

Chapter I

Introduction

1.1 Background of National Highways Authority of India

National Highways Authority of India (Authority) was constituted in 1988 by an Act of the Parliament with a mandate to upgrade the existing two-lane roads into four/six-lane high density corridors under the National Highways Development Programme (NHDP). The programme, initially linking Delhi-Mumbai-Chennai-Kolkata called the Golden Quadrilateral corridor, was subsequently extended to link Srinagar with Kanyakumari or the North-South corridor and Porbandar with Silchar or the East-West corridor. **Table 1** gives different phases of implementation of NHDP.

Table 1: Phases of National Highway Development Programme

Phase	Golden Quadrilateral (Km.)	North-South & East-West corridor (Km.)	Port connectivity (Km.)	Total length (Km.)	Estimated cost (Rs. in crore)
Phase-I (2001)					
BOT	756	174	--	930	
Others	4258	497	674	5429	
Total	5014	671	674	6359	30,300
Phase-II (2003-04)					
BOT	204	1413	--	1617	
Others	628	5216	--	5844	
Total	832	6629	--	7461	34,339

Phases-IIIA and IIIB of NHDP were approved in 2005 under which 10000 Km. of National Highways are to be converted into four/six-lane highways on Build, Operate and Transfer (BOT) basis at an estimated cost of Rs.55,000 crore.

As shown in Table 1, in Phase-I it was planned to upgrade 6359 Km. of roads at an estimated cost of Rs.30,300 crore by June 2004.

Table 2 gives the status of implementation of Phase-I as on 31 December 2007.

Table 2: Status of implementation of Phase-I of NHDP

Particulars	Total length	Length completed	Length under implementation	Estimated cost (1999 prices)	Actual expenditure till December 2007
	Kilometre			Rs. in crore	
Golden Quadrilateral	5014	3845	1169	25,055	27,574
North-South and East-West Corridor	671	470	201	2,381	2,756
Port connectivity and others	674	445	229	2,864	3,325
Total	6359	4760	1599	30,300	33,655

1.2 Public Private Partnership

Projects under Public Private Partnership (PPP) are based on a contract or concession agreement between a Government or statutory entity and a private sector company, for delivering an infrastructure service. It is a collaborative venture aimed at leveraging scarce budgetary resources and the delivery of the quality services at competitive costs. Between March 1998 and April 2003, 17 projects of Phase-I of NHDP were opened for private operators' participation. Similarly, 28 projects of Phase-II and the entire Phase-III A are planned to be executed through the BOT mode under PPP.

STRUCTURE OF PUBLIC PRIVATE PARTNERSHIP IN NATIONAL HIGHWAYS AUTHORITY OF INDIA



सत्यमेव जयते

Government of India, Ministry of Shipping, Road Transport and Highways



- OPERATIONS**
1. GOLDEN QUADRILATERAL
 2. NORTH-SOUTH CORRIDOR
 3. EAST-WEST CORRIDOR
 4. OTHERS



BOT – TOLL PROJECTS 9 CONCESSIONS	BOT – ANNUITY PROJECTS 8 CONCESSIONS
Delhi-Gurgaon	Palsit-Dankuni
Jaipur-Kishangarh	Tambaram-Tindivanam
Vivekananda Bridge	Panagarh-Palsit
Nellore-Tada	Maharashtra Border-Belgam
Satara-Kagal	Anakapalli-Tuni
Tumkur- Neelamangla	Tuni-Dharmavaram
Nandigama-Vijayawada	Dharmavaram-Rajahmundry
Durg bypass	Nellore bypass
Rail Over Bridge Kishangarh	

INDEPENDENT CONSULTANTS

1.3 BOT-Toll

In BOT-Toll projects, the concession includes construction, maintenance and tolling. Budgetary support is restricted to an upfront grant to the Concessionaire determined through competitive bidding and is usually up to a maximum of 40 *per cent* of the project cost. Commercial risks are borne by the Concessionaire and its investment is sustained by toll revenues. **Table 3** gives the status of BOT-Toll projects of Phase-I as of March 2008.

Table 3: BOT-Toll projects (A)

Sl. No.	Name of the project	Length in Km.	Project cost (including grant) (Rs. in crore)	Grant (Rs. in crore)	Date of commencement	Date of completion
1	Delhi-Gurgaon	27.70	710.00	(-) 61.06	April 2002	January 2008
2	Jaipur-Kishangarh	90.38	644.00	211.00	April 2003	March 2005
3	Vivekananda Bridge	6.00	641.00	120.00	September 2002	June 2007
4	Nellore-Tada	110.52	621.35	127.30	August 2001	February 2004
5	Satara-Kagal	133.00	600.00	240.00	February 2002	May 2006
6	Tumkur-Neelamangla	32.50	155.00	24.83	June 2002	December 2003
7	Nandigama-Vijayawada	35.00	138.65	40.20	August 2001	June 2004
8	Durg bypass	18.00	70.00	0.00	March 1999	January 2001
9	Rail Over Bridge Kishangarh	1.00	18.00	16.66	March 1998	February 2000
	Total (A)	454.10	3,598.00	718.93		

1.4 BOT-Annuity

In the case of projects built under BOT-Annuity mode, construction and maintenance form part of the concession and the Concessionaire relies on annuity payments determined by competitive bidding to recover its investment. All costs are borne by the Government in the form of deferred budgetary payments and the Concessionaire receives a fixed sum of annuity payment from the Authority directly on half-yearly basis. **Table 4** gives the status of projects executed under BOT-Annuity arrangement in Phase-I as of March 2008.

Table 4: BOT-Annuity projects (B)

Sl. No	Name of the project	Length in Km.	Project cost (Rs. in crore)	Six-monthly annuity (Rs. in crore)	Date of commencement	Date of completion
1	Palsit-Dankuni	65.00	432.40	40.00	October 2002	July 2005
2	Tambaram-Tindivanam	93.00	375.00	41.86	May 2002	October 2004
3	Panagarh-Palsit	64.46	350.00	55.50	June 2002	June 2005
4	Maharashtra Border-Belgam	77.00	332.00	50.51	June 2002	October 2004
5	Anakapalli-Tuni	59.00	283.20	29.48	May 2002	January 2005
6	Tuni-Dharmavaram	47.00	231.90	27.91	May 2002	August 2005
7	Dharmavaram-Rajahmundry	53.00	206.00	29.62	May 2002	March 2005
8	Nellore bypass	17.17	143.20	12.96	October 2002	September 2004
	Total (B)	475.63	2,353.70			
	Grand Total (A+B)	929.73	5,951.70			

1.5 Scope of audit

This performance audit* covers projects executed under the PPP model in Phase-I of NHDP. Four BOT-Toll[♥] and four BOT-Annuity[^] projects comprising 71.58 per cent and 61.21 per cent of the awarded cost for BOT-Toll and BOT-Annuity projects of Phase-I, respectively were selected for audit. These projects were selected on the basis of quantum of expenditure and stage of completion.

1.6 Audit objective

Audit objectives were to assess that:

- The system for the preparation of a long-term corporate plan and annual plans was effective and led to implementation of projects in time;
- The bid evaluation procedures were well established and functioning;
- The projects were executed through sound project management control system (PMCS) and monitored during the operation and maintenance stage;
- The revenue management system in toll collection was sound;
- The concessions were awarded on sound and equitable basis; and
- The Concessionaire fulfilled the objectives of NHDP.

1.7 Audit criteria

Audit test-checked relevant records with reference to the following criteria:

- Departmental, technical and financial estimates as per the DPRs;
- The financial model worked out for each project by the financial consultant and the Authority;
- System of evaluation of bids;
- System for evaluation of technical and financial proposals for selection of Independent Consultants (IC) to supervise the project;
- Terms of concession agreement;
- Project Management Control System prepared by the IC for monitoring the implementation, operation and maintenance of the project;
- The agreed conditions for monitoring the performance of the IC; and
- Operation and Maintenance Manual for carrying out the operation and maintenance programme.

* A performance audit of the projects funded by cess, market borrowings and multilateral lending agencies and executed by the Authority was conducted during 2004-05 and its results were reported in C&AG's Audit Report No. 7 of 2005.

♥ Delhi-Gurgaon, Jaipur-Kishangarh, Nellore-Tada and Satara-Kagal

^ Palsit-Dankuni, Tambaram-Tindivanam, Panagarh-Palsit and Anakapalli-Tuni

1.8 Audit methodology

Audit examined records of BOT projects maintained at the Authority's corporate office and at the Project Implementation Units (PIU) located at different places across the country. For quality assurance, Audit engaged Central Road Research Institute (CRRI) as a consultant for conducting technical audit of six projects - three each from BOT-Toll and BOT-Annuity projects. CRRI examined the Detailed Project Reports and carried out laboratory tests on the samples collected from the six selected project sites. The results of audit together with CRRI findings are mentioned in Chapters 2 to 5 of this report.

An entry conference with the Authority was held on 20 September 2006 to discuss the audit objectives. Audit teams completed the field audit during the period October 2006 to April 2007. CRRI conducted the technical audit between April 2007 and December 2007. The draft performance audit report containing audit findings was issued to the Authority and the Ministry on 2 January 2008. The reply of the Authority was received on 17 March 2008. The Audit Report incorporating Authority's replies was again issued to the Ministry and Authority on 21 April 2008 for discussion in the Audit Board meeting. An Audit Board meeting/exit conference was held on 29 April 2008 with the Ministry and Authority to obtain their views. The Ministry sent comments of the Authority on 30 April 2008.

1.9 Acknowledgement

Audit acknowledges the cooperation and assistance afforded by the Authority at various stages including the support extended during site inspections conducted jointly.