

**Public-Private Partnerships in India: An Assessment Based on  
Implementation and Financial Performance of Road Infrastructure  
Projects**

*Dissertation submitted to the Jawaharlal Nehru University in partial  
fulfillment of the requirements for the award of the degree of*

**MASTER OF PHILOSOPHY**

**Abhinav Prakash Singh**



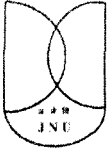
**CENTRE FOR ECONOMIC STUDIES AND PLANNING**

**SCHOOL OF SOCIAL SCIENCES**

**JAWAHARLAL NEHRU UNIVERSITY**

**NEW DELHI-110067**

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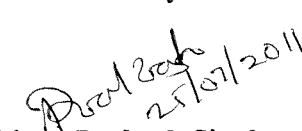
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July 25<sup>th</sup>, 2011



**DECLARATION**

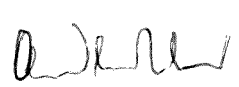
I declare that the dissertation entitled "**Public-Private Partnerships in India: An Assessment based on Implementation and Financial Performance of Road Infrastructure Projects**" submitted by me for the award of the degree of **Master of Philosophy** of Jawaharlal Nehru University is my own work. The dissertation has not been submitted for any other degree of this university or any other university.

  
Abhinav Prakash Singh

**CERTIFICATE**

We recommend that this dissertation be placed before the examiners for evaluation.

  
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For any errors and omissions, I, alone shall be held responsible.

**Abhinav Prakash Singh**

## ***Table of Contents***

<b><i>List of Tables and Figures</i></b>	<b>5</b>
--	----------

### *Chapter 1:*

<i>Introduction</i>	7
---------------------	---

### *Chapter 2:*

<i>Public-Private Partnerships in National Highways in India</i>	28
--	----

### *Chapter 3:*

<i>Case 1-Delhi-Gurgaon Expressway</i>	48
--	----

### *Chapter 4:*

<i>Case 2- Delhi-Noida Toll Bridge</i>	75
--	----

### *Chapter 5:*

<i>Conclusions</i>	98
--------------------	----

<b><i>Bibliography</i></b>	<b>103</b>
----------------------------	------------

<b><i>Appendix</i></b>	<b>108</b>
------------------------	------------

## *List of Tables and Figures*

### *Tables*

<b>Page No.</b>	<b>Table No</b>	<b>Name</b>
11	1.1	Projections of Investment in 11 <sup>th</sup> Plan
34	2.1	Value and Number of PPP Projects
36	2.2	Current Status of Implementation of NHDP (31 <sup>st</sup> May, 2011)
38	2.3	Contract Award Method
38	2.4	Distance Covered by PPP Projects on GQ and NSEW corridors
41	2.5	Allocation from the Central Road Fund
42	2.6	Breakup of Financing of NHDP
43	2.7	Summary of NHDP Financing Plan
44	2.8	Sources of Borrowing for NHDP
45	2.9	Modes of Delivery-Project Award Planning till 2014-15
54	3.1	Risk Allocation Framework of Delhi-Gurgaon Expressway
72	3.2	Expected and Actual Efficiency Gains from Expressway
78	4.1	Cost of Mayur Vihar Link
78	4.2	Share Holding Pattern of NTBCL (as of March 2010)
83	4.3	Profit and Loss Account of NTBCL, 2002
87	4.4	Actual and Projected Traffic and Toll Revenue of NTBCL, 2000-03
91	4.5	Events of Default and termination of Agreement

## *Figures and Charts*

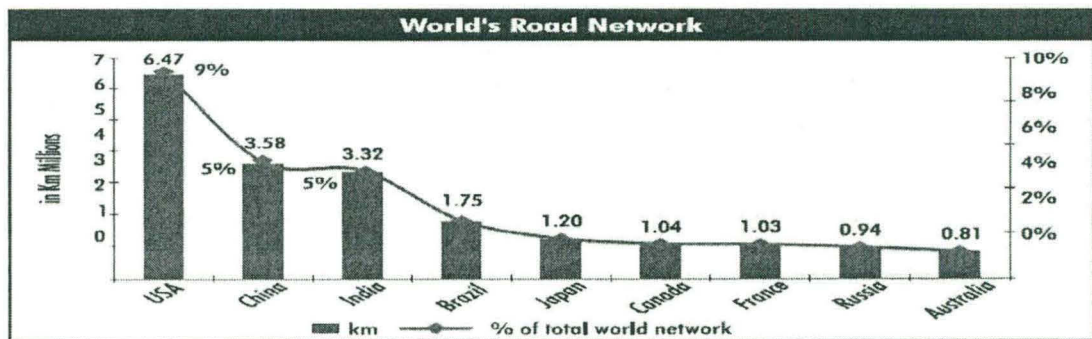
<b>Page No.</b>	<b>Figure/Chart No.</b>	<b>Name</b>
7	1.1	World's Road Network
9	1.2	Indian Road Network and Composition of NHAI
19	1.3	Different Types of PPP Models
23	1.4	Different PPP Models and Risks Associated with PPP
35	2.1	Growth of PPPs on Highways over the Years
40	2.2	Distribution of PPP Projects under NHDP
79	4.1	Shareholding Pattern of NTBCL
88	4.2	Traffic and Average Toll per Vehicle, Delhi-Noida Toll Bridge
97	4.3	Earning and Profits of NTBCL

# Chapter 1

## Introduction

A well-knit and coordinated system of transport plays an important role in the sustained economic growth of a country. India has a well-developed transport network comprising rail, road and coastal shipping. The total length of roads in India is over 30 lakh kms including both metalled and unmetalled roads, making it the third largest road network in the world. At 0.66 km of highway per square kilometer of land, the density of India's highway network is higher than that of the United States (0.65) and far higher than that of China's (0.16) or Brazil's (0.20).<sup>1</sup> As of 2002, only 47.3% of the network consisted of paved roads. Since independence, the inflow of funds into roads have been meager when compared to requirements and completely dependent on government budgetary support. But the government has now undertaken a major project to upgrade and modernise the road infrastructure in the country. In a recent consultation paper on infrastructure, the Planning Commission of India has envisaged an infrastructure spend of US\$500bn in the 11th plan (2008-12) and US\$1,000bn in the 12th plan (2013-17). Government is targeting to increase infrastructure spending as a percentage of GDP from 5% in FY2007 to over 10% of GDP by 2017. Annual spending on infrastructure is envisaged to grow from around US\$50bn in FY2007 to US\$250bn by FY2017.

**CHART 1.1: World's Road Network**



Source: CIA World fact book

<sup>1</sup> "India Transport Sector", World Bank.

The National Highways are the backbone of the road infrastructure in India. State Highways and Major District Roads constitute the secondary system of the road infrastructure in India.

National highways run through the length and breadth of the country connecting major ports, state capitals, large industrial and tourist centers, etc. National Highways in India are designated as NH followed by the highway number. The National Highways represent only 2% of the total network length, and they handle about 40% of the total road traffic. The National Highways are further classified based on the width of carriageway of the Highway. Generally, in case of a single lane, the lane width is of 3.75 meters, while in case of multi-lane National Highways, each of the lanes has a width of 3.5 meters. As of February 2008, out of the total length, 23% have four or more lanes and about 52% have 2-lanes or are double-laned, while the rest (25%) of the National Highway network has a single or intermediate lane.<sup>2</sup>

The Expressways of India make up approximately 600 km (120 mi), of the Indian National Highway System. Currently, a massive project is underway to expand the highway network and the Government of India plans to add an additional 18,637 km (11,580 mi) of expressways to the network by the year 2022.<sup>3</sup> Indian Expressways are access controlled, feature a divider in the centre and have at least six-lanes along with a shoulder on either side. Usually no two-wheelers, three-wheelers or tractor vehicles are allowed on these roads. Most of the existing expressways in India are toll roads.

The State Highways provide linkages with the National Highways, district headquarters, important towns, tourist centres and minor ports and carry the traffic along major centres within the state. These arterial routes provide connectivity to important towns and cities within the state and with National Highways or State Highways of the neighboring states. Their total length is about 1,54, 522 km.<sup>4</sup>

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<sup>2</sup> Annual report, 2010-11, Ministry of Road Transport and Highways

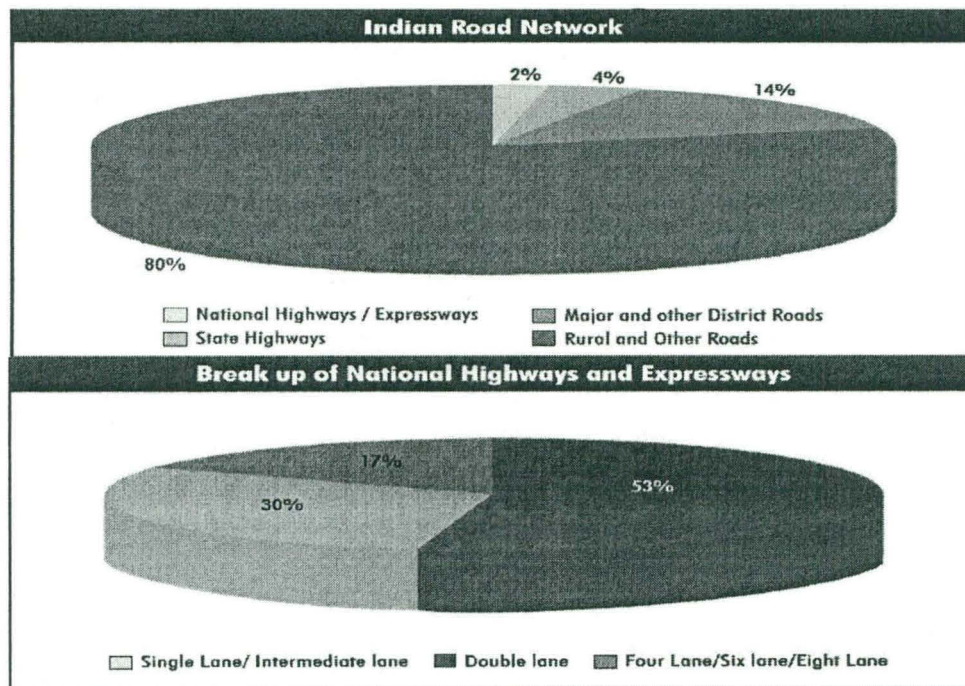
<sup>3</sup> Ashutosh Kumar, "Expressway cost pegged at Rs20 crore/km", Daily News and Analysis. DNA.

<sup>4</sup> Annual report, 2010-11, Ministry of Road Transport and Highways



District roads are important roads within a district connecting areas of production with markets and connecting these with each other or with the State Highways & National Highways. It also connects Taluka headquarters and rural areas to District headquarters within the state. The rural roads in India form a substantial portion of the Indian road network. For the development of these rural roads, the Pradhan Mantri Gram Sadak Yojana (PMGSY) (or "Prime Minister Rural Roads Scheme"), was launched in December 2000 by the Indian government to provide connectivity to unconnected rural habitations. These roads are constructed and maintained by the village panchayats. Their total length in 2005 was 26,50,000 km, which was about 80 percent of all types of roads in India.

**CHART 1.2: Indian Road Network and Composition of NHAI**



Source: NHAI

The Ministry of State for Surface Transport in India administers the national highway system, and state highways and other state roads are maintained by the state public works departments. The central and state governments share responsibilities for road building and maintaining Indian roads. The National Highways Authority of India (NHAI) is the authority responsible for the development, maintenance and

management of National Highways entrusted to it. The NHAI is currently undertaking the developmental activities under National Highways Development Project (NHDP) in phases. In addition to implementing the NHDP, the NHAI is also responsible for implementing other projects relating to National Highways, primarily road connectivity to major ports in India.

Ever since India's independence, the positive economic growth has resulted in increasing traffic. But due to lack of vision and appropriate concerns the infrastructure has not grown correspondingly. This is especially true for the railways, which are normally the mainstay of goods traffic in a country. But due to failure in expanding the railway network there has been an increasing burden on the road infrastructure.

Since 1951, the share of the road sector in freight and passenger traffic has increased from 12% to 64.5% and 25.8% to 86% respectively.<sup>5</sup> The total registered vehicles in the country grew at a Compound Annual Growth Rate (CAGR) of 10.8% between 1951 and 2009.<sup>6</sup> But this has not been matched by a commensurate growth in the road network. The road network increased 8.3 times, from 0.4 million km to 3.3 million km. The National Highway network (that accounts for nearly 40% of the total freight traffic) increased by 2.93 times, from 19,811 km to 58,112 km. Of the total 195,200 km of state and national highways, only 1.2% is 4-laned and 32% is 2-laned, while more than two-thirds still comprises single lane roads. This has resulted in Congestion on nearly 25% of the National and State Highways<sup>7</sup>. A 2005 study by World Bank found that highway deaths in India at about 75,000 per year with an annual economic loss of approximately Rs.550 billion (US\$11 billion)<sup>8</sup> In addition, approximately a quarter of all India's highways are congested, in some cases reducing truck and bus speeds to 30-40 km/h (19-25 mph).<sup>9</sup> Road maintenance remains under-funded, and some 40 percent of villages in India lack access to all-weather roads.

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<sup>5</sup> Indian Road Network, 2009, NHAI

<sup>6</sup> Road Sector Transport Year Book, 2007-2009, Ministry of Road Transport and Highways, GOI

<sup>7</sup> World Bank, (2002). "Challenges for India's Transport Sector". Washington, D.C.: Energy and Infrastructure Unit, South Asia Region, World Bank.

<sup>8</sup> World Bank (2005), Road Transport Service Efficiency Study, India

<sup>9</sup> Ibid (World Bank, 2002)

This has led to a sudden recognition of the need for investment in infrastructure, especially in roads. The roads in India, especially national highways, are in need of immediate up-gradation and expansion. To sustain economic growth it is necessary to facilitate quicker transportation and accommodate an increasing number of vehicles. The 11<sup>th</sup> and 12<sup>th</sup> five-year plans have chalked out an ambitious vision of investments in infrastructure, especially roads, which will account for 15% of India's infrastructure investment in the 11<sup>th</sup> plan with a targeted expenditure of US\$76bn.

**Table:1.1 Projections of Investment in 11<sup>th</sup> Plan**

Sector	Revised Projections of Investment in Infrastructure during the Eleventh Plan (Rs crore at 2006-07 prices)						
	X Plan (actual)	2007-08 (Actual)	2008-09 (Actual/ Estimated)	2009-10 (RE/BE/ Projected)	2010-11 (BE/Projected)	2011-2012 (Projected)	XI Plan (Revised Projections)
<b>Electricity (incl. NCE)</b>	340237	111134	117093	125958	144974	159471	658630
Centre	102665	29386	36769	39528	49900	54890	210474
States	100738	27252	30109	31193	34313	37744	160611
Private	136834	54497	50215	55237	60760	66836	287546
<b>Roads and Bridges</b>	127107	42741	48108	54638	63183	69988	278658
Centre	50468	12963	14876	17370	21765	23942	90916
States	67416	22769	25660	28225	31048	34153	141855
Private	9223	7009	7572	9043	10370	11893	45887
<b>Telecom</b>	101889	31900	52295	64206	84339	112394	345134
Centre	48213	7894	11048	13186	13988	15387	61503
Private	53676	24007	41248	51019	70351	97007	283631
<b>Railways (incl MRTS)</b>	102091	31182	39095	42830	40875	46820	200802
Centre	98914	29594	35863	39548	36675	40343	182024
States	2508	1128	2554	2048	2253	2479	10462
Private	669	460	677	1233	1947	3999	8316
<b>Irrigation (incl WS)</b>	119894	38789	44858	49093	54045	59449	246234
Centre	8597	1831	2133	2095	2348	2583	10990
State	111296	36958	42725	46997	51697	56867	235244
<b>Water supply &amp; Sanitation</b>	60108	19110	19939	21941	24141	26559	111689
Centre	20261	7201	7764	8541	9395	10334	43235
States	38830	11845	12094	13303	14633	16096	67971
Private	1018	65	81	97	113	128	484
<b>Ports</b>	22997	4942	7148	8323	9454	10779	40647
Centre	4051	831	1040	1076	1152	1268	5366
States	619	223	375	654	719	791	2763
Private	18327	3888	5733	6593	7582	8720	32517

<b>Airports</b>	6893	6912	7522	7092	7178	7434	36138
<b>Centre</b>	3811	1888					
<b>States</b>	712	424	525	91	100	110	1251
<b>Private</b>	2370	4600	4711	4615	4615	4615	23155
<b>Storage</b>	5643	906	1281	1669	2199	2911	8966
<b>Centre</b>	1416	0	0	47	47	47	141
<b>States</b>	2124	0	0	70	70	70	210
<b>Private</b>	2104	906	1281	1552	2082	2794	8615
<b>Oil &amp; gas pipelines</b>	32267	16190	21854	27080	29671	32511	127306
<b>Centre</b>	31367	7354	12234	16603	18264	20090	74545
<b>States</b>	1000	8836	9620	10476	11407	12421	52761
<b>Total</b>	919225	303807	359192	402829	460059	528316	2054205
<b>Centre</b>	369763	98941	124013	140381	155998	171593	690926
<b>States</b>	324242	100598	114041	122583	134834	148311	620367
<b>Private</b>	225220	104268	121138	139866	169227	208413	742912
<b>Total</b>	919225	303807	359192	402829	460059	528316	2054205
<b>Public</b>	694005	199539	238054	262964	290832	319904	1311293
<b>Private</b>	225220	104268	121138	139866	169227	208413	742912
<b>GDP</b>	17840877	4717187	5003545	5363800	5792904	6314265	27191700
<b>Investment as % of GDP</b>	5.15	6.44	7.18	7.51	7.94	8.37	7.55

Source: Mid-Term Appraisal of the Eleventh Five Year Plan

Achieving the increase in investment in infrastructure targeted in the Eleventh Plan presents many distinct challenges. In particular, the ability to finance infrastructure through the budget is limited, given the many other demands on budgetary resources. The emphasis on the reduction of the fiscal deficit after economic reforms has made the task even more difficult. The Eleventh Plan projections imply that only about 70 per cent of the infrastructure needs is to be met from public resources and the remaining 30 per cent is supposed to come from private investment in infrastructure in various forms, including Public Private Partnerships (PPPs). The Twelfth plan envisions even greater investment and private sector participation. Such private participation would not only provide the much-needed capital, it would also help to lower costs and improve efficiencies in a competitive environment as argued. In view of the above, the Government has been promoting investment in infrastructure sectors through a combination of public investment, private investment and Public Private Partnerships (PPPs). As a result, PPPs are increasingly becoming the preferred mode for construction and operation of commercially viable infrastructure projects in sectors such as highways, airports, ports, railways and urban transit systems.

PPPs have been particularly resorted to on a large scale in the road sector in the last decade. These public–private partnerships are creating a new way of investing in public infrastructure without public agencies supposedly having to incur on-balance sheet debt. There is usually a positive public perception of these relationships, as the public expects improvements to be made and view the performance of the private sector to be better than public sector agencies.

The main argument in favor of the public–private partnerships model has been that it will free up government resources from the need to construct roads. It is also expected to reduce the burden and risk exposure of the government in the road infrastructure area, while increasing efficiency<sup>10</sup> due to the involvement of the private sector which will bring in international best practices. Therefore, it is of interest to study actual experiences of public private partnership in road infrastructure in India. This work tries to do the same and examine the performance of public–private partnerships policy in the country by undertaking two case studies. It will study in detail the concession agreement and the actual project implementation, to analyse the claims being made in favor of public–private partnerships.

In **chapter 1**, it undertakes a review of the definition of the public–private partnerships and various models and risks involved in public–private partnerships. In **chapter 2**, it surveys the public–private partnerships in road infrastructure in India by studying the National Highways Development Programme, which accounts for the bulk of the PPP contracts signed so far. **Chapter 3** studies the Delhi-Gurgaon expressway project and **chapter 4** takes up the Delhi-Noida Toll Bridge. These both are hailed as success stories of public–private partnerships in India, which paved the way for greater private participation in the road infrastructure in the country. Both of these are Built Operate Toll models (BOT (Toll)), which has emerged as the preferred mode of implementation of a public–private partnership contract.

**Chapter 5** analyses the claims made in favor of the public–private partnerships based on these case studies and offers some suggestions for improving the framework adopted for promoting investment in the road infrastructure.

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<sup>10</sup> It means providing more goods and services for the society without using more resources in the same time period as earlier

## Public Private Partnership

There is no universally accepted definition of a Public-Private-Partnership or PPP. According to some, a PPP is said to have occurred if and only if there is an inflow of private investment. While some others argue that any form of interaction between the public and private sectors in the form of dialogue for policy making, joint projects & collaboration, consultancy etc will be perceived as PPP.

There are several definitions of PPP as adopted by various national and international bodies. According to the IMF, Public-private partnerships (PPPs) refer to arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. In addition to private execution and financing of investment, PPPs have two other important characteristics: there is an emphasis on service provision, as well as investment, by the private sector; and significant risk is transferred from the government to the private sector. While PPPs of this kind are seen as possible in a wide range of social and economic infrastructure projects, they are mainly used to build and operate hospitals, schools, prisons, roads, bridges and tunnels, light rail networks, air traffic control systems and water and sanitation plants.<sup>11</sup>

The European Commission<sup>12</sup> describes PPPs as a form of cooperation between the public authorities and economic operators. The primary aims of such cooperation are to fund, construct, renovate or operate an infrastructure or the provision of a service. PPPs are characterized by the duration of the relationship between the partners; the method of funding of the project; the role of the partners in the definition of objectives, design, completion, implementation, and funding; the and distribution of risks.

It distinguishes two types of PPP. Those of a purely contractual nature where the partnership is based solely on contractual links and may fall within the scope of European Directives on public procurement. And, PPPs of an institutional nature

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<sup>11</sup> Public-Private Partnerships, IMF, 2004

<sup>12</sup> Public Private Partnerships: In pursuit of Risk Sharing and Value for Money (Working party of senior budget officials, OECD), April 2008

involving cooperation within a distinct entity and may lead to the creation of an ad hoc entity held jointly by the public sector and the private sector or the control of a public entity by a private operator.

The Organization for Economic Cooperation and Development<sup>13</sup> (OECD) defines a public-private partnership as an agreement between the government and one or more private partners (which may include the operators and the financiers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners.

According to the Asian Development Bank<sup>14</sup>, the term “Public-Private Partnership” describes a range of possible relationships among public and private entities in the context of infrastructure and other services. PPPs present a framework that—while engaging the private sector—acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public investments achieved. A strong PPP allocates the tasks, obligations, and risks among the public and private partners in an optimal way. The public partners in a PPP are government entities, including ministries, departments, municipalities, or state-owned enterprises. The private partners can be local or international and may include businesses or investors with technical or financial expertise relevant to the project. PPPs can follow a variety of structures and contractual formats. However, all PPPs are seen as incorporating three key characteristics:

- A contractual agreement defining the roles and responsibilities of the parties,
- Sensible risk-sharing among the public and the private sector partners, and
- Financial rewards to the private party commensurate with the achievement of pre-specified outputs.

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<sup>13</sup> Public Private Partnerships: In pursuit of Risk Sharing and Value for Money (Working party of senior budget officials, OECD), April 2008

<sup>14</sup> Public Private Partnership Handbook (Asian Development Bank)

For the World Bank a public-private partnership (PPP) involves the private sector in aspects of the provision of infrastructure assets or of new or existing infrastructure services that have traditionally been provided by the government.

We can see that PPP is defined as an alternative model of public procurement where public services and infrastructure is routed through private players. But apart from service, in most cases a capital asset is being procured too. This implies that profits sought to be earned by the private partner during the concession period covers both the profit as well as part of the value of investment, which has to be recouped. It gives an incentive to inflate the cost of the capital and for poor maintenance of the asset as the end of the concession period approaches. Therefore, defining PPP is crucial since more and more public services are being routed through this model. It helps in proper identification of the issues involved and hence in the formulation of a proper PPP contract. Clarity about risks associated and their incidence encourages both private and public sector to opt for PPPs.

#### **DEFINITIONS OF PPP IN INDIA-**

The Guidelines for the Viability Gap Funding (VGF) scheme of the Ministry of Finance— ‘Guidelines for Financial Support to Public Private Partnerships in Infrastructure’—defines PPPs as projects based on a contract or concession agreement between a government or statutory entity on the one side and a private sector company on the other side, for delivering an infrastructure service on payment of user charges.

The Scheme and Guidelines for the India Infrastructure Project Development Fund, issued by the Ministry of Finance, Government of India, defines PPPs as “partnerships between a public sector entity (Sponsoring authority) and a private sector entity (a legal entity in which 51% or more of equity is with the private partner/s) for the creation and/or management of infrastructure for public purpose for a specified period of time (concession period) on commercial terms and in which the private partner has been procured through a transparent and open procurement system.”



The preface to the Guidelines for Formulation, Appraisal and Approval of Public Private Partnership Projects mentions that “unlike private projects where prices are generally determined competitively and government resources are not involved, PPP infrastructure projects typically involve transfer of public assets, delegation of governmental authority for recovery of user charges, private control of monopolistic services and sharing of risks and contingent liabilities by the Government. Protection of user interests and the need to secure value for public money demand a more rigorous treatment of these projects.”

The India Infrastructure Finance Company defines PPP as a project based on a contract or concession agreement, between a Government or a statutory entity on the one side and a Private Sector Company<sup>15</sup> on the other side, for delivering an infrastructure service on payment of user charges.

There are several common points in all these definitions both in India and outside. The services will be provided by a private player to the public under the authorization of or in collaboration with a public sector entity. The arrangement will be for a fixed, pre-determined period with pre-negotiated criteria for goals, performance and efficiency. The most important part is the risk sharing between the public and private entity. It is expected that risk will be shared according to the capacity of both within the mutually agreed framework. The terms of PPP can-not violate the law of the land and other laws meant for the provision of the public service in question.

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<sup>15</sup> Means a company in which 51% or more of the subscribed and paid-up equity is owned and controlled by private entities.

## PPP MODELS<sup>16</sup>

The usually adopted PPP models in India and the definitions are given below:

### **Build, Operate and Transfer (BOT)**

Under this category, the private partner is responsible for designing, building, operating (during the contracted period) and transferring back the facility to the public sector. The private sector partner is expected to bring the finance for the project and take the responsibility to construct and maintain it. The public sector will either pay a rent for using the facility or allow it to collect revenue from the users. The national highway projects contracted out by NHAI under PPP mode is an example.

### **Lease, Operate and Transfer (LOT)**

As the name indicates, under this type of PPPs, a facility which already exists and is under operation, is entrusted to the private sector partner for efficient operation, subject to the terms and conditions decided by mutual agreement. The contract will be for a given but sufficiently long period and the asset will be transferred back to the government at the end of the contract. Leasing a school building or a hospital to the private sector along with the staff and all facilities by entrusting it with the management and control, subject to pre-determined conditions could come under this category.

### **Build, Own, Operate (BOO) or Build, Own, Operate and Transfer (BOOT)**

This is a variation of the BOT model, except that the ownership of the newly built facility will rest with the private party during the period of contract. This will result in the transfer of most of the risks related to planning, design, construction and operation of the project to the private partner. The public sector partner will however contract to 'purchase' the goods and services produced by the project on mutually agreed terms and conditions. In the latter case (BOOT), however, the facility / project built under PPP will be transferred back to the government department or agency at the end of the contract period, generally at the residual value and after the private partner recovers its investment and reasonable return agreed to as per the contract.

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<sup>16</sup> Taken from PPP in Infrastructure Projects, Public Auditing Guidelines, CAG ,2009

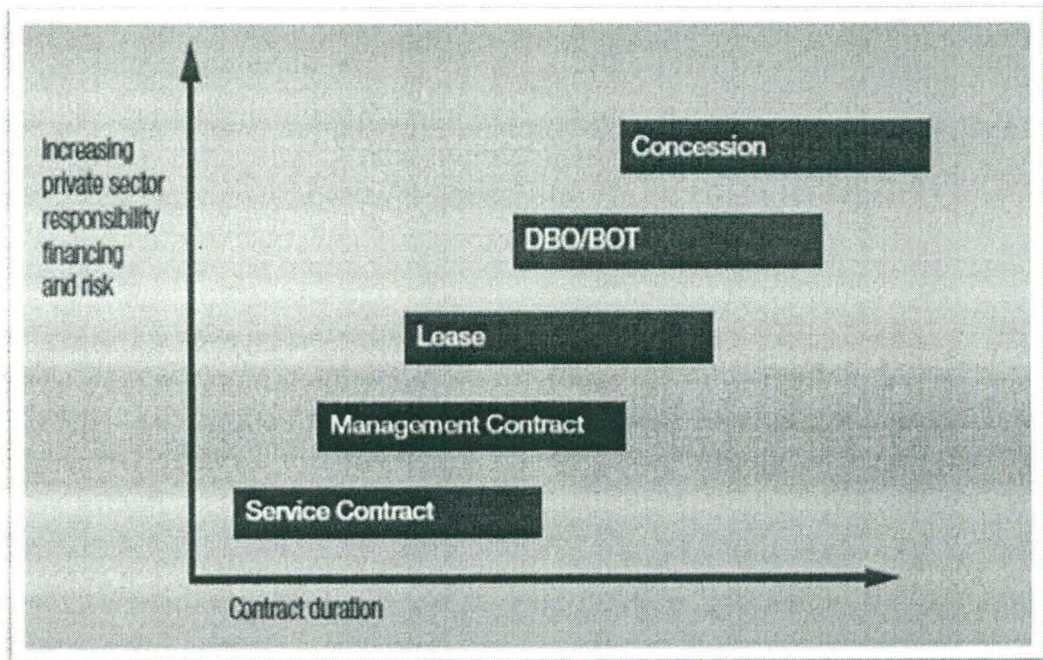
## **Design, Build, Finance and Operate (DBFO) or Design, Build, Finance, Operate and Maintain (DBFOM)**

These are other variations of PPP and as the nomenclatures highlight, the private party assumes the entire responsibility for the design, construct, finance, and operate or operate and maintain the project for the period of concession. These are also referred to as “Concessions”. The private participant in the project will recover its investment and return on investments (ROI) through the concessions granted or through annuity payments etc. It may be noted that most of the project risks related to the design, financing and construction would stand transferred to the private partner. The public sector may provide guarantees to financing agencies, help with the acquisition of land and assist to obtain statutory and environmental clearances and approvals and also assure a reasonable return as per established norms or industry practices, throughout the period of concession.

### **Operations Concessions**

This is a generic term, used to clarify the essential features of PPP arrangements, which authorize the private partner to recover its investments and expected returns.

**Chart 1.3: Different Types of PPP Models**



## **Risks associated with PPP in Road Infrastructure**

There are several risks associated with any PPP project which require to be identified clearly during the formulation of the PPP contract. A PPP involves participation of two different types of entities—a public sector entity and a private sector entity. Both of these have very different goals and perceptions regarding the project. They usually work with different perceptions of risk management and diversification of portfolio. The private entity's overriding goal is to recover its cost plus expected profits while minimizing the associated risks as much as possible. While the public sector entity works with the aim of providing cost-effective services to the public at large plus any other guidelines laid down by the government. It is usually ready to bear comparatively higher risks. This difference between the two regarding risk is not reconcilable and creates problems in the very structure of the PPP contract as it is the public entity which retains the final claim/ownership of the project while the task of construction, operations and maintenance is transferred to the private partner for the period of the agreement.

The first type of risk arises at the time of bidding itself. In a competitive bidding process, it is possible for the participants to quote higher bids than warranted by the initial risk and profit assessment. It may trap the winner into an unviable situation in long run. Such types of incidents are usually common in the Greenfield projects of a recently de-regularized sector. The private player may simply find it impossible to achieve financial closure. It may force the government to call for re-bidding at the cost of delay in the project. Or it is forced to give substantial grants and concessions to the concessionaire. It will reduce or may completely negate all benefits expected by the public entity by adopting the PPP route.

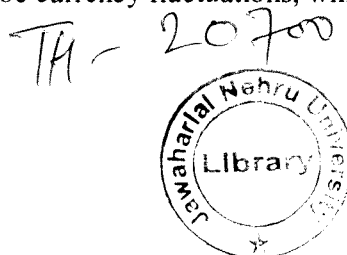
Since, the private player will be investing a huge amount of capital for a long term, it may try to extract various safeguards and concessions from the government. It may include guaranteed returns, extension of the concession period to ensure cost recovery, re-negotiation clauses etc. It may be necessary to accept these clauses to attract private investment in the first place itself. However, PPP is meant to be financed by the private player, thus, reducing the burden on the government budget. But, in practice, government remains involved through the complex web of various

kinds of concessions both explicit and implicit. Any default by the private player or any other problem may take its toll on government finances. It also increases uncertainty for the government budget especially if there are a large number of PPPs in a country.

It also causes the problem of moral hazard as instead of increasing efficiency to reduce cost in case of trouble, the private player may anytime declare losses triggering the relevant concession clause designed for such situation (like increasing the concession period etc) in the PPP contract. Or it may simply declare bankruptcy which will necessitate government to take over the un-viable project. Road projects takes several years to become profitable and for the cash flow of the concessionaire to stabilize. Therefore, it may happen that provision for upfront payments of negative grants may deter private participation. This may cause the government to lower the quantum of negative grant rather than using full value in certain projects. Further, the road projects grow in their economic value over time. This means that the true value of the projects cannot be determined accurately at the time of award of the project. This reduces the value of the negative grant which government can receive in the first place.

It is not possible to correctly assess the traffic flow risk before the project is actually commissioned. It may lead to under-estimation of risk leading to trouble for the concessionaire (and subsequently government). On the other hand, it may cause an over-estimation of risks forcing the government to reduce the negative grants and sweeten the deal with various un-warranted concessions.

Apart from these risks, there are many other risks, which arise due to the long-gestation period characteristic of the road projects. It involves large capital commitment for a long term, and depends on various other industries like cement, steel, and imports of capital equipments. Due to the long time-period involved there is an ever-present risk of inflation and interest rate fluctuation. These can unsettle the whole work plan by making it difficult to finance the project as planned. Interest rate risks are particularly high in developing countries like India, which lack a robust market for long-term debts. Then there may be currency fluctuations, which can affect



import of high-end machineries from abroad and can have serious consequences for the health of the project.

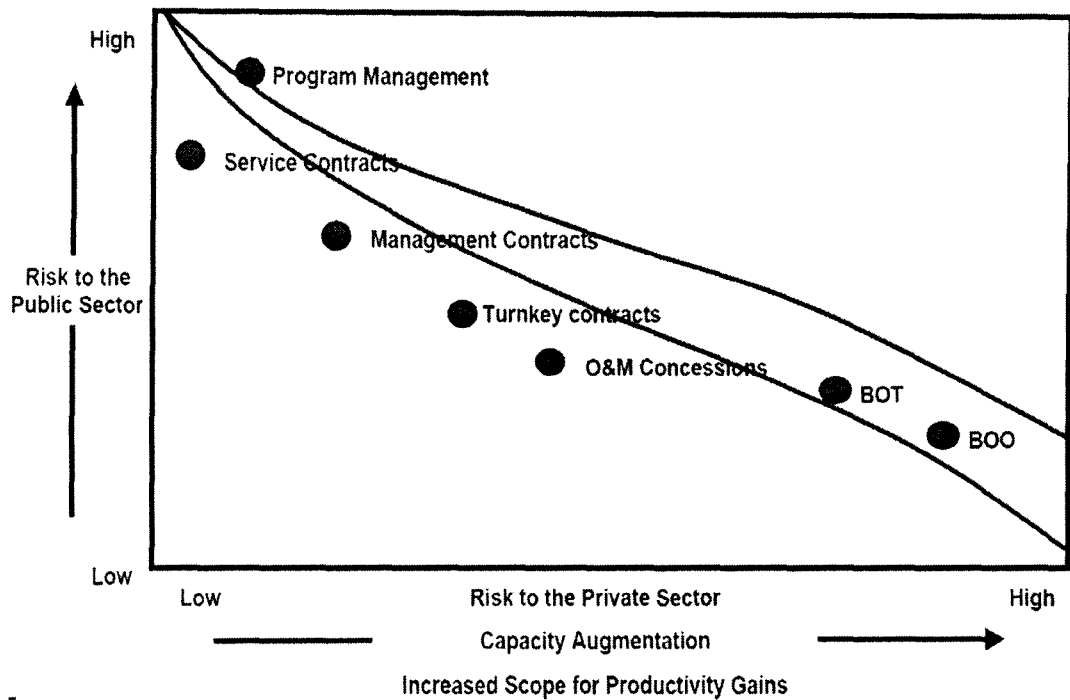
The problem of land acquisition forms another element of risk in the PPP projects and is very acute in developing countries like India. It can entangle the whole project in to a web of legal suits leading to delays and cost escalation. There are other legal risks like changes in corporate laws, tax laws etc.

Then there is the possibility of the inadequate demand for the PPP project, which will be revealed only when the project is commissioned. It can upset the whole PPP contract depending upon the capacity of the private partner to absorb the losses. The risk of a competing facility, whether road or other, coming up in vicinity in future cannot be accounted for properly beforehand, adding to uncertainties. This risk is especially high in areas of high economic activity.

The inability of properly enforcing toll collection by the private player and authorities is also an important component of risk. It may lead to lower than expected revenue flow. Inefficiency may also lead to congestion and longer stoppage time at the toll plaza reducing its attractiveness among commuters. This is truer of projects with competing road facilities even if they are not of the same quality.

Lender to the projects faces risks regarding the return of interests and principle, which depends upon the project getting adequate returns. The public faces the risk of delay in project completion and higher tolls which may come to pass in case of cost-over run or the private player being unable to recover its cost and anticipated returns.

**Chart 1.4: Different PPP Models and Risks Associated with PPP**



#### Arguments for and Against PPP:-

There has been a sharp increase in PPPs in the world since 1990s. More and more countries have been adopting the PPP route for implementation of public service projects. India too has followed suit in a major way in the last decade. The main arguments in favor of PPP are as follows:-

**Limitations of government resources and capacity to meet the infrastructure gap:** Globally, governments are increasingly constrained in mobilizing the required financial and technical resources and the executive capacity to cope with the rising demand for water supply, sewerage, drainage, electricity supply, and solid-waste management. Rapid economic growth, growing urban population, increasing rural-urban migration, and all-round social and economic development have compounded the pressure on the existing infrastructure, and increased the demand-supply gap in most of the developing world. Countries and governments, especially in the developing world, are experiencing increasing pressure from their citizens, civil society organizations, and the media to provide accessible and affordable

infrastructure and basic services. Rising costs of maintaining and operating existing assets, inability to increase revenue and cut costs and waste, and rising constraints on budgets and borrowing, do not allow governments to make the required investments to upgrade or rehabilitate the existing infrastructure or creating new infrastructure.

**Need for new financing and institutional mechanisms:** The political economy of infrastructure shortages, constrained public resources, and rising pressure from citizens and civil society have combined to push governments and policymakers to explore new ways of financing and managing these services. Governments have been pushed into exploring new and innovative financing methods in which private sector investment can be attracted through a mutually beneficial arrangement. Since neither the public sector nor the private sector can meet the financial requirements for infrastructure in isolation, the PPP model has come to represent a way out of the resource constraints.

**Access to project finance:** The foremost benefit of adopting the PPP route is the ability to access capital funding from the private sector, considering that funding is getting increasingly limited from public sector budgets. Thus, PPPs allow governments to overcome their constraints and raise finance for high-priority public infrastructure projects. Essentially, governments are able to use private finance through PPPs to build infrastructure projects that would previously have been built by the public sector using public sector finance. PPP projects also leverage available public capital by converting capital expenditure into flow-of-service payments.

It also ensures an **optimum risk allocation system**. The high degree of economic externality of public infrastructure, and the commercial and socioeconomic risks involved in developing and operating them, has made it difficult to appropriate returns from infrastructure investments. The long gestation period of infrastructure projects also requires sustainable financial and operational capacity. Therefore, there is some reluctance in both the public and private sectors to absorb all the costs and assume all the risks of building and operating these assets alone. Since, risk of performance of the projects is passed on to the private sector, it leads to better risk assessment and cost estimation which is done on the basis of economics alone. The emergence of PPPs is seen as a sustainable financing and institutional mechanism with the potential of



bridging the infrastructure gap. PPPs primarily represent value for money in public procurement and efficient operation. PPPs also increase efficiency in the public services. It brings in international best practices, better technology, innovative project and financial designs etc. Public sector, traditionally, has been found wanting on these accounts. It increases transparency and service standards. It leads to project completion on time and due to higher quality reduces maintenance costs in long run.

Even though there are arguments in favor of PPP, there are major concerns regarding its viability and effectiveness especially in the road sector, which requires significantly large investment for a long period. The first problem arises with the issue of financing PPP projects and cost recovery. Who will be in charge of the cost recovery from the projects whose gains due to their public nature are often indivisible? In addition, how will this be done? Since, capital expenditure on a highway project is indivisible and very large, fixed charges form the major component of the costs of providing the road services. When gains from a highway project are purely economic and accrue only to users with no externality present, the toll rate cannot exceed the marginal benefit from road services with the result that despite tolling consumer surplus may be substantial. Thus, though the net economic benefits from a road project are positive, it may not be commercially viable. Hence, there is a tendency for the private investment to be less than the optimal level. The inappropriateness of the private profitability criterion even when the benefits of highways are entirely economic and devoid of positive externalities is of special importance in India where easy transport facilities play a crucial role in stimulating local economies and creating job opportunities. Also, the benefits from economic externalities due to improvement in roads and highways tend to be much larger than the consumer surplus enjoyed by users. It promotes inter-regional trade, helps in exploitation of local resources and can aid in division of labor and specialization. Since, much of such gains cannot be captured through tolls, the gap between the socially optimal and commercially viable levels of investment in highways tend to lower than required.

Then there is a problem of the difference between social and private rate of discount. This gap drives private investment below the socially optimal level in two ways. First, given any stream of prospective yields from a road project, a higher rate of discount

implies a lower capitalized value of the yields. Second, at a higher discount rate the relative contribution to present value of some prospective yield in later periods is smaller compared with that in earlier periods. This factor is of particular importance in construction of highways with long expected life. The volume of traffic is usually low in the beginning but grows at a fast pace in the medium and long run. This is because of both growth of overall economy and effect of road connectivity on trade, increased specialization etc. The resulting temporal profile of toll revenues (coupled with high discount rate) makes most Greenfield projects unattractive to private players even though the capitalized value of the prospective yields at the social rate of discount may exceed the project cost by a substantial margin.

Fourth, as a host of studies suggest, improvement in roads, especially in backward areas, has a significantly positive impact on income inequality, poverty eradication, education, female literacy, health etc. Since, these factors do not enter into the assessment of the commercial viability of a project, many a road development programme having a high ratio of social benefits to cost will fail to attract required private investments.

Apart from making the scale of capital outlay lower than the socially optimal level, the aforementioned economics and social factors also cause serious distortion in composition of investment. Under private commercial considerations the dice are heavily loaded against projects which a) promote basic social, as against purely economic, objectives b) result in economic gains which cannot be appropriated through user charges and c) trigger with a time lag a cumulative process of regional or national economic development. Thus, we see that private investors are more than happy to undertake the projects against negative grants when projects are for widening of existing highways already catering to huge volume of traffic and connecting major cities & industrial areas. However, few would like to take up projects in backwards areas or remote areas like the northeast, which have a higher cost-benefit ratio than the former (where a substantial part of toll revenue is due to past investment by government)

Thus, government is forced to enact policies for neutralizing bias in private investment.

Therefore, Government bears the cost of Project feasibility study, Land acquisition for road, Land for the right of way and wayside amenities, Environment clearance, cutting of trees etc. It launches various schemes like viability gap funding, tax exemptions period and duty free imports of equipment. The rules for borrowing abroad are eased and tax exemptions are given to financial institutions financing such projects. And much of the time government gives upfront grants for specific projects. These concessions negate the basic arguments in favor of PPP i.e. it will reduce the burden on government funds. In fact, it is very difficult to deduce whether the total cost of the project both overall and for government has increased or decreased due to recourse to PPP model. Also, since cost saving because of such concessions in duties etc would be minor in relation to total costs, the quantitative impact remains doubtful. However, they can have significant distortionary effects and strengthen bias against investment with high social but low private returns. Duty rebates on inputs and interest subsidies erodes allocative efficiency and give rise to deadweight loss for the economy.

Thus, we see that theoretically there is strong case against PPP in road infrastructure. Keeping this in mind, we move to examining PPPs in the road sector in India, which has been leading developing countries in PPP projects.

## Chapter 2

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# PUBLIC-PRIVATE PARTNERSHIPS IN NATIONAL HIGHWAYS IN INDIA

Public-Private Partnership has been adopted as the main route for implementation of the road projects in the country especially in the National Highways Development Programme (NHDP). Public-Private partnerships are expected to finance the major share of NHDP which is the most ambitious project ever undertaken to modernize/upgrade the road network in India. And over the last decade more and more state governments have moved towards the PPP model to execute multi-billion rupee road projects like the Yamuna-Expressway etc.

According to the National Highways Act, 1956, National Highways are owned, construction, maintained and operated by the Central government under the National Highways Authority of India. This Act was amended in 1995 to allow for private participation. Now a private entity too can construct and operate highways. They can also levy user charges on the commuters to cover their costs and earn profits.

The Government of India first laid down basic principles and guidelines for the PPPs in a cabinet decision of 1997. In 2000, the Cabinet Committee on Economic Affairs approved the first phase of NHDP with a major emphasis on promoting PPP. Two models were preferred above all—BOT-Toll and BOT-Annuity. The third alternative was a Special Purpose Vehicle (SPV) which was to be used in cases where the former two models failed to attract private investments.

NHAI described the three models as adopted in India, to the Committee on Public Undertaking, 2009-2010: In BOT model concessionaire builds operate and maintenance the road for a fixed time-period. It bears all risks associated with the construction and operation of the road. It recoups its costs along with a pre-determined profit by collecting tolls from the commuters; Tolls are pre-determined jointly by the government and the concessionaire. They are inflation indexed for which Whole Sale Price Index (WPI) is used. At the end of the concession period, road is transferred to the government free of charge. Role of the government is limited

to project preparation and pre-construction activities like land acquisition, environment clearance etc. After that it just acts as a regulator and appoints an Independent Consultant for the supervision of day-to-day work of the concessionaire. It is a faster mode of project implementation as it gives maximum freedom to the private player and keeps the government, with all its bureaucratic delays, away from actual implementation. It also gives incentives to the concessionaire to ensure timely completion of the work and maximum quality so as to minimize costs of the project.

In BOT annuity mode, concessionaire builds and maintains the road for a fixed period of time. But he is compensated by the payment of a fix amount at every six months. Tolls, if any are collected by the government. The traffic, and hence revenue, risks are borne by the government. This mode is adopted in areas of low economic activities where BOT (Toll) is not viable as private players are unwilling to take up the traffic risk.

In SPC i.e.; Special Purpose Vehicle, mode, a fully owned subsidiary company of NAHI is constituted as per the Company Act 1956. It mobilizes capital by issuing shares and bonds. The entire burden of construction, operation and maintenance of the road is borne by the government. Government also bears the risks, both during the construction and of the revenue. SPVs were used in the early period of the PPPs. At that time private players were not very upbeat about the prospects of PPPs due to apprehensions about profitability and risks of such projects. So, an option where government was the bearer of all the risks was thought best to instill confidence and get the PPPs moving. Now, this model is used only when former two fail to attract private investments.

NHAI is now authorized to work on a commercial basis. Attracting private investment to the road projects, now forms an important part of its brief. But the initial policies failed to deliver any substantial increase in road infrastructure delivered through PPP projects. Under phase I only 1349.72 kms out of 7507.97 were upgraded through PPP.

It was concluded that lack of any coherent policies, clear guidelines for investors and government agencies, lack of clarity about government support and an appropriate risk sharing framework were the main causes for this. Also, unpreparedness and lack of capacity of the government agencies were blamed for it.

In 2005, it was decided to come out with a new and clearer policy regime regarding PPP. A substantial proportion of projects under the second phase of NHDP was also to be earmarked for PPPs to demonstrate the commitment of the government and instill confidence in the market.

As a result a new institutional framework has taken shape which is described below in some detail.

As we have seen an amendment of the National Highways Act allowed for private participation in the construction and operation of highways. It has also allowed for the charging of user fees from commuters that can be collected by a private entity.

Beside this, government came out with a Model Concession Agreement (MCA) for PPP projects. It also put forth standardized samples of other documents like Request for Qualification (RfQ) and Request for Proposal (RfP). These have been prepared separately for large and small projects, BOT-Toll and BOT-Annuity models. Since 2007, all contracts are being awarded on the basis of MCA which has considerably removed confusion regarding the bidding process and made the process more streamlined.

Dispute resolution is governed by the 1996, Indian Arbitration and Conciliation Act, which incorporates UNCITRAL<sup>17</sup> provisions.

PPP has been integrated into the planning process itself. Government has taken steps to facilitate faster clearances of various kinds like environmental clearance. Government has also taken the responsibility of land acquisitions and all the costs associated therein. A major restructuring of the Ministry of Road and Highways and NHAI has been undertaken to make it more oriented towards private sector participation. Capacity building of government agencies, both at the centre and state, is being sought under the Asian Development Bank's Technical Assistance Facility and various other programmes of other agencies like World Bank etc.

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<sup>17</sup> United Nations Commission on International Trade Law. It is the core legal body of the United Nations system in the field of international trade. Its main purpose is the modernization and harmonization of rules on international business.

One important policy measure regarding PPP has been the provision of Viability Gap Financing (VGF). According to it up to 40% of a project cost can be financed by the government as a onetime grant to facilitate the viability of the PPP in projects with high costs and low profit expectations.

For provision of VGF, the implementing agency must have been selected through an open competitive bidding process and the proposal must have been deemed complete on account of economic viability and technological feasibility. The nature and quantum of support required must be clear and properly assessed by competent agencies. It must have a clear timeframe for achieving financial closure. The main stakeholder must have at least 40 % equity share. The project must satisfy all the norms and guidelines including environmental norms. It must have been endorsed by the ministry. The total government support required by the project, including support from the Government of India under this facility, or any other sources of government and its agencies, must not exceed 20% of the total project cost. As estimated in the preliminary project appraisal, or the actual project cost, whichever is lower.

It has been mainly used for BOT-Annuity based projects. The BOT-Annuity model is adopted in areas with low levels of economic activity where the scope for sufficient toll collection to cover the project cost and profits is limited. But provision for VGF makes annuity model an attractive one for private investors. They become amenable to investments in not-so-developed areas because revenue risks are transferred to the government. Risk of construction still lies with the private player as payments are released only after road is constructed in accordance with the prescribed criteria. A major benefit of this arrangement, apart from attracting private investment has been to ensure timely implementation and quality control. It prevents cost overruns and reduces long term Operational and maintenance costs due to inbuilt incentives for private constructors to ensure quality. In fact, it has resulted in lower construction costs, to the extent of about 12-25% of initial project estimates.<sup>18</sup>

If BOT-Annuity too does not succeed in bringing in the desired private investments, government can fall back on a Special Purpose Vehicle (SPV). But it has not been necessary in the recent years. Although SPV is no more to be used in areas of high

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<sup>18</sup> PPIAF:Country Case Study, India

economic activity (where BOT-Toll is the preferred model) the existing SPVs are mainly concentrated in the port connectivity projects which are mostly low-risk-high-profit areas in the NHDP programme. This is because most of them were undertaken in the initial years of the shift towards PPP on an experimental basis. This was before setting up the firm guidelines for PPPs in the road sector.

In cases where all of these fail to attract private investments, the government employs Engineering, Procurement and Construction (EPC) contracts. Here the private player is allocated a fixed budget and carries no risk other than that of completing the project on time .

Moreover, government has provided for tax holidays for infrastructure projects along with various tax concessions to those investing in long term financing in the infrastructure area. Besides, it has made external commercial borrowings easier and permitted FDI upto 100% under the automatic route in many project types, especially BOT-Toll projects. Full repatriation of profits is now allowed. The road sector has been declared as an industry which eases issuance of bonds and, borrowing by the companies engaged in road infrastructure projects. MRTP norms have been relaxed to enable large firms to operate with greater ease. Duty free imports of the construction goods, with a concession period up to 30 years have been allowed. Other incentives include a 100% tax holiday for any 10 consecutive years out of 20 years after commissioning of the project. Financial investors in road projects are allowed tax deduction of up to 40% of their taxable income derived from financing of these investments.

Almost all departments of the Ministry of Shipping, Road and Highways, both at the central and state levels, have PPP cells for exploring possibilities of PPP tie ups and implementing the same. The government has also set up a Public Private Partnership Appraisal Committee<sup>19</sup> (PPPAC) as a nodal agency to fast track PPP projects by coordinating between various Ministries and departments. This is to reduce transaction costs and time. It mainly handles high cost projects of the central

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<sup>19</sup> Secretary (Economic Affairs) is the chairman of the committee, and Secretary (Planning Commission), Secretary (Expenditure), Secretary (Legal Affairs), and Secretary of the sponsoring department, are the members.



government and issues general guidelines for other types of projects which are the main reference points for NHAI.

For the purpose of concerned projects funds, under various heads, up to the tune of Rs 50 crore can be sanctioned by an empowered committee of the Department of Economic Affairs under an Additional Secretary. Funds exceeding that will require the approval of the finance ministry.

In recent years, the main focus of the government is to reduce the capital cost of projects by easing capital flows to such projects. This is because one major problem facing India's ambitious road building programme is the lack of domestic long term finances. It is difficult to source funds with tenure of more than 10 years especially when required on such a scale. Unavailability of the easy long term finances hampers private investment in the road sector. It also raises the cost to the companies already engaged as renewal is required after a certain time period. It severely affects the stability of the cash flow in the company book. Various government incentives like tax concessions etc have been so far failed to correct this basic problem in Indian market. So to tackle it the India Infrastructure Financing Company Limited (IIFCL) was setup in 2006.

Its main work is to ensure adequate financial flows to the infrastructure projects by facilitating debt equity etc and providing government guarantees. It works in close association with major infrastructure investors like IDFC and IL&FS along with state and central governments and other stakeholders. It is also the debt manager for \$3bn debt of the \$6bn India Infrastructure Financing Initiative.

A recent move by the government is to create an India Infrastructure Debt Fund. An infrastructure fund of \$ 500 bn is under consideration by the government to be launched by IIFCL. It will set up a non-banking finance company (NBFC) under the regulation and general supervision of the RBI for launching the debt fund.

It will be setup in partnership of both domestic and foreign investment firms. These funds will be invested in infrastructure bonds with the maturity of at least 10 years. The money raised by the infrastructure companies will be used to repay debts from banks. It will enable the banks to release the fresh rounds of funds for the

infrastructure financing. Only PPP projects which are operational for at least a year will be eligible for this facility. The recommendation is under consideration of the finance ministry.

Due to policy initiatives adopted by the government and the massive concessions on offer there has been a sharp increase in PPPs in road infrastructure both in terms of projects undertaken and share of private funding involved ( Table 2.1 and Chart 2.1)

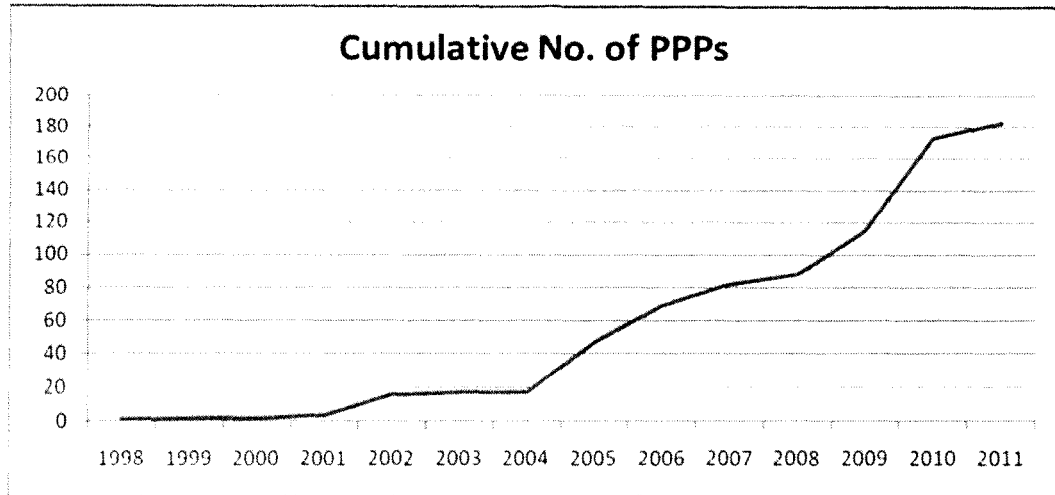
**Table 2.1: Value and Number of PPP Projects**

	No. of Concessions	Total Length	Cost (in Rs Cr.)	No. of Indian Firms	No. of Foreign Firms
<b>BOT (Toll)</b>					
Awarded	135	11427	96797	105	30
Completed	40	2170	15073	34	6
<b>BOT (Annuity)</b>					
Awarded	49	3711	29081	39	10
Completed	17	1011	6186	13	4

Source: NHAI

Even though PPP is fast emerging as the preferred mode in the states, it is the NHDP which accounts for a major share of PPP projects in the road sector as shown in Chart 2.1.

**Chart 2.1: Growth of PPPs on Highways over the Years**



Source: NHAI

Before analyzing it further, a brief description of the NHDP is in order. The details of NHDP are as follows:

**NHDP Phase I:** Comprises mostly of the Golden Quadrilateral (5,846 km) and North South-East West Corridor (981km), port connectivity (356 km) and others (315 km). The estimated cost of NHDP I is Rs 30,000 crore.

**NHDP Phase II:** comprises mostly of NS-EW Corridor (6,161 km) and other National Highways of 486 km length, the total length being 6,647 km. The estimated cost of NHDP II is Rs.34,339 crore.

**NHDP Phase-III:** Consists of gradation and 4 laning of 4,035 km of National Highways on BOT basis at an estimated cost of Rs. 22,207 crore. Government approved in April 2007 up gradation and 4 laning at 8074 km at an estimated cost of Rs. 54,339 crore.

**NHDP Phase IV:** Widening of 20,000 km of existing single /intermediate /two lane highways to two lane with paved shoulders at an estimated cost of Rs. 27,800 crore through PPP route on BOT (Toll) /BOT (Annuity) basis.

**NHDP Phase V:** Six laning of 6,500 km of National Highways at a cost of Rs. 41,210 crore through PPP route on BOT (Toll) mode using Design, Build, Finance and Operate (DBFO) pattern with a maximum VGF of 10%. In DBFO private parties needs meets the upfront cost of design, construction and expenditure on annual maintenance and recovers the entire cost along with the interest from toll collection during the concession period.

**NHDP Phase VI:** Construction of 1,000 km of expressways at an estimated cost of Rs. 16,680 crore through PPP route on BOT (Toll) mode following a DBFO pattern with a maximum VGF of 40%.

**NHDP Phase VII:** Construction of 700 km of standalone ring roads/bypasses as well as grade separators, flyovers, elevated road, tunnels road over bridge, under passes etc at an estimated cost of Rs. 16,680 crore through PPP route on BOT (Toll) mode with a maximum VGF of 40%.

The total length covered under NHDP is 54,651 km. Out of this 15,785 km has been completed while 10,284 km is under implementation. The balance of 29,234 km is yet to be awarded. NHDP is the world's largest PPP road development program. The table below gives detail information regarding the status of NHDP implementation:

**Table 2.2: Current Status of Implementation of NHDP (31<sup>st</sup> May 2011)**

S.No	NHDO Component	Total Length (km)	Completed lane	Under Implementation	Balance for Award	
				Length (km)	No. of Projects	
1	NHDP Phase I	7522	7431	91	18	
2	NHDP Phase II	6647	5225	988	84	444
3	NHDP Phase III	12109	2351	5925	82	3833

4	NHDP Phase IV	20000		765	5	19235
5	NHDP Phase V	6500	619	2018	19	3863
6	NHDP Phase VI	1000				1000
7	NHDP Phase VII	700		41	2	659
8	Misc. Projects	442	159	456	5	
	Total	54920	15785	10284	215	29034

Source: NHAI

The first PPP project in the national highways sector was the construction of an over bridge (ROB) at Kishangarh located in the Ajmer district of Rajasthan. This segment was developed on BOT basis in March 1998 on NH 8. Since then the number of PPPs has been increasing gradually over the years. However, it is interesting to note that the majority of PPPs have been undertaken in the rich states like Maharashtra, Karnataka etc which have higher demand for better infrastructure with users willing to pay user charges. Poor regions like Bihar or troubled regions like Assam or Jammu and Kashmir fail to attract private investors.

The government has been encouraging foreign firms to participate in the bidding process in order to leverage their reach in the international capital market and technological knowhow. The results have not been very encouraging and the PPP scene remains dominated by domestic firms like Larsen and Tubro, GMR, IL&FS etc. However, bidding rules have encouraged Indian firms to opt for joint venture with foreign firms. The rules for the Request for Qualification as well as for the final Request for Proposal stages provide weights to prior experience and financial soundness of the bidders. Foreign firms generally have longer experience and easier access to capital in international market. Therefore, a consortium of foreign and Indian firms stands a better chance of qualifying the short-listing criteria as well as winning the bid. Foreign participation is dominated by Malaysian and American

firms. In terms of approach to provider selection, almost all the projects involved either national or international competitive bidding with some negotiated ones through MOUs.

In terms of contract award method the International competitive bidding yielded 33.5% of total investment while domestic competitive bidding accounting from 61.5% as detailed in the table 2.3.

**Table 2.3: Contract Award Method**

Number of Projects	Values of Projects based on Contract Award Method (crore)			
	Domestic Competitive Bidding	International Competitive Bidding	Negotiated MOU	Value of Contracts (Rs Crore)
271	62779.2	34161.9	1259.2	102004.8

Source: As on November 15, 2009, NOTE ON PUBLIC PRIVATE PARTNERSHIP (PPP) PROJECTS IN INDIA, PPIIndia database

Since, 2009, around Rs.20,000 crore more of investments have entered through the PPP route. But despite all this, the total proportion of private investment in the national highway programme remains at low levels. Distance covered by PPP too remains at the low level of around 20% in the golden quadrilateral and NSEW corridor projects as per as a study done by Anant & Ram (2009). And this despite the fact that most national highways carry huge amount of traffic and in the face of VGF and substantial explicit and implicit concessions offered by the government.

**Table 2.4: Distance covered by PPP projects on GQ and NSEW corridors**

STATE	TOTAL LENGTH UPGRADED	LENGTH FUNDED BY PPPS	Length Covered by PPPs (% in Total)
Kerala	86.6	70	80.83
A.P	1785.462	741.922	41.55
Karnataka	655.28	170.88	26.08
Tamil Nadu	1008.385	360.715	35.77

<b>M.P</b>	643.525	227.825	35.4
<b>W.B</b>	521.017	135.457	26
<b>Maharashtra</b>	549.95	133	24.18
<b>Gujarat</b>	872.2	129.4	14.84
<b>Rajasthan</b>	1136.155	167.38	14.73
<b>U.P</b>	1602	194.4	12.13
<b>Haryana</b>	192.7	10	5.19
<b>Bihar</b>	756.235	10	1.32
<b>Assam</b>	648.3	0	0
<b>Delhi</b>	202.4	0	0
<b>J &amp; K</b>	134.53	0	0
<b>Jharkhand</b>	121.75	0	0
<b>Orissa</b>	388.095	0	0
<b>Punjab</b>	81.17	0	0
<b>Total</b>	11385.75	2350.98	20.65

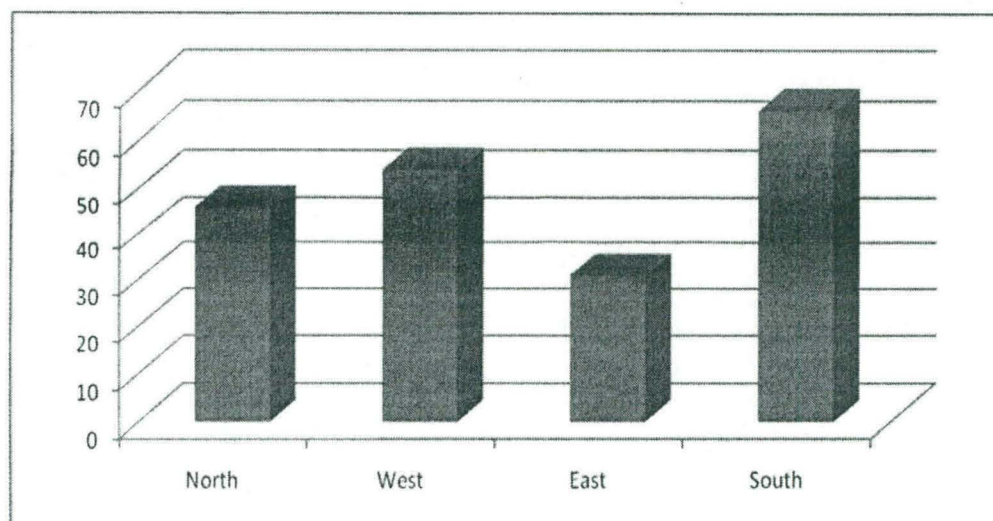
Source: Anant & Ram (2009)

Anant and Ram (2009) claim that Eastern states like Bihar and Orissa have failed to attract PPP investments due to poor economic conditions. This means that dependence on PPPs to meet the infrastructural requirement will leave the country in a state of uneven development. It leaves poor states in dilemma, either they can go for the traditional public money funded roads or they give more and more concessions to the private players to attract them. With emphasis on reducing fiscal deficit increasing after economic reforms, they are left with the second option. This has resulted in private players reaping huge benefits like getting precious land for free to develop and earn profits.

As a result in the last two years there has been an increase in the number of PPP projects going to these states. In 2011, of the PPP projects awarded so far, seven out

of ten have gone to the Eastern states with three each going to Bihar and West Bengal. But even then it is mainly the Western and Southern regions which lead in the terms of the number of PPP projects undertaken as shown in the chart below.

**Chart 2.2: Distribution of PPP projects under NHDP**



Source:NHAI

Here the Western region comprises of Gujarat, Maharashtra, M.P and Rajasthan. North includes J&K, Punjab, Haryana, H.P, Uttaranchal, U.P and NCR region. Eastern region includes W.B, Bihar, Jharkhand, Chhattisgarhi, Orissa. South comprises of Tamil Nadu, Kerala, Karnataka and Andhra Pradesh.

The financing of the road projects has been ensured under three heads - Budgetary sources, Internal and External Extra budgetary sources and Private sector participation. The budgetary sources include Cess (on diesel/petrol) allocation. The Central Government has created a dedicated fund called Central Road Fund (CRF) from collection of Cess on Petrol and High Speed Diesel Oil. Presently, Rs.2/- per liter is collected as cess on petrol and High Speed Diesel (HSD) Oil. The accrued fund is distributed for development and maintenance of National Highways, state roads, rural roads, and for railway over bridges / under bridges and other safety features as provided in Central Road Fund Act, 2000. Cess is being distributed in the following manner:<sup>20</sup>

<sup>20</sup> Annual Report of Ministry of Road, Transport and Highways, 2010-11



- Rs. 1.50 is being allocated as follows:
  - a) 50% of the cess on high-speed diesel (HSD) oil for development of rural roads.
  - (b) 50% of cess on HSD and the entire cess collected on petrol are there after allocated as follows:
    - a) 57.5% towards the development and maintenance of National Highways;
    - b) 12.5% for construction of road under or over bridges and safety works at unmanned railway crossing;
    - c) 30% on development and maintenance of state roads. Out of this amount, 10% is kept as reserve by the Central Government for allocation to states for implementation of state road schemes of Inter-State Connectivity and Economic Importance (ISC& EI).
- Remaining cess of Rs. 0.50 per liter is entirely allocated for development and maintenance of National Highways.

An allocation of Rs.15264.00 crore has been made under the CRF for 2010-11 with the following break-up:

**Table 2.5: Allocation from the Central Road Fund (Rs. in crore)**

Grant to State Governments and UTs for State Roads	1893.75
Grant to States & UTs for Roads of Inter-State Connectivity and Economic Importance	210.42
National Highways	7848.98
Rural Roads	4434.12
Railways	876.73
<b>Total</b>	<b>15264.00</b>

Source: ANNUAL REPORT 2010-11, Ministry of Road, Transport and Highways

External assistance (grants and loans) through GOI and additional budgetary support for specific purposes forms another important source in the budgetary sources. Internal and extra budgetary resources (I & EBR) mobilization includes capital gain tax exemption bonds, lines of credit from banks, direct loans from ADB and World Bank and surplus of toll revenue. Rest is private sector share under BOT (toll and annuity) and SPV models. But despite all the efforts to attract private investments and the hype surrounding it, the private sector has actually shied away from road sector. And where it has come it is due to massive concessions given by the state as we will see in later chapters where we examine in detail the actual experience of some of the projects. The following table gives a breakup of the financing of NHDP from 2000 to 2011:

**Table 2.6: Breakup of financing of NHDP (Rs Crore)**

Year	Cess Funds	External Assistance (Grants)	External Assistance (Loan)	Borrowings	Budgetary Support	Private Sector Participation	Total
1999-2000	1192	492	-			49.72	1733.72
2000-01	1800	461	12	656.62	0	225.1	3154.72
2001-02	2100	887	113	804.44	0	510.48	4414.92
2002-03	2000	1202	301	5592.94	0	846.25	9942.19
2003-04	1993	1159	290	-	0	1830.8	5272.8
2004-05	1848	1239	361	0	50	1462.84	4960.84
2005-06	3269.7	2350	600	1289	700	649.08	8857.82
2006-07	6407.4	1582.5	395.5	1500	110	1578.28	11573.7

2007-08	6541.0	1776	444	305.18	0	7062.4	16128.6
2008-09	6972.4	1515.2	378.8	3700	0	8184.73	20751.2
2009-10	8578.4	68	272	5000	0	16657.66	30576.1
2010-11	7848.9	80	320	7455	0	21256	36959.9

Government had planned for higher private investments via PPP to achieve its road construction goals. According to expectations, the share of PPP in financing was to increase progressively to overtake the public share. But that does not seem to have happened and government has been forced to revise its estimates to conform to the ground reality. The private sector is now expected to finance around 20-25% of NHDP rather than the over-optimistic expectations of financing about 60% of the same. The table below gives the revised summary of NHDP financing plan:

**Table 2.7: Summary of NHDP Financing Plan**

Particulars	(Rs in crores)
<b>A. Estimated Expenditure</b>	
Project Construction	337,959
Payment of Annuity	207,579
Interest on Borrowed Funds	78,285
Repayment of Borrowing	188,838
<b>Total (A)</b>	<b>812,661</b>
<b>B. Sources of funds</b>	
Cess funds	360,631
External Assistance(Grant and Loan)	9,782
Net surplus from Toll Revenue	117,418
Negative Grant	3,318
Budgetary Support	1,398
Addl. Budgetary Support	39,329
Share of private sector	211,315
Borrowings	191,948
<b>Total(B)</b>	<b>935,139</b>

Source: Report of B.K.Chaturvedi committee on NHDP

According to the B. K Chaturvedi committee<sup>21</sup> report the estimated borrowings of NHAI at about Rs.1, 90,000 crore are based on the estimation that 56 % of roads will be constructed on BOT Model and 35 % on Annuity basis. The borrowings by NHAI mainly constitute 54 EC capital gain bonds, the scope for which is limited due to a cap on maximum investment of Rs.50 lakh per year per individual. The tenure of these bonds i.e three years is also a constraint. NHAI requires long tenure loans and the available instruments are Tax Free Bonds with 10 year maturity, Deep Discount Bonds, SLR Bonds & Long lines of Credit from LIC and Pension Funds. But these bonds need RBI approval and other government commitments. The only permanent inflow NHAI has is cess which can't be securitized and used for raising funds via borrowing due to several legal issues involved including the fact that they are approved on yearly basis. According to the B.K Chaturvadi report likely sources of borrowings are as under:

**Table 2.8: Sources of Borrowing for NHDP, Rs crore**

Tax Free Bonds with 10 years maturity	10,000
Loans from Insurance Companies	12,000
Infrastructure Bonds	10,000
Loans from Multilateral Agencies (World Bank & ADB)	15,000
Market Borrowing (with Govt. Guarantee)	10,000
Loans from Domestic Financial Institutions (Banks)	20,000

Thus we see that even while deciding upon the likely sources of borrowing, the expectation of mobilizing market borrowing is low. The major share of borrowing is supposed to come from bonds and loans from various banks and domestic financial institutions, with a large number of them being public sector.

<sup>21</sup> It was constitute on 8.08.2009. The objective of the Committee is to resolve procedural impediments to the programme as well as the need to take a holistic look at the financing need and arrive at a financing plan that balances the needs of the road sector and other priority areas of Government.

Keeping with the preferences of the private players as shown by experience and also with the policy of government to give first priority to BOT-Toll model, most projects have been awarded under BOT (Toll) so far. This is because according to government, BOT-Toll model involves least exposure and commitment on its side by reducing its role to that of a facilitator and regulator. On the private side, however, it is the possibility of fixing tolls according to its requirements which makes it the preferred mode for it too. We will see this in the studies of the two PPP projects in the following chapters. The breakup of NHDP implementation under different models can be seen from the following table:

**Table 2.9: Modes of delivery-Project Award Planning till 2014 –15**

Phase	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Total Km
<b>BOT (Toll) 64%</b>							
4 lane –Phase III	2567	1403	1447	786	-	-	6203
4 lane –Phase II	210		54	-	-	-	264
6 lane –Phase V	390	1018	1432	964	1081	483	5368
<b>Expressways –Phase VI</b>	-	-	-	-	624	416	1040
2 lane with paved shoulders –Phase III	-	69	282	197	-	-	548
2 lane –Phase IV	-	589	272	1096	2166	2083	6207
4 lane-Phase IV	-	-	2324	-	-	778	3102
Phase VII	22	-	-	140	522	-	684
Others		-	135	-	-	-	135
<b>Sub-total</b>	<b>3189</b>	<b>3080</b>	<b>5946</b>	<b>3182</b>	<b>4393</b>	<b>3760</b>	<b>23551</b>
<b>BOT (Annuity) 22%</b>							
4 lane –Phase III	172	444	-	219	-	-	835

4 lane –Phase II	-	-	163	-	-	-	163
4 lane -Phase IV	-	170	184	-	-	-	354
J&K –Phase II	-	160	76	-	-	-	236
2 lane with paved shoulders –Phase III	-	637	-	-	-	-	637
2 lane –Phase IV	-	-	716	1891	1517	1598	5722
4 lane –SARDP-NE	-	112	201	81	-	-	394
<b>Sub-total</b>	<b>172</b>	<b>1524</b>	<b>1340</b>	<b>2191</b>	<b>1517</b>	<b>1598</b>	<b>8342</b>

EPC (14 %)							
4 lane -Phase I	-	30	-	-	-	-	30
2 lane -Phase IV	-	-	-	1825	1390	1400	4615
4 lane -Phase IV	-	-	-	-	-	-	-
4 lane -Phase II	-	-	-	-	-	-	33
4 lane -Phase III	-	-	-	22	-	-	22
2 lane -Phase III	-	-	-	80	-	-	80
OTHERS-MP	-	422	-	-	-	-	422
<b>PROJETCS</b>							
<b>Sub-total</b>	<b>-</b>	<b>452</b>	<b>33</b>	<b>1927</b>	<b>1390</b>	<b>1400</b>	<b>5202</b>
<b>Total</b>	<b>3361</b>	<b>5057</b>	<b>7319</b>	<b>7300</b>	<b>7300</b>	<b>6758</b>	<b>37095</b>

Source: Ministry of Road Transport and Highways

It is clear that despite concessions and sweeteners on offer, PPPs have failed to attract private investments as expected. And with the commitment of CRF for the payment of BOT annuities and debt servicing, scope for further borrowings is increasingly becoming limited. In fact, NHAI may find itself facing the possibilities of bankruptcy as asserted by Gajendra Haldea in the report named “Sub Prime Highways”. The liability of the NHAI is already greater than its budgetary allocations via cess on diesel and petrol. By 2030 it is expected that BOT annuities will be around 37% of the

toll and cess revenue of the NHAI. Even though a local debt market exists it is not sufficient to fulfill the financing needs of the roads projects being undertaken in country and with scope for further borrowings limited government is betting more and more on private inflows including foreign inflows through FIIs. But it is unlikely that private investments will reach anywhere near expected levels.

After examining the various PPP models and risks associated with it and a review of the PPP in road infrastructure in India, we will take up two projects for detailed study. Both of these projects are BOT-Toll models as it has emerged as the most preferred mode of implementation in India. The studies focus on the structuring of the projects and their implementation and their performance after operationalisation. This will reveal the concessions private players have got and the cost to the public both in terms of actual cost of the project & government support and performance.

## Chapter 3

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### Case 1: The Delhi-Gurgaon Expressway

One of the limitations of this analysis is the lack of access to the feasibility report for the project being studied with which to draw quantitative comparisons. Secondly, the expressway has been in operation for only two and a half years, thus limiting the analysis of performance during the operational period. Therefore, an assessment based on publicly available information has been attempted.

#### Project Description

The National Highways Authority of India (NHAI), under the Ministry of Road Transport & Highways (MoRT&H), launched the Golden Quadrilateral project (Highway Project connecting the four metro cities of New Delhi, Mumbai, Chennai and Kolkata). The Western Transport Corridor comprising the National Highway (NH) – 8 (Delhi-Jaipur-Ahmadabad-Mumbai) was identified as one of the top priorities to be undertaken for upgradation. NH-8 carries a sizeable amount of intra-state and inter-state traffic as well as import-export traffic to and from the ports on the Arabian Sea. Accordingly, NHAI decided to upgrade the section of NH-8 connecting Delhi and Gurgaon into an 8/6 lane access controlled expressway as it was the busiest part of the highway.<sup>22</sup>

The plan for a expressway connecting Gurgaon and Delhi was initiated in the late 1990s and a detailed project report was prepared for the same. Subsequently, in 2000-01, the MoRT&H decided to augment the capacity of the National Highways connecting the four metros under the prestigious Golden Quadrilateral project, as traffic intensity on these corridors had increased manifold which hampered safe and efficient movement of vehicles.

The then existing 4 lane, 27.7 km section of NH-8 between Delhi and Gurgaon with as many as 20 intersections, experienced high vehicular density (145,000 Passenger

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<sup>22</sup> Expressway to turn Gurgaon into a city, The Economics Times, 05-10-2003



Car Units (PCUs)/day in 2000) and non-segregation of traffic that led to increase in accidents, acute congestion, wastage of fuel and excessive pollution.

NHAI was finding itself constrained to fund the estimated Rs. 555 Crore for the expressway. The risk of cost escalation during the period of construction was also a cause for concern. Malaysia's Construction Industry Development Board (CIDB) was initially proposed to take up this project under the memorandum of understanding (MoU) route as a part of a government to government initiative. However, this proposal sought a grant of Rs. 120 crore from NHAI and was thus rejected.

The Government of India, at the time, was keen to promote public private partnerships (PPPs) in viable expressway projects to attract funding and capitalize on supposed private sector efficiency. It was therefore decided to undertake the project on BOT (Build-operate-Transfer) basis. NHAI used the Detailed Project Report prepared in 1998 for the traffic projections for this project.

The project was finally chosen to be implemented using PPP. This PPP project marked a decisive policy shift towards the PPP regime and the introduction of user charges in India.

Since, this was the first large project to be undertaken under PPP, the policy framework to be adopted was not clear. This led to several problems as we will see later in the chapter.

It was first decided to implement this project using the SPV model but in the middle of the project award process the mode was changed to the BOT-Toll model.

The MoRT&H invited pre-qualification bids in 2001. The project was initially envisaged to require a capital grant to be paid by NHAI to the successful bidder towards the cost of construction for enhancing the viability of the highway project. However, considering the high economic activity area in which the road was located and consequent higher traffic projections, bids were received with negative grants. In April 2002, the consortium of Jaiprakash Industries and DS Constructions was declared the successful bidder. RBM Malaysia, which was the L2 bidder, had quoted

Rs 55 crore as the negative grant. Other bidders were Gamuda Malaysia, IJM Malaysia and Larsen & Toubro (L&T).<sup>23</sup>

The project was thus, awarded to the consortium of Jaypee Industries and DS Construction Ltd to design, finance, construct, operate & maintain the facility for a concession period of 20 years. As in a typical BOT highway project, the Concessionaire is allowed to collect toll from the users of the project facility during the operation period to recover his investment and the expressway is required to be transferred back to the Government at the end of the concession period.

This was also the first BOT project in India to have been awarded on negative grant basis where in the concessionaire offered to pay an upfront fee to NHAI in return of the concession as against a capital grant from the Government. In consideration of the traffic projections, the selected bidder offered to pay Rs. 61.06 crore to NHAI.

The expressway was commissioned in January 2008<sup>24</sup> after much delay primarily owing to problems relating to land acquisition and changes in the scope of work. It carries more than 180,000 PCUs<sup>25</sup> per day as on date.

### **PPP structure of the Project**

The project was awarded to the consortium of Jaiprakash Industries Ltd and DS Construction Ltd on Built-Operate-Transfer (BOT) basis for a period of 20 years. The selected concessionaire offered to pay Rs. 61.06 crore upfront as negative grant to the NHAI. The Concessionaire was required to design, construct, operate and maintain the expressway in accordance with the specifications as approved by NHAI. The concession period included the construction period to encourage the concessionaire to complete the construction early.

A Special Purpose Vehicle called the Delhi Gurgaon Super Connectivity Ltd (formerly Jaypee DSC Ventures Ltd.), was created for execution of the project. While at the time of bidding, Jaiprakash Industries had a controlling stake of 51% and DS

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<sup>23</sup> Builders to make Delhi-Gurgaon expressway and pay for it too!, The Financial Express, Wednesday, Feb 13, 2002

<sup>24</sup> Delhi-Gurgaon expressway opened for traffic, The Times of India, 23-01-2008

<sup>25</sup> Passenger Car Units

Constructions held 49%, during the course of project implementation, Jaiprakash Industries reduced its stake in the SPV to about 1.2%.

The SPV entered into a fixed time-fixed price Engineering, Procurement & Construction (EPC) contract with DS Constructions Limited for this project.

### **Key Obligations of NHAI & Concessionaire**

NHAI was responsible for undertaking land acquisition and providing the Right of Way (RoW) to the Concessionaire free from all encumbrances. A notional concession fee of Re.1/- was to be paid annually by the Concessionaire to NHAI.

During the development period, NHAI undertook the operation and maintenance of the existing highway at its own cost. The shifting of utilities and related expenses was the responsibility of NHAI. NHAI was also required to have necessary environmental clearances, permits etc. granted to the Concessionaire.

A loan facility, in case of the revenue falling short of subsistence revenue level, was made available by NHAI at the State Bank of India Prime Lending Rate. Such a loan could also be provided by NHAI to cover a shortfall in meeting debt service payments.

The Concessionaire was required to comply with the all the requirements needed for clearances, approvals, permits etc. from various government agencies.

The Concessionaire was obliged to enter into a state support agreement with NHAI, the Government of National Capital Territory of Delhi (GoNCTD) and Government of Haryana (GoH). A performance security was to be paid by the Concessionaire on or before the date of the Agreement for its due and faithful obligation during the Construction Period.

To allow recovery of investment and to earn a suitable return, the Concessionaire is entitled to collect toll from the users of the expressway during the operation period. The toll is notified by the MoRTH and there is an annual revision linked to the extent of variation in the WPI. The toll has to be shared with NHAI if more than 130,000 PCUs are tolled on the expressway.

## **Development**

The erstwhile Jaypee DSC Ventures Ltd. (now known as Delhi Gurgaon Super Connectivity Ltd.), the SPV incorporated by the Concessionaire for the project, achieved financial closure in May 2003. The construction of the expressway commenced in January 2003.

In June 2004, Jaiprakash Industries, despite being the lead promoter, sold its stake to DS Constructions and retained only 1.2%.

The project development, however, soon ran into difficulties over approvals, land acquisition and additions to the scope of work which were largely due to the physical setting of the project highway.

The highway was the first semi-access controlled highway in an urban environment traversing two states besides having access to both the domestic and the international airports and sensitive defence establishments along its route. There were more than 15 government agencies/civic bodies such as the Delhi Jal Board, the Ministry of Defence, GAIL, BPCL, Delhi Development Authority (DDA), Haryana Urban Development Authority (HUDA), GoH, GoNCTD, Haryana Tourism, Airports Authority of India (AAI), etc., affected by the development of this highway that had to grant various approvals for the project. This became a complex and time consuming process during the construction period.

Being in a thickly populated environment, land acquisition became a problem impacting delivery. This was in fact one of the core obligations of NHAI and the State Government under the tripartite State Support Agreement entered into with the concessionaire. NHAI and other agencies involved with this project put in a great deal of effort to hasten the process. However, there were certain small parcels of land which were difficult to acquire. In addition, court cases, removal of trees, shifting of religious structures and the massive number of utilities that had to be shifted contributed to the delay.

Another major reason for delay in project completion was the change in the scope of work. There were substantial changes in the original design that were sought by NHAI and the government keeping in mind future requirements and the convenience

of commuters. Out of a total of 11 structures, spread over the entire project length, 9 structures had significant design modifications. Since the structures were closely spaced, the entire alignment of the project was affected which necessitated the change of scope and the scheduled project completion date had to be revised. Demands made by bodies like HUDA and DDA regarding other connected projects also played a role in the delay. The provisional change of scope order was finalized and issued to the concessionaire in July 2005 just days before the original scheduled completion date.

Moreover, with the high density of traffic on the route and the requirement of a minimum length for acceleration and de-acceleration of traffic being approximately 300 meters (As per the Indian Roads Congress Provisions), the partial opening of expressway had to be held back for safety reasons even if completed at certain locations.

### **Financing Information**

The funding for the project at the time of financial closure (9 May 2003) is provided in the following table:

<b>PARTICULARS</b>	<b>AMOUNT</b>
<b>Debt</b>	Rs. 383.3 crore
<b>Equity</b>	Rs. 164.2 crore <sup>26</sup>
<b>TOTAL</b>	Rs. 547.5 crore

Rs. 200 crore of the debt was provided by the Housing and Urban Development Corporation Limited (HUDCO). The other lenders included State Bank of Mysore (Rs. 30 crore), Punjab National Bank (Rs. 30 crore), Srei International Finance (Rs. 25 crore) and Jammu & Kashmir Bank (Rs. 15 crore). The SPV also issued non convertible debentures amounting to Rs. 50 crore to LIC and Rs. 37.30 crore to UTI Bank.

<sup>26</sup> Including a grant of Rs. 61 crore

The actual cost of the project was eventually Rs. 1,175 crore. The project cost overrun was funded by the promoters, by withholding payments to DSC Limited (EPC contractor) and from the amount received from NHAI (Rs. 155.25 crore) on account of changes in scope.

### Delivery and Current Status

The expressway has been operational for three years now after it was opened to traffic in January 2008. It carries more than 180,000 PCUs per day. It is much higher than the traffic estimates for the project by 13,000 to 15,000 PCUs per day and growing at 9% year-on-year.

The substantially higher number of vehicles using the facility has often led to a queuing up of vehicles and congestion at the toll plazas. The expressway consists of 9 flyovers, 4 underpasses and 2 foot-over bridges and 3 toll-plazas. Smart tags have been introduced to enable cashless automatic payment.

### Exit

The concession period is for 20 years and the projected end date is 11 January 2023 when the expressway will be handed over to the government.

**Table 3.1: Risk allocation framework<sup>27</sup>**

Risk Type	Sensitivity	Risk Period	Primary Risk Bearer	Comments
<b>(A) PRE-OPERATIVE RISKS</b>				
<b>Delays in land acquisition</b>	High	0-5 years	NHAI	NHAI was liable to pay damages of if it failed to provide RoW within the specified time. Delays in land acquisition resulted in an increase in the acquisition cost for the

<sup>27</sup> PPIAF, case study India

government. They also resulted in loss of potential revenue accruing to the Concessionaire due to delays in commencement of operations.

<b>Financing risks</b>	Medium	0-5 years	Private sector	The Concessionaire was required to achieve financial closure within 180 days from the date of the agreement beyond which an additional period of 90 days was allowed subject to an advance weekly payment of Rs. 1,00,000 per week as damages by the Concessionaire for delay in achieving financial closure.
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<b>Approvals</b>	Low	0-5 years	Private sector	Though the Government was expected to provide 'best effort' support, the obligation was the Concessionaire's.  With multiple stake holders involved such as GoH, GoNCTD, DDA, HUDA, Ministry of Defence, AAI, etc., the process of approvals was slow.
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**(B) CONSTRUCTION PHASE RISKS**

<b>Design Risk</b>	High	0-5 years	Private sector	There were substantial changes in the design that led to escalation in cost as well as time over-run. This meant revenue loss to the Concessionaire as the concession period was not altered.
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<b>Constructio</b>	High	0-5	Private	If Concessionaire failed to
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<b>n Risk</b>	years	sector	complete the project construction by the scheduled completion date, the agreement prescribed weekly damages at the rate of 0.01% of the total project cost. The construction of the expressway got delayed due to inordinate delays in land acquisition and changes in the scope of work. The risk was primarily borne by the Concessionaire and more specifically by DS Constructions Ltd. as it was also the EPC contractor for the project. For change in scope, NHAI was also asked to contribute the increased investment requirement.
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**(C) OPERATIONS PHASE RISKS**

<b>Operations &amp; Maintenance Risk</b>	Medium	Throughout	Private sector	The risk is primarily with the concessionaire NHAI as the concession authority has set stringent performance standards and obligations to be met.
<b>Market Risk</b>	Low	Throughout	Private sector	Market risk that primarily manifests in terms of lack of tollable traffic in a typical BOT project is with the private sector. However, it has proven to be non-existent in the particular case. The actual traffic has so far been



much higher than that projected and is only expected to grow. The only risk factor could be that of the possibility of a competing road facility allowed to be constructed by NHAI, GoNCTD or GoH either on the PCU level reaching 170,000/day (continuous for 180 days) or expiry of 20 years, whichever is earlier. However, this risk is also sufficiently mitigated through the allowance of an increase in the concession period (equal to half the number of years by which commissioning of such competing road precedes expiry of Concession period) and the provision of toll for the competing facility to be kept higher (133% of per km fee) than that applicable for the expressway.

<b>Financial Risks</b>	Medium	Throughout	Private sector	These are a result of adverse movements in interest rates, exchange rates, etc. and the private sector is expected to manage them through appropriate financial management techniques.
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(D) Handover risk events

<b>Handover risk</b>	Medium	Last 2.5 to 3 years	Private sector	The risk of poor condition of assets on transfer is with the
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				private operator. As per the agreement, a joint inspection shall be conducted, not less than 30 months or more than 36 months prior to the expiry of the concession period. 2 years prior to the expiry, an amount equivalent to the fees realised for a traffic volume of 10,000 PCUs/day for the last 2 years or higher based on certification from the Independent Consultant shall be retained in an escrow account for renewal works.
<b>Concessionaire event of default</b>	Medium	Throughout	Private sector	For a Concessionaire event of default, NHAI will pay a termination payment equal to 90% of the debt due less any insurance claims.
<b>NHAI's event of default</b>	Low	Throughout	NHAI	For an NHAI event of default during operations period, NHAI will pay a termination payment equal to the total debt due, 120% of subordinated debt, 150% of the equity subscribed in cash and the negative grant amount. Beyond 3 years from appointed date, the equity amount will be adjusted for changes in the Wholesale Price Index and this adjusted amount will be reduced by 7.5% every year.

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(E) OTHER RISKS

<b>Change in Law</b>	Low	Throughout	Private sector and NHAI	In case a change in law results in a financial burden greater than Rs. 1 crore in any accounting year for the concessionaire, the concessionaire may notify NHAI and propose amendments to the concession agreement so that the concessionaire is in the same financial position. Similarly, if a change in law results in a financial benefit greater than Rs. 1 crore for the concessionaire, NHAI may notify and propose changes in the concession agreement.
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<b>Force Majeure</b>	Low	Throughout	NHAI	In case of a Force Majeure event before financial closure, the date for achieving financial closure shall be extended by the period for which the force majeure event shall subsist. In case of a Force Majeure event after financial closure, before commencement of operations, the dates in the project completion schedule and the concession period shall be extended. In case of a Force Majeure event after commencement of operations, the concessionaire shall make efforts to collect toll,
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failing which the concession period shall be extended.

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## **A Sordid Tale of Mismanagement and Deliberate Machinations:**

### **Re-Evaluating the financial viability**

The serious manipulations in the project started even at the planning stage. The project was initially approved for execution by NHAI through SPV from Km. 15.400 to Km. 36.630. In the SPV mode of execution, Government has to promote A Special Purpose Vehicle (SPV) with equity participation from NHAI and the other partners to the SPV and through debt, which will be raised from the financial institutions or through issue of bonds. But the NHAI was eager to insure greater private sector participation. It hired a financial consultant M/s. SBI Capital Markets Limited (A subsidiary of SBI) to carry out a study of viability of the BOT-Toll model. In the subsequent study BOT-Toll was found to be an unviable mode of implementation. But NHAI forced the matter by asking the financial consultant to re-evaluate the viability of BOT-Toll taking into account various debt-equity mixes, toll structures etc. SBI Cap recommended changing the length of project to 42.00 from 14.300 km instead of original 15.400 to 36.630 km. But NHAI asked SBI cap to reevaluate the financial viability of the project based on BOT basis by considering two additional aspects:

- Additional tolling rights up to km. 61 (where NHAI is setting up its toll plaza) beyond 8-lane project reach, the revenue of which will accrue to the Concessionaire.
- The facility being an 8-lane Access Controlled Highway, a higher toll rate as compared to normal 4-lane highway projects.

It is easy to understand the motives behind these re-evaluation exercises. NHAI had already made up its mind to award the project using the BOT-Toll model and the financial consultant was being forced to comply. Asking it to re-evaluate the viability using different toll rates clearly shows that NHAI was not interested in the optimum/minimum tolls for the commuter but the commercial viability of the concessionaire. Also, it was ready to award a longer length of road for the project to

ensure its “viability” rather than carrying out the work on necessity basis as originally planned.

### **No comparative study of different models of PPP**

No study for comparing the cost-effectiveness under different models was carried out before deciding upon the BOT-Toll model. There is no argument for the automatic preference for the BOT-Toll model over BOT-Annuity or SPV. This is especially true for high traffic roads which are located in the fast growing economic centres. In such cases, risks associated with toll collection PPPs are minimized, negating the government position (as seen in previous chapters) that SPV and BOT-Annuity should be avoided and BOT-Toll favoured. In this case, the concessionaire was able to collect Rs 208 crore as toll in the first 20 months of operation. This was found more than sufficient by the Committee on Public Undertakings report on the Delhi-Gurgaon project to sustain either BOT-Annuity or SPV mode of implementation. Even if toll revenues were not that high, it does not mean that government will not undertake any risk associated with road projects and try to pass it on private players who may then demand flexibility to fix higher toll rates. The welfare of commuters and not minimizing risks to itself and maximizing profit to private partner should be the main criteria for government undertakings.

### **Generous concession period and toll rates**

As a matter of policy NHAI, before calling for the bids in respect of BOT projects, fixed the maximum concession period at 30 years, which in itself is an arbitrary number. In this case however, before fixing the concession period, the Authority had not systematically developed financial models to indicate the benchmark Internal Rate of Return (IRR) which would determine the optimum concession period within which the Concessionaire would recover the capital cost of the project and other project related expenditure besides earning a reasonable return. In the absence of such a system, the audit of four BOT-Toll projects selected for audit based on discounted post tax cash inflows and outflows using the projections made in the DPRs/concession agreements found that the IRR of the Delhi-Gurgaon project was 24 per cent. Based on that reasonable IRR, the Committee for Public Undertakings came to the conclusion that a concession period of 14 years should have been allowed to the

Concessionaire, whereas the actual concession period fixed for this project was 20 years.

Further, despite the recommendations by SBI Cap, no fresh traffic study was undertaken by NAHI to be used for traffic and toll projection in the future. Since, the concession period was decided on the basis of the toll collection that would suffice for the recovery of the cost of the project plus profit, it should have used the latest data in such exercise. The story of suspect decisions does not end here. The toll rates were fixed assuming the worst case scenario. While this would have been a legitimate exercise for assessing the viability of the project, it was an obviously inappropriate basis for fixing actual toll rates on such a busy road segment where traffic, if anything, is expected to increase.

This has led to the grant of an unduly long concession period. As a result of scenario, the Concessionaire of this project was expected to gain Rs.187.77 crore (after discounting at a rate of 20 per cent) during the extended concession period. Even though there is provision for NHAI to get the surplus toll revenue beyond 1,30,000 PCUs per day, the erroneous decision cannot be justified. It appears that NAHI is more interested in the commercial interest of both itself and concessionaire rather than the interest of the commuting public, who will end up paying this higher toll for a longer period.

### **Faulty Project Planning**

That the project report was deficient on many accounts was betrayed once the implementation started. There were several requests from the Delhi and Haryana governments seeking changes in the project. This resulted in the authority issuing Change of Scope orders, first in April, 2003 and subsequently on 22.9.2003 to the Concessionaire after due deliberations at length in various meetings with officers of AAI, Haryana Government and Delhi Government. On 29.11.2003 it was directed to further optimize the design and provide some more value additions. Secretary, RTH directed CRRRI to undertake a study and suggest optimization of Design, which was approved on 8.4.2004 by the Ministry of Road Transport and Highways and a letter was issued on 29.4.2004. Proposals for change of scope costing Rs. 224.48 crore as assessed by an independent consultant (as against the Concessionaire costing of Rs.

257.50 crore) was put up in the 55th meeting of the Authority held on 15.7.2005 and approved. However, by 6.7.2005 NHAI gave notice to the concessionaire to proceed with the works pending the final issue of cost. NHAI hired Engineer's India Ltd (EIL), a Public Sector Undertaking to ascertain the reasonableness of the cost. EIL in consultation with NHAI brought down the cost to Rs. 218.51 crore as against Rs. 224.48 crore assessed by IC. The cost of Change of Scope of work was finalized by the Independent Consultant at Rs. 244.01 crore due to further changes on account of provision of RE walls, noise barrier, service roads etc. However based on several rounds of discussions the proposal of change of scope works was reviewed by the IC, which arrived at an estimated cost of Rs. 175.18 crores on 10.5.2006 deleting certain structures at Kapshera and Hero Honda Chowk and other items. The IC's recommendation was examined in NHAI and modified to Rs. 155.25 crore (with net financial implication of Rs. 146.62 crore to NHAI) after deleting noise barriers, contingencies and underpass at AWWA and landscaping. However, since the element of Change of Scope of work is also an integral part of the ongoing project, therefore it was practically not feasible to engage another agency as it may lead to contractual complications by putting two different agencies in the same structure for similar kind of activity as change of scope works were inter-related and inter-linked with main scope of works like increase in height/length of viaduct or width of the structures. The change in scope of work included change in the height of underpasses from 3.5 metre to 5.5 metre, construction of elevated stretch from Rao Tula Ram Marg to Palam and additional underpasses at two locations. Further, it was decided to include Dhaula Kuan too.<sup>28</sup>

This whole process only betrays the deliberate carelessness entertained in the formulation of the project report. It resulted in awarding of the project with incomplete assessment of the work required hence, at lower initial cost and resultant lower negative grant. Then when deficiencies became apparent it was argued that since the contract has been awarded and finalized, it could not be changed or modified. The required changes (which should have been part of original plan) sought in the project should be paid for with public money. Then even these changes were trimmed down to bare essentials to reduce the cost to NHAI. So much so that the

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<sup>28</sup> Gurgaon Expressway will now include Dhaula Kuan, The Financial Express, 2006-04-24

promise of a “world class” road facility via much-hyped public private partnership remained unrealised. It simply became an avenue of awarding lush contracts to private players at lower quoted cost, with the public exchequer left to pay for “improvements” and commuters for the recovery of total cost plus profit.

### **Lack of transparency in Project financing**

To create an effective monitoring mechanism to ensure that the funds released for a particular project have actually been utilized, concessionaires are required to open an escrow account (EA) with a bank and all receipts and payments in respect of the project are to be routed through this account. The Concessionaires are required to forward monthly EA report within five days of the end of each month to the Authority. The terms and conditions of operation of the EA also require the bank to forward a copy of the account each to the Concessionaire, the Authority and the lenders.

But in this case the Escrow account was established after expiry of almost more than one and half years after signing of the agreement. At the initial stages of implementation of the BOT projects, the Escrow accounts were not maintained by the concessionaire as per the concession agreement as also pointed out by the Audit. The Concessionaire was irregular in submission of the EA report. The authority had taken up the matter with the Concessionaire time and again in writing as well as during progress review meetings before the Escrow Account details began being received regularly.

Even though this problem was rectified much prior to the start of the collection of tolls, it should be noted that equity was not routed through the escrow account. And it took several meetings and pressures for the concessionaire to setup an escrow account, well after financial issues were sorted out and construction was in full swing. This raises serious questions about the whole mechanism of financing of the project which remain unanswered.

### **Avoidance of appointment of Independent Auditors**

According to the concession agreement, the Authority has the right but not the obligation to appoint at its cost another firm of Chartered Accountants (independent



auditor) to audit and verify all matters, such as expenses, costs, realizations and other assurances which the statutory auditors of the Concessionaire, are required to do, undertake or certify. But there was an inexplicable delay in the appointment of the same. The Authority appointed a firm of Chartered Accountants on 5 August, 2008 to audit the transactions of the Concessionaire for Delhi-Gurgaon project for the period from 2002-03 to 2007-08. The independent auditor submitted its Report for the year 2007-08 on 18 March, 2009. It observed differences between the amounts entered in the financial records and in the software generated reports both in cash collection as well as onboard unit (OBU) collection. There was an excess in the financial books of Rs. 2.16 crore in "Cash Collection" as compared to "software generated reports". Further in respect of On Board Unit users, the deficit in booking books was Rs. 66.35 lakh. Since, the concessionaire has to share excess toll revenue with NHAI if traffic crosses 1,30,000 PCUs per day, it raises a question mark on the accuracy of the traffic report and whether the revenue sharing had been done properly or not. NHAI fined<sup>29</sup> the concessionaire for Rs one crore for several lapses. It included the penalty for delay in sharing revenue with the NHAI. Even though fines were imposed, it raises questions regarding the integrity and motives of the concessionaire.

#### **Delays in Plan execution**

The completion of this project was delayed by 42 months beyond the scheduled completion date of June 2004. This was mainly because of three reasons-1) Change of mode of plan implementation from SPV to BOT-Toll, 2) Inability of concessionaire to achieve financial closure in time, 3) Change in scope and 4) Delays in land acquisition.

The Authority changed the mode of execution from SPV to BOT-Toll mode in May 2001 despite the fact that the target month for award of contract was March 2001. This led to a delay of 12 months in award of concession.<sup>30</sup> Then bids were invited for

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<sup>29</sup> NHAI slaps Rs 1 crore fine on Delhi-Gurgaon Expressway developer, Times of India, January 16th, 2010

<sup>30</sup> Delhi-Gurgaon expressway to be kicked off in March, The Economics Times, Dec 15, 2001

this project on BOT basis from Km 14.300 to km 42.000. The proposal to award the project to the successful bidder who had offered highest negative grant was put up to the 44th NHAI Board meeting held on 30.01.2002 and the project was approved by the authority. The Concession Agreement was signed on 18th April, 2002 and 2th January, 2003, was set as the date from which the construction period of 30 months started. The target date of completion of this project was 12th July, 2005.

The Concessionaire was given six months time for financial closure. But it could not achieve the financial closure. As a result, the concessionaire agreement could be signed only after the appointed date, which is usually six months afterwards. The delay in achieving financial closure caused other problems like forcing the lender banks to assess viability etc. That appointed date would have been 17.10.2002. So, NHAI extended the date for financial closure and the appointed date got shifted by a few months and the concessionaire was slapped with a fine.

After this appointed date, normally the concessionaire was required to complete the project within two and a half years, but because of the scope change and other factors, work was completed with a delay of about 30 months. As against 12.7.2005, the completion certificate was given on 23.1.2008.

There was also delay in acquisition of land. It was the responsibility of NHAI to acquire land for the project. But due to multiple actors involved like Air port authority of India, defense establishments, governments of Delhi and Haryana etc, there were complications and delays. Also, shifting of facilities of various departments like water, telecom etc were characterized by the usual bureaucratic delays. Finally the empowered committee of secretaries<sup>31</sup> asked defense authorities<sup>32</sup> and the Airport Authority of India to hand over the lands to NHAI even though price issues remain unsettled. It also asked state secretaries to personally oversee the land acquisitions in Delhi and Haryana.<sup>33</sup>

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<sup>31</sup> The committee on infrastructure, headed by the Prime Minister, set up an empowered committee of secretaries to address inter-ministerial and Centre-state issues regarding land acquisition and utility shifting, environmental clearance, clearance of Rail Over Bridges etc. Chief secretaries have been asked to attend these meetings.

<sup>32</sup> NH-8 gets defense land, The Times of India, April 7, 2005

<sup>33</sup> Land acquisition a big hurdle, The Financial Express, 2005-07-07

These delays once again reveal the shallow planning which was done since the beginning and the avoidable confusions which followed. But what is important to note is the fact that concessionaire was unable to achieve the financial closure within required time frame. This throws the whole procedure of selection of bid and assessing the bidder into question. It was unclear whether the problems were just the result of the hurry and eagerness to implement the PPP or deliberate moves by the people involved.

All this led to cost overruns in the project. During its testimony to the Committee on Public Undertakings, NHAI had to accept that the final cost of the project was Rs 1170.26. That is about 110 per cent more than the original cost of Rs 555 crore.

### **Pre-Mature Issuance of Completion Certificate**

The Authority has to appoint an Independent Consultant (IC) to supervise the work executed by the Concessionaire; ensure compliance with quality specifications and time schedules; approve any proposals for change of scope, verify whether road facility is constructed according to the approved designs in conformity with Government specifications and issue completion certificates. The concession agreements stipulate that the Concessionaire could commence work on an appointed date being the date on which the financial closure was achieved and commence commercial operations on obtaining a completion or provisional completion certificate from the IC. After the issue of provisional completion certificate, a punch-list of items was required to be prepared which includes certain minor items of work to be completed even though the road was opened to traffic. The Concessionaire was bound to complete the punch list items within a stipulated period and obtain final completion certificate.

As per the reports of IC (November 2006), 87 quality related and 19 traffic and safety/environmental related Non-Conformity Reports (NCRs) were pending for want of remedial action by the Concessionaire. The Concessionaire's quality team was not fully functional and was found under-staffed (November 2006). Even after 38 months of commencement of construction, the Concessionaire had not appointed a

qualified/experienced team leader to ensure operational efficiency in the execution of the project. Provisional Completion Certificate for starting of the operation was issued on 23rd January, 2008 subject to the completion of punch-list items attached therewith with the stipulation of their completion with 120 days. The work was still pending on the date of provisional completion certificate (January 2008) and was included in the punch-list items which have to be complied with within 120 days as per the concession agreement, despite the fact that these NCRs were pending since November 2006 indicating deficient performance by the Concessionaire.<sup>34</sup> But the final Completion Certificate was issued to the Concessionaire on 22nd April, 2009 without the completion of works. Concessionaire simply gave an undertaking that it will be fully responsible for the quality of work and they undertake to repair/reconstruct any defects at their own risk and cost during entire concession period and financial penalty, if any, imposed by NHAI on the recommendation of IC, will be paid by them.

What is even more interesting is that the concessionaire disputed various items on the list on account of their being outside the scope of original agreement like cement paint on structures, landscaping in increased area between RTR-Palam junction etc. It forced the matter to be referred to a Committee that recommended de-linking such items from the punch list for further examination by the Independent Consultant. As a result of such machinations regarding fine print of concession agreement and premature issuance of completion certificate, the work was not fully completed even upto August 2009.<sup>35</sup> What is more, there is no system to charge the actual loss since there was a maximum limit of penalty imposable on a contract of Rs2 lakhs for every week of delay. No rationale has been put forward for this (meagre) maximum limit. In fact, NHAI itself clarified that that penalty was not kept at a level adequate to recover the entire amount so that it served as a deterrent for the Concessionaire. In the end, NHAI was compelled to slap fines on concessionaire.<sup>36</sup>

NHAI seems to have abdicated all its responsibility once it had appointed an Independent Consultant. Every matter was referred to an IC and NHAI washed its

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<sup>34</sup> COMMITTEE ON PUBLIC UNDERTAKINGS, 2009-10

<sup>35</sup> Highway operator under the scanner, The Indian Express, 19-08-2009

<sup>36</sup> NHAI slaps Rs 1 crore fine on Delhi-Gurgaon Expressway developer, Times of India, January 16th, 2010

hands of the responsibility of its lax regulation & enforcement and faulty project design.

### **Quality of Work**

The quality of work was tolerated at the minimum acceptable level. The CAG report of 2008 notes that the "The Authority did not fix uniform levels of roughness while defining the 'acceptable' and 'desirable' levels in the six projects test-checked as discussed above. The Authority stated that a range for roughness had been indicated in the concession agreement in order to make an attempt to achieve 'desirable' results. The reply is not tenable as in most of the locations tested, the roughness value was only at the 'acceptable' level. Therefore the justification for prescribing two levels i.e. 'acceptable' and 'desirable' was purposeless."

### **Road Safety**

In the first year of its operation itself, the expressway saw 1694 accidents. It caused over 100 deaths. Most of the people who died were local people from nearby areas of Gurgaon. The main reason for these accidents was the unavailability of the sufficient numbers of foot bridges to cross the road. The needs of the pedestrians have been largely ignored resulting in a number of deaths. Beside this, lack of sufficient service lanes and maintenance of those commissioned were also major causes of accidents.

In June, 2008, the Central Road Research Institute (CRRI) carried out a road safety audit for the Delhi-Gurgaon expressway. The CRRI had observed that no road safety study had been carried out earlier at the planning stage or at the Detailed Project Report (DPR) stage. This is due to not appropriately addressing the issues relevant for non-motorized transport users.

The Concessionaire was responsible for construction of two pedestrian/cattle underpasses as per provisions of concession agreement, which were to be provided as part of the original scope of works. Further a cycle cum foot over bridge at Subroto Park and Shankar Vihar and Pedestrian cum cycle subway at Kendriya Vidhyalaya 3 were provided as part of change of scope. But soon it was clear that they were inadequate and more under passes and foot bridges would be required at various junctions. It was, therefore, decided to provide 5 more foot over bridges on the

stretch. Subsequently based on a request from the Delhi police, one foot over bridge at Dhaula Kuan has been added. Bids were invited for construction of six foot over bridges in June, 2007 and only one bid was received, therefore being single bid, it was decided to go for rebidding. Second time bidding resulted in non response and therefore bids were again re invited a third time on January, 2008 and this time also it resulted in to single bid with very high rates. It was, therefore, decided to hand over the work of Construction of five foot over bridges in Haryana portion to Haryana PWD as deposit work in February, 2008. Further, NHAI has planned to provide 5 vehicular underpasses between Rajiv Chowk and Kherki Daula at its own expense.<sup>37</sup>

Besides all this, the expressway lacked a sufficient number of public toilets, rest areas, petrol pumps and other services despite provisions regarding them are mentioned in the concession agreement.

On the top of that, the concessionaire failed to provide a sufficient number of marshals to control traffic at crucial points and patrol the road and ambulances for quick response to emergencies. In fact, the Delhi-Gurgaon expressway is now known as a killer expressway and the problems have still not vanished.<sup>38</sup>

### **Unjustified Tolls**

According to the concession agreement, the concessionaire is compelled to give “local personal traffic” at least 50 percent of the applicable fees for different categories of vehicles. According to the concession agreement, the interest of the local resident would be kept in mind and they would be charged concessional rates.

But it has shrewdly designed its toll policy regarding local personal traffic in such a way so as to extract maximum profits for itself.

The concession is available only through the SmartExpress plan.<sup>39</sup> It allows a registered vehicle 60 crossings of the toll plaza at Delhi-Gurgaon border over a period

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<sup>37</sup> Who will build over bridges on expressways?, The Indian Express, 20-01,2009

<sup>38</sup> Overspeeding, lack of patrolling adding to hazard, The Times of India, 19-06-2011

<sup>39</sup> [http://dgexpressway.com/pdfs/terms\\_n\\_conditions.pdf](http://dgexpressway.com/pdfs/terms_n_conditions.pdf)

of one month from the date of activation by advance payment. This amount to a discount of about 50 %.

But a number of these local cars/vehicles which are classified for concession do not cross the toll plaza on a daily basis. For example a car which crosses the toll plaza only 20 days in a month, i.e 40 times, should be charged only for that number of trips and the balance must be carried forward or refunded.

But there is no provision of re funding and the balance can be carried forward only when the card is recharged before the expiry of 30 days. This means there will be successive piling up of the unused trips for which commuters would still be paying. This leads to unethical profits for the concessionaire. This has been one of the reasons for smartcards not being popular among the daily commuters and even local people having to face the hassle of daily cash payments at the toll plaza.

### **Unfair Trade Practices and Monopoly**

In August 2009, wide spread allegations of irregularities in the expressway attracted the attention of the Director General of Investigation and Registration (DGIR) of the Monopolies and Restrictive Trade Practices Commission (MRTPC). The DGIR said in its report: "It is evident that the traffic analysis submitted by DGSC to NHAI and Rites was highly under-projected and ... the toll fees (which should be charged) in 2020 are being charged now, for each category of vehicles."<sup>40</sup>

"Thus by submitting unprojected/ misprojected figures of volume of traffic, Delhi-Gurgaon super connectivity has adopted a ... method which amounts to unfair trade practice," the DGIR added.

The estimated traffic projection was 56,416 vehicles in 2006, 78,711 in 2011, 1,08,224 in 2016 and 1,85,258 in 2025 and tolls were fixed accordingly. But the real number was 1,33,808 vehicles which used the toll plaza on the Delhi-Haryana border at Siroli and 48,693 in Kherki Daula in June 2009 alone. It is clear that the concessionaire fixed the tolls and NHAI allowed this to happen in order to shore up the profits of the concessionaire.

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<sup>40</sup> Gurgaon highway, NHAI under MRTPC lens, The Financial Express, 10-08-2009

Another hidden clause in the concession agreement was unveiled by DGIR: the no-competition clause, according to which the government forfeited its right to build any road in the vicinity of the toll road which can pose possible competition to the expressway.

According to the deal to rope in the private player, the governments at the Centre or Delhi or Haryana cannot build any such road unless the concession period of 20 years has passed or the expressway reaches its peak capacity of 1,70,000 PCUs per day. But if the government goes ahead for an alternative road, it could only be done if the new road is not only not toll free but charges 133% more toll than the toll being charged by Delhi-Gurgaon expressway at that point of time. It also has provisions regarding increasing the concession period as well.

This is clearly a provision for creating a monopoly for assured profit for the private player. It is unclear how such a provision can be justified in an infrastructure starved country.

#### **Traffic comes to a Standstill**

The table 3.2 presents the brief analysis of efficiencies expected to be achieved:

**Table 3.2: Expected and Actual Efficiency Gains from Expressway**

Particulars	Earlier	Now
Average Travel Speed	25.65Km/Hr	66 Km/Hr
Average Travel Time from Delhi to Gurgaon	65 Minutes	25 minutes
Capacity (in terms of lanes)	6-Lane-5km- 4 Lane - 22.7 Km	8-Lane - 22.3Km 6 Lane - 5.4 km
Intersections	20 Intersections	10 Grade Separated Intersections

But actual experience has been quite different. It still takes an hour to commute between the two destinations, primarily because of the congestion at the toll plaza. This is due to underestimation of the traffic volume (as toll projections were to be made on the basis of worst case scenario to assure investors!), inadequate toll



windows and capacity,<sup>41</sup> lack of traffic police and marshals to control the traffic and point it towards proper lanes etc. The problem became so acute that it warranted the intervention of the Ministry of Shipping, Roadways and Highways itself, which directed the concessionaire to improve the conditions at toll plaza on a priority basis.<sup>42</sup> Even now there has been no respite from congestion and the possibility ever rising tolls.<sup>43</sup> Recently it has forced a Delhi Based NGO, Chetna to issue a legal notice<sup>44</sup> to both the Delhi Police and the concessionaire to fix listed traffic problems in 15 days. Both, the Delhi Police and concessionaire, are bound by the concession agreement to make all necessary arrangements for the safety of the commuters.

The Delhi-Gurgaon Expressway is among the very first of the major PPP projects undertaken in the road sector. It is often touted as a success story in face of all odds. Indeed in the public perception it is a symbol of the new India which is being heralded by dependence on competent private sector dynamism. Indeed the project did achieve some benefits for commuters as expected.

But the question is at what cost? A close look quickly unravels the myths and hype surrounding it. It is clear that from very beginning the aim was not of providing the commuter and the economy an optimum cost world class transit facility but attracting and safe-guarding the commercial interests of the private players. The “policy decision” in favor of PPP was undertaken even before any detail assessment. BOT-Toll was chosen as the model on the assumption that private players will not be attracted towards other models and this was done even before invitation of bids! Second, the argument was that it reduces the costs & risks to government to the minimum possible. But it is worth asking whether the government should shirk its responsibility to undertake provide at any cost or risk the economical infrastructure

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<sup>41</sup> More toll windows needed on Gurgaon Expressway: DCP to HC, Dailybaskar, 11-07-2011

Commuters on e-way stuck in jam, The Times of India, 12-04-2011

<sup>42</sup> High volume traffic leads to snarls, India Infrastructure, February 2008

<sup>43</sup> Gurgaon e-way toll to go up from April 1, The Times of India, 19-03-2011

<sup>44</sup> E-way chaos: NGO sends legal notice, TOI, 28-06-2011

needed by people in a country whose main bottleneck is infrastructure. There is also evidence of colossal incompetence (it is impossible to say whether deliberate or inherent) of the government agency in preparing project plans, enforcing its proper execution and then regulating the operation.

Even though the ownership of the land involved was not transferred to the concessionaire, it doesn't have to pay for it either. It has got it for free to reap high profits from the project by engaging in all kind of malpractices in fixing tolls as is evident from the DGIR report. And it is done on the top of the fact that original concession excluded many important works and facilities which are a must in any road project. And then even those are not completed in time and left unfinished in lieu of an undertaking.

The whole argument for PPP i.e reducing the fiscal burden on government and providing better infrastructure in time collapses. The government loses the potential negative grants and toll revenues because of the compulsions to make the project sweeter to attract private players by offering all kinds of concessions like generous estimates of concession period and tolls etc. In fact, it ended up paying around Rs 144 crore on account of change of scope for the works that should have been the part of project anyway. This besides it bearing all the costs of land acquisition and providing encumbrance free land to the concessionaire. And in the end it gets cheated of its revenue share by the concessionaire, which has underreported traffic flow and toll collection.

It is hard to understand the benefit<sup>45</sup>, whether in the form of fiscal flows, efficiency gain, or low cost to commuters, that accrued due to the "conscious decision" to go for PPP rather than the traditional method of cash contract or government agencies themselves doing the work. After all in the case of the 5 footbridges the NHA was compelled to build to reduce accidents were ultimately built by the PWD as hardly any private player took any interest and those who did quoted high prices. Exactly the same thing happened in case of original expressway with the difference that there the government opted for the proposal of the private player.

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<sup>45</sup> Growing but going nowhere, TOI, 05-10-2010

## Chapter 4

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### Case 2 : Delhi-Noida Toll Bridge

#### Project Description

The Delhi Noida Toll Bridge popularly known as the DND flyover is the result of a PPP (Public Private Partnership). This bridge marks the shortest route between Noida and Delhi. It is 9.2 km long with 8 lanes (4 lane dual carriageways) and a 31-lane Toll plaza at the Noida end and 11-lane Toll plaza at the Mayur Vihar end. It is one of the three bridges across the Yamuna River connecting Noida with Delhi and is the only one which is tolled.

IL&FS, NOIDA and the Delhi Administration (DA) reached an in-principle agreement for the construction of DND Flyway on Build, Own, Operate & Transfer (BOOT) basis. A tripartite Memorandum of Understanding (MoU) was signed between IL&FS, NOIDA, and Delhi Administration on April 7, 1992 for establishing the new bridge and defining the scope and mutual obligation of the various partners. As a consequence of this agreement, IL&FS received a mandate from the NOIDA/Delhi Administration.

According to the MoU, a Steering Committee consisting of representatives of Government of Uttar Pradesh (GoUP), Delhi Government (DG), the Ministry of Urban Affairs and Employment, Government of India, Delhi Development Authority (DDA), NOIDA and IL&FS was established for monitoring the Delhi Noida Toll Bridge and taking decisions relating to the development of the DND Flyway. Pursuant to the decision of the Steering Committee, NTBCL was incorporated on April 8, 1996 under the Companies Act, 1956 for the purposes of developing, establishing, designing, constructing, operating and maintaining the DND Flyway.

On November 12, 1997 a Concession Agreement was entered into by NOIDA, NTBCL and IL&FS conferring to NTBCL the right of implementation of the Delhi Noida Toll Bridge. The major components of the Delhi Noida Toll Bridge comprise of a 552.5 metres long, eight lane, short span box, continuous girder based bridge across the Yamuna river; approach ways to the bridge with cloverleaf interchange

points at both ends to interface with the existing road network; three minor bridges over existing watercourses; a 28-lane toll collection plaza at the Noida end and a flyover with interchanges at the Ashram crossing in South Delhi (built as per the support agreement with Delhi Govt. to augment traffic to DND flyover)

Construction of the Delhi Noida Toll Bridge was completed after 25 months, 4 months ahead of schedule. The Delhi Noida Toll Bridge was opened to traffic on 7 February 2001. The Ashram Flyover was opened to traffic on 30 October 2001. Commercial operations of the Company commenced on February 7, 2001, almost four months prior to the scheduled date of operation, without the commissioning of Ashram flyover. The initial traffic was far lower than the projections. With the opening up of the Ashram Flyover the average daily traffic on the Bridge increased by around 30%. Despite the sharp increase in traffic after the completion of the Ashram flyover the traffic remained much lower than the break-even traffic level. In January, 2008 Mayur Vihar Link (MVL) Toll Plaza with 11 lanes was commissioned to augment the revenue of the company.

The average daily traffic on the bridge has grown from approximately 17,000 vehicles per day in 2000-2001 to more than 104,000 vehicles per day in 2009-2010. In the long run, the traffic levels on the Delhi Noida Toll Bridge are expected to increase due to implementation of planned development in Noida and Greater Noida. In addition, completion of the following construction work on the three entries/exits to the Toll Bridge, due to the Commonwealth Games in October 2010, has had positive effects on the bridge traffic:

- Barapura Nalla elevated link on Ring Road, which will reduce congestion at Ashram during peak hours.
- Bridge across the drain at the Mayur Vihar Link exit, which will facilitate direct flow of traffic to and from Gazipur on NH 24.
- Underpass at the Rajnigandha crossing, on Noida side

### **PPP structure of the Project**

The Noida Toll Bridge Company Ltd (NTBCL) was formed as a Special Purpose Vehicle for taking on the project on BOOT basis (Build, Own, Operate, Transfer). The project was structured as a 30-year BOOT concession, which means that the company builds and owns and operates a project for a contractually agreed upon period before transferring it back to the customer.

At the time the Concession Agreement was entered into, the relevant traffic projection figures indicated that the Company would derive revenues from the Concession at such a rate that the Company would have recovered the Total Project Cost and the Returns thereon within a period of 30 years. The Concession Agreement therefore provides that the concession period would 30 years or, if less, till such time as the total project cost and the returns thereon have been recovered. However, the Concession Agreement provides that if such recovery is not achieved within the initial concession period of 30 years, then the concession period shall be extended by 2 years at a time until such time as such recovery is achieved.

The Company has a wholly-owned subsidiary, DND Flyway Limited, through which it intends to carry out development activities on the surplus land around the Delhi Noida Toll Bridge.

### **Financing of the Project and Share Holding**

The Company has used a combination of equity and debt financing to fund the construction of the Delhi Noida Toll Bridge. The total funding requirement for the project of Rs 4082 million was financed through equity financing of Rs 1224 million and debt financing of Rs 2858 million. The debt financing consisted of term loans from various Indian banks and financial institutions totaling Rs 2358 million in aggregate, and the issue by the Company of deep discount bonds totaling Rs 500 million in aggregate. The World Bank also participated in the financing of the project through a line-of-credit granted to IL&FS out of which IL&FS used Rs 600 million for providing a rupee term loan facility to the Company. The cost of the Mayur Vihar link is given in table 4.1.

**Table 4.1: Cost of Mayur Vihar Link (Rs crore)**

<b>Construction Cost</b>	<b>7.14</b>
<b>Design Cost</b>	<b>0.50</b>
<b>Supervision Cost</b>	<b>0.35</b>
<b>Toll Plaza Cost</b>	<b>0.95</b>
<b>Land Acquisition and Other Costs</b>	<b>0.60</b>
<b>Contingency</b>	<b>0.66</b>
<b>Total</b>	<b>10.20</b>

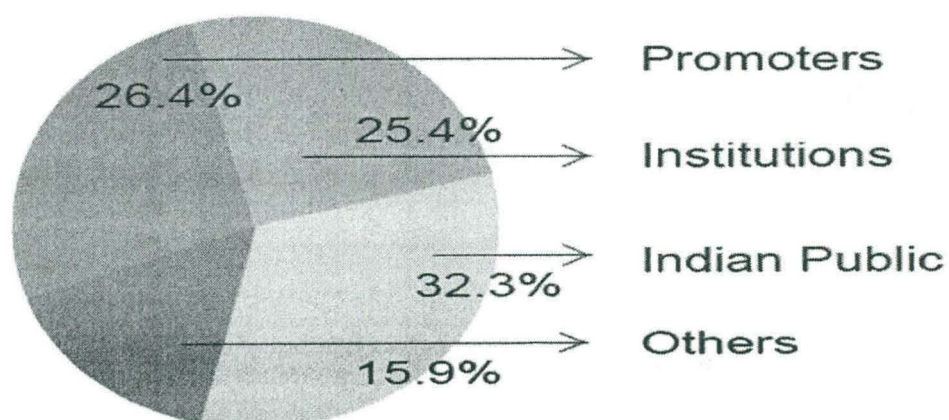
The present shareholding pattern of the company is as follows:

**Table 4.2: Shareholding Pattern of NTBCL (as of March 2010)**

<b>Category of Shareholder</b>	<b>No. of shareholders</b>	<b>Total number of shares</b>	<b>% to Capital</b>
<b>Promoter Shareholding</b>			
<b>Infrastructure Leasing &amp; Financial Services Ltd.</b>	<b>1</b>	<b>1900000</b>	<b>1.02</b>
<b>IL&amp;FS Transportation Networks Ltd.</b>	<b>1</b>	<b>47195007</b>	<b>25.35</b>
<b>Total Promoter Shareholding</b>	<b>2</b>	<b>49095007</b>	<b>26.37</b>
<b>Public Shareholding</b>			
<b>Mutual Funds/UTI</b>	<b>12</b>	<b>17331046</b>	<b>9.31</b>
<b>Financial Institutions/ Banks</b>	<b>4</b>	<b>153000</b>	<b>0.08</b>
<b>Central Govt./State Govt.-NOIDA</b>	<b>1</b>	<b>10000000</b>	<b>5.37</b>
<b>Venture Capital Funds</b>	<b>1</b>	<b>1000</b>	<b>0</b>
<b>Insurance Companies</b>	<b>4</b>	<b>12223080</b>	<b>6.56</b>

Foreign Institutional Investors	13	16324867	8.77
Foreign National	1	1000	0
Bodies Corporate	1660	22830703	12.26
Individual Shareholders holding nominal share capital upto Rs 1 lakh	116967	44874864	24.1
Individual Shareholders holding nominal share capital in excess of Rs 1 lakh	296	9366556	5.03
Trust/Clearing Members/NRIs/Foreign Bodies	1002	1602879	0.86
<b>Total Public Holding</b>	<b>119961</b>	<b>134708995</b>	<b>72.35</b>
Shares held by Custodians and against which Depository Receipts have been issued	1	2391000	1.28
<b>Grand Total</b>	<b>119964</b>	<b>186195002</b>	<b>100</b>

**Chart 4.1: Shareholding Pattern of NTBCL (as of March 2010)**



Source: Annual Report of NTBCL

The share of public holding has increased over time along with that of banks and other institutions.

## **Concession Agreement and Support Agreement<sup>46</sup>**

On 12 November 1997 NOIDA, NTBCL and IL&FS entered into a Concession Agreement granting the Company the right to construct, operate and maintain the Delhi Noida Toll Bridge. The Concession Agreement gives the Company the right to commercially exploit the Delhi Noida Toll Bridge by levying tolls (the "Concession"). In the event of revenue shortfall, NOIDA may grant development rights to enable the Company to generate income through property development and other commercial exploitation of the land held by the Company which is not required for the Delhi Noida Toll Bridge project. To date the Company has principally derived revenues by levying tolls upon the users of the Delhi Noida Toll Bridge. The Company has also gained income by licensing the right to advertise on the bridge to various advertisers.

The Concession Agreement provides that the Concession shall last until such time as the Company has recovered the total cost of the project ("Total Project Cost") and returns each year of 20% of the Total Project Cost (the "Returns"). It provides that the Total Project Cost is the aggregate of the cost of the project, any major maintenance expenses, and any shortfalls in the recovery of the Returns for previous years. The cost of the project consists of the cost of construction and other costs of commissioning as determined by an independent auditor in consultation with an independent engineer<sup>47</sup>, who are appointed in accordance with the terms of the Concession Agreement.

The amount of revenue to which the Company is entitled under the Concession for the purpose of recovering the Total Project Cost and the Returns thereon is to be calculated at annual intervals by an independent auditor. Based on the Company's current forecasts of returns, and the shortfalls in the recovery by the Company of the total project cost and the returns thereon to date, the Directors believe that the Concession Period will be in excess of 70 years. The level of fees which the Company

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<sup>46</sup> AIM Admission Document

<sup>47</sup> Independent Auditor means an internationally recognized firm of chartered accountants that is also licensed to practice in India as may be appointed by the Lenders, NOIDA and the Concessionaire. Independent Engineer means an internationally recognized firm of engineers agreed to be appointed by the Lenders, NOIDA and the Concessionaire.



is entitled to charge to the users of the Delhi Noida Toll Bridge is fixed under the Concession Agreement, and reviewed annually by a fee review committee. This committee consists of 3 members, namely a Company representative, a NOIDA representative and one representative appointed by the representatives of NOIDA and the Company. The toll rates are revised annually and are derived from a formula specified in the Concession Agreement. The rates are revised by the fee review committee on 1 February of each year. The Company cannot charge tolls which exceed the levels set by the fee review committee.<sup>48</sup>

However, in order to increase commuter loyalty, the Company does offer various discount schemes to its pre-paid users at levels set by the marketing committee of Directors from time to time.

#### *Support Agreement*

The Government of Uttar Pradesh and the Government of Delhi entered into a Support Agreement dated 14 January 1998 to support and extend cooperation to NOIDA and the Company with respect to the implementation of the Delhi Noida Toll Bridge project. The Support Agreement is intended to remain in force for the same period as the Concession Agreement.

Under the terms of the Support Agreement, the Government of Uttar Pradesh and the Government of Delhi leased the land required for the construction of the Delhi Noida Toll Bridge to NOIDA, which in turn has subleased the land to the Company.

The Government of Uttar Pradesh and the Government of Delhi had also agreed:

- not to propose or require at any time any change in the geographical alignment of the Delhi Noida Toll Bridge;
- not to levy any additional toll, fee, charge or tax on the use of the Delhi Noida Toll Bridge or cause any diversion of traffic or close down the approach to the

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<sup>48</sup> The Fee Review Committee shall take all steps to ensure that the revenues from the Project are maintained at levels sufficient to recover the Total Cost of Project and meet the Concessionaire's Returns thereon. When determining whether a revision to the Fee is warranted, the Fee Review Committee may consider, among other circumstances, (i) the benefits to the Users, (ii) traffic flow over the Project, (iii) any increase in any cost of expense in relation to the Project owing to the occurrence of an event under subsection (c) above, and (iv) the Concessionaire's Debt Service obligations.

Delhi Noida Toll Bridge in a manner so as to detrimentally affect the free flow of traffic to and from the Delhi Noida Toll Bridge;

- (iii) to consider granting additional development rights to the Company in the event the revenues generated are not sufficient to cover the Total Project Cost and the Returns thereon upon the request of NTBCL or NOIDA or both; and
- (iv) the Government of Uttar Pradesh had agreed not to propose, recommend or implement without the written consent of the Company (which is not to be unreasonably withheld) any bridge or other service network which does not charge toll fees or charges toll fees which are lower than the fee charged on the Delhi Noida Toll Bridge across the Yamuna river within the area between the Okhla Barrage to the south of the Delhi Noida Toll Bridge site and the existing Nizamuddin Bridge to the north of the Delhi Noida Toll Bridge for a period of 10 years or until such time the traffic using the Delhi Noida Toll Bridge has reached its full rated capacity, whichever is later. The Government of Delhi had given a similar undertaking which lasts for 10 years or until the traffic using the Delhi Noida Toll Bridge has reached partial capacity<sup>49</sup> (being 60% of full rated capacity), whichever is later.

The Government of Uttar Pradesh had undertaken to assist the Company, on a best effort basis, to obtain all clearances, if any, as may be required for the due implementation of the Delhi Noida Toll Bridge project by the Company, in accordance with the terms of the Concession Agreement. The Government of Delhi had undertaken that it will ensure that the Company obtains all clearances, including those as may be required from the Municipal Corporation of Delhi, for the due implementation of the project by the Company, in accordance with the terms of the Concession Agreement.

In the event of any breach of the Support Agreement, the Government of Uttar Pradesh and/or the Government of Delhi (as relevant) are contractually obliged to

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<sup>49</sup> Partial capacity would be deemed to have occurred when the daily peak hour traffic registered on the Delhi Noida Toll Bridge equals to or exceeds 60% of the full rated capacity on a daily basis for a consecutive period of 180 days.

compensate NOIDA for any payments that NOIDA has to make to the Company under the terms of Concession Agreement.

### Development

In its first few years, this company faced major problems due to cost escalation and lower than expected traffic. The company had the used a highly leveraged capital structure for funding the project cost. Of the total funding requirement only around 30% was financed through equity. The remaining was funded with debt comprising a mix of term loans from banks and the issue of deep discount bonds. The slow rate of traffic pick up<sup>50</sup> made the situation of the company perilous, as it found it increasingly difficult to service its debts. The financial position of the company in the first two years of its operations is provided in table 4.3

**Table 4.3: Profit and loss account of NTBCL, March, 2002**

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Toll Revenue	97151760	11600938
	20927841	1375543
	<b>118079601</b>	<b>12976481</b>
Expenditure		
	64846882	8180470
Finance Charges	425996345	49659497
Depreciation	68308412	2286201
Misc Expenditure Written off	15170543	2202846
Loss after Taxes	<b>456242581</b>	<b>49352533</b>
Balance Brought Forward for the	-49352533	
previous Year		

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Source: Annual Report of NTBCL

<sup>50</sup> Annual Report of NTBCL

Finance charges i.e. interest on debt were more than four times the toll revenue and the company was headed towards bankruptcy.

In 2002, the company was forced to approach its bankers for restructuring its debt which took many years to negotiate and implement.<sup>51</sup>

The key features of the corporate debt restructuring proposal were: (i) rescheduling of interest and repayments; (ii) reduction in interest rate for loans (effective cost of debt was reduced from 14.5% p.a. to 9.5% p.a.); and (iii) construction of new links in order to augment the Company's revenues to be funded by additional equity capital.

In March 2006, the company raised Rs 1880 million equity funds<sup>52</sup> by selling GDRs in the Alternate Investment Market (AIM) of The London Stock Exchange.<sup>53</sup> Part of this money was used to reduce debt and the balance was used to construct the "Mayur Vihar Link" which connects East Delhi to South Delhi. The Mayur Vihar Link, which started in January 2008, created a new source of revenue for the company. In March 2002, total debt on the company's books was approximately Rs 2892 million. By March 2008, this debt had shrunk to Rs 1958 million due to the debt-restructuring mentioned above and also due to debt repayments from cash flows. In the meantime, traffic volume increased substantially, resulting in the company coming out of the debt trap.

There were also problems with regard to land acquisition, with acquisition proceedings being challenged in courts of law, but they were mainly handled by Delhi and Noida authorities. The company recorded a profit for first time in 2006.<sup>54,55</sup>

### **Evaluating the Project which heralded the era of PPP in Road sector**

The PPP provides that the concession would last until NTBCL recovered the total project cost plus a return of 20% per annum of the total project cost and tolls would

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<sup>51</sup> Debt Recast Committee Clears Seven Proposals, The Financial Express, 08-11-2002

<sup>52</sup> Noida Toll Bridge mops up Rs 188 cr, The Economic Times, 21-03-2006

<sup>53</sup> Noida Toll Bridge listed on LSE's AIM market, The Economic Times, 22-03-2006

<sup>54</sup> Noida Toll Bridge's net profit at Rs 1.6 cr, The Economic Times, 21-07-2006

<sup>55</sup> High traffic, revenue put Noida toll bridge on growth path, The Financial Express, 24-04-2008

be fixed accordingly. Moreover, in case of a toll revenue shortfall, the concessionaire was to be granted development rights by government to augment its revenues or the concession period was to be increased as required. This warrants a clearly and rationally defined **Total Project Cost (TPC)**. The Total Project Cost is defined in the Concession Agreement to mean the aggregate cost of the project, any major maintenance expenses plus any shortfall in the return in any specific year. It also includes the other costs of commissioning. Other Costs of Commissioning means “all costs and expenses of whatever kind, as specified in the accounts maintained by the Concessionaire, NOIDA, Sponsor, Govt. of UP, and Delhi Government in the format approved by the Independent Auditor and duly audited by the Independent Auditor, incurred in respect of the Project, prior to the Project Commissioning Date, other than the Cost of Construction, including but without being limited to: (a) cost incurred in relation to the acquisition and preparation of the land upon which the facilities shall be located (including all lease rentals payable) (b) all pre-operative expenses incurred by NOIDA, the Sponsor and the Concessionaire prior to entering into the Agreement, (c) management overheads such as corporate office expenses, salaries to staff, traveling expenses, administrative overheads, and management and legal expenses, (d) all consulting and advisory service fees incurred prior to the Project Commissioning Date, including all site investigation charges, Independent Engineer and other engineers’ and architects’ fees incurred in relation to the implementation of the Project, (e) expenses incurred by the Concessionaire for mobilization of financial resources, in whatever form for funding the Project, including but not limited to, brokerage, commissions, upfront discounts on debt, merchant banker’s fees, legal fees, publicity and travel expense, financial advisory charges and other related charges and fees including charges and fees payable under the Financing Agreements, (f) any duties (including stamp duty payable on the Financing Agreements), taxes, levies, fees and commissions, duly grossed up, (g) other specific expenses as agreed upon and incurred by the Concessionaire, Sponsor, NOIDA, GOUP and DG under the Support Agreement or their respective agencies during implementation of the Project, (h) all costs of the insurance required to be obtained in connection with the Project prior to the Project Commissioning Date, and (i) the Management Fee (the Management Fee is 1% of the Project Cost, payable to the Sponsor (IL&FS) upon financial closure).

We see that the definition of TPC is open-ended despite including practically everything in it. Moreover, TPC is calculated ex-post which means that concessionaire was given an open hand in construction of bridge. It created an incentive for cost-maximization rather than cost-minimization and efficiency. It was like handing over a blank cheque at the cost of the public, which will have to pay for any whimsical number filled in by concessionaire. Noida authority had guaranteed a fixed rate of return on an unknown amount.

The project cost also included, “without limitation”, attorneys’ fees associated with the settlement of pending or threatened suits/claims (other than suits/claims resulting from the negligence or breach of the concession agreement by the concessionaire). Allowable O&M expenses also include such items as “fines” on the concessionaire. While company will incur the expenditure of any major repair work that too will be added to the Total Project Cost. So if a section of road breaks down due to low quality of construction material used, its repair cost will be included in the Total Project Cost and if the authorities decide to impose fines on the company that too can be included in the Total Project Cost. Even if the authorities impose a fine on the concessionaire for low quality work, it will be added to the TPC. And if authorities wake up to this travesty and try to take legal action against the concessionaire for the same, this cost can also become the part of TPC!

Since any deficit in returns significantly increases the total cost of the project, this can create a vicious cycle in which the shortfall in achievement of required returns and the compounding thereof results in a repeated need to lengthen the concession period and/or raise toll rates or grant Development Rights. It will have rights to undertake additional projects to either increase the traffic flow or supplement the revenue via additional projects altogether. And such a situation has already come to pass. We have seen that the company suffered heavy losses in the initial years of its operation. Therefore, it undertook the construction of Mayur Vihar link to divert the traffic of densely populated East-Delhi towards the toll bridge. Plus, it had already undertaken the construction of the Ashram flyover under the support agreement with Delhi to ensure smooth dispersal of traffic and increase traffic from the Delhi end. Cost of both these were added to the TPC.

Losses in initial years due to overestimated projections have opened the way for super profits now. The 'Magic of Compounding' is now at work. Dues (shortfalls) as of FY09 end stood at Rs.14,875 Mn. The figure only keeps getting larger as 20% on this would be approx Rs.3,000 Mn while even at the present day satisfactory level of profits, 'Return' is about Rs.530 Mn. In fact, it has been estimated and loudly proclaimed by the company itself that the concession period "may be" needed to be extended to 70 years<sup>56</sup> "unless development rights" are granted to reduce that time period.

It is important to note that no proper standard of traffic estimates had been followed like in case of Delhi-Gurgaon expressway. The difference is that in the earlier case traffic was underestimated and this case it is over-estimated. But in both cases the concessionaire is the beneficiary.

The shortfall between actual and projected traffic and revenue in the initial years is given table 4.4.

**Table 4.4: Actual and Projected Traffic and Toll Revenue, 2000-01 to 2002-03**

Year	Traffic (Million Vehicles)		Total Revenue (Rs Lakhs)		% (Actual revenue on projected)
	Projected	Actual	Projected	Actual	
2000-01*	-	0.91	-	11.6	
2001-02	35.43	8.17	4666	1180.79	25%
2002-03	37.9	14.04	6467	1873.45	29%

\*There were 53 days of operation in 2000-01

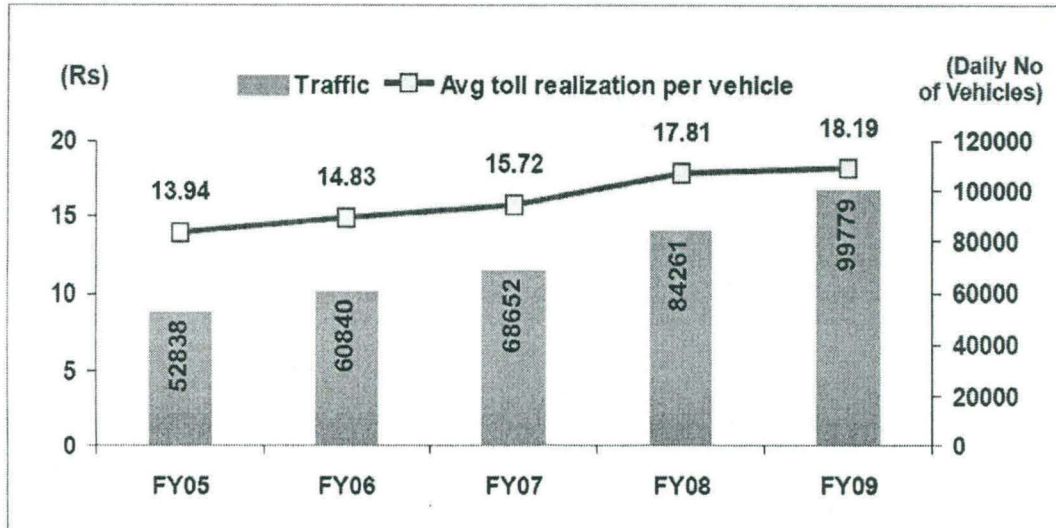
Source: Aim Admission Document

Such huge difference between actual and projected figures cast a shadow over both the intent and competence of the parties involved in the planning exercise. When we

<sup>56</sup> A simulation exercise was undertaken using the traffic and associated revenue projections provided in "Traffic Consultants' Report and Business Valuation" prepared in February, 2006 by M/s Halcrow Consulting India Limited. Starting with a Total Cost of Project of Rs. 953.4 crore in 2006, it appears that even if the entire operating surplus were allocated to payment of returns there would still be a shortfall in returns each year, with the result that the total project cost in 2021 could be about Rs. 11,817.54 crore. This scenario suggests a potential concession in perpetuity unless significant Development Rights or increases in toll rates or both are granted.

compare this with the steady and stable increase in traffic, the whole case based on “unexpected” behavior or fluctuation in traffic flow falls flat. Chart 4.2 points to a fairly stable rising traffic and revenue on the bridge.

**Chart 4.2: Traffic and Average Toll per Vehicle, Delhi-Noida Toll Bridge**



Source: Annual Report of NTBCL.

The traffic has grown from about 17,000 vehicles (ADT–Average Daily Traffic) in 2001 to almost 100,000 in 2009, a CAGR of about 24%. Average Toll realization per vehicle has also grown handsomely from 2005-06 as can be seen in the chart above. It is inconceivable that such a stable trend in traffic flow could not be estimated with an acceptable degree of error.

A second issue of importance is that the concessionaire has been **absolved of almost all the risks** involved in the project. The whole argument behind BOT-Toll model is that it spares the government from risks which are then borne by the private partner. But here we see that the concessionaire has been guaranteed a 20 % rate of return. And shortfalls in the revenue will be added to the TPC which is to be recovered with profit. But the story doesn't stop here. Under the Concession Agreement, the Company has the ability to request NOIDA to grant it development rights<sup>57</sup> over the

<sup>57</sup> Development Rights means such additional rights, property and assets that are not part of and are not anticipated to be part of the Project as on the date of the project Agreement but are granted to the Concessionaire by NOIDA for enabling the Concessionaire to generate additional revenue, and may include... provision of advertising



land surrounding the Delhi Noida Toll Bridge which is not anticipated to be required for the operation of the Delhi Noida Toll Bridge. The Company may request the grant of development rights if the Independent Auditor upon reference by the Company determines that there has been a shortfall in the toll revenues derived by the Company from the Delhi Noida Toll Bridge project. In fact, the Company requested the grant of development rights under the Concession Agreement and got the 'in principle' approval on 16 May 2001.

The Company has a leasehold title on approximately 99 acres; 65 acres on the Delhi side of the bridge and the remaining on the Noida side. These lands are not required for the operation of the toll bridge. A valuation study by Jones Lang LaSalle in 2004 estimated the potential value of this land at \$82 million if it were developed.<sup>58</sup> The Company is so sure of it that it has already created a wholly-owned subsidiary, DND Flyway Limited, with the intention that this subsidiary would undertake any future exploitation of the development rights granted to the Company. The Company has begun to liaise with real estate developers in addition to various Government departments, to explore the ways in which the Company could commercially exploit the land. It believes that the association of a leading real estate developer will provide impetus to the process of procuring development rights. The realization of development income in the near term is contingent upon receipt of final government approvals and the nature and extent of developments permitted.

All this practically removes all the risks<sup>59</sup> which should have fallen upon the concessionaire. And like the TPC, the provision of development rights too is ambiguous. It can be granted on the recommendation of an independent consultant (IC), if revenue fall below the expected levels. But it is nowhere mentioned that at what level of shortfall this provision will be invoked. On what basis would the

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services, right to develop hotels, restaurants and other facilities, services contracts and agreements and/or real property interests.

<sup>58</sup> AIM Admission Document

<sup>59</sup> The guarantee of a 20% return on total project cost is not time-bound: automatic extension of the concession period to permit the recovery of total project cost and returns thereon would not remove all risk from the project since the concessionaire's investment would be locked in for a longer period (and the present value of additional returns after 30 years is very low).

Auditor decide whether an extension to the concession is unlikely to generate “sufficient revenues” to recover Total Cost of Project and the necessary Return? Also, what will be the share of revenues from developmental rights, increases in tolls and extension of concession period in compensating for the shortfalls? And what will be the monitoring provision for the revenues accruing from such developmental activities?

Since, these developmental activities will be undertaken by concessionaire or other real estate developers (to whom NBTCL may sub-lease the land) the question arises that who will retain the ownership of structures erected, after the end of the concession period? Will Noida buy it or the private developers retain it after paying for the land? Even if they are to compensate NOIDA, it will amount to anarchy in use of scarce land resources in such an important economic hub of the country.

The company has already bagged the land lease to build the Mayur Vihar link to augment its toll revenue, with the construction to be in accordance with the Debt Restructuring Agreement. Besides this the Concession Agreement contains no competition clause. It compels NOIDA, Delhi & U.P Govt “not to propose, recommend, implement or permit to be implemented without prior written consent of the Company (which is not to be unreasonably withheld) any toll-free bridge or other service network, which does or does not involve the collection of tolls, fee or other charges or fee or other charges which are lower than the fee being charged on the Delhi Noida Toll Bridge and which spans across the Yamuna river within the area between the Okhla Barrage to the south of the Delhi Noida Toll Bridge site and the existing Nizamuddin Bridge to the north of the bridge site for a period of 10 years or till the Delhi Noida Toll Bridge achieves full rated capacity (partial capacity<sup>60</sup> of 60% in the agreement with the Delhi government) or a peak hour movement of 16,000 passenger car units, whichever is later.” This effectively grants the NBTCL a monopoly right over road infrastructure. The most quoted argument in favour of private participation is to remove/dilute the monopoly enjoyed by the state by

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<sup>60</sup> Partial capacity would be deemed to have occurred when the daily peak hour traffic registered on the Delhi Noida Toll Bridge equals to or exceeds 60% of the full rated capacity on a daily basis for a consecutive period of 180 days.

bringing in competition which will increase efficiency. But we that here (and in most PPPs) is that a no competition clause is the first one to be demanded and granted!

In fact, NTBCL issued a legal notice to PWD, Delhi Government and contractor of under-construction Kalindi Bypass, on 15<sup>th</sup> December 2005, asking them to stop the work. It was argued that Kalindi Bypass would affect the traffic flow to the Toll Bridge. It proposed to redraw the plans such that its commercial interests remain unaffected. Kalindi Bypass was built after a delay with re-alignment in consultation with NTBCL.

There are several provisions for termination of the contract in event of default. The settlement clauses are provided in Table 4.5.

**Table 4.5: Events of Default and Termination of Agreement**

Event	Remedies Available for the Investor
Termination due to NOIDA event of default. Eg. : Change in law by NOIDA, Repudiation of Agreement by NOIDA, Breach by GoUP or DG of the Support Agreement.	NOIDA shall pay the Concessionaire the total project cost with returns and cost of transferring the project assets less any cash reserves created for debt service and proceeds from insurance covers.
Termination due to Concessionaire event of default Liquidation, Breach of Obligations, Suspension of performance of obligations by NOIDA for 9 consecutive days, Repudiation of this Agreement by the Concessionaire.	NOIDA shall pay the Concessionaire all sums due to the lenders and cost of transferring the project assets less any debt service reserve and insurance proceeds
Termination following force majeure events; Direct Political Event Occurrence of force majeure events such as change in law by GoUP, or GOI or DG, or refusal to grant clearances, and court orders which makes the project unviable as determined by the independent engineer and independent auditor.	NOIDA shall pay the Concessionaire  Lenders' Due  Cost of transferring the assets  20% equity return Less Debt Service Reserve and Insurance proceeds

Termination following force majeure NOIDA shall pay the Concessionaire  
events: Indirect Political Event Such as acts of  
War, strikes, terrorism, etc.

Lenders' Dues

Cost of transferring the assets

10% equity return Less Debt Service Reserve  
and Insurance proceeds

Termination following force majeure NOIDA shall pay the Concessionaire  
events: Natural Disasters such as lightning,  
earthquake, landslides etc.

Lenders' Dues

Cost of transferring the asset Less Debt Service  
Reserve and Insurance proceeds

It is clear to see that in all cases it is NOIDA which ends up paying the concessionaire even if it is the concessionaire who terminates the contract. The concessionaire does not even have to bear the risk of natural calamity. Moreover, no distinction is made in terms of compensation between a concessionaire event of default which occurs prior to entry into operation of the bridge (i.e., before construction has been completed) vs. one that occurs after commercial operation has commenced (i.e. post-construction). Therefore, even the risks associated with the construction phase were borne by the NOIDA and not the concessionaire.

Thirdly, it is not clear that what standards/processes were used to decide upon the **rate of return**. Since, it was a negotiated award, there should have been a pre-determined benchmark and process to decide the rates as same cannot be discovered via a competitive bidding in this case. The NTBCL has been giving much higher rates of return to the equity holders as rate is determined on the basis of TPC. The interest rate on debt has been reduced following the Debt Restructuring Agreement, which means the margin between the average interest rate payable on the company's Term Loans (9.5%) and the assured return of 20% would accrue as an additional return to equity holders. In addition, any increase in total project cost (e.g., due to shortfalls in returns) would result in higher returns being due to the concessionaire (since the base upon which returns are due would increase). As the amount payable to debt is fixed, the returns allocated to equity would increase disproportionately. This despite the fact that concessionaire has undertaken practically no risk in this project.

Fourthly, for **Operation and Management (O & M)**, Intertoll Management Services BV, Netherlands, a 100% subsidiary of M/s Intertoll Holdings (Pty) Ltd., South Africa, was hired in December, 1998. The O&M contract has three distinct components.

- Fixed equipment supply including systems hardware, related software, and traffic & telecommunications systems.
- Periodic maintenance including road surface overlays, replacement and maintenance of bridge equipment and
- Toll collection and management.

The fees payable to O&M Contractor are entirely variable for the first 10 years and for the rest of the period a substantial portion of the fees is linked to the actual number of users of the facility. This has been done to provide an incentive to the operator to effectively collect tolls. The maximum permissible leakage specified in the O&M contract is 0.1% and anything beyond that will be compensated by the O&M Contractor. In addition, Intertoll's has an 8.64% equity stake in the Company, which provides an additional incentive for proper discharge of duties. Therefore, the risk of leakage of traffic either due to under reporting of fees or due to non-payment of fees by certain users too has been transferred to another party. NBTCL will only pay for the major repair work, which, we have already seen, will become part of the TPC. The question arises, if it is the government which is taking all the risks, why couldn't it construct the road and hire a private player for the O & M, if that is the problem with government agencies.

#### **Land with Ease**

On 23 October 1998, the Government of Delhi and NOIDA entered into a land lease deed (the 'Lease'), to lease the land in Delhi ('Delhi Land') to NOIDA for NOIDA to sub lease the same to the Company for the purposes of implementation of the Delhi Noida Toll Bridge project. The term of the Lease is for a period of 31 years, which period is to be co-terminus with the term of the Concession Agreement and is to be

extended or terminated at a prior date to coincide with the term of the Concession Agreement. The annual rent is of Rs 1. The Delhi Government has covenanted that it shall not, inter alia, undertake the following with respect to the Delhi Land: (i) interfere with, or impede in any manner or otherwise limit, restrict or impose any restrictions on the complete free and full enjoyment and use of the Delhi Lands for the purposes of implementation of the project (this non-interference extends to the establishment, design, construction, operation and maintenance of the project, and possession, control and use of the lands by the Company); (ii) increase the lease rentals payable; (iii) charge any fee, rental, tax or any other charge on NOIDA or the Company for lease of the Delhi Land (iv) terminate the lease except upon due and valid termination of the Concession Agreement in accordance with the terms thereof.

Further, under the Lease, the Delhi Government has vested NOIDA with the right for NOIDA to vest the Company with the right, without requiring any prior permission from the Delhi Government or NOIDA in this regard, to mortgage, transfer, assign or otherwise encumber the Delhi Lands and any or all of its rights in relation thereto or otherwise create a security interest in favour of the lenders over the Delhi Lands for the purposes of enabling financing of the project. On the same day as the Lease, NOIDA had executed a sub-lease deed in favour of the Company for the sub-lease of Delhi Land. The land and the structures built on the Noida Land would vest with the Company during the term of the Concession Agreement, following which the Noida Land would revert back to NOIDA.

NTBCL first gets the land for constructing the road at no cost. Then it gets the right to mortgage or transfer or lease this public land without any restriction. This despite the fact that land was handed to it at nominal charges for a specific purpose supposedly for public good. Even though land will revert back to NOIDA, it raises many issues which have been left unanswered as we have already seen above. It also, exposes the land to the possibility of frivolous transfers to enrich the concessionaire. In fact, exactly this happened even before the granting of the development rights by the authorities.

After construction of the bridge, the Company was left with possession of surplus land situated partly in Delhi and partly in Noida after utilizing the lands required for the construction and operation of the Delhi Noida Toll Bridge. On 31 March 2004, the Company entered into a sub-lease agreement with DND Flyway Limited, its wholly owned subsidiary, for sub-lease of part of the surplus lands on the Noida side measuring 30.493 acres for a consideration of Rs 1,034,841,881 and an annual rent of Rs 1. But this amount is to be paid only when development rights are granted and revenue has begun to flow from subsequent development undertaken.

According to the support agreement between NBTCL and Delhi government, the concessionaire was required to construct the Ashram Flyover. Upon completion of the construction of the Ashram Flyover, the operation and maintenance of the Ashram Flyover will be the sole responsibility of the Government of Delhi. Under the terms of the Ashram Flyover Construction Contract, the Government of Delhi has leased the Ashram Flyover Site for an annual rent of Rs 1 and for a term commencing from 31 August 1999, for a period of 31 years, which period shall be co-terminus with the Support Agreement and the Ashram Flyover Construction Contract and shall be extended or terminated earlier to coincide with the term of the Support Agreement and the Ashram Flyover Construction Contract. The concessionaire will have full right over the land for the period of concession.

The lease of the land over which the Ashram flyover is constructed will continue to subsist and the legal title and property of the Ashram Flyover will remain with the Company, for the term of the Ashram Flyover Construction Contract, despite the Transfer. But all risks will lie with the Government of Delhi in respect of the loss or damage to the whole or any part of the Ashram Flyover, from the date of the Transfer. What is more, the cost of construction will be added to the TPC, adding towards the concession period while the land title continues to shore up the balance sheet of the company.

In case of default or termination by any party, almost the same clauses are applicable, as we have seen in the case of the main deal.

It can be clearly seen that, the whole PPP is designed for the enrichment of the concessionaire without it taking any risk. From deciding the base for calculation of rate of return to deciding the actual rate of return, nowhere was a clear and standard procedure was followed. The Concessionaire gets public land for “free” for constructing a project for public good but has the unrestricted right to mortgage its interest in the project assets, including the project site. This, plus the provision of more lands for developmental rights and constructing link roads to augment its toll revenue. But the list does not end here.

IL&FS, a project sponsor, was fully involved in conceptualizing the project and as a member of the steering committee that decided that the project should be implemented by a corporate entity promoted by itself. It is also one of the lenders to the concessionaire and a major shareholder in the company. It has a major say in decision making regarding the constitution of the oversight board, the Independent Consultant, the Auditor etc, which are provided for in the concession agreement to ensure proper compliance with the agreement and prevent frauds. It is like saying, let me award the project to myself and then let me audit/verify the implementation and operations as well.

In this case the final power to determine the user fee/toll is vested with the concessionaire unlike other projects where it is vested either with the government or with a joint committee of both. Taking full use of this privilege, the concessionaire has indexed the toll rates to the CPI rather than the WPI which reflects inflation in its costs more closely. Also, debt is fixed in nominal terms; hence the real value of debt repayments declines with inflation and there is no need to index the share of revenues allocated to debt repayment to inflation. Therefore, there is no reason for tolls to reflect the full impact of inflation. But that is what is happening leading to periodic hikes in toll rates. It has lead to wide spread discontent among the users and has even forced the authorities to intervene.<sup>6162</sup>

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<sup>61</sup> Noida Toll Bridge rates to go up Feb 15, The Financial Express, 11-02-2011

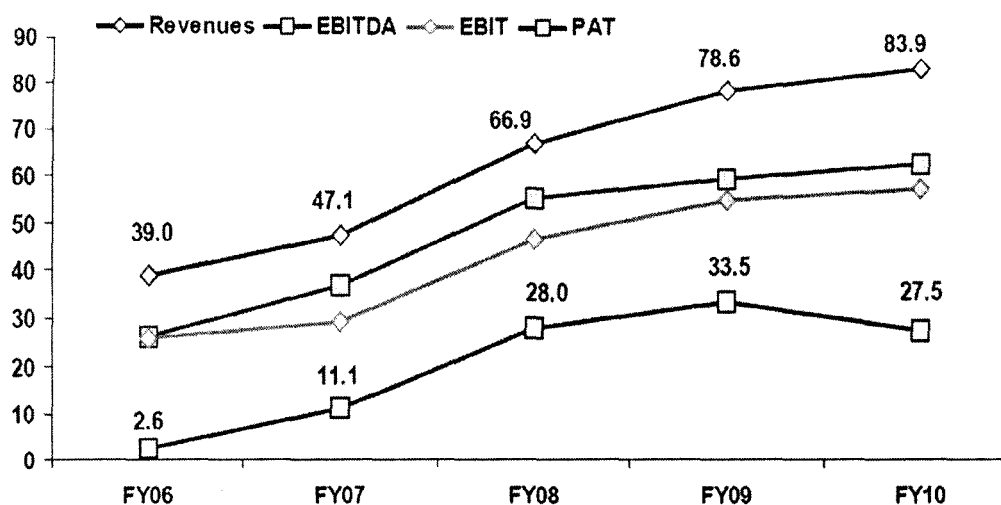
<sup>62</sup> DND Flyway rolls back toll tax hike, The Financial Express, 18-02-2011



All this while concessionaire continues to enjoy profits without any risk<sup>63</sup> as shown in Chart 4.6 And is almost sure of getting developmental rights on land, potentially worth billions of rupees after development, along with an extension of the concession period to 70 years!

**Chart 4.3: Earning and Profits of NTBCL**

(Rs. Crs)



Source: Annual Report of NTBCL.

No wonder the Delhi-Noida Toll bridge is seen as the model for PPP projects by developers, and as the project which confirmed the viability of PPPs in the road sector.<sup>64,65,66</sup> It is the only toll road to be listed on the stock exchange.

<sup>63</sup> Noida Toll Bridge sees FY12 profit up 40%, The Financial Express, 21-04-2011

<sup>64</sup> Noida toll bridge is a road to success, The Economic Times, 08-10-2007

<sup>65</sup> Downside restricted in Noida Toll: Ashish Chugh, moneycontrol.com, 06-07-2010

<sup>66</sup> Accumulate Noida Toll: Parag Parikh Financial Services, moneycontrol.com, 26-11-2010

## Chapter 5

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### Conclusions

India's post-Independence government undertook the mammoth task of building infrastructure in the country. Road connectivity between centers of major economic activity and rural and urban areas was a main concern of this endeavor. Since, private players were unwilling to take up road infrastructure projects due to the low profitability and long gestation periods involved, it was the government alone which was involved in building of roads. Direct budgetary outlays were used to finance the roads. But by the 1980s, it was becoming clear that the road infrastructure remained inadequate to attain the required socio-economic development. Also, the general argument was building up against a state directed economic strategy and in favour of de-regulation and privatization. The main part of this argument was the reduction of the fiscal deficit by curtailing government expenditure to achieve macro-economic balance.

The case was made for the reduction of government involvement in the economy especially in areas where private sector is willing to/potentially can enter. The government was expected to actively court the private investment in infrastructure projects. It was supposed to reduce the burdens on government finances and improve plan implementation by freeing the sector from bureaucratic red-tapism and delays. But since, private sector had been unwilling to invest in the road projects, a new mechanism were conceived –Public Private Partnerships. This was marketed as a win-win situation. The government will share risks of the road projects which will remove the hesitation of the private players and reduce the burden on the public budget. It will also provide concessions to bolster the profitability of the projects. In short, government will make it a priority to attract private investments in the road sector. Thus, shift to PPP was a result of the adoption of the strategy of liberalization, privatization and globalization rather than any proven superiority of the PPPs.

Despite all the efforts of the government at attracting private players for PPPs, the actual inflows have been much less than expectations. The roads and highways are primarily being built by public money and from borrowings by NHAI. And whatever

private investment has come, involves massive concessions on the part of the government to sweeten the deal.

The important point in PPPs is that, it depends on reducing risks and concessions to the private player. This could possibly negate the original argument in favour of PPPs that it will allow government to free up resources from road sector. In fact, the two case studies undertaken in this dissertation point to this outcome. Both projects were located in the metropolitan areas of high economic activities. But despite that private players were unwilling to take up the projects without substantial government concessions and guarantees. On its side, the government has been pushing for PPPs even when they are not financially viable. The government is not averse to changing the original plan of the projects itself to make it viable for the PPPs. This usually means awarding more stretches of roads to the private players, fixing higher tolls etc.

Government has chosen the BOT-Toll model in PPPs because it wants to minimize risks to itself. But what happens is that even private players are unwilling to take up those risks. In this case, ideally the government should have undertaken those projects despite risks. Rather, it has undertaken to attract private investments even if private players are unwilling to come. Therefore, it ends up giving not only various implicit and explicit concessions but guaranteed returns as well. These concessions are aimed at reducing revenue risk arising from inadequate traffic. This negates the whole point of preferring PPP through BOT-Toll model.

The concession period is often fixed for a longer time period than warranted by the costs and estimated returns involved. For this several manipulations of rules and procedures are done. Outdated traffic data are used either to over-project or under-project the traffic flow in such a way so as to provide maximum scope of windfall profits to the concessionaire.

Tolls are fixed at a higher level to ensure returns which have been calculated on inflated costs. PPPs clearly give incentives for inflating costs. There is also reason for private players preferring Toll based projects as it gives them maximum flexibility in recouping their costs and returns. PPPs have thus become an excuse for low cost-efficiency, maintenance etc as whatever be the cost, it can be recovered through user

charges. The PPPs have become another avenue of private profiteering rather than any superior model for plan implementation.

Then there is the crucial question of land use. The land is being handed over to the private players at no cost. The argument is that even if the government would have built the road, it would have not received any payments for land because it would have been a mere transfer of land from one department to another. But transferring land between government departments and to a private player are two different things. If instead of building roads the government had decided to sell the land to some real estate developer for some other purpose, then it would have earned a huge sum. There is an opportunity cost involved here which is not being accounted for in these decisions. And, in any case, private players are using land for real-estate development. Even if title of land is still being held by the government and it is to be handed back, it amounts to anarchy in the land use pattern and urban planning.

The government abdicates all responsibilities, but on paper, of maintaining and enforcing quality standards and rules etc. It is content to appoint independent consultants and auditors to carry out its work. This has resulted in several instances of concessionaires openly flouting the rules and commitments. The scope of the projects is decided in such a way that it includes only the bare minimum of what is actually required. When such deficiencies are revealed, it is left to the government, for which it again awards contracts to the private players. It becomes a mechanism of earning from the same project several times.

PPPs have also has become the means to take several government expenditures off the budget and present a rosy picture of the government's fiscal health. While detractors of public expenditure frown upon the budgetary support to public sector units engaged in road building, they are most welcoming of viability gap funding for private sector lead projects. For some reason, such government funding is not considered as an indicator of private sector inefficiency like in case of public sector. In fact, it turns out that in the case of government support or subsidies to the public sector the amount is usually much lower than in the case of support to the private sector. This is because the private sector demands a higher rate of return than the public sector, which

increases the amount of government support required to ensure adequate rate of returns to attract private players.

Concessionaires are always sure of inserting a re-negotiation clause in case of lower than expected profits. It usually has provisions for right to construct more road links or development rights on surplus lands or extra land as may be granted by government. But there are no re-negotiation clauses in case where concessionaire fails to fulfill its commitments or faulty project reports result in omissions of crucial construction works.

The involvement of the private sector was championed to bring the much needed competition by diluting the government monopoly in the road sector. But PPP projects are more likely to have some kind of anti-competition clauses which limits the scope of the construction of any competing infrastructure facilities in the vicinity. This has reduced PPPs to a means of establishing monopolies by the private players.

At the surface, the problem seems to lie in the faulty contracts which are so pro-concessionaire that they negate all supposed benefits accruing to the government. If only the concession agreements were framed by competent bureaucrats/authorities, it is argued, the PPPs could be a win-win situation. But the main problem lies in the whole shift towards the strategy of reducing government involvement in the crucial road sector and to make attracting private investment its priority.

And when attracting private investment has been made the only way for building infrastructure, it is but natural that the government will have to dance on the tunes of the private players. It will have to make the road projects “attractive” by granting various concessions and guarantees. The adoption of PPPs as a means of doing away with any scope for government to undertake road projects on its own is the basic problem in the whole approach. The government always faces a trade-off between risk allocation and moral hazard in the case of PPPs. In the end, neither risks to government are reduced nor is problem of moral hazard resolved. The government ends up undertaking all the risks and also providing grants to the private sector players who are free to manipulate project costs & impose user charges as per their whims and reap super profits.

This study has tried to examine these issues involved in PPPs projects through two case studies of BOT-Toll projects. Even though it is a limited sample from the large number of PPP projects undertaken so far, it provides crucial insights into the basic problems involved in the PPPs. They were ideal deals for the private players on any count as both of these projects are located in the metropolitan area where profitability if anything, was expected to increase over time. But they reveal that even in these supposedly lucrative projects the private sector is unwilling to participate unless substantial concessions are given. If this is true for projects located in areas of high economic activity then it must be truer for projects in remote areas of the country.

Based on these case studies it can be argued that, the appropriate way for the government will be to drop the use of PPPs as the default method of building road infrastructure. Government can invite private investments through PPPs but no concession should be given apart from some essential support, such as in land acquisitions etc. If the private players are willing to take up the project and bear the risks involved then well and good. Otherwise the government can undertake such projects work on its own using deficit financing. Since, deficit financing is being used for creating productive infrastructure which will result in higher economic growth; it will not face the problem of sustainability. It will be a legitimate way because government is already bearing all risks and costs of construction in the majority of the road projects which are not located near major industrial centers. Also, the automatic preference in favour of the BOT-Toll model in case of PPPs projects should be dropped. It is far better to undertake the project on BOT-Annuity basis, where tolls, if any, will be collected by the government while the private partner will be compensated through fixed annuity payments at fixed intervals. It provides better incentives for cost-minimization on the part of private players than the BOT-Toll model.

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## Appendix

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### Lengths covered under PPPs in various States (Status as on 30.04.2011)

STATE	Length of PPP (km)
Assam	0
Bihar	781.29
Chhattisgarh	144.1
Delhi	12.4
Goa	208
Gujarat	1027.41
H.P	6.69
Haryana	535.99
J & K	160.01
Jharkhand	279.8
Karnataka	1021.53
Kerala	444.9
M.P	767.08
Maharashtra	1458.22
Meghalaya	111.8
Orissa	318
Punjab	518.93

<b>Rajasthan</b>	980.907
<b>Tamil Nadu</b>	1816.2
<b>U.P</b>	1555.75
<b>Uttaranchal</b>	98
<b>W.B</b>	664.9
<b>Total</b>	<b>14316.584</b>

Source: NHAI

#### Number of PPPs under NHDP in various states

<b>STATE</b>	<b>No of PPPs</b>
<b>H.P</b>	1
<b>Delhi</b>	2
<b>Uttaranchal</b>	2
<b>Goa</b>	2
<b>Meghalaya</b>	2
<b>Jharkhand</b>	3
<b>Chattisgarh</b>	3
<b>J &amp; K</b>	4
<b>Orissa</b>	4
<b>Kerala</b>	6
<b>Punjab</b>	8

W.B	9
M.P	11
Haryana	11
Gujarat	12
Bihar	12
Rajasthan	13
Karnataka	15
Maharashtra	16
U.P	18
A.P	20
Tamil Nadu	25
<b>Total</b>	<b>199</b>

Source: NHAI

**Number of PPPs under NHDP in various Years\***

Year	No. of PPP Projects
1998	1
1999	1
2000	0

2001	2
2002	12
2003	1
2004	0
2005	30
2006	22
2007	13
2008	6
2009	27
2010	58
2011	10
<b>Total</b>	<b>183</b>

Source: NHAI

\* The difference in total number from the list of PPPs under NHDP in various states arises from the fact that if a stretch of road passes through more than one state it is counted under both states in the previous list.

## List and Details of the Projects under NHDP (Status as on 30.04.2011)

S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
1	Ahmedabad to Vadodara Section	Gujarat	8	102.3	2125.24	NHDP Phase V	Apr-2011	IRB Infrastructure Ltd.	BOT	Under Implementation
2	Kota - Jhalawar	Rajasthan	12	88.09	530.01	NHDP Phase III	Apr-2011	Keti Constructions Ltd.	BOT	Under Implementation
3	Reengus - Sikar	Rajasthan	11	43.887	333.51	NHDP Phase III	Mar-2011	G.R.Infraprojects Ltd.	Annuity	Under Implementation
4	Ranchi - Rangoon - Jamshedpur	Jharkhand	33	163.5	1479	NHDP Phase III	Mar-2011	Madhucon Projects Ltd.	Annuity	Under Implementation
5	6-Laning of Dhankuni-Khargpur Section	West Bengal	6	111.4	1396.18	NHDP Phase V	Feb-2011	Ashoka Buildcon Ltd.	BOT	Under Implementation
6	Gopalganj- Chhapra	Bihar	85	92	325	NHDP Phase III	Feb-2011	Abhijeet Infrastructure Ltd.	Annuity	Under Implementation
7	Krishnanagar - Berhampore	West Bengal	34	78	702.16	NHDP Phase III	Feb-2011	SEW Infra.	Annuity	Under Implementation
8	Barasat - Krishnanagar	West Bengal	34	84	867	NHDP Phase III	Feb-2011	Madhucon Projects Ltd.	Annuity	Under Implementation
9	Mugharia - Purnea	Bihar	31	140	664	NHDP Phase III	Feb-2011	Punj Lloyd Infrastructure Ltd.	Annuity	Under Implementation
10	Mothari-Raxaul (Approved Length 67 Km)	Bihar	28A	68.79	375.09	NHDP Phase III	Jan-2011	Tantia-Jiangsu (JV)	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
11	Patna - Bakhtiarpur	Bihar	30	50.6	574	NHDP Phase III	Dec-2010	BSC-C & C (JV)	BOT	Under Implementation
12	Raibariety to Allahabad	Uttar Pradesh	24B	119	291.36	NHDP Phase IV	Dec-2010	Vijay Infrastructure Ltd-Vijay Construction (JV)	BOT	Under Implementation
13	Aligarh - Kanpur	Uttar Pradesh	91	208	723.08	NHDP Phase IV	Dec-2010	Lanco Infratech Ltd.	BOT	Under Implementation
14	Four Lanning of Ludhiana- Talwandi section	Punjab	95	78	479	NHDP Phase III	Dec-2010	Essel Infra Projects Ltd. - Pan Indian Networks Ltd.	BOT	Under Implementation
15	Kanpur - Kabral	Uttar Pradesh	86	123	373.47	NHDP Phase IV	Nov-2010	PNC	BOT	Under Implementation
16	Agra - Aligarh	Uttar Pradesh	98	79	250.5	NHDP Phase IV	Nov-2010	JMC Project	BOT	Under Implementation
17	Panvel-Indapur	Maharashtra	17	84	942.69	NHDP Phase III	Oct-2010	Supreme Infrastructure India Ltd.- Mahavir Road & Infrastructure Pvt. Ltd.-China State Construction Engg. Maintenance Ltd.	BOT	Under Implementation
18	4 laning of Jetpur Somnath section of NH-8D (approved length 127.6)	Gujarat	8D	123.45	828	NHDP Phase III	Sep-2010	IDFC-PLUS Expressway Berhad Consortium	BOT	Under Implementation
19	Srinagar to Barahat	Jammu Kashmir	1A	67.76	1100.7	NHDP Phase II	Sep-2010	Ramky Infra and JPTEG	Annuity	Under Implementation
20	2 Laning of Muzaffarpur - Sonbarsa (Approved Length 89 Km)	Bihar	77	86	511.54	NHDP Phase III	Jul-2010	BSCPL-C&C (JV)	Annuity	Under Implementation
21	4 Laning of Belgaum-Khanpur Section (Km 0.00 to Km 30.00) and 2 Laning with paved shoulders of Khanpur-Knt/Sou. border. (Km. 30.00 to	Karnataka	4A	81.89	359	NHDP Phase III	Jul-2010	M/s GVR Infra Projects-RMN Infrastructure Ltd	BOT	Under Implementation
22	Bhubneshwar-Puri (Approved Length 59 Km)	Orissa	203	67	500.29	NHDP Phase III	May-2010	KSS-Vatecha (Bhubneshwar Expressway Pvt. Ltd.)	BOT	Under Implementation



S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
23	4 Lining of Chappra-Hajipur(Approved Length 153 Km)	Bihar	19	65	575	NHDP Phase III	May-2010	M/s Madhucon Projects Ltd	Annuity	Under Implementation
24	Chitradurga - Tumkur Bypass(Approved Length 145 Km)	Karnataka	4	114	839	NHDP Phase V	May-2010	M/s IRB Infrastructure Developer Ltd	BOT	Under Implementation
25	Chenani-Nashri	Jammu Kashmir	1A	12	2159	NHDP Phase II	May-2010	IL & PS Transportation Networks Ltd	Annuity	Under Implementation
26	4 Lining of Barhi - Hazaribagh(Approved Length 40 Km)	Jharkhand	33	41.314	398	NHDP Phase III	May-2010	M/s Ashijeet Infrastructure Ltd-Corporate Ispat Alloy Ltd(JV)	BOT	Under Implementation
27	2 Lining of Mokama-Munger(Approved Length 70 Km)	Bihar	80	69.27	351.54	NHDP Phase III	May-2010	M/s BSCPL - C & C Consortium	Annuity	Under Implementation
28	4/6 Lining of Maharashtra/Goa Border - Panaji Goa/KNT Border	Goa	17	139	1872	NHDP Phase III	May-2010	IVRCL Infrastructure & Projects Ltd	BOT	Under Implementation
29	2 Lining of Dindigul-Perikulam-Theni-Kumili	Tamil Nadu	220	134	485	NHDP Phase III	May-2010	Transstroy-OJSC Consortium Ltd	Annuity	Under Implementation
30	4 Lining of Nagpur Betul	Madhya Pradesh[120]/Maharashtra[56.3]	69	176.3	2498.76	NHDP Phase IV	May-2010	M/s Oriental Structural Engineers Pvt Ltd- Continental Engineers Ltd	Annuity	Under Implementation
31	Shilong-Bypass	Meghalaya	40 & 44	50	226	SARDP-NE	May-2010	M/s GR-Chetak(JV)	Annuity	Under Implementation
32	Six Lining of Hosur-Krishnagiri	Tamil Nadu	7	59.87	535	NHDP Phase V	May-2010	Reliance Infrastructure Ltd	BOT	Under Implementation
33	KNT/Kerala Border to Kamsur Section(Approved Length 286.3)	Kerala	17	126.6	1157.16	NHDP Phase III	May-2010	M/s Transstroy-OJSC Consortium	BOT	Under Implementation
34	Delhi - Agra(Approved Length 180.3 Km)	Haryana[74]/Uttar Pradesh[105.5]	2	179.5	1928.22	NHDP Phase V	May-2010	M/s Reliance Infrastructure Ltd	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
35	Six Lining of Nellore-Chilikalipet	Andhra Pradesh	5	183.52	1535	NHDP Phase V	May-2010	KMC-BSCPL Consortium	BOT	Under Implementation
36	2 Lining of Forbesganj-Jogwani(Approved Length 13 Km)	Bihar	57A	2.258	73.55	NHDP Phase III	May-2010	M/s GPT-RDS Consortium Ltd	Annuity	Under Implementation
37	Jorbat-Barapani	Meghalaya	40	61.8	536	SARDP-NE	May-2010	M/s ILFS-Ramkey	Annuity	Under Implementation
38	Belgaum-Dharwad(Approved Length 111 Km)	Karnataka	4	80	480	NHDP Phase V	May-2010	Ashoka Buildcon	BOT	Under Implementation
39	Two Lining of Trichy - Karaikudi and Trichy Bypass(Approved Length 100 Km)	Tamil Nadu	210 & 67	110.372	374	NHDP Phase III	May-2010	Transstroy Ltd OJSC Consortium	Annuity	Under Implementation
40	Bhopal-Sanchi(Approved Length 40 Km)	Madhya Pradesh	86E*	53.78	209	NHDP Phase III	May-2010	Pratibha Industries-Abhyuday Housing Construction Ltd	Annuity	Under Implementation
41	Sambalpur-Baragarh-Chattisgarh/Orrisa Border	Orissa	6	88	909	NHDP Phase III	May-2010	M/s Ashoka Buildcon Ltd-(Ashoka Sambalpur Baragarh Expressway Pvt. Ltd.)	BOT	Under Implementation
42	Quazigund-Banihal	Jammu Kashmir	1A	15.25	1987	NHDP Phase II	Apr-2010	Navyuga Engineering Co. Ltd.	Annuity	Under Implementation
43	Jammu - Udhampur	Jammu Kashmir	1A	65	1813.76	NHDP Phase II	Apr-2010	Shaboorji & Paloni Co. Ltd.	Annuity	Under Implementation
44	Deoli - Kota	Rajasthan	12	83	593	NHDP Phase III	Apr-2010	GVK Development Projects Pvt Ltd	BOT	Under Implementation
45	Tirupati -Tiruthani - Chennai(Approved Length 125.5 Km)	Tamil Nadu[61.47]/Andhra Pradesh[63.23]	205	124.7	571	NHDP Phase III	Apr-2010	Transstroy -OJSC Consortium(JV)	BOT	Under Implementation
46	Varanasi-Aurangabad	Bihar[135]/Uttar Pradesh[57.4]	2	192.4	2648	NHDP Phase V	Apr-2010	Isolux Sonix Consortium	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (in Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
47	Six Laning of Chandikhol-Jagatpur-Bhubaneswar(Approved Length 61 Km)	Orissa	5	67	1047	NHDP Phase V	Apr-2010	SREI-Simplex-Galfar Consortium(Sivree Jagannath Expressway pvt.ltd.)	BOT	Under Implementation
48	Rimoli - Roxy - Rajamunda(Approved Length 163Km)	Orissa	215	96	586	NHDP Phase III	Apr-2010	MBL-SREI	BOT	Under Implementation
49	Devihalli-Hassan(Approved Length 73 Km)	Karnataka	48	77.23	453	NHDP Phase III	Apr-2010	Larsen & Toubro Ltd.	BOT	Under Implementation
50	Bareilly - Sitapur(Approved Length 134 Km)	Uttar Pradesh	24	151.2	1046	NHDP Phase III	Apr-2010	ERA-SIBMOST	BOT	Under Implementation
51	Indore-Dewas(Approved Length 55 Km)	Madhya Pradesh	3	45.05	325	NHDP Phase V	Mar-2010	DLF-Gayatri	BOT	Under Implementation
52	Six Laning of Krishnagiri-walajahpet section	Tamil Nadu	46	148.3	1250	NHDP Phase V	Mar-2010	Larsen & Toubro Ltd.	BOT	Under Implementation
53	4 Laning of Faraka-Raiganj	West Bengal	34	103	1078.84	NHDP Phase III	Feb-2010	Hindustan Construction Company Ltd.	BOT	Under Implementation
54	4 Laning of Raiganj-Dalkola	West Bengal	34	50	580.43	NHDP Phase III	Feb-2010	Hindustan Construction Company Ltd.	BOT	Under Implementation
55	Bijapur - Hungund Section (Approved Length 194 Km)	Karnataka	13	97.22	748	NHDP Phase III	Feb-2010	SEL-MCL Consortium	BOT	Under Implementation
56	Upgradation of Hyderabad-Bangalore Section	Karnataka	7	22.12	680	NHDP Phase VII	Feb-2010	Navayuga Engrg Co.Ltd	BOT	Under Implementation
57	Hungund-Hospet (Approved Length 194 Km)	Karnataka	13	97.89	946	NHDP Phase III	Feb-2010	GMR-OSE Consortium	BOT	Under Implementation
58	4 Laning of Brahampore-Faraka	West Bengal	34	103	998.79	NHDP Phase III	Feb-2010	Hindustan Construction Company Ltd.	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (in Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
59	Rohtak - Bawal(Approved Length 97 Km)	Haryana	71	82.553	650	NHDP Phase III	Feb 2010	JMC SREI(JV)	BOT	Under Implementation
60	Panipat - Rohtak(Approved Length 73 Km)	Haryana	71A	80.858	807	NHDP Phase III	Jan-2010	Sadbhav Engineering Ltd	BOT	Under Implementation
61	Kandla - Mundra Port(Approved Length 73 Km)	Gujarat	8A	71.4	953.88	NHDP Phase III	Jan-2010	Reliance Infra Projects Ltd.	BOT	Under Implementation
62	Panji-Goa/Karnataka Border	Goa	4A	69	471	NHDP Phase III	Jun-2010	IRB-MRM Consortium	BOT	Under Implementation
63	Semaikhal-Gandhidham	Gujarat	8A	56.16	805.39	NHDP Phase V	Jan-2010	Larsen & Toubro Ltd.	BOT	Under Implementation
64	Pune - Satara(Approved Length 145)	Maharashtra	4	140.35	1724.55	NHDP Phase V	Jan-2010	Reliance Infrastructure Ltd -JTEG Consortium	BOT	Under Implementation
65	Charthala-ochira	Kerala	47	83.6	1535	NHDP Phase III	Jan-2010	ISOLUX-SOMA	BOT	Under Implementation
66	Chengapalli to Coimbatore Bypass and End of Coimbatore Bypass to TN/Kerala Border	Tamil Nadu	47	54.83	852	NHDP Phase II	Jan-2010	IVRCL Infrastructure & Projects Ltd	BOT	Under Implementation
67	4 Laning of Ahmedabad to Godhara (Approved Length 210 Km)	Gujarat	59	117.6	1008.5	NHDP Phase III	Jan-2010	ESSEL Infra & CR-18 Consortium	BOT	Under Implementation
68	4 Laning of Godhara to Gujarat /MP Border(Approved Length 210 Km)	Gujarat	59	87.285	785.5	NHDP Phase III	Jan-2010	BSPCL Ltd	BOT	Under Implementation
69	Muzaffarnagar - Haridwar (Approved Length 77 )	Uttar Pradesh[21]/Uttaranchal [59]	58, 72	80	754	NHDP Phase III	Dec-2009	ERA-SIBMOST	BOT	Under Implementation
70	Haridwar - Dehradun (Approved Length 69)	Uttaranchal	72	39	478	NHDP Phase III	Dec-2009	ERA - SIBMOST(JV)	Annuity	Under Implementation

S.No.	Stretch	State	NH No.	Total Length (in Km)	TPC (Rs Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
71	Hyderabad-Yadgiri (Approved Length 30)	Andhra Pradesh	202	35.65	388	NHDP Phase III	Dec-2009	Sadbhav Engineering Ltd. (Hyderabad-Yadgiri Tollways Pvt. Ltd.)	BOT	Under Implementation
72	Indore-Jhabua-Gujrat/MP (Approved Length 168)	Madhya Pradesh	59	155.15	1175	NHDP Phase III	Dec-2009	IVRCL Infrastructure Projects Ltd.	BOT	Under Implementation
73	Muradabad-Bareilly (Approved Length 112)	Uttar Pradesh	24	121	1267	NHDP Phase III	Dec-2009	IL & FS Transportation Ltd.	BOT	Under Implementation
74	Ghaziabad-Aligarh (Approved Length 106)	Uttar Pradesh	91	126	1141	NHDP Phase III	Dec-2009	SREI - PNC - GALFAR Consortium	BOT	Under Implementation
75	Patna- Muzzaffarpur	Bihar	19 & 77	63	671.3	NHDP Phase III	Nov-2009	Gammon Infrastructure Ltd	Annuity	Under Implementation
76	Kundapur-Surathkal & Mangalore-KNT/Kerala Border	Karnataka	17	90	671	NHDP Phase III	Nov-2009	Navayuga - KPCL Consortium	BOT	Under Implementation
77	Jaipur-Reengus (Approved Length 52.65 Km)	Rajasthan	11	54	267.81	NHDP Phase III	Oct-2009	RIL-AAA- JTEG Consortium	BOT	Under Implementation
78	Jaipur-Tonk - Deoli (Approved Length 148.77 Km)	Rajasthan	12	150	792.06	NHDP Phase III	Oct-2009	IRB-MRM Consortium	BOT	Under Implementation
79	Talegaon-Amravati (Approved Length 55Km)	Maharashtra	6	67.8	567	NHDP Phase III	Aug-2009	IRB-MRM Consortium	BOT	Under Implementation
80	Hazaribagh Ranchi	Jharkhand	33	75	625.07	NHDP Phase III	Aug-2009	ITNL-Punj Lloyd Ltd (JV) (Hazaribagh Ranchi Express way Ltd)	Annuity	Under Implementation
81	Four laning from MP/Maharashtra border to Nagpur I/C Kamptee Kanon and Nagpur bypass	Maharashtra	7	95	1170.52	NHDP Phase II	Aug-2009	Oriental Structural Engineers Ltd.	BOT	Under Implementation
82	Pune-Sholapur Pkg-II (Approved Length I & II 170 Km)	Maharashtra	9	105	835	NHDP Phase III	Aug-2009	IL & FS Transportation Network Ltd	BOT	Under Implementation

S.No.	Stretch	State	NH No.	Total Length (in Km)	TPC (Rs Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
83	4-laning of Kannur Vengalem Kuttipuram (Package -I)	Kerala	17	83.2	1366	NHDP Phase III	Jul-2009	KMC Construction Ltd.	BOT	Under Implementation
84	4-laning of Kannur Vengalem Kuttipuram (Package -II)	Kerala	17	81.5	1312	NHDP Phase III	Jul-2009	KMC Construction Ltd.	BOT	Under Implementation
85	Amritsar - Pathankot (Approved Length 101Km)	Punjab	15	106	705	NHDP Phase III	Jul-2009	IRB-MRM Pvt Ltd.	BOT	Under Implementation
86	Armur to Kadloor Yellareddy (NS-2/AP-1) (Approved Length 80.25)	Andhra Pradesh	7	59	390.56	NHDP Phase II	May-2009	Navayuga KPCL Consortium	BOT	Under Implementation
87	Hyderabad-Vijayawada	Andhra Pradesh	9	181.63	1740	NHDP Phase III	May-2009	GMR-Punj LLOYD Consortium (GMR-Hyderabad Vijayawada Expressway Pvt. Ltd.)	BOT	Under Implementation
88	Kishangarh-Ajmer-Beawar	Rajasthan	8	82	795	NHDP Phase III	Apr-2009	Isolux-Soma Consortium	BOT	Under Implementation
89	Cuddapah-Mydukur-Kurnool	Andhra Pradesh	18	188.752	1585	NHDP Phase III	Feb-2009	KMC Construction Ltd. - IVRCL Consortium	BOT	Under Implementation
90	Six laning of Vadakkancherry - Thrissurection	Kerala	47	30	617	NHDP Phase II	Feb-2009	KMC Construction Ltd. - CRIRG Consortium	BOT	Under Implementation
91	Gujrat/Maharashtra Border-Surat - Hazira Port Section	Gujarat	6	132.9	1509.1	NHDP Phase III	Feb-2009	Isolux-Soma Consortium (JV)	BOT	Under Implementation
92	Pune-Sholapur Pkg-II (Approved Length Pkg I & II 170 Km)	Maharashtra	9	110.05	1110	NHDP Phase III	Feb-2009	Navinya Buildcon-Atlantis Spa (JV)	BOT	Under Implementation
93	MP/Maharashtra Border-Dhule	Maharashtra	3	98	835	NHDP Phase III	Jan-2009	Hindustan Construction Company Ltd. - Laing-Sadbhav Consortium	BOT	Under Implementation
94	Pimpalgaon - Nasik - Gonde	Maharashtra	3	60	940	NHDP Phase III	Jan-2009	Larsen & Toubro Ltd. - ABL Consortium	BOT	Under Implementation

S.No.	Stretch	State	NH No.	Total Length (in Km)	TPC (Rs Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
95	New 4-Lane Elevated Road from Chennai Port - Madhavroyal	Tamil Nadu	4	19	1655	NHDP Phase VII	Jan-2009	Chennai Elevated Tollway std	BOT	Under Implementation
96	Badarpur Elevated Highways	Delhi[2.7]/Haryana[1.7]	2	4.4	340	NHDP Phase V	Jun-2008	BFTL	BOT	4 LANED
97	Surat - Dahisar (Six lane)	Gujarat[118.2]/Maharashtra[120.77]	8	239	1693.75	NHDP Phase V	Feb-2008	IRB Infrastructure Developers Ltd.- Deutsche Bank AG	BOT	Under Implementation
98	Panipat - Jalandhar (Six lane)	Haryana[116]/Punjab[175.1]	1	291	2288	NHDP Phase V	Feb-2008	Isolux Corsan Concessionaires Sa - Corsan Corviam Constructions SA - Soma Enterprise Ltd	BOT	Under Implementation
99	Chennai - Tada (Six lane)	Tamil Nadu	5	43.4	353.37	NHDP Phase V	Feb-2008	Larsen & Toubro Ltd.	BOT	Under Implementation
100	Gurgaon - Kotputli - Jaipur (Six lane)	Haryana[64.3]/Rajasthan [161.3]	8	225.6	1673.7	NHDP Phase V	Feb-2008	Emirates Trading Agency LLC - KMC Construction Ltd.	BOT	Under Implementation
101	Chilikaluripet - Vijayawada (Six lane)	Andhra Pradesh	5	82.5	572.3	NHDP Phase V	Feb-2008	IJM Corporation Berhad - IDFC Ltd.	BOT	Under Implementation
102	Khalghat - MP/Maharashtra Border	Madhya Pradesh	3	82.8	549	NHDP Phase III	Oct-2007	Navyuga Engineering Co. Ltd.	BOT	Under Implementation
103	Amritsar - Wagha border	Punjab	1	35.93	205.88	NHDP Phase III	Aug-2007	Rohan Builders Pvt. Ltd. - Rajdeep Buildcon Pvt. Ltd. - IDFC Ltd. Consortium	Annuity	4 LANED
104	Delhi/Haryana Border to Rohtak	Haryana	10	63.49	486	NHDP Phase III	Jul-2007	KCT - ERA consortium	BOT	Under Implementation
105	Neelamangala Junction on NH 4 with NH 48 to Devihalli	Karnataka	48	81	441	NHDP Phase III	Apr-2007	Lanco Devihalli Highways Pvt. Ltd.	BOT	Under Implementation
106	Islam Nagar to Kadial (NS-2/BOT/AP-7)	Andhra Pradesh	7	53.01	548.83	NHDP Phase II	Mar-2007	Patel - KNR (JV)	Annuity	4 LANED

S.No.	Stretch	State	NH No.	Total Length (in Km)	TPC (Rs Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
107	Salem-Ulundrupet (BOT-1/TN-06)	Tamil Nadu	68	136.357	941	NHDP Phase III	Mar-2007	Reliance Energy Limited	BOT	Under Implementation
108	Trichy - Dindigul	Tamil Nadu	45	88.273	576	NHDP Phase III	Mar-2007	Reliance Energy Limited	BOT	Under Implementation
109	Trichy - Karur	Tamil Nadu	67	79.7	516	NHDP Phase III	Mar-2007	Reliance Energy Limited	BOT	Under Implementation
110	Banglore - Neelamangala	Karnataka	4	19.5	445	NHDP Phase III	Mar-2007	Navyuga Engineering Co. Ltd.	BOT	4 LANED
111	Pondicherry - Tindivanam	Tamil Nadu	66	38.61	285	NHDP Phase III	Mar-2007	Maytas - NCC Consortium	BOT	Under Implementation
112	Zirakpur - Parwanoo	Haryana[20]/Himanchal Pradesh[6.69]/Punjab[2]	22	28.69	295	NHDP Phase III	Feb-2007	Jaiprakash Associates-(Himalyan Expressways Pvt. Ltd.)	BOT	Under Implementation
113	Banglore-Hoskote-Mudbagal Section	Karnataka	4	79.724	565	NHDP Phase III	Feb-2007	Lanco Hoskote Highway Pvt. Ltd.	BOT	Under Implementation
114	Lakhnadon to MP/MH Border (NS-1/BOT/MP-3)	Madhya Pradesh	7	56.475	407.6	NHDP Phase II	Jan-2007	Sadhav - SREI (JV)	Annuity	Under Implementation
115	Kadal to Armur (NS-2/BOT/AP-8)	Andhra Pradesh	7	31	271.73	NHDP Phase II	Dec-2006	Hindustan Construction Company Ltd.	Annuity	4 LANED
116	MH/AP border to Islam Nagar (NS-2/BOT/AP-6)	Andhra Pradesh	7	54.6	360.42	NHDP Phase II	Dec-2006	SOMA - Avinash Consortium	Annuity	4 LANED
117	Kurali - Kiratpur	Punjab	21	42.9	309	NHDP Phase III	Dec-2006	BSCPL - C & C Consortium	BOT	Under Implementation
118	End of Durg Bypass - Chattisgarh / Maharashtra Border	Chattisgarh	6	82.685	464	NHDP Phase III	Dec-2006	Ashoka - IDFC Consortium	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs. Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
119	Chattisgarh / Maharashtra Border Wainganga Bridge	Maharashtra	6	80	474	NHDP Phase III	Dec-2006	Ashoka - IDFC Consortium	BOT	4 LANED
120	Bharuch to Surat Package BOT- II (Six lane) 48.32(Six lane completed) 16.68 (Four lane completed)	Gujarat	8	65	492	NHDP Phase V	Jul-2006	IDAA Infrastructure Pvt. Ltd.	BOT	4 LANED
121	Vadodara to Bharuch Package BOT-1 (Six lane)	Gujarat	8	83.3	660	NHDP Phase V	Jul-2006	Larsen & Toubro Badodara Bharuch Tollway Limited	BOT	6 LANED
122	Gwalior Bypass (NS-1/BOT/MP-1)	Madhya Pradesh	75, 3	42	300.93	NHDP Phase II	May-2006	Ramky - Era - Shriram Consortium	Annuity	Under Implementation
123	Gwalior - Jhansi	Madhya Pradesh[68.5]/Uttar Pradesh[11.5]	75	80	604	NHDP Phase II	May-2006	DSC - Apollo consortium	Annuity	Under Implementation
124	Lakhnadon to MP/MH Border (NS-1/BOT/MP-2)	Madhya Pradesh	7	49.35	263.17	NHDP Phase II	Apr-2006	Navabharat - Ferro Alloys Ltd.(Malaxmi Highways pvt. Ltd.)	Annuity	Under Implementation
125	Jhansi to Lalitpur (NS-1/BOT/UP-3)	Uttar Pradesh	26	49.3	276.09	NHDP Phase II	Apr-2006	Gayatri - IDFC Consortium	Annuity	Under Implementation
126	Jhansi to Lalitpur (NS-1/BOT/UP-2)	Uttar Pradesh	25, 26	49.7	355.06	NHDP Phase II	Apr-2006	Gayatri - IDFC Consortium	Annuity	Under Implementation
127	AP/Karnataka border- Nandi Hill Crossing & Devenhalli to Meenu Kunte Village	Karnataka	7	61.38	402.8	NHDP Phase II	Apr-2006	Patel - KNR Infrastructure Pvt. Ltd. (JV)	Annuity	4 LANED
128	Gorakhpur Bypass	Uttar Pradesh	28	32.6	600.24	NHDP Phase II	Apr-2006	Gammon India Ltd. - GIPL - ATSL Consortium	Annuity	Under Implementation
129	Kosi Bridge including approaches and Guide Bond & Afflux Bond (BR-5)	Bihar	57	10.63	418.04	NHDP Phase II	Apr-2006	Gammon India Ltd. - GIPL Consortium	Annuity	Under Implementation
130	Thanjavur - Trichy	Tamil Nadu	67	56	280	NHDP Phase III	Feb-2006	Madhucan Projects Ltd.	BOT	Under Implementation

S.No.	Stretch	State	NH No	Total Length (In Km)	TPC (Rs. Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
131	Madurai-Arunkottai-Tuticorin	Tamil Nadu	45B	128.16	629	NHDP Phase III	Feb-2006	Madhucan Projects Ltd. - SREI - Madhucan granites Ltd (JV)	BOT	Under Implementation
132	Ulundurpet - Padalur (Pkg- VI-B)	Tamil Nadu	45	93.89	460	NHDP Phase II	Feb-2006	JM - Sapoorji Pallonji (JV) (Trichy tollway Pvt. Ltd.)	BOT	4 LANED
133	Tindivanam - Ulundurpet (Pkg- VI-A)	Tamil Nadu	45	72.9	480	NHDP Phase II	Feb-2006	GMR Infrs. Ltd. - GMR Energy Ltd.(GMR Ulundurpet Expr. Pvt. Ltd.)	BOT	4 LANED
134	Padalur - Trichy (Pkg - VI-C)	Tamil Nadu	45	38.427	320	NHDP Phase II	Feb-2006	Navayuga - Indu - Abhishek Consortium (Indu Navayuga Infrs. Pvt. Ltd.)	BOT	4 LANED
135	Hyderabad Bangalore section (NS-2/BOT/AP-5)	Andhra Pradesh	7	74.65	592	NHDP Phase II	Feb-2006	IL & PS CTNL Consortium (Andhra Pradesh Expressway Ltd.)	Annuity	4 LANED
136	Palanpur to Swaroopganj (Rajasthan - 42 km & Gujarat-34 km)	Rajasthan[42]/Gujarat[34]	14	76	498	NHDP Phase II	Dec-2005	Larsen & Toubro Ltd., ECC Division	Annuity	4 LANED
137	Barsa to Orai	Uttar Pradesh	2, 25	62.8	465	NHDP Phase II	Dec-2005	NCC - KMC Consortium	Annuity	4 LANED
138	Kadloor Yellareddy to Gundla Pochampalli (NS-2/BOT/AP-2)	Andhra Pradesh	7	85.74	490	NHDP Phase II	Dec-2005	GMR Infrastructure Ltd - GMR Energy Ltd. Consortium	Annuity	4 LANED
139	Elevated Highway from Silk board junction to electronic city junction	Karnataka	7	9.98	450	NHDP Phase III	Dec-2005	SOMA - NCC - MAYTAS Consortium	BOT	4 LANED
140	Farukhanagar to Kottakata (NS-2/AP-3)	Andhra Pradesh	7	46.162	255	NHDP Phase II	Sep-2005	GMR Energy Ltd. & GMR Infrastructure Ltd. Consortium (GMR Jachherla Expressways Pvt. Ltd.)	BOT	4 LANED
141	Salem to Kerala Border Section (TN-7)	Tamil Nadu	47	48.51	379.8	NHDP Phase II	Sep-2005	IVRCL Infrastructure Projects Ltd. (Kumar Palayam Tollway Ltd.)	BOT	4 LANED
142	Krishnagiri to Thoppughat (NS-2/TN1)	Tamil Nadu	7	67.5	372.7	NHDP Phase II	Sep-2005	Larsen & Toubro Ltd. (M/S L & T Krishnagiri Thoppughat Toll Road Pvt. Ltd.)	BOT	4 LANED

S.No.	Stretch	State	NH No	Total Length (in Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
143	Karur to Madurai (TN-4)	Tamil Nadu	7	68.125	327.2	NHDP Phase II	Sep-2005	Madhucon Projects Ltd. - SREI [TN(DK) Expressways Ltd.]	BOT	4 LANED
144	Salem to Karur (NS-2/TN-3)	Tamil Nadu	7	33.48	205.6	NHDP Phase II	Sep-2005	Reliance Energy Ltd. [NK Toll Road Ltd.]	BOT	4 LANED
145	Thirissur to Angamali (KL-1)	Kerala	47	40	312.5	NHDP Phase II	Sep-2005	KMC Construction Ltd. - SREI (JV) [Guruvayoor Infrastructure Pvt. Ltd.]	BOT	Under Implementation
146	Farukhanagar to Kotakatta (NS-2/AP-4)	Andhra Pradesh	7	55.74	302	NHDP Phase II	Sep-2005	Larsen & Toubro Ltd. (L & T Western Andhra Tollways Pvt. Ltd.)	BOT	4 LANED
147	Salem to Karur (NS-2/TN-2)	Tamil Nadu	7	41.55	253.5	NHDP Phase II	Sep-2005	MVR - MRK - JTEC (JV) [MVR Infrastructure & Tollway Pvt. Ltd.]	BOT	4 LANED
148	Salem to Kerala Border Section (TN-6)	Tamil Nadu	47	53.525	469.8	NHDP Phase II	Sep-2005	IVRCL Infrastructure Projects Ltd. (Salem Tollways Ltd.)	BOT	4 LANED
149	Nagpur - Kondhali	Maharashtra	6	40	168	NHDP Phase III	Sep-2005	Atlanta - SREI Consortium (JV)	BOT	Under Implementation
150	Karur to Madurai (TN-5)	Tamil Nadu	7	53.025	283.5	NHDP Phase II	Sep-2005	Reliance Energy Ltd. [D5 Toll Road Ltd.]	BOT	4 LANED
151	Sitapur - Lucknow	Uttar Pradesh	24	75	322	NHDP Phase III	Aug-2005	Apollo(UK) - JLI(UK) - DSC(Indian) - LOR(UK) Consortium	BOT	Under Implementation
152	Kondhali - Telegaon	Maharashtra	6	50	212	NHDP Phase III	Aug-2005	Oriental Structural Engineers Pvt. Ltd. Delhi Brass Consortium	BOT	4 LANED
153	Agra - Bharatpur	Uttar Pradesh[24,75]/Rajasthan[20,25]	11	45	195	NHDP Phase III	Jul-2005	Oriental Structural Engineers Pvt. Ltd. Delhi Brass Consortium	BOT	4 LANED
154	Indore-Khajhat	Madhya Pradesh	3	80	472	NHDP Phase III	Jul-2005	Oriental Structural Engineers Pvt. Ltd. Delhi Brass Consortium	BOT	4 LANED

S.No.	Stretch	State	NH No	Total Length (in Km)	TPC (Rs.Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
155	Ambala - Zirakpur	Haryana[6]/Punjab[30]	21, 22	36	298	NHDP Phase III	Jun-2005	GMR Energy Ltd. & GMR Infrastructure Ltd. Consortium	BOT	4 LANED
156	Gonde-Vadape (Thane)	Maharashtra	3	100	579	NHDP Phase III	Jun-2005	Gammon India Ltd. - Sadbhav - Billimoria Consortium	BOT	Under Implementation
157	Panipat Elevated Highway	Haryana	1	10	270	NHDP Phase II	Jun-2005	Larsen & Toubro Ltd.	BOT	4 LANED
158	Jalandhar - Amritsar	Punjab	1	49	263	NHDP Phase III	May-2005	IVRCL Infrastructure Projects Ltd.	BOT	4 LANED
159	Mnerut-Muzaffarnagar	Uttar Pradesh	58	79	359	NHDP Phase III	Mar-2005	Nagarjuna Construction Co. Ltd. - MAYTAS Consortium	BOT	Under Implementation
160	Rajkot Bypass & Gondal Jctpur (Package VII)	Gujarat	8B	36	388.09	NHDP Phase II	Mar-2005	West Gujrat Expressway Ltd.	BOT	4 LANED
161	Dhule - Pimpalgaon	Maharashtra	3	118	556	NHDP Phase III	Mar-2005	IRCON-SOMA Consortium	BOT	4 LANED
162	Aurang - Raipur	Chhattisgarh	6	43.485	190	NHDP Phase III	Mar-2005	Apollo(UK) - JLI(UK) - DSC(Indian) - LOR(UK) Consortium	BOT	Under Implementation
163	Mahua-Jaipur	Rajasthan	11	108	483	NHDP Phase III	Mar-2005	JMTP(L) Corporation Project	BOT	4 LANED
164	Bharatpur-Mahua	Rajasthan	11	57	250	NHDP Phase III	Mar-2005	Madhucon Projects Ltd. - SREI	BOT	4 LANED
165	Guna Bypass	Madhya Pradesh	3	14	46	NHDP Phase III	Feb-2005	Guna Infrastructure Ltd.	BOT	4 LANED
166	Mahapura (near Jaipur) - Kishangarh (E Lane)	Rajasthan	8	90.38	644	NHDP Phase I	Apr-2003	Consortium of GVK International-BSCPL	BOT	4 LANED

S.No.	Stretch	State	NH No.	Total Length (In Km)	TPC (Rs. Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
167	Palsit - Dankuni	West Bengal	2	65	432.4	NHDP Phase I	Oct-2002	Consortium of Gomuda (Malaysia) & WCT Engineering (Malaysia)	Annuity	4 LANED
168	Nellore Bypass	Andhra Pradesh	5	17.166	143.2	NHDP Phase I	Oct-2002	Consortium of Some Enterprises & Navayuga Engg. Co. Ltd.	Annuity	4 LANED
169	Vivekananda Bridge and Approach	West Bengal	2	6	641	NHDP Phase I	Sep-2002	SVBTG Consortium of Pacific Alliance Inc - PBIDC - STRADEL Inc - CES & L & T	BOT	4 LANED
170	Panagarh - Palsit	West Bengal	2	64.457	350	NHDP Phase I	Jun-2002	Gamuda Malaysia - WCT Malaysia	Annuity	4 LANED
171	Tumkur - Neelmangala	Karnataka	4	32.5	155	NHDP Phase I	Jun-2002	Jas Toll Road Co. Ltd. (Consortium of Jayaswals - Ashoka Buildcon-SERI Intl.)	BOT	4 LANED
172	Maharashtra Border-Belgaum	Karnataka	4	77	332	NHDP Phase I	Jun-2002	North Karnataka Expressway Pvt. Ltd. (Consortium of IL & FS - Panj Lloyd - CTNL)	Annuity	4 LANED
173	Ankapalli - Tuni	Andhra Pradesh	5	58.947	283.2	NHDP Phase I	May-2002	GMR-Tuni-Ankapalli Express Ltd.	Annuity	4 LANED
174	Tuni - Dhamavaram (AP-16)	Andhra Pradesh	5	47	231.3	NHDP Phase I	May-2002	Andhra Expressway Limited	Annuity	4 LANED
175	Tambaram - Tindivanam	Tamil Nadu	45	93	375	NHDP Phase I	May-2002	Tambaram-Tindivanam Express way Pvt. Ltd. (Consortium of GMR Consortium & UE Malaysia)	Annuity	4 LANED
176	Dhamavaram - Rajahmundry (AP-15)	Andhra Pradesh	5	53	206	NHDP Phase I	May-2002	Rajahmundry Expressway Ltd. - Gammon (JV)	Annuity	4 LANED
177	Delhi - Gurgaon Section (Access Controlled 6/6 Lane)	Delhi[9.7]/Haryana[18]	8	27.7	710	NHDP Phase I	Apr-2002	JaiPrakash Industries Ltd. - DS Constt. Ltd.	BOT	8 LANED
178	Satara - Kagal	Maharashtra	4	133	600	NHDP Phase I	Feb-2002	MSRDC Ltd. Mumbai	BOT	4 LANED

S.No.	Stretch	State	NH No.	Total Length (In Km)	TPC (Rs. Cr.)	NHDP Phase Category	LOA Issued	Concessionaire	Funded By	Present Status
179	Nellore - Tada (AP-7)	Andhra Pradesh	5	110.517	621.35	NHDP Phase I	Aug-2001	CIDBI Malaysia	BOT	4 LANED
180	Nandigama - Vijayawada	Andhra Pradesh	9	35	188.65	NHDP Phase I	Aug-2001	CIDBI Malaysia	BOT	4 LANED
181	Durg Bypass	Chattisgarh	6	18	70	NHDP Phase I	Mar-1999	Shakti Kumar M. Sancheti Ltd.	BOT	2 LANED
182	RCR at Kishangarh	Rajasthan	8	1	18	NHDP Phase I	Mar-1998	MSK Projects (I) Ltd.	BOT	4 LANED

