fifth Schedule or Sixth Schedule to the Constitution.

The SIA must be carried out in the proposed affected areas taking into consideration the impact that the project will have on public and community properties, assets and infrastructure. In particular: roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds, grazing land, plantations,



public utilities, such as post offices, fair price shops, food storage godowns, electricity supply, health care facilities, schools and educational or training facilities, places of worship, land for traditional tribal institutions, burial and cremation grounds.

Subsequently, the SIA should describe all required infrastructural facilities and amenities in the resettlement area, specify clear timeframes within which the implementation of the rehabilitation package shall be accomplished and lay down an effective monitoring and grievance redressal mechanism. Where both EIA and SIA are required, the public hearing carried out in the project affected area for EIA shall also cover issues related to SIA.

The SIA report shall be examined by an independent multi-disciplinary expert group with two non-official social science and rehabilitation experts. The SIA clearance shall be accorded as per the procedure and within the time limits.

Authorities for Rehabilitation & Resettlement

The State Government appoints an Administrator to be not below the rank of District Collector. The responsibilities involve minimizing displacement and identifying non-displacing or least-displacing alternatives, hold consultation with the affected families, prepare a draft scheme for rehabilitation and resettlement (R&R) and budget for R&R activities in consultation with representatives of the affected families and arrange and allot adequate land for R&R also sanction benefits

Rehabilitation & Resettlement benefits for Affected Families

This includes housing benefits, allotment of agricultural land, registration of land or other property allotted. Financial assistance for cattle shed, transportation cost, working shed or shop employment and skill development. Rehabilitation grant and option for allotment of shares, land development projects, fishing rights, subsistence allowance, monthly pension to vulnerable affected persons, option for a lump-sum payment in lieu of benefits, special provisions for Scheduled Tribes and the Scheduled Castes.

Grievance redressal

The policy provides for a strong grievance redressal mechanism including a standing R&R Committees at the district and project level. These committees shall have representatives from the affected families including women, voluntary organizations, local elected representatives, etc.

Social audits of the rehabilitation and resettlement schemes and plans should be undertaken.

Social audit is a way of increasing community participation, strengthening links with government and/or service providers, promoting transparency and public accountability, and instilling a sense of responsibility among all those involved.



It is a process by which the people (the final beneficiaries of any scheme, programme, policy or law), are empowered to audit such schemes, programmes, policies and laws.

A social audit involves both the service providers and the users examining the impact of the project or service in a systematic way comparing the real benefits that have accrued with the expected benefits, while also looking at unexpected impacts.

It is an ongoing process (in-fact social, financial and environment audit should be an ongoing process starting from the designing phase to monitoring phase) by which the potential beneficiaries and other stakeholders of an activity or project are involved from the planning to the monitoring and evaluation of that activity or project. It thereby tries to ensure that the activity or project is designed and implemented in a manner that is most suited for the prevailing local conditions, appropriately reflects the priorities and preferences of those affected by it, and most effectively serves public interest. The findings of the social audit are shared with all stakeholders and where problems are identified, the process for implementing changes is initiated.

SIA in Infrastructure sector

For purpose of SIA, Infra sector includes a wide range of activities including:

- Construction, expansion and rehabilitation of physical assets; streets, roads and highways, port facilities and railway infrastructure, logistics and trade facilitation infrastructure.
- Improving access to transportation and logistics to promote economic expansion and poverty reduction.
- Institution-building through improved planning and programming, training, cost recovery and cost sharing, and stakeholder involvement in various phases of transportation sector planning and operations.
- System improvements designed to promote efficiency and safety, reduce waste and sector-related pollution, and integrate vulnerable groups as areas of special focus.
- Sector restructuring through the introduction of new forms of ownership and partnership, increased involvement of consumers, and the introduction of community based transportation schemes.
- Investments in non-transportation areas where transportation has substantial impact such as HIV/AIDS.

The outputs of a social analysis include inputs to other aspects of the project assessment, including the revenue forecasts needed to assess financial viability and assisting in identifying potential barriers to the project and developing mitigation strategies.



Social Impact Assessment facilitates the achievement of Social development goals within the Infra Sector so that:

- The access of the poor and vulnerable in infrastructure and services is expanded and improved
- Poor peoples' assets (homes and communities) and capacities (education and willingness to work) are enhanced through improved and affordable access
- Capabilities of communities to participate in the design and operations of infra services are strengthened
- Adverse risks that people, especially the poor and the vulnerable, may disproportionately shoulder are reduced or mitigated
- Public accountability is improved as is the ability of remote people to participate in the political process, and
- Policy reform is facilitated by the results of social analysis, which in many cases provides a social framework of support for making difficult choices.

In the Infra sector, social analysis has been essential to identifying various kinds of infrastructure users and in assessing cost recovery mechanisms, beneficiary assessments and willingness to pay



Annexure - 3

DETERMINATION OF DISCOUNT RATE

Definition of Discount Rate

In risk valuation there is a distinction between categories of risk. The discount rate may be used to value systematic uncertainties.

Category	Example	Description
Decision uncertainties	Major change in technology	Decisions affecting project (Scope)
Risk before contract close	Delay in go decision on project due to elections	Decisions affecting mainly before the project starts
Systematic uncertainties	Inflation risk	Uncertainties due to market circumstances
Pure risks	Accident at construction site	Potential project related events with negative impact
Regular uncertainties	Uncertainty in volume of raw material availability	Uncertainties in quantities or prices, related to level of design of project

Depending on which theoretical framework is used, the term Discount rate can refer to different rate:

	Excluding Inflation	Including Inflation
Risk free	Real risk free rate	Nominal risk free rate
Including standardized risk premium	Real rate including risk	Nominal rate including risk
Including project specific risk premium	Real rate including project specific estimation or systematic risk	Nominal rate including project specific estimation of systematic risk

The main purpose of the discount rate is to make it possible to compare cash flows over time. To determine the most appropriate discount rate several decisions need to be made:

- Preference for simplicity and consistency (standardized discount rate) or preference for best possible valuation (project-specific discount rate)
- Preference for explicit risk valuation of systematic risk (in the numerator through cash flows) or implicit valuation of systemic risk (in the denominator through discount rate).



We note that various countries have guidelines recommending different discount rates for different types of appraisal. For instance:

- Australia uses a nominal rate including risk for both project appraisal and bid evaluation.
- The Netherlands uses a real rate including project-specific risk for project appraisal, and a nominal rate including project-specific risk for bid evaluation and VfM analysis.
- The UK has used a real risk-free rate since 2003 (and a real rate including risk prior to that), arguing that risks should be made transparent in the cash flows of a project.

Determination of risk-free rate

From a financial perspective, the risk-free rate is determined by accounting for the most recent market information. The asset that is traded in the markets that best approaches “risk-free” is a Federal government bond. For a standardized discount rate, governments tend to look at long-term historical averages. For instance the Netherlands used a discount rate of 4% (real risk-free rate) until 2008, and then subsequently reset it to 2.5%. We note that in financial markets only the nominal rate is observable, therefore to determine the real rate a correction has to be made for inflation. For instance, if a 15-year government bond has an interest rate of 7.5%, and the average Consumer Price Index (CPI) has been 5% over the last ten years, then the real discount rate would be approximately 2.5%.

The risk-free rate of the project should be determined in relation to the respective financing terms. Overall financing can be sliced into “tranches” with different durations based on the project cash flows. The tranches with early repayment have a shorter duration, which is reflected in the interest rate. In addition, in this case the rate should be the forward expected rate. The rate needs to account for the fact that the first drawdowns will occur after the date of the VfM assessment, therefore forward prices should be used to determine this expected rate. In similar fashion to the pricing of an interest rate swap, blended rates can be determined for all tranches together, facilitating the use of a single discount rate.

Pricing is a complicated exercise, and it is important to consider whether this approach is necessary for the sole purpose of conducting a VfM assessment. During the early stages of the project in particular this is often not the case, and a simpler alternative on the basis of today’s rates for the indicative average duration can be used. However, after receipt of the bids, this simpler approach should be abandoned because it may inhibit a fair comparison.



Determination of risk premium using a theoretical approach

If systematic risk has not been incorporated in the cash flows of a project, then it should be accounted for in the discount rate. Financial theory offers the Capital Asset Pricing Model (CAPM) to determine the relevant risk premium. The CAPM states that each asset has a correlation (beta) to the general market risk (r_m). For relatively low-risk assets the beta is below one and for high-risk assets the beta is above one; therefore the beta is used to assess how the market's movements affect the magnitude of the value of an asset's movements. Typically, government infra projects such as are not traded on financial markets. To determine a beta for a specific project (or projects in general) it is possible to select assets (i.e., companies) that are traded on markets that best reflect the risk profile of the project, deriving a beta for this "peer group" that can be applied to the project.

The alternative to estimating a project-specific premium is to use a shortcut stating that the average beta for all assets is 1 (true by definition) and therefore the standardized risk premium equals the market risk premium. This approach can either lead to an overestimation of risk for low-risk projects—such as building extra capacity for a busy road—or an underestimation of risk for high-risk greenfield or technological innovation projects.

The market risk premium can be estimated or derived from available literature. In this literature, the market risk premium is estimated to be between 3% and 9%. If a specific project has a beta of 0.5 (based on benchmark analysis of projects) and the average market risk premium is 6%, then the risk premium for this project would be 3%.

Determination of Risk premium using market based information (WACC)

An alternative way to estimate the risk premium for projects is to look at information from bids on previous similar projects. We can then apply the weighted average cost of capital (WACC) formula to derive the average cost of finance, which is an estimate for the discount rate.

The weighted average cost of capital formula is:

$$\text{WACC} = \frac{E}{D+E} r_e + \frac{D}{D+E} r_d (1-t)$$

Where 't' is the tax rate, 'D' is the total amount of debt, 'D+E' is the total amount of financing, 'r_d' is the interest rate on debt, 'E' is the total amount of equity, and 'r_e' is the return on equity. Bids from similar projects can provide clues as to the value of all of these variables, although typically this information is confidential.

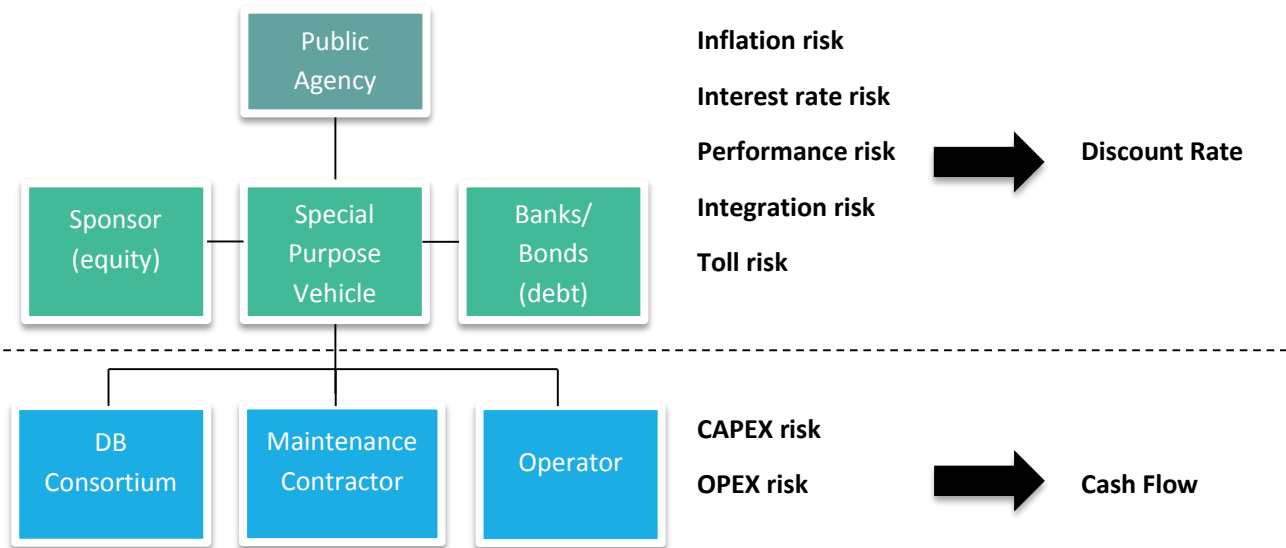


In a PPP approach, a substantial portion of the risk profile is reflected in the WACC. The pricing follows the organizational structure of a P3 special purpose vehicle (SPV). Most of the risks are typically subcontracted and therefore shown in the cash flows in the bid. Some of the risks are explicitly or implicitly retained by the SPV (for example through caps on liabilities in subcontracts). These are not only typical systematic risk categories (for example inflation, interest rate, and toll risk) but also risk categories that are associated with the long-term and integrated characteristics of the contract (long-term performance risk and project coordination risks). This needs to be carefully taken into consideration to avoid double-counting, and for consistency when comparing the PSC and shadow bid/actual bid. For instance, if the cash flows of a project include an interest rate swap, transferring the variable interest rate risk to a swap counterpart will result in higher cash flows, because the interest rate will now include a premium for the swap transaction. The interest rate risk is now valued in the cash flows and should no longer be reflected in the discount rate.



Annexure - 4

PPP ORGANIZATIONAL STRUCTURE



Above fig. shows that depending on the risk allocation, some systematic risk may be valued through the discount rate and some risk may be valued in the cash flows. For the cash flows a probability analysis based on Monte Carlo analysis may be used for risk valuation. Since risks are not valued in both the discount rate and the cash flows, the confidence level chosen for the probability analysis is not related to the risk premium in the discount rate.

Combined with the previous (theoretical) method this gives two estimates, which together yield a range of possible discount rates.



Annexure - 5

TEMPLATE FOR CONTRACT MANAGEMENT PLAN

Activity	Detail activities assigned	Primary Responsibility	Reporting Authority	Timelines	Escalation of default
Stage wise Contract Management Activities					
Development stage – Signing of concession agreement					
Performance Management					
Concessionaire's KPI					
Rare Event Management					
Handling Variations					
Change in Law					
Liquidated Damages					
Handling Issues & Disputes					
Dispute Management					

Procedure for Development of Contract Management Plan

Step 1: Need for Assessment for Contract Management

The focus of any contract management plan lies in solving the issues faced by the Authority and other stakeholders currently. Thus, a need assessment is essential for effective problem identification and resolution. This approach follows the 'first principle' school of thought, focusing on firstly identifying what is the need that the contract management plan would fulfill or in other words, "why do the stakeholders need a contract management plan". The contract management plan would then be developed focusing on the needs of the stakeholders to give the best experience possible.

Step 2: As- in analysis of Contract management practices

The first part of drafting a contract management plan is to undertake an analysis of best contract management practices followed in the organization and outside. This helps the Authority to identify innovative solutions and best SOPs that can be leveraged to help in the PPP project.



Key focus should be on similar PPP projects sector wise in developing countries, due to strong similarities in the issues being faced. A thorough analysis needs to be done including but not limited to document review, management interviews, site visit and others.

Step 3: Draft the Plan

The development of an effective contract management strategy must be carefully planned. The contract manager can begin the planning process by asking the following questions:

- **What contract management tools and processes may be required for the project?** Manager should list the tools and processes relevant to the particular project.
- **What human, financial and technology resources are available?** The available resources may dictate the form taken by contract management tools and processes.
- **What time constraints should be set for the development of the contract management tools and processes?** The time constraints should be matched to both the available resources and the expected project delivery dates and milestones.

Step 4: Develop & implement contract management tools & processes

After obtaining appropriate resources, and collecting and analyzing relevant information, project manager should proceed to develop and implement the necessary contract management tools and processes. The processes and tools developed and implemented for contract management purposes should be collated in a Contract management plan. The Contract management plan and the performance reports produced over the life of the contract are key documents for the project.

Step 5: Establish a system of ongoing contract management & review

In establishing a system of ongoing contract management and review, the project manager relies on the same tools and processes that have been identified earlier. The project manager should also establish a culture of ongoing contract management which includes the systematic review of the contract management strategy and tools and processes during the lifecycle of the project. Senior management needs to support the culture of effective contract management in the relevant government entity.

As part of establishing an effective contract management culture, contract manager and its team should have undertaken training that provides skills and competencies in the contract management of PPP projects



The contract management team needs to develop/use the following tools for an effective contract management culture

- Risk register
- KPI template
- Issue management review report
- Dispute resolution tracker
- Tool to analyze effect of facility usage variations
- Tool to analyze effect of Termination
- Tool to analyze effect of Change in Law



Annexure - 6

TEMPLATE FOR ONGOING REVIEW PLAN

(Illustrative)

Category	Type of change	Description of change	Action Plan	Responsible person / team for tracking and executing change
Contract Management arrangement	Contract Management team	Key personnel leaving the organization	Plan to recruit internally/externally, train & onboard the new resource	Operations Level, Supervisory Level, Decision Making Level (as applicable)
	Management team of Concessionaire	Change in key contract management personnel of concessionaire	Update risk register, onboard new personnel in the partnership structure	Operations Level, Supervisory Level, Decision Making Level (as applicable)
Performance obligations	Service level obligations	Need to operate fewer facilities due to reduction in usage	Revise service performance register to reflect change threshold level	Operations Level
Project risks	New insurance products	New products to transfer risk	Evaluate insurance product & update risk mitigation strategy	Operations Level
	New financial market products	Possibility to hedge interest rate or currency risks/ possibility of refinance	Evaluate options & update risk mitigation strategy	Operations Level
Rare Events	Competing facility	Potential diversion of usage due to competing facility	Revise performance KPIs for Concessionaire, Update risk register	Operations Level, Supervisory Level



Annexure – 7

CONTRACT MANAGEMENT ACTIVITIES IN DEVELOPMENT PERIOD

1. Activities to be undertaken by Operations Level – HQ Officer

Execution of Concession Agreement

Sr. No.	Activities	Responsibilities / Action Points	
		Action	Timeline
1.	Concession Agreement Signing	Step 1: The authority to accept the LOA acceptance letter from Successful bidder	Within 7 days of issuance of LOA
		Step 2: The Authority may send reminder letter to the Successful Bidder in case the Successful Bidder does not submit the LOA acceptance letter to the Authority.	Within 15 days of issuance of LOA
		Step 3: The Authority to accept the LOA acceptance letter from the Successful Bidder after the reminder.	Within 7 days of receipt of reminder letter from Authority
		Step 4: The Bid Security shall be forfeited and appropriated by the Authority as mutually agreed genuine pre-estimated compensation and damages payable to the Authority for, inter alia, time, cost and effort of the Authority without prejudice to any other right or remedy that may be available to the Authority hereunder or otherwise in case the Selected Bidder, fails to sign and return the duplicate copy of LOA within the specified time limit.	Within 7 days of issuance of reminder letter
		Step 5: The Authority to review & approve the submitted draft documents for incorporation of an SPV under the Companies Act 1956 (or as per amended versions of the Act) by the Successful Bidder, after submission of the LOA acceptance letter.	Within 15 days of acceptance of LOA
		Step 6: The Authority to send all Legal documents (as submitted by Successful Bidder) to the legal/ financial Consultant for review & comments. After receiving the opinion from legal/financial consultant, Authority to communicate the same to the Successful Bidder	Within 7 days of receipt of such document
		Step 7: The Authority to suggest required changes in SPV incorporation documents and further review & approve the revised documents submitted by the Successful bidder.	Within 7 days of receipt of such comments



	<p>Step 8: The Authority to send all revised documents (as submitted by Successful Bidder) to the Legal/ Financial Consultant for further review & comments. After receiving the opinion from legal/financial consultant, Authority to issue an approval letter to the Successful Bidder for Incorporation of SPV.</p>	Within 7 days of receipt of such documents
	<p>Step 9: The Authority to review and approve the following documents for incorporation of SPV under the Companies Act, 1956(or as per amended versions of the Act) and Successful bidder to form the SPV:</p> <ul style="list-style-type: none"> • Board Resolution / Power of Attorney in favour of one of the Director of SPV to execute the Concession Agreement. • Legal opinion and request to the Authority to accept the Concessionaire as the entity which shall undertake and perform the obligations and exercise the rights of the selected bidder/ Consortium under the LOA. 	Within 7 days of receipt of approval of Incorporation of SPV
	<p>Step 10: The Authority to send all documents (as submitted by the Concessionaire) to the legal/ financial Consultant for review & comments. After receiving the opinion from legal/financial consultant, Authority to issue a letter to the Concessionaire and agree to enter in to Concession Agreement with the Concessionaire</p>	Within 7 days of receipt of such documents
	<p>Step 11: The Authority to accept Concessionaires' mutual consent of signing the Concession Agreement</p>	Within 7 days of receipt of such request
	<p>Step 12: The Authority to issue Concession Agreement Signing Date after receiving consensus from the Concessionaire.</p>	Within 7 days of receipt of such consent from Concessionaire
	<p>Step 13: The Authority & Concessionaire to execute the Concession Agreement.</p>	Within 45 days of Issuance of LOA

Submission of Performance Security

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
	Submission of Performance Security	<p>Step 1: The Authority to accept the Performance Security in form of Bank Guarantee (BG) from the Concessionaire</p>	Within 90 days of signing of CA or on an earlier day acceptable to Authority
		<p>Step 2: The Authority to verify the Bank Guarantee from the respective Bank and issue an acknowledgement to the Concessionaire subsequent to its verification.</p>	Within 7 days of receipts of such document
	Submission of Performance Security	<p>Step 1: The Authority to encash the Bid Security and appropriate the proceeds thereof as damages in case the Performance Security is not provided by the Concessionaire within 180 days of signing of CA</p>	Within 7 days from 180 of Signing of CA
		<p>Agreement shall be deemed to have been terminated by mutual Agreement shall be deemed to have been terminated by mutual</p>	Within 7 days from 180 of Signing of CA



Written Consent from Authority

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Written Consent from the Authority	<p>Step 1: The Authority to provide written consent to the Concessionaire for making any amendments in the Financing Agreements.</p> <p>Step 2: The Authority to review the proposal submitted by the Concessionaire and communicate the comments, if any. Authority shall not unreasonably withhold its consent for restructuring or rescheduling of the Debt Due.</p>	Within 7 days of receiving of such request

Covenant

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Covenant	<p>Step 1: The Authority to be provided by the Concessionaire provisions in each of the Project Agreement, that entitle the Authority to step into such agreement, in its sole discretion, in substitution of the Concessionaire in the event of Termination or Suspension (the "Covenant").</p> <p>In the event of Termination or Suspension, the Authority has right of substitution / step into Agreement within 90 days from Transfer Date. Authority to evaluate the project with respect to the substitution and implement the right of substitution.</p>	Within 90 Days of Transfer Date

Maintenance of Infra Project

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Maintenance of Infra Project	<ul style="list-style-type: none"> The Authority to maintain the Infra Project as compared to its condition 7 days prior to the bid submission date. (OR) Pay to the Concessionaire the cost and expense, as determined by the Independent Engineer 	Within 7 days of receiving of such request

Appointment of Safety Consultant

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Appointment of Safety Consultant	<p>The Authority to appoint one or more Safety Consultant within 90 days of signing of Agreement</p> <p>The Authority to invite proposals from various agencies through tendering process and finalise the Safety Consultant based on technical and financial criteria.</p>	Within 90 days of signing of Concession Agreement



2. Activities to be undertaken by Operation Level - Field Officer

Condition Precedent (Authority) – Handing over of ROW

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Handing over of ROW	<p>Step 1: Upon receipt of notice from the Concessionaire, Authority to make sure the availability of at least 80% Right of Way (ROW) within 30-60 days from issuance of Notice from Concessionaire or within 180 days of signing of Concession Agreement.</p> <p>Coordination with Competent Authority of Land Acquisition (CALA), Revenue Department (State) etc.</p>	Within 180 days of signing of Concession Agreement

Condition Precedent (Authority) – Approval of general arrangement drawings (GAD)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Approval of General arrangement drawings (GAD)	<ul style="list-style-type: none"> Upon receipt of notice from Concessionaire, Authority to procure approval of the Railway authorities in the form of a general arrangement drawing to construct road over bridges / under bridges at level crossings on the Project within 30-60 days from issuance of Notice from Concessionaire The Authority may by notice extend, for up to an aggregate of 6 months for approval of Over-bridges and applicable permit relating to environmental protection The Authority to send the request to the Railway Authority for GAD approval 	Within 30-60 days from issuance of Notice from Concessionaire

Condition Precedent (Authority) – Environmental Clearance

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Environmental Clearance	<ul style="list-style-type: none"> Upon receipt of notice from Concessionaire, Authority to procure all Applicable Permits relating to environmental protection and conservation of the Site within 30-60 days from issuance of Notice from Concessionaire or Authority may by notice extend, for up to an aggregate of 6 (six) months. The Authority to send the request to the competent authority for environmental clearance approval 	Within 30-60 days from issuance of Notice from Concessionaire



Condition Precedent (Authority) – Utilities Shifting

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Utilities Shifting	<p>Step 1: Upon receipt of notice from Concessionaire for utility shifting, Authority to make the arrangement for Utility Shifting.</p> <p>The Authority to ask for financial quotation for utility shifting.</p> <p>To seek necessary financial approvals:</p> <ul style="list-style-type: none"> • If the sanctioned value is less the limit assigned to the RO/ field office, the same is approved by RO/ field office. • However, if the sanctioned value is more than the limit assigned to the RO/ field office the same is approved by Head Quarter. 	Within 7 days of request received from Concessionaire

Utilities, Associated Old infrastructure, Roads & Trees

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Existing Utilities & Roads	<p>Step 1: Authority shall, upon written request from the Concessionaire, initiate and undertake at the Concessionaire's cost, legal proceedings for acquisition of any right of way necessary for diversion. The Concessionaire to ensure that the respective entities owning the existing roads, right of way or utilities on, under or above the Site are enabled by it to keep such utilities in continuous satisfactory use, if necessary, by providing suitable temporary or permanent diversions with the authority of the controlling body of that road, right of way or utility</p>	Within 30 days of receiving of such request
2.	Shifting of Obstructing utilities	<p>Step 1: The Authority or the respective owning entity to bear the cost of utility shifting which causes an adverse effect on the construction, operation or maintenance of the Infra Project. The shifting to be undertaken by the Concessionaire and in case of delay, the Concessionaire shall be excused for failure to perform.</p>	Within 7 days of receiving of such documents
3.	New utilities & roads	<p>Step 1: The Authority to direct the Concessionaire, if required, to connect the adjoining road to the Infra Project and the connecting portion falling within the Site.</p>	
4.	New utilities & roads	<p>Step 1: The Concessionaire to connect any adjoining service station, hotel, motel or any other public facility or amenity to the Infra Project, upon advance payment of the cost by the beneficiary entity as assessed by Independent Engineer</p>	
5.	Falling of trees	<p>Step 1: The Authority to assist the Concessionaire in obtaining the Applicable Permits and bear the cost for falling of trees if these cause material adverse effect on construction, operation or maintenance of the Project.</p> <p>In the event of any delay in falling of trees for reasons beyond the control of the Concessionaire, it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the falling of trees.</p>	Within 30 days of receiving of such request



Obligations relating to Project Agreements

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Obligations relating to Project Agreements	Step 1: The Authority to undertake review and provide its comments, if any within 15 days of the receipt of the drafts of all Project Agreements, to the Concessionaire.	Within 15 days of the receipt of the drafts of all Project Agreements.
		Step 2: Within 7 days of execution of any Project Agreement or amendment thereto, the Authority to receive from the Concessionaire a true copy thereof, duly attested by the Director of the Concessionaire, for its record.	Within 7 days of execution of any Project Agreement or amendment thereto

3. Activities to be undertaken by the Supervisory Level- Finance Officer

Damage for Delay by the Authority

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Damage for delay by the Authority	Step 1: Upon receipt of notice from Concessionaire for damage for delay, on account of Authority's failure to meet any of the Conditions Precedent within the specified timelines, the Authority to pay 0.1% of Performance Security for each day of delay until fulfillment of all such Conditions Precedent, subject to a maximum of 20% of the Performance Security to the Concessionaire as damages. Provided; the delay should not have occurred as a result of breach of this Agreement by the Concessionaire or due to Force Majeure. Authority to review the request received from the Concessionaire and negotiate with the Concessionaire	Within 7 days of request received from Concessionaire

Escrow & Substitution

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Escrow & Substitution Agreement	Step 1: Authority to review and approve the draft version of Escrow & Substitution Agreement submitted to the Authority by the Concessionaire	NA
		Step 2: Authority to send Escrow & Substitution Agreement to the legal/ Financial Consultant for review & comments. After receiving the opinion from legal/financial consultant, Authority to communicate the same to the Concessionaire	Within 7 days of receipt of such document
		Step 3: Authority to suggest required changes in the Escrow & Substitution Agreement to the Concessionaire and further review & approve the revised Escrow & Substitution Agreement.	



		<p>Step 4: Authority to send revised Escrow & Substitution Agreement to the legal/ financial Consultant for further review & comments. After receiving the opinion from legal/financial consultant, Authority to issue a letter to the Concessionaire and agree to execute the Escrow & Substitution Agreement</p> <p>Step 5: Authority to sign the Escrow & Substitution Agreement submitted by the Concessionaire.</p>	
2.	Applicable Permits	<p>Step 1: Authority to review the supporting documents submitted by Concessionaire with respect to the following Applicable permits and subsequently issue an acknowledgement letter to the Concessionaire: Concessionaire to procure all Applicable Permits. The Applicable Permits includes:</p> <ul style="list-style-type: none"> • Permission of the State Government for extraction of boulders from quarry • Permission of Village Panchayat and Pollution Control Board for installation of crushers • License for use of explosives • Permission of the State Government for drawing water from river/reservoir • License from Inspector of factories or other competent authority for setting up Batching Plant • Clearance of Pollution Control Board for setting up Batching Plant • Clearance of Village Panchayat and Pollution Control Board for Asphalt Plant • Permission of Village Panchayat and State Government for borrow earth • Permission of State Government for cutting of trees and • Any other permits or clearances required under Applicable Laws. 	
3.	Representation & Warranties	<p>Authority to review the following representations and warranties submitted by Concessionaire and subsequently issue an acknowledgement letter to the Concessionaire:</p> <ul style="list-style-type: none"> • The selected bidder/ Consortium Members, together with its/ their Associates, shall hold not less than 51% (fifty-one per cent) of its issued and paid up Equity as on the date of this Agreement; and that no member of the Consortium whose technical and financial capacity was evaluated for the purposes of pre-qualification and short-listing in response to the Request for Qualification shall hold less than 26% (twenty six per cent) of such Equity during the Construction Period and two years thereafter • The selected bidder/ Consortium Members and its/their Associates shall have the financial standing and resources to fund the required Equity and to 	Within 7 days of receipts of such document



	<p>raise the debt necessary for undertaking and implementing the Project in accordance with this Agreement</p> <p>The selected bidder/ each Consortium Member shall be duly organised and validly existing under the laws of the jurisdiction of its incorporation, and shall have requested the Authority to enter into this Agreement with the Concessionaire pursuant to the Letter of Award, and shall unconditionally accept the terms and conditions set forth in this Agreement.</p>	
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Financial Closure

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Financial Closure	<p>Step 1: Authority to accept three copies of Financing Agreement along with 3 true copies of the Financial Package and Financial Model (in MS Excel version or any substitute thereof, which is acceptable to the Senior Lenders) submitted by the Concessionaire within 180 days of Concession Agreement signing date or before Appointed Date. All documents should be duly attested by a Director of the Concessionaire. Concessionaire to execute the Financing Agreement also.</p>	NA
		<p>Step 2: Authority to send all Financing Agreement to the legal/ financial Consultant for review & comments. After receiving the opinion from legal/financial consultant, Authority to communicate the same to the Concessionaire</p>	Within 7 days of receipts of such document
		<p>Step 3: Authority to further review and approve the revised Financing Agreements subsequent to its submission by the Concessionaire after incorporating all changes suggested by the Authority.</p>	Within 7 days of receipts of such comments
		<p>Step 4: Authority to send revised Financing Agreement to the legal/ financial Consultant for further review & comments.</p> <p>After receiving the opinion from legal/financial consultant, Authority to issue a letter to the Concessionaire and declare the Financial Closure, if the terms and condition of Financing Agreement are acceptable to the Authority. In case the changes are not appropriate, the Authority to seek further changes and repeats the above process.</p>	Within 7 days of receipts of such document
2.	Delay in Financial Closure	<p>Step 1: On account of delay in Financial closure, Authority to issue notice for damage claim to the Concessionaire. And receive payment at the rate of 0.1% of the Performance Security for each day of delay up to a further period of 120 days.</p> <p>(OR)</p>	Within 7 days from 180 of Signing of CA



		Or for a further period not exceeding 200 days, subject to receipt of payment of Damages for delay by the Concessionaire	
		Step 2: Termination of the Concession Agreement by mutual agreement of the Authority & the Concessionaire in the event of non-occurrence of Financial Close within the specified or extended timelines.	Within 7 days from 180 of Signing of CA
		<p>Step 3: Upon Termination due to failure to achieve Financial Close, the Authority to encash the Bid Security and appropriate the proceeds thereof as Damages</p> <ul style="list-style-type: none"> • If the Bid Security has been substituted by the Performance Security, the Authority shall be entitled to encash therefrom an amount equivalent to the Bid Security. <p>If Financial Close has not occurred solely as a result of the Authority being in default of any of its obligations, upon Termination, the Bid Security along with the Damages due and payable shall be return to the Concessionaire</p>	Within 7 days from 180 of Signing of CA

Condition Precedent

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Condition Precedent – status / progress of condition precedent	Step 1: Authority to receive written updates from the Concessionaire at least once a month about the status / progress of the Conditions Precedent entitled to the Concessionaire.	Once in month
		Step 2: Authority to inform/ notify in writing to the Concessionaire at least once a month on the status / progress of the Conditions Precedent entitled to the Authority.	Once in month
2.	Condition Precedent - Concessionaire	<p>Step 1: Authority to</p> <ul style="list-style-type: none"> • Get all Condition Precedent documents verified from Legal / Financial Consultant • Declare the Appointed Date • If All Condition Precedent are not fulfilled within specified timelines then penalty would be charged from the Concessionaire • Penalty payment would be appropriated from performance Security within 30 days. <p>Concessionaire to meet all Conditions Precedent (as specified in the Concession Period) within 180 days from the date of signing of the Concession Agreement or any time decided by both parties</p>	Within 7 days of receiving of such documents



3.	Appropriation of Performance Security	Step 1: Authority to encash and appropriate relevant amount from the Performance Security upon Concessionaire's default or failure to meet Conditions Precedent. The Authority to appropriate 0.2% of the Performance Security for each day of delay until fulfillment of all such Conditions Precedent, subject to a maximum of 20% of the Performance Security. Provided; the delay should have not occurred as a result of failure to fulfill the obligations specified in this Agreement by the Authority, or due to Force Majeure.	
		Step 2: In case the Concessionaire does not cure its default within Cure Period of 90 days, the Authority to encash and appropriate such Performance Security as Damages, and to terminate the Agreement.	Within 7 days from 180 of Signing of Concession Agreement

4. Activities undertaken by the Supervisory Level (HQ) – Technical Officer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Damage for delay by the Authority	Step 1: Upon receipt of notice from Concessionaire for damage for delay, on account of Authority's failure to meet any of the Conditions Precedent within the specified timelines, the Authority to pay 0.1% of Performance Security for each day of delay until fulfillment of all such Conditions Precedent, subject to a maximum of 20% of the Performance Security to the Concessionaire as damages. Provided; the delay should not have occurred as a result of breach of this Agreement by the Concessionaire or due to Force Majeure. Authority to review the request received from the Concessionaire and negotiate with the Concessionaire	Within 7 days of request received from Concessionaire

5. Activities undertaken by the Supervisory Level (Field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of documents	Step 1: Authority to review and provide inputs on the monthly status reports of the all ongoing projects and all files/ documents pertaining to it. Reporting & escalation to be done to the immediate supervisor (Decision Making Level- Technical Officer) within 1 day of default.	1 day of default



6. Activities undertaken by Decision making Level (Technical)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of documents	Step 1: Authority to review and provide inputs on the monthly status reports of the all ongoing projects and all files/ documents pertaining to it. Reporting & escalation to be done to the immediate supervisor (Board/ Chairman) as and when required.	Within 5 days of default

7. Activities undertaken by Decision making Level (Finance)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of documents	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting & escalation to be done to the immediate supervisor (Board/ Chairman) as and when required.	Within 5 days of default



Annexure - 8

CONTRACT MANAGEMENT ACTIVITIES IN CONSTRUCTION PERIOD

1. Activities to be undertaken by Operations Level – HQ Officer

Release of Performance Security

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Release of Performance security	Step 1: Authority to release the Performance Security one year from Appointed Date or earlier upon the Concessionaire expending at least 20% of TPC. The same shall be processed upon receipt of request from Concessionaire provided it is not in default of the Concession Agreement.	Within 7 days of receiving of such request

Grant

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Grant	<ul style="list-style-type: none"> Authority to scrutinize the request for equity support along with necessary documents (subject to achievement of milestones as per Schedule 'G': Project Completion Schedule by the Concessionaire) and release grant to escrow account within 15 days of receiving the request from the concessionaire. Equity Support is due and payable to the Concessionaire after expending the Equity, and is disbursed proportionately along with the loan funds. Subsequently the balance is disbursed by the Senior Lenders under the Financing Agreements. 	Within 15 days of receiving of such request



2. Activities to be undertaken by Operations Level – Field Officer

Right of Way

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Handing over ROW	<p>Step 1: In case the entire ROW has not been provided to the Concessionaire before the Appointed Date, Authority to ensure availability of 100% ROW within 90 days of Appointed Date.</p>	Within 90 days of appointed date
		<p>Step 2: In case the Authority does not hand over the ROW within 90 days of Appointed Date for any reason other than Force Majeure or breach of this Agreement by Concessionaire, the Authority has to pay the damages to the Concessionaire. The damages are calculated at the rate of Rs. 50 (Rupees fifty) per day for every 1,000 square meter or part thereof, commencing from the 91st day of the Appointed Date and until such Right of Way is procured.</p>	Within 90 days of appointed date

Milestone

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Milestone	<p>Step 1: The Authority to issue a notice to the Concessionaire to pay the Damage for delay, in case the Concessionaire does not meet the milestone within specified timelines (Unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority).</p>	Within 7 days of after 90 days of Schedule Milestone date
		<p>Step 2: Authority to receive payment for damages by the Concessionaire calculated at the rate of 0.1% of the amount of Performance Security for delay of each day until such Milestone is achieved.</p>	
		<p>Step 3: In case the project is not completed within 270 days from schedule completion date the Authority shall be entitled to terminate this Agreement, unless the delay is on account of reasons solely attributable to the Authority or due to Force Majeure.</p>	Within 7 days of after 270 days of Schedule Completion date
2.	Completion of Construction	<p>Step 1: Authority to receive payment for damages from the Concessionaire equivalent to 3% of the Average Daily Fee per day, if the Concessionaire fails to complete six laning on or before the Scheduled six laning Date.</p>	



Monitoring of Construction

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Progress Report	Step 1: The Authority to receive monthly progress reports from the Concessionaire and the Independent Engineer.	Within 7 days of the close of each month during the Construction period.
2.	Inspection	The Authority to receive monthly 'Inspection Report' from the Independent Engineer specifying deficiencies in construction with respect to the Scope of the Project and Specifications and Standards.	Within 7 days of inspection
3.	Test	Step 1: Independent Engineer to request the Concessionaire to carry out tests for quality assurance in accordance with Good Industry Practice. The results of these tests to be furnished to the Independent Engineer by the Concessionaire.	
		Step 2: The Independent Engineer to certify the cost incurred on the test.	
		Step 3: The Authority to reimburse to the Concessionaire – one half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable.	Within 7 days of receiving of such request
		Step 4: If tests establish any defects or deficiencies, the Independent Engineer has to be furnished with a report on the remedial measures carried out by the Concessionaire for the identified defects and deficiencies.	
4.	Delay During Construction / Suspension	Step 1: The Independent Engineer to notify the Concessionaire, in case the Concessionaire fails to achieve any of the Project Milestones or the Independent Engineer reasonably determines that the rate of progress of Construction Works is such that the project is not likely to be achieved by the Scheduled Date.	
		Step 2: The Independent Engineer to be notified by the Concessionaire within 15 days of such notice about the steps it proposes to take to expedite progress and the period within which it will achieve the Project Completion Date.	
5.	Independent Engineer	Step 1: The Independent Engineer to recommend the Authority about the suspension of the construction work if such works threatens the safety of users and pedestrians.	
		Step 2: Authority by notice may require the Concessionaire to suspend forthwith the whole or any part of the Construction Works based on the recommendation from Independent Engineer	Within 7 days of receipt of such request from Independent Engineer
		Step 3: The Independent Engineer to be notified to inspect remedial measures conducted by the Concessionaire to secure the safety of suspended works and the Users.	
		Step 4: Independent Engineer to inspect such remedial	



		measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.	
		<p>Step 5:</p> <ul style="list-style-type: none"> • Upon receiving the recommendations of the Independent Engineer, the Authority to either revoke such suspension or instruct the Concessionaire to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Authority. • In case further remedial measures taken by Concessionaire are not reasonable in the opinion of the Authority, Authority to repeat the above process until Suspension is revoked. 	Within 7 days of receipt of such request from Independent Engineer
6.	Suspension of Unsafe Construction Work	<p>Step 1: The Independent Engineer to determine the extension of date set forth in the project completion schedule (in case of suspension not attributable to Concessionaire) and subsequently notifies the same to the Authority.</p> <p>Step 2: The Authority to extend the project completion schedule and increase the Concession period based on recommendations of the Independent Engineer.</p>	
7.	Video Recording	The Authority to receive a video recording from the Concessionaire every quarter, covering the status and progress of Construction Works. The first video should be provided within 7 days from the Appointed Date and subsequently every quarter within 15 days from the last date of each quarter.	

Completion Certificate

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Test	<p>Step 1: The Independent Engineer to be notified by the Concessionaire of its intent to subject the Infra Project to Tests at least 30 days prior to the likely completion of the Infra Project.</p>	Notification to be received at least 30 days prior to the likely completion of the Project.
		<p>Step 2: The Independent Engineer to be notified by the Concessionaire of its intent to subject the Infra Project to Tests at least 30 days prior to the likely completion of the Project.</p>	
		<p>Step 3: Authority to designate it's representative to witness the test</p>	
		<p>Step 4:</p> <ul style="list-style-type: none"> • In case the Concessionaire and the Independent Engineer fails to mutually agree on the date for conducting tests, the Independent Engineer to be notified by the Concessionaire a date providing at 	



		<p>least 10 days' of prior notice to the Independent Engineer.</p> <ul style="list-style-type: none"> The Independent Engineer to be assisted by the Concessionaire for reasonably conducting the Test 	
		<p>Step 5:</p> <ul style="list-style-type: none"> Independent Engineer to conduct all Tests in accordance with Schedule I and determine compliance of Infra Project with Specifications and standards. The Independent Engineer to direct the Concessionaire to remedy/rectify the defects/deficiencies or suspend/delay such tests, in case the performance of the Infra Project does not conform to required specifications and standards. After the completion of each Test Independent Engineer to provide the copy of all Test data to the Concessionaire and the Authority. 	
2.	Completion Certificate	The Independent Engineer to issue a Completion Certificate to the Concessionaire and the Authority, upon completion of Construction Works and successful tests.	
3.	Provisional Certificate	The Independent Engineer to issue a Provisional Certificate if the tests are successful and the Project can be safely commercially operationalized, though certain works or things are outstanding and not yet complete.	
4.	Punch List	Step 1: In case of incomplete/outstanding Items (Punch List) forming part thereof, the provisional Certificate has to be jointly signed by Independent Engineer and Concessionaire appending the list of outstanding items.	
		Step 2: In case the Concessionaire does not complete the Punch List Items within 90 days of the date of issue of the provisional certificate, the Independent Engineer to determine the damages with respect to delay in the completion of Punch List Items.	
		Step 3: Authority to recover damages from the Concessionaire on per day basis, at lower of 0.1% of the Performance Security or 0.2% of the cost of completion of such items as estimated by the Independent Engineer for a period not extending 120 days.	Within 7 days of expiry of date prescribed by Independent Engineer
		Step 4: Independent Engineer to issue the Completion Certificate upon completion of Punch List Items.	
		Step 5: The Authority to terminate the agreement (except reasons due to Force Majeure or attributable to the Authority) in case of failure to complete Punch list Items within 120 days of start of Payment of damages.	Within 7 days of expiry of date prescribed by independent engineer
5.	Withholding of Provisional	Step 1: Independent Engineer to send report to the Authority and the Concessionaire, in case Independent Engineer determines that the Project or any part thereof	



Certificate	does not conform to the provisions of the Agreement	
	Step 2: Upon receipt of report from the Independent Engineer and after conducting its own inspection, the Authority to notify the Concessionaire regarding the defects and deficiencies in the Project and direct the Independent Engineer to withhold issuance of the Provisional Certificate.	Within 7 days of receipt of such notice issued by Independent Engineer
	Step 3: The Independent Engineer to undertake test, subsequent to correction of defects and deficiencies by the Concessionaire.	
	Step 4: If the Independent Engineer certifies to the Authority and the Concessionaire that it is unable to issue the Completion Certificate or Provisional Certificate, as the case may be, because of events or circumstances on account of which the Tests could not be held or had to be suspended, the Concessionaire has to re-schedule the Tests and hold the same as soon as reasonably practicable.	

3. Activities to be Undertaken by Independent Engineer

Construction of Project (Infrastructure)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Interrupt & direct the flow of traffic	Step 1: Prior approval of Independent Engineer to be obtained by the Concessionaire – before interrupting and diverting the flow of traffic on existing lanes for the efficient progress of construction works.	Within 90 days of appointed date
		Step 2: On Concessionaire's request, Independent Engineer to approve the interruption and diversion of the flow of traffic on existing lanes for efficient Timeline Progress of construction works. The interruption and diversion shall be conducted at Concessionaire's cost.	Within 90 days of appointed date
2.	Drawings	Step 1: Independent Engineer to review the drawings provided by the Concessionaire and conveys its observations within 15 days of submission.	
		Step 2: If the observations of the Independent Engineer indicates that the Drawings are not in conformity with the Scope of the Project or the Specifications and Standards, the Independent Engineer to be provided with the revised drawings through resubmission by the Concessionaire.	
		Step 3: Independent Engineer to review the revised drawings and convey its observations to the Concessionaire.	Within 7 days of submission of the drawings
		Step 4: The Authority to review and provide comments on the drawings submitted by the Concessionaire relating to alignment of the Project.	



		Step 5: Authority has the right but not the obligation to undertake such review and provide its comments, if any within 30 days of receipt of such drawings.	Within 30 days of receipt of such drawings
3.	Final Drawings after completion of Construction	Step 1: The Authority and Independent Engineer to be furnished by the Concessionaire with a complete set of as-built Drawings within 90 days of Project completion date. The submission has to be made in 2 hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project as actually designed, engineered and constructed. These drawings should include an as-built survey illustrating the layout of the Project and setback lines, if any, of the buildings and structures forming part of Project Facilities.	

4. Activities to be undertaken by Supervisory Level (field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of document	Step 1: Relevant Authority officer to review and provide inputs on the monthly status reports received from its immediate subordinates (Operations Level Field Officer in this case) of the all ongoing projects and all files/ documents pertaining to it. Relevant Authority officer to report and escalate exceptions to its immediate supervisor (Decision Making Level- Technical Officer).	Within 1 days of default

5. Activities undertaken by Decision Making Level – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting to be done to immediate relevant supervisor (Decision Making Level- Technical Officer).	Within 1 days of default



6. Activities undertaken by Supervisory Level (field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status report & review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting and escalation to be done to immediate relevant supervisor (Board/ Chairman) as and when required.	5 days of default



Annexure - 9

CONTRACT MANAGEMENT ACTIVITIES IN OPERATIONS & MAINTENANCE STAGE

1. Activities to be undertaken by Operation Level- HQ Officer

User Fee

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Collection & appropriation of fees	Step 1: <ul style="list-style-type: none"> Authority to request MORTH to issue official fee notification for levy of user fee. Fee Notification to be issued by MoRTH within 90 days of signing of agreement. 	Within 7 days of receipt of such request

Revenue Shortfall Loan

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Collection & appropriation of fees	Step 1: Authority to receive a request from the Concessionaire, for Revenue Shortfall Loan along with the particulars thereof including a detailed account of the Indirect Political Event, Political Event or the Authority Default, as the case may be, and its impact on the collection of Fee.	Within 30 days of receipt of such request
		Step 2: If the Realizable Fee in any Accounting Year falls short of the Subsistence Revenue as a result of an Indirect Political Event, a Political Event or an Authority Default, the Authority to provide a Revenue Shortfall Loan at 2% above the Bank Rate within 30 days of receiving a valid request from the Concessionaire	
		Step 3: Authority to receive from the Concessionaire, a sum equivalent to 50% of the 'profit before tax,' to be earmarked for repayment of the Revenue Shortfall Loan and interest.	Within 90 days of the close of the accounting year
2.	Provisional Revenue Shortfall Loan	Step 1: Authority to evaluate request for Provisional Revenue Shortfall Loan by the Concessionaire and disburse the same within 30 days of receiving a valid request from the Concessionaire (along with the particulars thereof including a detailed account of the Indirect Political Event, Political Event or the Authority Default, as the case may be, and its impact on the collection of Fee).	Within 30 days of receipt of such request



Effect of Variation in Infra Facility Usage Growth

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Effect of variations in usage growth	<p>Step 1: To calculate actual average usage, the Authority to undertake usage sampling for a continuous period of 7 days at any time within 15 days prior to the following dates.</p> <ul style="list-style-type: none"> • One year prior to the Target Date • On the Target Date • On the First anniversary of the Target Date 	<p>Within 15 days prior to the following dates to calculate actual average usage.</p> <ul style="list-style-type: none"> • One year prior to the Target Date • On the Target Date • On the First anniversary of the Target Date
2.	Modification in Concession Period	<p>Step 1: The Authority to acknowledge the usage numbers and agree for determining the modification to the Concession Agreement</p>	
3.	Augmentation of Infra Project	<p>Step 1:</p> <ul style="list-style-type: none"> • If the average daily usage of PCUs exceeds the designed capacity of the Project in any accounting year, the Authority at its discretion may source preparation of a DPR for augmenting the capacity of the project such that its capacity have increased sufficiently (for carrying the current usage in accordance with the corresponding provisions of the IRC -64, 1990 or any substitute thereof). • The authority may thereafter, at their sole discretion, issue a notice to the Concessionaire to undertake the augmentation of the project as per the DPR. • On refusal or non- acceptance by the Concessionaire to undertake such augmentation, either absolutely or • On such extension of concession period as assessed by DPR (OR) • On failure of the Concessionaire to undertake such augmentation on the due date intimated by the Authority <p>An Indirect Political Event shall be deemed to have occurred. The Authority to terminate this Agreement by issuing a Termination Notice and making a Termination Payment.</p>	



2. Activities to be undertaken by Operations Level-Field Officer

Replacement of O&M Contractor

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Replacement of O & M Contractor	Step 1: Selection or replacement of an O&M Contractor and execution of the O&M Contract shall be subject to the prior approval of the Authority from national security and public interest perspective.	Within 7 days of receipt of such request
		Step 2: Authority to convey its decision expeditiously.	

Operation & Maintenance

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Construction Inspection	Step 1: Independent Engineer to inspect the project once a month and submit a construction Inspection Report to the Authority.	Within 7 days of inspection
2.	Maintenance Program	Step 1: The Authority to receive the proposed Maintenance Program on or before COD or no later than 45 days prior to beginning of each accounting year.	No later than 45 days prior to beginning of each accounting year.
		Step 2: Independent Engineer to review the Maintenance Program and convey its comments to the Concessionaire with particular reference to its conformity with the Maintenance Requirements, Maintenance Manual and Safety Requirements.	Within 15 days of receipt of the Maintenance Program
3.	Closure Approval	Step 1: The Authority and the Independent Engineer to approve the Closure which is to be requested by the Concessionaire.	
		Step 2: Independent Engineer to review the request of granting permission and if agreed, send copy of the permission to Authority within three days of receiving the request.	Within 3 days from receiving request
		Step 3: <ul style="list-style-type: none"> • The Independent Engineer to approve the closure for undertaking maintenance or repair works by the Concessionaire. • The Authority to receive the damages by the Concessionaire for delay in re-opening such lane at the rate of 0.1% of the Average Daily Fee for every stretch of 250 meters for each day of delay until the facility is reopened. 	



4.	O & M Inspection – Defects/ Deficiencies	Step 1: The Authority or Independent Engineer to receive the progress report on repair or rectification of deficiencies. Subsequently the concessionaire should submit the updates through weekly progress report until the works are fully complete.	Within 15 days of receipt of the O&M Inspection report
		Step 2: <ul style="list-style-type: none"> Independent Engineer to review the report submitted by Concessionaire. Independent Engineer to estimate the damages in case the Concessionaire fails to repair or rectify any deficiency in the Maintenance Requirements. 	
		Step 3: The Authority to receive damages (at higher of 0.5% of Average Daily Fee or 0.1% of the cost of such repair as estimated by the Independent Engineer) in case the Concessionaire fails to repair or rectify any deficiency in the Maintenance Requirements.	
5.	Authority's right to take remedial measure	<ul style="list-style-type: none"> The Authority to undertake remedial measures, if the Concessionaire fails to commence remedial works within 15 days of receipt of the O&M Inspection Report. And such cost of undertaking remedial measures and an additional sum equivalent to 20% of such cost (as damages) shall be directly deducted from the Escrow Account as O&M expense and paid to the Authority. 	Within 7 days of failure of the Concessionaire to meet the remedial measures
6.	Overriding Powers of Authorities	<p>Authority to take over the performance of any or all the obligations of the Concessionaire in the event of</p> <ul style="list-style-type: none"> a national emergency, civil commotion or any other act related to Indirect political event and/or If the Concessionaire fails to rectify or remove any hardship or danger within a reasonable period 	
7.	Modification of Project	Step 1: Independent Engineer to review the request of Modification Approval and give its comments to Authority and Concessionaire.	Within 15 days of receiving proposal
8.	Barriers & Diversions	Authority to ensure no barriers or diversions are erected or placed except during emergencies, National securities, law and order or collection of interstate taxes.	Within 7 days of completion of such modification

Safety Requirements

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Safety Requirements	Step 1: <ul style="list-style-type: none"> Authority & Safety Consultant to receive from Concessionaire compiled Safety Data on quarterly basis. Authority to receive from the Concessionaire a detailed listing and analysis of all accidents of the preceding Accounting Year and all the measures taken by the Concessionaire on an annual basis. 	



		<p>Step 2: Authority to receive from Safety Consultant, Safety Audit report within 1 month of completion of Safety Audit.</p> <p>Step 3: Upon receipt of the report, Authority to forward one copy each to the Independent Engineer and the Concessionaire</p> <p>Step 4: Independent Engineer to review the same along with the Safety Report and, by notice, direct the Concessionaire to carry out any or all modifications required within 15 days of receipt of the comments.</p>	Within 7 days of receipt of such documents
2.	Expenditure on Safety Requirement	Step 1: Costs and expenses on works and services not covered are to be borne from the dedicated Safety Fund, owned and operated by the Authority.	

Monitoring of Operations & Maintenance

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Safety Requirements	<p>Step 1: The Authority & Independent Engineer to receive from Concessionaire a monthly status report stating in reasonable detail the condition of the Project including its compliance with the Maintenance Requirements, Maintenance Manual, Maintenance Programme and Safety Requirements no later than 7 days after the close of each month.</p>	No later than 7 days after the close of each month.
		<p>Step 2: Independent Engineer to review the monthly status report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 days of receipt of the report.</p>	Within 7 days of receipt of such request
2.	Inspection / Test	<p>Step 1:</p> <ul style="list-style-type: none"> • Independent Engineer to inspect the Project at least once a month and make report of such inspection stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Maintenance Requirements, Manual, the Programme and Safety. The Independent Engineer to send a copy of the same to the Authority and the Concessionaire within 7 days of such inspection. • Independent Engineer to direct the Concessionaire to carry out tests specified by it in accordance with Good Industry Practice. 	
		<p>Step 2: Authority to reimburse to the Concessionaire one half of the costs incurred on such tests and to the extent certified by the Independent Engineer as reasonable.</p>	
3.	Remedial Measures	<p>Step 1:</p> <ul style="list-style-type: none"> • The Authority and Independent Engineer to receive, repair/rectification report from the Concessionaire within 15 days of Concessionaire receiving the O&M Inspection Report. 	



		<ul style="list-style-type: none"> In case the repair/rectification would take more than 15 days, the Authority and Independent Engineer are entitled to receive the progress reports once every week until such works is completed by the Concessionaire in conformity with this Agreement. 	
		Step 2: Independent Engineer to direct the Concessionaire to repeat the procedure mentioned above until the Project conforms to the Maintenance Requirements.	
		Step 3: The Authority to recover Damages from the Concessionaire (at the higher of 0.5% of Average Daily Fee or 0.1% of the cost of such repair as estimated by the Independent Engineer) in case remedial measures are not completed by the Concessionaire in conformity with the provisions of the Agreement.	Within 7 days of such default
4.	Monthly Fee Statement	The Authority to receive from the Concessionaire a fee statement within 7 days of completion of each month along with other information which the Authority may reasonably require, at specified intervals.	
5.	Reports of Unusual Occurrence	<ul style="list-style-type: none"> Prior to the close of each day, Authority and the Independent Engineer to receive, by facsimile or e-mail, a report stating accidents and unusual occurrences on the Project relating to the safety and security of the Users and Project. A weekly and monthly summary of such reports shall also be sent within three days of the closing of each week and month, as the case may be. 	

Infrastructure Facility Sector Regulation

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Regulations	Step 1: Authority to regulate usage in the Project in accordance with the Applicable Laws, and subject to the supervision and control of the State authorities or a substitute thereof empowered in this behalf under the Applicable Laws.	
2.	Expenditure on Safety Requirement	Step 1: Authority to assist the Concessionaire in procuring police assistance from the State Police Department or a substitute thereof for regulating the use of Project in accordance with the Applicable Laws and the Agreement.	Within 7 days of receipt of such request



Usage data & Census

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Survey	Step 1: Authority may require the Concessionaire to conduct, during each year of the Concession Period, a detailed usage survey (at its own cost) at such frequency and on such days as the Authority may specify, provided that the cumulative period of such survey shall not exceed 14 days in a year.	Every Year
		Step 2: The Authority to be furnished a detailed report by the Concessionaire within 15days of the completion of each survey.	
2.	Usage Sampling	Step 1: The Authority to inspect the relevant records of the Concessionaire, and may, at its own cost, undertake usage sampling. The sampling shall be conducted in the manner set forth in Schedule-O at such frequency as it may deem appropriate, but in no case for less than a continuous period of 7 days.	Within 7 days of receipt of such request
		Step 2: The Authority shall be provided with all necessary assistance by the Concessionaire required for such usage sampling.	
3.	Computer Systems & Network	Step 1: The Authority may specify protocol for Electronic Data Interchange (the "EDI") required for the purpose of installation, operation and maintenance of the computer system.	

3. Activities to be undertaken by the Supervisory Level (HQ) – Technical Officer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	Step 1: Relevant Authority officer to review and provide inputs on the monthly status reports received from its immediate subordinate (Operations Level Field Officer in this case) of the all ongoing projects and all files/ documents pertaining to it. Authority to report and escalate to its immediate supervisor (Decision Making Level- Technical Officer) within 1 day in case of any default.	1 Day to default



4. Activities undertaken by Supervisory Level (field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the immediate relevant supervisor (Decision Making Level- Technical Officer) within 1 day. In case of any default, the issue to be escalated.	1 Day to default

5. Activities undertaken by Decision making Level (Technical)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the immediate relevant supervisor (Board/ Chairman) as and when required. In case of any default, the issue to be escalated.	Within 5 Day to default



Annexure - 10

CONTRACT MANAGEMENT ACTIVITIES IN EXIT STAGE

1. Activities to be undertaken by Operations Level-HQ Officer

Divestment of Rights and Interest

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Divestment Requirements	Step 1: Both parties, the Authority & the Concessionaire shall continue to perform their obligations under this Agreement, notwithstanding the giving of any Termination Notice, until the Termination of this Agreement becomes effective in accordance with its terms.	Within 7 days of receipt of such request
2.	Inspection & Cure	Step 1: Not earlier than 90 days prior to Termination and no later than 15 days prior to the effective date of such Termination, Independent Engineer shall verify, after giving due notice to the Concessionaire of the time, date and venue of such verification, compliance by the Concessionaire with the Maintenance Requirements, and if required, cause appropriate tests to be carried out.	
3.	Co-operation & assistance on transfer Project	<ul style="list-style-type: none"> Both the Parties, the Authority & the Concessionaire shall provide to each other 9 months prior to the Transfer Date in the event of Termination by efflux of time and immediately in the event of either Party conveying to the other Party its intent to issue a Termination Notice, as the case may be, as much information and advice as is reasonably practicable regarding the proposed arrangements for operation of the Project following the Transfer Date Authority, its Concessionaire or agent to receive reasonable advice and assistance from the Concessionaire on operation of the Project until the expiry of 6 months after the Transfer Date. 	
		<ul style="list-style-type: none"> Authority shall take all necessary measures, in good faith, to achieve a smooth transfer of the Project in accordance with the provisions of this Agreement so as to protect the safety of and avoid undue delay or inconvenience to the Users, other members of the public or the lawful occupiers of any part of the Site 	



		<ul style="list-style-type: none"> The Parties shall provide to each other 9 months prior to the Transfer Date in the event of Termination by efflux of time and immediately in the event of either Party conveying to the other Party its intent to issue a Termination Notice, as the case may be, as much information and advice as is reasonably practicable regarding the proposed arrangements for operation of the Project following the Transfer Date The Authority has the option to purchase or hire from the Concessionaire at a fair market value and free from any encumbrance all or any part of the plant and machinery used in connection with the Project but which does not form part of the assets. 	
4.	Vesting Certificate	The Authority shall issue a certificate substantially in the form set forth in Schedule-U (the "Vesting Certificate"), Without unreasonable delay, when all of the Divestment Requirements have been fulfilled.	Within 30 days of receipt of such request
5.	Divesting Cost	Authority shall bear all stamp duties payable on any deeds or Documents executed by the Concessionaire in connection with such divestment.	
		Concessionaire shall bear and pay all costs incidental to divestment of all of the rights, title and interest of the Concessionaire in the Project in favour of the Authority upon Termination.	

2. Activities to be undertaken by Operations Level-Field Officer

Defects Liability after Termination

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Liability for defects after Termination	Step 1: Concessionaire is responsible for all defects and deficiencies in the Project for a period of 120 days after Termination, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project	
		Step 2: Authority shall be entitled to get the Project repaired or rectified at the Concessionaire's risk in the event that the Concessionaire fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by the Authority.	Within 15 days from the date of notice issued by the Authority.
		Step 3: Authority to receive all costs incurred by it from the Concessionaire.	Within 15 days of receipt of demand thereof
		Step 4: The Authority shall be entitled to recover the same from the Escrow Account, in the event of default in reimbursing such costs.	Within 7 days of such default



2.	Retention in Escrow Account	Step 1: Independent Engineer shall carry out an inspection of the Project at any time between 180 to 210 days prior to the Termination.	
		Step 2: <ul style="list-style-type: none"> If Independent Engineer recommends that the status of the Project is such that 5% of the total Realizable Fee for the year immediately preceding the Transfer Date should be retained in the Escrow Account for a period longer than 120 days, the amount recommended by the Independent Engineer shall be retained in the Escrow Account for the period specified by it. Concessionaire may provide a Bank Guarantee to the Authority of the sum and period specified above for the performance of its obligations 	
		Step 3: Authority shall be entitled to encash and appropriate the required amounts from the Performance Guarantee for undertaking the repairs or rectification at the Concessionaire's risk and cost.	Within 7 days of such default

3. Activities to be undertaken by the Supervisory Level (HQ) – Technical Officer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/documents pertaining to it. Reporting to be done to the immediate relevant supervisor (Board/ Chairman) as and when required. In case of any default, the issue to be escalated.	1 Day of default

4. Activities undertaken by Supervisory Level (field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/documents pertaining to it. Reporting to be done to the immediate supervisor (Decision Making Level- Technical Officer) within 1 day. In case of any default, the issue to be escalated	1 Day of default



5. Activities undertaken by Decision making Level (Technical)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of document	<p>Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/documents pertaining to it. Reporting to be done to the immediate supervisor (Decision Making Level- Technical Officer) within 1 day.</p> <p>In case of any default, the issue to be escalated</p>	Within 5 Day of default



Annexure - 11

CONTRACT MANAGEMENT ACTIVITIES THROUGHOUT THE PROJECT LIFECYCLE

1. Activities to be undertaken by Operations Level- HQ Officer

Independent Engineer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Appointment of Independent Engineer	Step 1: <ul style="list-style-type: none"> The Authority shall issue an EOI for selection of Independent Engineer. Authority to finalise the list of 10 firms from the received EOI based on the predetermined criteria. The Authority shall convey the aforesaid list to the Concessionaire for scrutiny and comments if any 	
		Step 2: <ul style="list-style-type: none"> Authority to receive comments from the Concessionaire shall be entitled to scrutinise the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure The Concessionaire shall send its comments, if any, to the Authority within 15 days of receiving the aforesaid list of firms. 	Within 15 days from the date of notice issued by the Authority.
		Step 3: <ul style="list-style-type: none"> The Authority, upon receipt of comments if any from Concessionaire, shall after considering all relevant factors, finalise and constitute a panel of 10 firms and convey its decision to the Concessionaire. From the shortlisted firm authority shall ask for their respective technical and financial offers. Based on the technical and financial score authority shall finalise the Independent Engineer. Report to Supervisory Level- Headquarter Officer & Member 	Within 30 days of receipt of comments
		Step 4: On expiry or termination of the aforesaid period, the Authority may in its discretion renew the appointment, or appoint another firm from a fresh panel as Independent Engineer for a term of 3 years, and such procedure shall be repeated after expiry of each appointment	At least 15 days before the expiry or termination



2.	Duties & Functions	<p>Independent Engineer</p> <ul style="list-style-type: none"> • Shall discharge its duties and functions substantially in accordance with the terms of reference set forth in Schedule-Q • Submit regular periodic reports at least once every month to the Authority in respect of its duties and functions set forth in Schedule-Q 	
3.	Remuneration	<p>Step 1: Independent Engineer to raise an invoice for the payment</p> <p>Step 2:</p> <ul style="list-style-type: none"> • Authority to pay for the remuneration, cost and expenses of the Independent Engineer subject to the limits set forth in the Concession Agreement. • Authority to submit statement of expenditure to the Concessionaire. <p>Step 3: Reimburse one-half of remuneration, cost and expenses of the Independent Engineer to the Authority within 15 days of receiving a statement of expenditure from the Authority</p>	
4.	Termination of Independent Engineer	<p>Step 1: Terminate the appointment of the Independent Engineer at any time, but only after appointment of another Independent Engineer.</p> <p>Step 2: Concessionaire may make a written representation to the Authority and seek termination of the appointment of the Independent Engineer if the Concessionaire has reason to believe that the Independent Engineer is not discharging its duties and functions in a fair, efficient and diligent manner</p> <ul style="list-style-type: none"> • Upon receipt of written representation seeking Termination of the Independent Engineer from Concessionaire, the Authority shall hold a tripartite meeting with the Concessionaire and Independent Engineer for an amicable resolution of the Dispute • If no solution is found, then Dispute Resolution mechanism shall apply. 	Within 7 days of receipt of such request
5.	Authorized Signatories	Independent Engineer to designate and notify to the Authority and the Concessionaire up to 2 persons employed in its firm to sign for and on behalf of the Independent Engineer and may, by notice in writing, substitute any of the designated persons by any of its employees.	



Disclosure

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Disclosure	<p>Step 1: Authority shall be entitled to direct the Concessionaire, from time to time, to withhold the disclosure of Protected Documents (the disclosure of which the Authority is entitled to withhold under the provisions of the Right to Information Act, 2005) to any person in pursuance of the aforesaid Clauses.</p>	

Redressal of Public Grievances

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Complaints Register/ Redressal of complaints	<p>Step 1: The Authority and the Independent Engineer to receive a true photocopy of all the pages of the Complaint Register which the Concessionaire has to maintain</p> <ul style="list-style-type: none"> Concessionaire shall maintain the Complaint Register at the public relations office at each of the Toll Plazas open to public access at all times for recording of complaints by any person. 	Within 7 days of the close of each month.
		<p>Step 2: The Authority may advise the Concessionaire to take such further action as appropriate for a fair and just redressal of any grievance.</p>	
		<p>Step 3: The Concessionaire shall consider such advice and inform the Authority of its decision thereon.</p>	

2. Activities to be undertaken by Supervisory Level-Finance Officer

Accounts & Finance

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Audited Account	<p>Step 1: The Authority shall have the right to inspect the maintained records of books of accounts recording all its receipts. Authority to receive copies of Concessionaires' Balance Sheet, Cash Flow Statement, Profit and Loss Account & Audited Financial Statement within 90 days of the close of the Accounting Year. The copies should be duly certified by the Statutory Auditors, and are to be provided to the Authority for verification of basis of payments. In the event of any discrepancy, the same shall be rectified and such rectified account shall form the basis of payments by either Party under this Agreement</p>	Within 7 days of the close of each month.



2.	Quarterly Unaudited Results	Step 2: Authority to receive from Concessionaire unaudited financial statements in the manner and form prescribed by the SEBI for publication of quarterly results by the companies listed on a stock exchange.	
3.	Audited Account	On or before the 31-May each Year, Concessionaire to provide to the Authority, for the preceding Accounting Year, a statement duly audited by its Statutory Auditors giving summarized information on <ul style="list-style-type: none"> • the usage count for each category of using the Project and liable for payment of Fee • Fee charged and received, Realizable Fee and other revenues derived from the Project Such other information as Authority may reasonably require.	

Appointment of Auditors

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Appointment of Auditors	Step 1: <ul style="list-style-type: none"> • Authority to invite offers from all reputed firms of Chartered Accountants who fulfill eligibility criteria. • The information furnished by each firm shall be scrutinized and evaluated by the Authority and one point shall be awarded for each annual audit of the companies. • The Authority shall prepare a list of all the eligible firms along with the points scored by each such firm and 10 firms scoring the highest points shall be identified and included in the draft Panel of Chartered Accountants • The Authority shall convey the aforesaid panel of firms to the Concessionaire for scrutiny and comments, if any 	Within 7 days of the close of each month.
		Step 2: Authority to receive comments, if any from the Concessionaire who shall be entitled to scrutinize the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, within 15 days of receiving the aforesaid panel.	
		Step 3: The Authority shall, after considering all relevant factors including the comments, if any, of the Concessionaire, finalize and constitute a panel of ten firms which shall be deemed to be mutually agreed Panel of Chartered Accountants.	
		Step 4: After completion of every five years from the date of preparing the mutually agreed Panel of Chartered Accountants, or such earlier period as may be agreed between the Authority and the Concessionaire, a new panel shall be prepared.	



3. Activities to be undertaken by the Supervisory Level (HQ) – Technical Officer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of Document	<p>Step 1: Relevant Authority officer to review and provide inputs on the monthly status reports received from its immediate subordinate (Operations Level Field Officer in this case) of all ongoing projects and all files/ documents pertaining to it. Authority to report and escalate to be done to the immediate supervisor (Decision Making Level-Technical Officer) within 1 day in case of any default.</p> <p>In case of any default, the issue to be escalated</p>	1 day of default

4. Activities undertaken by Decision Making Level – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of Document	<p>Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the immediate supervisor (Board/ Chairman) as and when required.</p> <p>In case of any default, the issue to be escalated.</p>	5 days of default

5. Activities undertaken by Decision making Level (Finance)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly Status Report & Review of Document	<p>Step 1: Authority to review and provide inputs on the monthly status reports of all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the immediate supervisor (Board/ Chairman) as and when required.</p> <p>In case of any default, the issue to be escalated.</p>	5 days of default



Annexure - 12

PERFORMANCE MONITORING KEY PERFORMANCE INDICATORS

1. Stage wise Concessionaire KPIs

Concessionaire KPIs during development stage

Sr. No	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point	Review/ Escalation period after stipulated timeline
1. Timeline – Actual vs. Targeted							
1.	Signing of concession agreement	Bidder to incorporate an SPV under the Companies Act, 1956(or as per amended versions of the Act) and request the Authority to accept the Concessionaire as the entity which shall undertake and perform the obligations and exercise the rights of the selected bidder/ Consortium under the LOA and execute the Concession Agreement within 180 days of issuance of LOA	Concessionaire	Within 180 days of issuance of LOA	Operations Level- Headquarter Officer (Technical)	To ensure the Concession Agreement has been executed on time In case of any delay, write a letter to the Concessionaire Report to the Supervisory Level- Headquarter Officer(Technical) and Member(Technical)	Within 15 days (One Time)
2.	Submission of Performance Security	Concessionaire to Submit Performance Security within 90 days of signing of CA or on an earlier day acceptable to the Authority.	Concessionaire	Within 90 days of date of CA	Operations Level- Headquarter Officer (Technical)	To ensure performance security has submitted on time In case of any	Within 7 days from 180 of Signing of CA (One Time)



						<p>delay, encash the Bid Security and appropriate the proceeds thereof as Damages.</p> <p>Report to the Supervisory Level- Headquarter Officer and Member</p>	
3.	Financial Closure	The Concessionaire to achieve financial closure within targeted timelines of 180 days from the date of the agreement or within the timeline specified in the Concession Agreement as applicable.	Concessionaire	Within 180 days of date of CA	Supervisory Level Supervisory Level- Headquarter Officer (F)	<p>To ensure that Financial Closure has been achieved on time</p> <p>In case of any delay write a letter to the Concessionaire and Collect the damage payment for the further period of 120 days at the rate of 0.1% of the Performance Security for each day of delay or for a further period not exceeding 200 days, subject to payment of Damages for delay by the Concessionaire</p> <p>Report to the Member (F) and Chairman</p>	Within 7 days (One Time)



4.	Appointment of Independent Engineer	The Concessionaire to scrutinise the relevant records of the Authority to ascertain whether the selection of firms for Independent Engineer has been undertaken in accordance with the prescribed procedure	Concessionaire	Within 15 days of receiving the aforesaid list of firms.	Operations Level-Operations Level-Headquarter Officer (Technical)	<p>The Authority to ensure appointment of the Independent Engineer takes place in timely manner. The Authority to float a list of shortlisted 10 firms to the Concessionaire based on applications received for EOI.</p> <p>The Authority shall after considering all relevant factors, finalise and constitute a panel of 10 firms and convey its decision to the Concessionaire .</p> <p>From the shortlisted firm Authority shall ask for their respective technical and financial offers and finalise one firm based on the overall technical and financial scores.</p>	Within 30 days of receiving comments (One Time)
5.	Fulfillment of conditions precedents	Concessionaire to meet all Condition Precedents as specified in the Concession Period Within 180 days	Concessionaire	Within 180 days from signing of CA or any time decided by	Supervisory Level-Headquarter Officer (F)	To ensure all Condition Precedents of the Concessionaire have been	Within 30 days (One Time)



		from signing of CA or any time decided by both parties.		both parties		fulfilled on time To ensure all Condition Precedents of the Concessionaire have been fulfilled on time Report to the Member (F) and Chairman	
2. Project Cost							
1.	Variance in Project Cost	No/least variation in Total Project Cost in the Financing Agreement (at the time of the financial closure) with respect to TPC mentioned in the CA.	Concessionaire		Supervisory Level-Headquarter Officer (F)	To ensure that the deviation in Total Project Cost is less than or equal to 5% from the cost approved by the Authority at the time of Financial Closure In case, a variation greater than 5% is observed report to Member (F) with copy to Chairman	Within 7 days (One Time)
3. Quality of Services							
1.	Quality of finalized drawings/design incorporating Independent Engineer's review /suggestions	95%-100% of the technical design has been accepted as right first time. Revisions and suggestions given on draft drawings / reports by Independent Engineer have been fully incorporated & submitted on time.	Concessionaire		Operations Level Field Officer	To review the drawing/designs submitted by Concessionaire In case the Concessionaire has not incorporated the	Within 15 days(One Time)



						<p>suggestions of the Independent Engineer, write a letter to the Concessionaire</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	
4. Communication & Responsiveness							
1.	Correspondence with key Authorities and parties	<p>To ensure completeness in design and execution on following aspects:</p> <ol style="list-style-type: none"> 1. Irrigation Department for design of major water structures, 2. Railway Department for construction of Rail over bridges, 3. Utility Agencies for undertake shifting of any utility including electric lines, water pipes and telephone cables and 4. Police department for setting up of a traffic aid post, and 5. All tripartite agreements for bearings, traffic signals are shared with the Independent Engineer or the Authority. 	Concessionaire		Operations Level Field Officer	<p>To ensure most of the aspects for completeness of design and execution are in line with the expectation of the Authority</p> <p>If concessionaire does not meet the Authority expectation, Authority to write a letter to the Concessionaire</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	Within 30 days (Recurring-Monthly)



5. Project & Contract Management							
1.	Procurement of all applicable permits on time	The Concessionaire to obtain, as required under the Applicable Laws and as per provision in the Concession Agreement, all applicable Permits on or before the Appointed Date. Additionally, the annual renewals of all such permits have been on time.	Concessionaire	Before Appointed Date & Annual Renewal cycle	Operations Level Field Officer	To ensure the Concessionaire has procure all applicable permits on time If concessionaire does not procure all applicable permits on time, Authority to write a letter to the Concessionaire Report to the Supervisory Level, Field Officer and Member (Technical)	Within 15 days (One Time)
2.	All Insurances maintained and renewed timely	All of the below mentioned insurance aspects to be adhered to by the Concessionaire on time: 1. Disclosure of proposed insurance arrangement 45 days prior to commencement of the operation and the construction period, 2. Undertaking insurance covers for mitigating risks for maximum sums and renewing the same on or before time.	Concessionaire	At least 45 days prior to commencement of Construction and Operation & 7 days prior to expiry of each term of insurance	Operations Level Operations Level-Headquarter Officer (Technical)	To ensure the Concessionaire has maintained the Insurance & renewed the same on time If the concessionaire doesn't maintain and renewed the insurance on time, Authority to write a letter to the Concessionaire Report to the Supervisory Level-Headquarter Officer and Member (Fin)	7 days prior to expiry of each term of insurance (One Time)



Concessionaire KPIs during the construction stage

Sr. No.	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point	Review/ Escalation period after stipulated timeline
1. Timeline – Actual vs. Targeted							
1.	Timely submission of monthly progress report of the works and other relevant information as required by the Independent Engineer	All 12 monthly progress reports in a year to be submitted on time to the Independent Engineer/ Authority.	Concessionaire	Monthly	Operations Level Field Officer	To ensure Concessionaire has submitted all monthly progress report and other relevant information on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly)
2.	Financial Progress status corresponding to Physical Progress	The variation between the financial and the physical progress should not exceed 10% at any stage of project execution.	Independent Engineer	Monthly	Operations Level Field Officer	To ensure the variation between the financial and the physical progress does not exceed 10% at any stage of project execution In case the variation is more than 10%, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly)
3.	Achievement of Project Milestones	The concessionaire to achieve all the project milestones on time and the project to be	Independent Engineer	On milestone Date		To ensure the Concessionaire meet all Milestone as per the Schedule	Within 7 days (Recurring-On



	and Scheduled Project Completion Date	completed within the scheduled project completion date as specified in the concession agreement.				of the Concession Agreement In case of delay in meeting any of the Milestone, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Milestone date)
2. Quality of Services							
1.	Quality of Machinery and Equipment used	The equipment's like batch mix plant, hot mix plant, paver, grader used by the concessionaire should be fairly new having latest technology thereby resulting in improved services and maximum one breakdown in a day as reported by the Independent Engineer with no loss of productive hours per day.	Independent Engineer	-	Operations Level Field Officer	To ensure that the Machineries and Equipment used by Concessionaire are having the latest technology If Concessionaire does not use the equipment with new technology, Field Officer may write to Report to the Supervisory Level- Headquarter Officer and Member (Technical) the Concessionaire in this regard.	Within 7 days of notice from Independent Engineer (One Time)
2.	Quality of Maintenance during Construction Period	All the below mentioned aspects or aspects covered in the CA to be met within the specified timelines and to the satisfaction of Independent Engineer: 1. Usage worthiness at no time is materially inferior as compared to their condition 7 days prior to the date	Independent Engineer	-	Operations Level Field Officer	To ensure that all maintenance obligations has been met within the time line and to the satisfaction of Independent Engineer. In case of any delay or variation from the Independent Engineer expectation, write	Within 7 days of Notice from Independent Engineer (Recurring)



		of the Agreement, 2. Undertook necessary repair and maintenance works for this purpose; 4. Ensured safe operation of the Project.				a letter to the Concessionaire Report to the Supervisory Level, Field Officer and Member(Technical)	
3.	Quality of Construction and extent of defect identified	No major defects or deficiencies to be identified in the Concessionaire's design, construction or implementation, and the concessionaire are to be fully compliant for the quality of constructed items with the specification of the tests prescribed by IRC and/or MORTH. In addition, the concessionaire should achieve the following conditions: 1. The concessionaire's quality control mandatory test results in less than 2% of non-conformity outcomes. 2. Not more than 1 additional test recommended and the test result had no non-conformity outcome.	Independent Engineer	-	Operations Level Field Officer	To ensure that the quality of the construction is maintained as per the IRC manual. In case of any variation from IRC manual, write a letter to the Concessionaire Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days of Notice from Independent Engineer (Recurring-Monthly)
3. Communication & Responsiveness							
1.	Responsiveness on delivering additional scope of work	The concessionaire to provide timely responses covering the following aspects to the satisfaction of Independent Engineer 1. The concessionaire should provide the likely impact of change of scope on project completion schedule, 2. Options for implementing changed scope of work,	Independent Engineer		Operations Level Field Officer	To ensure that Concessionaire was able to implement requirement of change of scope, after being directed by the Independent Engineer and the concessionaire provided response on the said aspects to the satisfaction of Independent	Recurring - Monthly



		<p>3. Detailed breakdown by work classifications and</p> <p>4. Details specifying the material and labor cost.</p> <p>Justifications in terms of providing safer and improved services to the users to be explicitly detailed out by the concessionaire for such change of scope</p>				<p>Engineer on time.</p> <p>In case of any delay in response or not as per the direction of the Independent Engineer, write a letter to the Concessionaire</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	
2.	<p>Responsive to instruction, queries or notice of Authority, Independent Engineer or Safety Consultants – Clarity, Completeness and Timeliness</p>	<p>Concessionaire to be responsive to the instructions issued queries, and cure period notices issued by Authority/Independent Engineer. Concessionaire responds promptly on more than 90% of the occasions to the satisfaction of the Independent Engineer/Authority.</p>	Independent Engineer		<p>Operations Level Field Officer</p>	<p>To ensure that Concessionaire is available and responds to all occasions to the satisfaction of the Independent Engineer/Authority .</p> <p>In case response from the Concessionaire are not satisfactory to Independent Engineer/Authority , write a letter to the Concessionaire</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	<p>Recurring – Monthly</p>



Concessionaire KPIs during the Operation and Maintenance stage

Sr. No.	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point	Review/ Escalation period after stipulated timeline
1. Timeline – Actual vs. Targeted							
1.	Submission and acceptance of maintenance manual and maintenance program	The maintenance manual to be submitted 180 days prior to the Scheduled Completion Date and maintenance program to be submitted within 45 days prior to COD/beginning of each accounting year during the operation period. The maintenance documents to be acceptable to Independent Engineer without any revisions/suggestions. The maintenance manual to be revised every 3 years.	Independent Engineer	At least 180 days prior to the Scheduled Completion Date	Operations Level Field Officer	To ensure that the maintenance manual and maintenance program on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level-Headquarter Officer and Member(Technical)	Within 7 days of Notice from Independent Engineer (One Time)
2.	Meeting target timeline for correction works specified in O&M Inspection Report	The Concessionaire to repair or rectify the defects or deficiencies, set forth in the O&M Inspection Report within 15 days of receiving the O&M Inspection Report or the test results. Where the remedying of such defects or deficiencies takes more than 15 days (as agreed by the Independent Engineer) , the Concessionaire to submit progress reports of the repair works once every week until such works	Independent Engineer	Within 15 days of O&M Inspection Report	Operations Level Field Officer	To ensure that the correction works specified in O&M Inspection Report on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days of Notice from Independent Engineer (One Time)



		are completed in conformity with this Agreement. The concessionaire shall not be penalized for any delay on account of the Authority.					
3.	Submission of Monthly Fee Statement	All 12 monthly fee statements in a year to be submitted on time to the Authority. The concessionaire shall not be penalized for any delay on account of the Authority.	Concessionaire	Monthly	Operations Level Field Officer	To ensure that the Concessionaire has submitted Monthly Fee Statement on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days of Notice from Independent Engineer (Recurring-Monthly)
4.	Provide audited annual accounts and schedules on time	The Concessionaire, within 30 days of the close of each quarter of an accounting year, to furnish its unaudited financial results in the manner and form prescribed by the SEBI and provide its Balance Sheet, Cash Flow Statement, Profit and Loss Account, and Statutory Auditors report on time, within 90 days of the close of the accounting year.	Concessionaire	Within 30 days of close of each quarter	Operations Level Field Officer	To ensure that the Concessionaire has submitted audited annual accounts and schedules on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Finance)	Within 7 days of Notice from Independent Engineer (Recurring-Quarterly)
2. Quality of Service							
1.	Quality of Maintenance	The concessionaire to conform to the maintenance	Independent Engineer	-	Operations Level Field Officer	To ensure that the quality of the	Within 7 days of Notice



	during operation period	<p>requirements of the concession agreement. All three of the below mentioned aspects to be achieved as per the required timelines:</p> <p>1. Concessionaire through its engineer to undertake a daily visual inspection of the Project and maintain a record thereof in a register.</p> <p>2. Undertake timely and prompt routine maintenance during operation period including prompt repairs</p> <p>3. All adverse comments/notices issued by the Independent Engineer to be implemented and adhered to.</p>	er			<p>maintenance is as per the good industry practice and all comments/ notices issued by Independent Engineer has been resolved</p> <p>In case the comments of Independent Engineer have not been resolved, write a letter to the Concessionaire.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	from Independent Engineer
2.	Curing Timelines for Default Punch list items and Maintenance timeline Requirements	Cure period covering timelines for curing breach for Punch List items or on default of maintenance requirements of the project to be served without any delay.	Independent Engineer	-	Operations Level Field Officer	<p>To ensure that the breach or default for punch list items and maintenance requirements were addressed within the cure period.</p> <p>In case of any delay, write a letter to the Concessionaire.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	Within 7 days from expiry of cure period (One Time)
3.	Periodic Maintenance of	Riding quality of each lane of the carriageway to be	Independent Engineer	-	Operations Level Field Officer	To ensure that the Periodic Maintenance of	(Recurring-Monthly)



	Pavement	checked with the help of a calibrated bump integrator and whenever the maximum roughness exceeds 2500 mm for each kilometer the Concessionaire to carry out pavement rehabilitation as per the IRC guidelines and the Annual O&M program to be approved by Independent Engineer. The pavement rehabilitation work is to be carried out within 180 days from the point Roughness value exceeded 2500 mm/km.	er			Pavement has been done as per the IRC and the Annual O&M program approved by Independent Engineer In case of any deviation, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	
4.	Authenticity of usage figures provided during operation period for sampling	On conduct of usage sampling by Authority through Independent Engineer/Independent Toll Audit Consultant, less than 2% variation to be noted between the usage sampling results estimated by Authority and usage reported by concessionaire. No discrepancies or missing information were to be reported for the concessionaire.	Independent Engineer	Monthly	Operations Level Field Officer	To ensure that the usage figures provided by Concessionaire are in line with the actual usage In case of deviation, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly)
3. Project and Contract Management							
1.	Escrow account withdrawals during construction and operations period	Monthly escrow account details to be submitted to the Authority on time. All 12 monthly reports to be made on time. Concessionaire to not modify the order of	Escrow Agent	Monthly	Operations Level Field Officer	To ensure that the no escrow default has occurred and withdrawal has been done as per the Concession	Within 7 days (One Time)



		payment specified from the escrow account as per the CA in any manner. No escrow default to occur.				Agreement In case of any deviation, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	
2.	Behavior of staff deployed for Toll operations	As identified in compliant register maintained by concessionaire or reported to the Authority /Independent Engineer through the grievance redressal forum, no incidence of misconduct (of the personnel deployed) to be reported. The personnel deployed should always sport the uniform bearing the name of the agency.	Independent Engineer	-	Operations Level Field Officer	To ensure that the Behavior of staff deployed for Toll operations is acceptable for users. In case of any deviation, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	(One Time)
3.	Re-appropriation of excess fee	If usage of facility in any accounting year exceeds the cap of 120% of the designed capacity, the Concessionaire to collect and appropriate the excess realizable fee and deposit the same into the Safety Fund within the designated timelines of 60 days from the close of the relevant accounting year.	Concessionaire	Within close of the 60 days from the close of the relevant accounting year.	Operations Level Field Officer	To ensure that the Concessionaire deposit the excess realizable fee in Safety Fund on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field	Within 7 days (One Time)



						Officer and Member(Technical)	
4.	Augmenting the capacity of the project	The Concessionaire to respond on time – within a period of 3 months from the date of issuance of notice by the Authority, to undertake the required augmentation (as determined by Authority) within six months of such notice.	Concessionaire	Within 3 months from the date of receipt of notice	Operations Level Field Officer	To ensure that the Concessionaire has responded on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Tech)	Within 7 days (One Time)
5.	Payment outstanding to independent Engineer /Sub-Contractors/ Other Agencies	No delay to be recorded for the payment made to the Independent Engineer/Statutory Auditor and no adverse notice to be received by the Authority relating to the delay in the payment to the sub-contractors.	Concessionaire	Monthly	Operations Level Field Officer	To ensure that the Concessionaire has made the payment to the Independent Engineer/SA/ Sub-contractors or other agencies if any on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Finance)	Within 7 days (One Time)
6.	Problem resolution and customer satisfaction capabilities	1. The Concessionaire to inspect the complaint registers every day. 2. Within 7 days (as per designated timelines) of the close of each month, the	Concessionaire	Every day	Operations Level Field Officer	To ensure that the Concessionaire inspects the complaint register every day and send the copy of the	Within 7 days (One Time)



		Concessionaire to furnish a copy of the complaint register (for that month) to the Authority and Independent Engineer. 3. The Concessionaire to take the lead promptly, providing highly effective solutions in case of problems,				complaint register to Authority and Independent Engineer on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	
4. Safety Considerations							
1.	Submission of monthly summary reports of unusual occurrences	The concessionaire should proactively follow daily reporting and weekly/monthly summary reports to be submitted on time within 3 days of the closing of each week/month as specified in the agreement.	Concessionaire	Weekly / Monthly	Operations Level Field Officer	To ensure that the Concessionaire submit the monthly summary reports of unusual occurrence on time In case of any delay, write a letter to the Concessionaire. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly/Weekly)
2.	Compliance with the safety measures.	All of the following five aspects to be achieved on time as per the required timelines: 1. The concessionaire to provide the safety consultants with necessary drawings at the development stage and recommendations	Independent Engineer	-	Operations Level Field Officer	To ensure that the Concessionaire compliance with all safety measures as per IRC manual In case of any deviation, write	Within 7 days (One Time)



		<p>provided by the safety consultants to be adequately incorporated in the design as per the applicable laws,</p> <p>2. Concessionaire to make adequate provisions for the safety of workers and users in the construction zone as per IRC provision during the construction and notify Authority and Independent Engineer about such arrangements,</p> <p>3. Concessionaire to establish Safety Management Unit (SMU) to be made functional after COD, keeping annual record of all accidents and FIRs with identification of the location on the project road and listing of the accidents and its analysis for preceding year,</p> <p>4. All safety reports recommendations during the Construction and operation phase to be applied/acted upon suitably as per IRC provisions and good industry practices, and</p> <p>5. Concessionaire's work to be never suspended on account of unsafe works/safety reasons.</p>				<p>a letter to the Concessionaire.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	
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2. Independent Engineer

The Independent Engineer has a major role to play in ensuring that the project progress is in line with the set timelines, the quality of Project developed by the Concessionaire is as per the desired standards and discrepancies/issues, if any, have been flagged and brought to the notice of Authority officials in a timely manner. This section lists those KPIs that help Authority officials monitor whether the Independent Engineer is working as per the expectations set from it.

Sr. No.	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point	Review/ Escalation period after stipulated timeline
1. Timeline – Actual vs. Targeted							
1.	Timely Reporting of change in scope and flagging of expected delays in achieving project milestones	Timely reporting of change in scope, additional works, variations in cost & quantity and other issues that could have resulted in delay in achieving project milestones. All such measures to facilitate Authority. In taking timely actions. In the opinion of the Authority, the delay, if any, in achievement of the project timelines is not to be on account of Consultant's default	Reports from Independent Engineer	Monthly	Operations Level Field Officer	To ensure that the Independent Engineer is Timely Reporting of change in scope and flagging of expected delays in achieving project milestones In case of any delay, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly)
2.	Adherence to timelines for reviews	All the Inspection Reports and review activities like monthly statements for value of work change in	Reports from Independent Engineer	Monthly	Operations Level Field Officer	To ensure that the Independent Engineer is reviewing and	Within 7 days (Recurring-Monthly)



	and reporting	quantity, valuation of variation items, cash flow statement, recording of management meetings, sub-contracting works to be on time. More than 95% of the inspection reports to be submitted on time	er			reporting all mentioned reports on time In case of any delay, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member(Technical)	
3.	Timely curing of Defects by Concessionaire/ Contractor	Curing of defects by the concessionaire/ contractor to be always on time	Reports from Independent Engineer	-	Operations Level Field Officer	To ensure that the Independent Engineer is curing the defects by the Concessionaire on time In case of any delay, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (Recurring-Monthly)
2. Quality of Services							
1.	Accuracy in the review of Design, Document, Drawings and Procedures	The Consultant to be compliant with the Good Industry Practice vis-a-vis Concession Agreement	Reports from Independent Engineer	-	Operations Level Field Officer	To ensure that the accuracy level of the Independent Engineer during the review is high In case of deficiencies in the report or methodology adopted for	Within 7 days (One Time)



						<p>review, write a letter to the Independent Engineer.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	
2.	Report to the Supervisory Level, Field Officer and Member(Technical)	<p>1. Inspection to be carried out at least once in a month (or as per provision of the agreement), or at other times as reasonably requested by Authority with timely reporting.</p> <p>2. Comprehensive review to be conducted and appropriate comments to be offered on Drawings and Documents like Annual Maintenance Program, O&M Inspection Report and Safety Reports, request to be made for closure of lanes for maintenance works and modifications suggested to project.</p> <p>3. The defects or deficiencies noted are to be clearly in conformity with Good Industry Practice and maintenance requirements stated in the agreement.</p> <p>4. Curing of defects by the concessionaire/contractor to be adequately monitored and reviewed and</p>	Reports from Independent Engineer	-	Operations Level Field Officer	<p>To ensure that the Inspection carried out at least once in a month with timely reporting by the Independent Engineer</p> <p>In case of any delay, write a letter to the Independent Engineer.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	Within 7 days (One Time)



		deficiencies by the Concessionaire/ Contractor to be addressed.					
3. Communication & Responsiveness							
1.	Timely reply/address of Authority Queries/comment	The consultant to be always available/responsive during consultancy contracts and bidding stage included post submission during project procurement phase.	Reports from Independent Engineer	-	Operations Level Field Officer	To ensure that the Independent Engineer respond to the Authority queries/comments on time In case of any delay, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member (Technical)	Within 7 days (Recurring-Monthly)
2.	Adequacy of Responses to Authority queries	The responses to the Authority queries to be factual, consistent and the consultant to show considerable ease in discussing project details during the meetings. More than 90% of responses to be acceptable to the Authority.	Reports from Independent Engineer	-	Operations Level Field Officer	To ensure that the respond received from Independent Engineer are factual and consistent In case of any deviation/doubts, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member(Authority)	Within 7 days (Recurring-Monthly)



4. Project & Contract Management							
1.	Availability of key personnel	Key personnel to be deployed on time as per schedule and to be available for project delivery and carrying out tasks as per proposed job description in the contract. Team leader to be available for all the meetings with Authority while other key personnel's to be available for more than 90% of the meetings.	Reports from Independent Engineer	-	Operations Level Field Officer	To ensure that the key personnel of Independent Engineer are available in the meetings In case of non-availability of key personnel, write a letter to the Independent Engineer. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days

3. Safety Consultant

Safety Consultant is another important related party that is responsible for safeguarding that the quality and safety requirements from a project and ensuring that any potential or actual defects observed, are brought to the notice of the Authority officials in timely manner. This section enumerates the KPIs for monitoring the Safety Consultant's performance.

Sr. No.	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point	Review/ Escalation period after stipulated timeline
1. Timeline – Actual vs. Targeted							
1.	Timely submission of Reports, review of documents/ designs provided by concessionaire and submission	Reports to be delivered and review activities to be conducted on time or with less than 5% delay in Business days.	Reports from Safety Consultant	Monthly	Operations Level (Field Officer)	To ensure that Safety Consultant reviews and conduct the activities on time In case of any delay, write a letter to the	Within 7 days (Recurring-Monthly)



						<p>Safety Consultant.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	
2. Quality of Service							
1.	Adequacy in work methodology, conduct of safety audits and reporting/recommendations	The Consultant to be compliant with the Good Industry Practice vis a via Concession Agreement	Reports from Consultant		Operations Level Field Officer	<p>To ensure that the accuracy level of Safety Consultant during the review is as per the good industry practice</p> <p>In case of deficiencies in the report or methodology adopted for review, write a letter to the Safety Consultant.</p> <p>Report to the Supervisory Level, Field Officer and Member(Technical)</p>	Within 7 days (Recurring-Monthly)
2.	Recording and analysis of accident records resulting in accident reductions	Timely review of accident records on the Project and remedial measures to be suggested.	Reports from Safety Consultant		Operations Level Field Officer	<p>To ensure that the Safety Consultant timely review the accident records and suggest the remedial measures.</p> <p>In case of deficiencies or delay, write a letter to the</p>	Within 7 days



						Safety Consultant. Report to the Supervisory Level, Field Officer and Member(Technical)	
3. Project & Contract Management							
1.	Availability of key personnel	1. Key personnel to be deployed on time as per schedule and are available for project delivery and carrying out tasks as per proposed job description in the contract. 2. Safety Consultant to carry out site inspections as per schedule and to be available for more than 90% of the meetings with Authority and Concessionaire.	Reports from Safety Consultant		Operations Level Field Officer	To ensure that the key personnel of Safety Consultant are deployed on time and available for the meetings In case of non-availability of key personnel or late deployment, write a letter to the Safety Consultant. Report to the Supervisory Level, Field Officer and Member(Technical)	Within 7 days (One Time)
2.	Limited change in Key Personnel	No change in key personnel's position.	Reports from Safety Consultant	-	Operations Level Field Officer	To ensure that there is no change in approved key personnel of Safety Consultant In case of any change in key personnel, write a letter to the Safety Consultant. Report to the	Within 7 days



						Supervisory Level, Field Officer and Member(Technical)	
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4. Financial Consultant

Sr. No.	Parameter	Description	Source	Stipulated Timeline for Completion	Responsible official	Action Point
1. Timeline – Actual vs. Targeted						
1.	Timely Delivery of Reports	Reports to be delivered and review activities to be conducted on time or with less than 5% delay in Business days.	Reports from Financial Consultant	-	Operations Level Operations Level-Headquarter Officer (Technical)	To ensure that Financial Consultant reviews and submit the report on time In case of any delay, write a letter to the Financial Consultant. Report to the Supervisory Level- Headquarter Officer and Member(Technical)
2. Quality of Service						
1.	Adequacy in work methodology, and review of the Financing documents submitted by Concessionaire	The Consultant to review the documents as per the Concession Agreement viz. a viz. Guidelines of Govt. of India	Reports from Financial Consultant	-	Operations Level Operations Level-Headquarter Officer (Technical)	To ensure that the accuracy level Financial Consultant during the review is as per the good industry practice In case of deficiencies in the report or methodology adopted for review, write a letter to the Safety Consultant. Report to the Supervisory Level- Headquarter Officer and Member(Technical)
3. Project & Contract Management						
1.	Availability of key personnel	Key personnel to be deployed on time as per schedule and need to be available for project delivery and carrying out tasks as	Reports from Financial Consultant	-	Operations Level Operations Level-Headquarter Officer	To ensure that the key personnel of Financial Consultant are available in the meetings In case of non-availability of



		per proposed job description in the contract. Team leader to be available for all the meetings with Authority while other key personnel's to be available for more than 90% of the meetings.			(Technical)	key personnel, write a letter to the Financial Consultant. Report to the Supervisory Level- Headquarter Officer and Member(Technical)
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Annexure - 13

HANDLING RARE EVENTS (CONTINGENCIES)

1. Activities to be undertaken by Operations Level- HQ Officer

Change in Law

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Change in Law – Increase in Cost	Step 1: Authority to get notice from Concessionaire in case of change in law resulting in increase of costs or reduction in net after-tax return or other financial burden, the aggregate financial effect of which exceeds the higher of Rs. 1 crore and 0.5% of the Realizable Fee in any Accounting Year.	
		Step 2: Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable but no later than 30 days from the date of notice, and either agree on amendments to this Agreement or on any other mutually agreed arrangement	Within 30 days of receipt of such Notice
		Step 3: Authority to get paid an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law, from Concessionaire in case no agreement is reached within 90 days of Notice	
		Step 4: The Authority shall pay the amount specified therein within 15 days of receipt of such notice, along with particulars thereof.	Within 15 days of receipt of such Notice
2.	Change in Law – Reduction in Cost	Step 1: The Authority to issue notice to the Concessionaire in case of change in law resulting in reduction in costs or increase in net after-tax return or other financial gains, the aggregate financial effect of which exceeds the higher of Rs. 1 crore and 0.5% of the Realizable Fee in any Accounting Year.	Within 30 days of such event
		Step 2: Upon notice by the Authority, the Parties shall meet, as soon as reasonably practicable but no later than 30 days from the date of notice, and either agree on amendments to this Agreement or on any other mutually agreed arrangement	Within 30 days of such Notice
		Step 3: Authority to issue notice to Concessionaire, in case no agreement is reached within 90 days of Notice, to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law	Within 90 days of such Notice



		Authority to receive from the Concessionaire the amount specified therein within 15 days of receipt of such notice, along with particulars thereof.	
3.	Protection of NPV	The Parties shall rely on the Financial Model to establish a net present value (the "NPV") of the net cash flow and make necessary adjustments in costs, revenues, compensation or other relevant parameters, as the case may be, to procure that the NPV of the net cash flow is the same as it would have been if no Change in Law had occurred.	
4.	No claim in the event of recovery from Users	The Authority shall not be liable to reimburse any sums on account of a Change in Law to the Concessionaire, if the same are recoverable from the Users.	

Force Majeure

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Force Majeure Event	Step 1: Affected party shall by notice report occurrence of Force Majeure event to the other party including particulars of: <ul style="list-style-type: none"> • nature and extent of each Force Majeure Event which is the subject of any claim for relief under Article 34 with evidence in support thereof; • estimated duration and the effect which such Force Majeure Event is having or will have on the Affected Party's performance of its obligations under the Agreement; • the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event 	Within 7 days of event
		Step 2: Authority to assess the impact on Concession period and allocation of cost upon occurrence of Force Majeure event	Within 7 days of receipt of such request.
		Step 3: <ul style="list-style-type: none"> • Upon the occurrence of any Force Majeure Event prior to the Appointed Date, the period for achieving Financial Close shall be extended by a period equal in length to the duration of the Force Majeure Event • before COD, the Concession Period and the dates set forth in the Project Completion Schedule shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists • after COD, whereupon the Concessionaire is unable to collect Fee, the Concession Period shall be extended by a period, equal in length to the period during which the Concessionaire was prevented from collection of Fee on account thereof; 	



	<ul style="list-style-type: none"> provided that in the event of partial collection of Fee where the daily collection is less than 90% (ninety per cent) of the Average Daily Fee, the Government shall extend the Concession Period in proportion to the loss of Fee on a daily basis. 	
	Step 4: If the Force Majeure Event subsists for a period of 180 days or more within a continuous period of 365 days, either party can terminate the Agreement	Within 365 days of Event
	Step 5: <ul style="list-style-type: none"> Initiator to inform other Party of intention to issue termination notice and grant 15 days' time to make a representation May issue notice thereon, irrespective of representation 	

Compensation for Breach of Agreement

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Compensation for Breach in Agreement - default by the Authority	Step 1: Authority to receive compensation demand for material default, supported by necessary particulars from the Concessionaire	Within 7 days of event
		Step 2: Authority to pay within 30 days of receipt of the demand <ul style="list-style-type: none"> The Authority shall in addition to payment of compensation, in case of delay in achieving COD or leads to suspension of or reduction in collection of Fee, extend the Concession Period. Such extension being equal in duration to the period by which COD was delayed or the collection of Fee remained suspended. The Authority shall pay to the Concessionaire, in the event that an Additional facility or a Competing facility is opened in breach of this Agreement, for each day of breach, compensation in a sum equal to the difference between the average daily Realizable Fee and the projected daily Fee until the breach is cured. Compensation payable shall be in addition to Termination Payment, if any.	With Within 30 days of receipt of the demand in 7 days of receipt of such request.
2.	Compensation for Breach in Agreement - default by the Concessionaire	Step 1: Authority to raise compensation demand for material default, supported by necessary particulars	Within 7 days of such default
		Step 2: The Authority to get paid for all direct costs suffered or incurred by Concessionaire as a consequence of such material default within 30 days of receipt of the demand.	



Assignment & Charger Creation Request

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Restrictions on assignment and charges	Step 1: Authority to give prior consent in writing before Concessionaire assigns the Agreement to any person	
		Step 2: Authority shall be entitled to decline the consent without assigning any reason	Within 15 days of receipt of such request
2.	Restrictions on assignment and charges	Step 1: Authority to give prior consent in writing for Concessionaire to create or permit to subsist any Encumbrance, or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement or any Project Agreement to which it is a party except <ul style="list-style-type: none"> • Liens arising by operation of law • Mortgages/pledges/hypothecation of goods/ assets other than project assets and their related documents of title, a charge on the escrow account arising or created and as security only for indebtedness to the senior lenders under the financing agreements and/or for working capital arrangements • Assignment of rights, interest and obligations of the concessionaire to or in favour of the lenders' representative as nominee to the extent covered by and in accordance with the substitution agreement as security for financing • Liens or encumbrances required by any applicable law 	
		Step 2: Authority shall be entitled to decline the consent without assigning any reason	Within 7 days of receipt of such request
3.	Substitution Agreement	The Lenders' Representative, on behalf of Senior Lenders, may exercise the right to substitute the Concessionaire pursuant to the agreement for substitution of the Concessionaire (the "Substitution Agreement")	
4.	Assignment by the Authority	The Authority may, after giving 60 days' notice to the Concessionaire, assign and/ or transfer any of its rights and benefits and/or obligations under this Agreement to an assignee who is, in the reasonable opinion of the Authority, capable of fulfilling all of the Authority's then outstanding obligations under this Agreement.	



Indemnity Claims

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Indemnity claims	<p>Step 1: In the event that either Party receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity, it shall notify the other Party (the "Indemnifying Party") within 15 days of receipt of the claim or demand and shall not settle or pay the claim without the prior approval of the Indemnifying Party.</p>	Within 7 days of receipt of such claim
		<p>Step 2: In the event that the Indemnifying Party wishes to contest or dispute the claim or demand, it may conduct the proceedings in the name of the Indemnified Party, subject to the Indemnified Party being secured against any costs involved, to its reasonable satisfaction</p>	

Suspension of Concessionaire's Rights

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Suspension upon Concessionaire Default & Authority to act on behalf of Concessionaire	<p>The Authority shall be entitled to following upon occurrence of a Concessionaire Default</p> <ul style="list-style-type: none"> • suspend all rights of the Concessionaire and • Exercise such rights itself or authorize any other person to exercise or perform the same on its behalf during suspension. • Suspension will be effective upon issuance of notice by the Authority to the Concessionaire. • During Suspension, the Authority will, on behalf of the Concessionaire, collect all Fee and revenues and deposit the same in the Escrow Account. • The Authority can also make withdrawals from the Escrow Account for meeting the costs incurred by it for remedying and rectifying the cause of Suspension 	Within 7 days of receipt of such claim
2.	Revocation of Suspension	<ul style="list-style-type: none"> • In case the Authority shall have rectified or removed the cause of Suspension within a period not exceeding 90 days from the date of Suspension, it shall revoke the Suspension and restore all rights of the Concessionaire under this Agreement. The Authority may revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed. • The Authority shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement, upon the Concessionaire having cured the Concessionaire Default within a period not exceeding 90 days from the date of Suspension 	Within 90 days from the date of Suspension



3.	Substitution - Concessionaire Default	Step 1: The Authority to inform lender about intention to issue termination notice 15 days prior to Termination Notice upon occurrence of a Concessionaire Default,	15 days prior to the Termination Notice
		Step 2: Authority to receive representation from lender for substitution within 15 days from receiving information from Authority.	
		Step 3: Authority to withhold termination or invoke 180 day suspension, extendable by 90 days on lenders written request, at the discretion of Authority.	
		Step 4: Lender may substitute the Concessionaire by a Nominated Company	
4.	Suspension of Concessionaire rights - Substitution	Step 1: Upon occurrence of a Financial Default, the Lenders' Representative to issue a notice to the Concessionaire or request Authority to terminate	
		Step 2: <ul style="list-style-type: none"> • Authority to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project. • Authority shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. 	
		Step 3: Lender may substitute the Concessionaire by a Nominated Company within 180 days from the date of suspension	
		Step 4: The Authority may terminate the Concession Agreement forthwith by issuing a Termination Notice, in the event such substitution is not completed within 180 days from the date of Suspension, provided that upon written request from the Lenders' Representative and the Concessionaire, the Authority may extend the aforesaid period of 180 days by a period not exceeding 90 days.	

Termination

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Termination for Concessionaire's Default	Step 1: <ul style="list-style-type: none"> • the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice to the Concessionaire in the event such substitution is not completed within 180 days from the date of Suspension • the Authority shall by a notice inform the Concessionaire of its intention to issue such Termination Notice and grant 15 days to the Concessionaire to make a representation before issuing the Termination Notice 	Within 7 days of receipt of such claim
		Step 2: Authority to get representation from concessionaire within 15 days of intimation of intention by the Authority	



		<p>Step 3: The Authority is also required to send a copy of its notice of intention to issue a Termination Notice to inform the Lenders' Representative and grant 15 days for making a representation on behalf of the Senior Lenders stating the intention to substitute the Concessionaire.</p>	
		<p>Step 4: The Senior Lenders to submit a representation to the Authority 15 days of intimation of intention to substitute the Concessionaire.</p>	
		<p>Step 5: The Authority in the event receives representation on behalf of Senior Lenders, it shall at its discretion, either withhold Termination or exercise its right of Suspension, for enabling the Lenders' Representative to exercise the right of substitution.</p> <p>If Lenders' Representative procure that the default specified in the notice is cured within 180 days, and upon such curing thereof, the Authority shall withdraw its notice and restore all the rights of the Concessionaire. Upon written request from the Lenders' Representative and the Concessionaire, the Authority shall extend the period of 180 days by period not exceeding 90 days, as the Authority may deem appropriate.</p>	
2.	Termination for Authority Default	<p>Step 1:</p> <ul style="list-style-type: none"> • Authority to receive Termination notice from concessionaire upon occurrence of an Authority Default • Authority to be informed by concessionaire Authority of its intention to issue the Termination Notice and grant 15 days to the Authority to make a representation before issue of the Termination Notice 	
		<p>Step 2: Authority to submit a representation to Concessionaire within 15 days of intimation of intention by the Concessionaire</p>	Within 15 days of such intimation
3.	Termination Payment	<p>Step 1: Concessionaire to raise demand notice for Payment due against the Termination.</p>	
		<p>Step 2: Authority to make payment within 15 days of demand notice for payment due by the Concessionaire. In the event of any delay, the Authority needs to pay interest at a rate equal to 3% above the Bank Rate. Also, such delay should not exceed 90 days</p>	Within 15 days of demand notice
		<p>Step 3:</p> <ul style="list-style-type: none"> • The Authority shall pay to the Concessionaire an amount equal to 90% of the Debt Due less Insurance Cover upon Termination on account of a Concessionaire Default during the Operation Period, • Authority not to pay on account of a Concessionaire Default occurring prior to COD. 	



	<p>The Authority shall pay to the Concessionaire an amount equal to Debt Due and 150% of the Adjusted Equity upon Termination on account of an Authority Default</p>	
	<p>Step 4: The Authority upon Termination for any reason whatsoever, may</p> <ul style="list-style-type: none"> • take possession and control of the Project and all materials and plants about the site • restrain any person claiming through or under the Concessionaire from entering upon the Site • require the Concessionaire to comply with the Divestment Requirements • The Authority will not be liable for any dues of the contractor before the date Authority took charge. Such claims shall constitute debt between the Concessionaire and the Contractor <p>If the Authority elects to cure any outstanding defaults, the amount expended by the Authority for this purpose shall be deducted from the Termination Payment.</p>	

2. Activities to be undertaken by Operations Level-Field Officer

Change of Scope- Proposed by Authority

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Change of Scope – Proposed by Authority	<p>Step 1: Authority may propose Change of Scope if felt necessary, and give notice to Concessionaire to consider Change of Scope. The Concessionaire can reject a change of scope if it exceeds 20% of the Total Project Cost anytime during Concession Period or 5% of the Total Project Cost in any continuous period of 3 years before the Change of Scope Order.</p>	Within 7 days of receipt of such claim
		<p>Step 2: Authority to issue a notice to the Concessionaire specifying in reasonable detail the works and services contemplated thereunder (the “Change of Scope Notice”)</p>	Within 7 days of receipt of such request
		<p>Step 3: Authority will be provided information as is necessary, together with preliminary Documentation by the Concessionaire upon receipt of a Change of Scope Notice</p>	
		<p>Step 4: If the Authority, upon receipt of information, decides to proceed with the Change of Scope, the Authority to convey its preferred option to the Concessionaire and the Parties to thereupon make good faith efforts to agree upon the time and costs for implementation thereof with assistance of the Independent Engineer.</p>	
		<p>Step 5: Independent Engineer to assist the parties in deciding the options and Cost & Timelines required for carrying the Change of scope.</p>	



	<p>Step 6: A Change of Scope Agreement would be executed</p>	<p>Within 7 days of Change of Scope Agreement</p>
	<p>Step 7: The Authority, upon reaching an agreement, to issue an order requiring the Concessionaire to proceed with the performance thereof. Authority may, in the event that the Parties are unable to agree, by issuing a Change of Scope Order, require the Concessionaire to proceed with the performance thereof pending resolution of the Dispute, or carry out the works.</p>	

Change of Scope – Proposed by Concessionaire

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Change of Scope – Proposed by Concessionaire	<p>Step 1: Authority to receive notice from the Concessionaire at any time for Change of Scope, if felt necessary</p>	
		<p>Step 2: Authority may either accept such Change of Scope with modifications, if any, and initiate proceedings therefor or inform the Concessionaire in writing of its reasons for not accepting such Change of Scope within 15 days of receipt of such notice</p>	<p>Within 15 days of receipt of such request</p>
		<p>Step 3: In case the Authority accepts the proposed change of scope, Authority to issue a notice to the Concessionaire specifying in reasonable detail the works and services contemplated thereunder (the “Change of Scope Notice”)</p>	<p>Within 15 days of receipt of such request</p>
		<p>Step 4: Authority will be provided information as is necessary, together with preliminary Documentation by the Concessionaire upon receipt of a Change of Scope Notice</p>	
		<p>Step 5: If the Authority, upon receipt of information, decides to proceed with the Change of Scope, it will convey its preferred option to the Concessionaire and the Parties to thereupon make good faith efforts to agree upon the time and costs for implementation thereof with assistance of the Independent Engineer.</p>	<p>Within 7 days of receipt of such request</p>
		<p>Step 6: Independent Engineer to assist the parties in deciding the options and Cost & Timelines required for carrying the Change of scope.</p>	
		<p>Step 7: A Change of Scope Agreement would be executed</p>	
		<p>Step 8:</p> <ul style="list-style-type: none"> The Authority, upon reaching an agreement, to issue an order requiring the Concessionaire to proceed with the performance thereof. The Authority may, , in the event that the Parties are unable to agree, issue a Change of Scope Order, require the Concessionaire to proceed with the performance thereof pending resolution of the Dispute, or carry out the works. 	<p>Within 7 days of Change of Scope Agreement</p>



Payment for Change in Scope

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Payment for Change in Scope	Step 1: Authority to make an advance payment to the Concessionaire in a sum equal to 20% of the cost of Change of Scope as agreed and in the event of a Dispute, 20% of the cost assessed by the Independent Engineer within 7 days of issuing a Change of Scope Order	Within 30 days of Change of Scope Agreement
		Step 2: Authority to execute payment of bills in respect of the works commenced by Concessionaire, supported by such Documentation as is reasonably sufficient for the Authority to determine the accuracy thereof	
		Step 3: Independent Engineer to certify the Cost and the advance amount against the Change of Scope	
		Step 4: Authority to disburse amounts as certified by the Independent Engineer within 30 days of receipt of bills.	Within 30 days of receipt of bills.
		Step 5: In the event that the total cost arising out of Change of Scope Orders (if any) issued prior to the Project Completion Date is less than 0.25% of the Total Project Cost, the difference thereof shall be credited by the Concessionaire to the Safety Fund within a period of 180 days of the Project Completion Date	
2.	Reduction in Scope of the Project	Authority to get 80% of the amount saved due to reduction in the scope from Concessionaire	

3. Activities to be undertaken by Supervisory Level-Finance Officer

Financial Restructuring & Novation Requests

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Financial Restructuring & Novation	<p>Step 1: Authority to</p> <ul style="list-style-type: none"> • Issue an acknowledgement to Concessionaire. • Get all Legal document (as submitted by Concessionaire) verified from Legal/ Financial Consultant. • Suggest the required changes in the documents, if any or approved the documents <p>Upon submission of proposal for financial restructuring by the Concessionaire along with supporting documents</p>	Within 15 days of receipt of such request



Equity Transfer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Equity Transfer	<p>Step 1: Authority to</p> <ul style="list-style-type: none"> • Issue an acknowledgement to Concessionaire. • Get all Legal document (as submitted by Concessionaire) verified from Legal/ Financial Consultant. • Suggest the required changes in the documents, if any or approved the documents <p>Upon submission of proposal for financial restructuring by the Concessionaire along with supporting documents</p>	Within 15 days of receipt of such request

4. Activities to be undertaken by the Supervisory Level (HQ) – Technical Officer

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status reports & review of documents	<p>Step 1:</p> <p>Relevant Authority officer to review and provide inputs on the monthly status reports received from level below it (Operations Level Field Officer in this case) of the all ongoing projects and all files/ documents pertaining to it. Authority to report and escalation to be done to the next higher level (Decision Making Level- Technical Officer) within 1 day in case of any default.</p>	1 day of default

5. Activities undertaken by Supervisory Level (field) – Technical

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status reports & review of documents	<p>Step 1:</p> <p>Authority to review and provide inputs on the monthly status reports of the all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the next higher level (Decision Making Level- Technical Officer) within 1 day.</p>	1 day of default



6. Activities undertaken by Decision making Level (Technical)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status reports & review of documents	Step 1: Authority to review and provide inputs on the monthly status reports of the all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the next higher level (Board/ Chairman) as and when required. In case of any default, the issue to be escalated.	5 days of default

7. Activities undertaken by Decision making Level (Finance)

Sr. No.	Activities	Responsibilities / Action Plans	
		Action	Timeline
1.	Monthly status reports & review of documents	Step 1: Authority to review and provide inputs on the monthly status reports of the all ongoing projects and all files/ documents pertaining to it. Reporting to be done to the next higher level (Board/ Chairman) as and when required. In case of any default, the issue to be escalated	5 days of default



Annexure - 14

CHECKLIST

1. Financial Restructuring & Novation

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Clarity on justification of restructuring / refinancing		
2	New lender, if any, has agreed to Concession Agreements		
3	No Objection Certificate (NOC) from existing lenders, if being changed		
4	Opinion from Financial / Legal Consultant has been taken		
5	Concurrence from all promoters having more than 26% of equity in the SPV		
6	All comments of Financial / Legal Consultant or Authority itself is incorporated in the executed documents.		
7	Is in compliance with Concession Agreement		
8	Is in compliance with Companies Act, 1956(or as per amended versions of the Act) and other relevant laws and regulations		
9	Increase / decrease in funded amount, if any, justified		
10	No increase in Authority's liability in amount and time		
11	Funds are to be used for project purposes only		
12	No objection from Authority issued as a necessary condition		
13	Draft documents reviewed by Authority for checking compliance with Concession Agreements and Authority policy		
14	Executed version of the Agreements submitted to Authority within 10 days of execution		
15	The Final Executed documents are already been approved by Level 4 in Authority		



2. Equity Transfer

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Clarity on justification of equity transfer / buy / sale		
2	Equity buyer, if new and with more than 26% stake, has agreed to all Concession Agreements		
3	Opinion from Financial / Legal Consultant has been taken		
4	No risk on national security and public interest perspective		
5	Selected bidder/ Consortium Members, together with its/ their Associates is/are holding at least 51% Equity till signing of Concession Agreement.		
6	All member of the Consortium whose technical and financial capacity was evaluated for shortlisting at RFQ stage is having at least 26% of equity, in case the Equity Transfer is proposed during the Construction period and two years thereafter.		
7	Concurrence from all promoters having more than 26% of equity in the SPV		
8	All comments of Financial / Legal Consultant or Authority is resolved.		
9	No Objection Certificate (NOC) from seller		
10	Concurrence from all promoters having Equity 26% or above in Private Party		
11	Is in compliance with Concession Agreement		
12	Is in compliance with Companies Act, 1956(or as per amended versions of the Act) and other relevant laws and regulations		
13	No disproportionate rights to any equity investor		
14	No increase in Authority's liability in amount and time		
15	No increase in Authority's liability in amount and time		
16	Draft documents reviewed by Authority for checking compliance with Concession Agreements and Authority policy		
17	Executed version of the Agreements submitted to Authority within 10 days of execution		
18	The Final Executed documents are already been approved by Level 4 in Authority		



3. Change in Scope

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Clarity on reason for change of scope		
2	Interested party has issued a notice to other party regarding change of scope		
3	Entire information related to Change of Scope is provided by Concessionaire to the Authority		
4	The Information submitted by Concessionaire was reviewed by the Independent Engineer		
5	The options, cost and time line was decided by Authority with assistance from the Independent Engineer		
6	A Change of Scope Agreement has been executed between Concessionaire and Authority		
7	Check if the particular change of scope is permitted under agreement		
8	Increase in cost due to change of scope less than 5% annually in any continuous period of 3 years and less than 20% of TPC		
9	Methodologies for effecting change in scope analyzed and plan of action finalized		
10	Payment for change in scope agreed upon		
11	Change of scope formalized in a formal change of scope order		
12	A Change of Scope Agreement has been executed between Concessionaire and Authority		
13	Relevant work to start and payment to be made accordingly		



4. Change in Law

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Private Party's understanding of the changes in service obligations due to change in law is adequate		
2	Private Party's understanding of the changes in service obligations due to change in law is adequate		
3	Opinion from Financial / Legal Consultant has been taken		
4	There is variation in financial position by more than Rs. 1 crore and 0.5% of the Realizable Fee in any Accounting Year because of Change in Law		
5	The Financial position of the Concessionaire is same as it was before the Change in Law		
6	The Financial Position has been compared in terms of NPV		
7	The Financial Position has been compared with Financial Model submitted at the time of Financial Closure		
8	The variation in Financial position is not recoverable from the users		
9	Information provided to all stakeholders involved		
10	Meeting called for all parties to discuss and agree on required changes		
11	Timelines of project redefined to reflect new legal conditions		
12	New payment rights defined to protect Private Party project NPV		
13	Payment mechanism redefined to achieve agreed objective		
14	Is in compliance with the Concession Agreement		

5. Renegotiation

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Change proposed is agreed by both parties		
2	Information provided to all stakeholders involved		
3	Costing for the renegotiation agreed and understood by both parties		
4	Contract Management Team considered employing a third party in the renegotiation process		
5	Opinion from Financial / Legal Consultant has been taken		
6	Timelines & scope of project redefined		
7	Increase/ Decrease in funds justified		
8	Is in compliance with the Concession Agreement		
9	Payment mechanism and scheduled restructured as per the renegotiated contract		



6. Force Majeure

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Any Political Event, Indirect Political Event or Non-Political Event as defined in the Concession Agreement has occurred in India		
2	Affected party has issued notice to other party to report happenings		
3	All information related to Force Majeure event is provided by the Affected party		
4	Information provided to all stakeholders involved		
5	Parties meet to discuss and decide on a collective response		
6	Correct classification of force majeure event as indirect political event, non-political event or political event		
7	Continuation/Termination of agreement due to force majeure		
8	Agreement on effect of Force Majeure on Concession period		
9	Costs arising due to force majeure allocated		
10	Termination payment determined and paid, if required		
11	Formal agreement among all stakeholders regarding proceedings		

7. Termination

Sr. No.	Checklist Item	Tick (if yes)	Comments
1	Affected party has issued notice to other party issuing termination		
2	Information provided to all stakeholders involved		
3	Parties met to discuss and agree on timelines		
4	Termination Payment is estimated as per the Concession Agreement		
5	Opinion from Financial / Legal Consultant has been taken		
6	Agreement on termination payment to be made between parties		
7	Authority to take possession and control of project /equipment		
8	Assume control over access rights and personnel of project		
9	Closure of agreement by completing payment and other formalities		



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