CHAPTER-IV

DEVELOPMENT OF NATIONAL HIGHWAYS IN INDIA: AGENCIES AND PROGRAMME

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4.1 INTRODUCTION:

The International experience of private sector participation referred in previous chapter has not been found much depending upon private funding of the project cost on long term basis (PPP route). The sector of commercially important roads (expressways, motorways) is found using PPP route and the percentage of tolling of this category of roads is found on average little less than 40% (computed for leading 11 European nations)mainly through public concessionaire companies. The France being oldest practitioner of concessions has preferred public form of concessionaire even after selling off its stake in three major public concessionaire companies in 2007. Portugal's toll road network run by its nationalized concessionaire BRISA lost acceptance due to failure of BRISA to construct more roads matching with growing needs and in want of free alternative roads that was accepted norm of nation. The Spain was benefited by attracting foreign investors in the road sector backed by assured returns on PPP. But Spain's decision to offer concession on individual stretches could not withstand profitability problems in long term. Like Portugal, Spain also faced circumstances to revert back to public financing of projects for some period when private sector did not respond to growing needs adequately. The hasty Mexican toll road programme with private sector funds met with unfortunate outcome and cost of PPP was heavily paid by Government.

Thus, many Governments have attempted massive road development for superior roads under PPP route or under active private sector participation but public financed route. In practice there is no straightforward answer for format of such programmes. The role of highway agencies world over has undergone structural changes and users have seen road sector getting more ring fenced for its expenditure and revenues.

India has also taken up an ambitious programme for construction of superior roads from 1999 after many deliberations for almost a decade. India had options like-model of public finance based Interstate highway project of US, public financed based but outsourcing management based UK model, publicly managed concession based

French model, complete PPP based Mexican experience and initially public financed and then linked to PPP route based Chinese model available to draft own programme. India has opted for creation of specialist highway agency to implement the outsourcing based administration (somewhat similar to Highway Agency of UK) but looking forward for Mexican or Spain type awarding of PPP concession on cautious piecemeal basis. The tenure of Indian programme so far is very brief and is dominated by public funded projects through budgetary allocations from fuel taxes and general revenues. The scale of PPP based projects is yet to see its due share. The financing and refinancing of highways leveraging on project revenues is not established in want of market for such transactions. However, Indian highway agency has now access to widespread coffers owing to direct tolling of all four lane roads (already built or newly built) sections and permanent bridges. The users paying into such coffers in addition to various taxes in the sector are puzzled with the development which has just begun for providing better roads with extra cost. The transition of roads from public goods into natural monopoly is being witnessed by users under PPP route of development. This chapter encircles circumstance under which Indian highway (rather National Highway) programme was framed, its status, its locus over the time and attitude for PSP in general; PPP in particular.

4.2 PRESENT ROAD NETWORK IN INDIA:

The Indian roads have wide spread network of various hierarchy of roads connecting ultimate settlements in remote villages to spread out market places and growth centers in the country. The service standards in terms of road surfacing (earthen, metal or bituminous/concrete), carriageway width (single lane to six lane) and geometrics (grade separation, access control, junction designs, speed limits, horizontal/vertical alignments) vary across these hierarchy and hence varies the throughput volume. The planning of overall road network in India for its density and connectivity norms is governed by various 20 year road development plans framed by Indian Roads Congress (IRC).

The present status of Indian road network is as below[1].

Table: IV-1

Present Road network In India

Indian Road Network As On June 2007	
Expressways	200km (0.006%)
National Highways	66590km (2.00%)
State Highways	131899km (4.00%)
Major and other District Roads	467763km(14.00%)
Rural Roads	2650000km (80.00%)
Total of Indian road network	33 Lakhs Kms(Approx) (100%)

(Source: National Highway Authority of India (NHAI) offices)

The above categories are broadly indicative of width of carriageway like- rural roads are typically single lane (3.75 meter) or lesser width roads and significant length is yet to be all weather roads; major and other district roads are intermediate lane (5.5 meter or lesser width) but generally bituminous roads; State Highways are two lane(7.0 meter or lesser and in rare cases four lane (7.0 meter each on both sides of central verge) and are typically bituminous roads; National Highways are typically atleast two lane roads and can be six lane roads; Expressways are on prima facie superior roads with atleast four lanes with access control and mostly six lane roads. However, many States in India could be found having some stretches of National and State Highways of rural roads standards and likewise.

Different agencies are responsible for development and construction of above categories of roads. The village roads or rural roads and most of major and other district roads are under the purview of Panchayats of State Governments and have access to central as well State resources. State Highways are upgraded version of district roads and are under the purview of State Governments. Recently, important State highways are provided viability gap funding from Central Government to take PPP route and many roads under State have been assisted under budgeted central funds under Prime Minister Jawahar Rojgar Yojana (PMJSY). The National Highways and Expressways are under Central Government purview (either under Ministry of Shipping, Road Transport & Highways (MOSRT&H) but managed by respective State PWDs like their State Highways or independently under NHAI). Except very broad level integration of all categories of roads under 20 year road development plans, no mechanism sees them as an integrated network for

development of regional or national economy which is envisaged in Plan Vision 2021 of Government of India (GOI 2007: Working Group 11th Plan Report).

Nevertheless, India stands at second rank as far as total road length is concerned as given under Table: IV-2. Regarding density (i.e. measure of spread of road length in a region) , it is also second in rank but better than US and China so as to avail better connectivity to scattered development.

Table: IV-2

International Comparison of Road Network as in 2004 for Total Road Network

Nation	Total Road Length (10,000 Km)	Road Density (Km/100 Sqkm)
USA	635	65
India	332	112
Brazil	198	24
China	186	19
Japan	115	305
Australia	91	13
Canada	90	9

(Source: Zhang 2005)

As far as commercial aspect of road development is concerned, it is the NH and Expressways (Expressways are subsets of NH) and to certain extent State Highways (those stretches carrying interstate traffic) are of importance owing to quantum of traffic being served per km and scale of investments required. As a practice any road attracting more and more traffic will be upgraded gradually from any level up to NH or will be brought up to NH standards. Hence it not surprising that National Highways constitute only about 2% of the road network but carry about 40% of the total road traffic. The declaration of any stretch as National Highway could be a political decision too. The NH sector is institutionally supported by apex Policy making body like Indian Roads Congress (IRC) and National Institute of Training for Highway Engineers (NITHE) and implementation agencies like NHAI and MOSRT&H. The Planning Commission of India also takes deep interest in development of NH sector. The scale of investments in NH sector has been phenomenal and guiding in terms of policy planning to all lower hierarchy of roads.

The road construction specifications and contract formats are guided by NH standards for all lower hierarchy of roads. Hence developments in NH sector and operations of its agencies (MOSRT&H and NHAI) will be important to study in the road sector.

4.3 NATIONAL HIGHWAYS IN INDIA:

In terms of list I of the Seventh Schedule of the Constitution, the Government of India is responsible for the National Highways.

Table: IV-3

NH Stock Additions in India

Period	NH Length added in Kms	Total NH length in Kms.
As on 01.04.1947	00	21440
Pre First Plan (1947-1951)	815	22255
First Plan (1951-1956)	00	22255
Second Plan (1956-1961)	1514	23769
Third Plan (1961-1966)	179	23948
Interregnum Period (1966-1969)	52	24000
Fourth Plan (1969-1974)	4819	28819
Fifth Plan (1974-1978)	158	28977
Interregnum Period (1978-1980)	46	29023
Sixth Plan (1980-1985)	2687	31710
Seventh Plan (1985-1990)	1902	33612
Interregnum Period (1990-1992)	77	33689
Eight Plan (1992-1997)	609	34298
Ninth Plan (1997-2002)	23814	58112
Tenth Plan (2002-2006)	9008	**66590***

* 530 km length of National Highways of Madhya Pradesh has been de-notified.

(Source: GOI 2007: Working Group 11th Plan Report).

Even before independence, with effect from April 1, 1947, under an agreement with the then existing provinces, the Government of India provisionally accepted entire financial liability for the construction, development and maintenance of certain highways in the provinces which were considered suitable for inclusion in a system of National Highways (NH).

National Highways Act, 1956 which came into force from April 15, 1957, declared certain highways as National Highways and vested all National Highways in the Central Government. The NH Act also empowered the Central Government to declare any other highway as National Highway or omit certain highways from the list of National Highways. The Five year plan wise additions in stock of NH are available as below. These additions are basically upgradation of State Highways on the basis of national importance and are coupled with change in land ownership. More over, the state is divested of financial obligation for further maintenance and development. It is worth to note that major NH stock increment was very recently in the Ninth plan & then in Tenth plan period. In these plan periods, the NH stock has doubled. The declaration of additional stretches as NH is not supposed to increase quantum of central grants for maintenance for the NH sector owing to paucity of funds.

4.4 QUALITATIVE ASPECT OF INDIAN NATIONAL HIGHWAYS:

Clarifying for above data in Table- IV-1, the label "National Highway" is not meant for full fledge roadway in India because even by 2006-2007, India has around one third of NH stock bearing only 3.75 Meter wide carriageway which is as good as village roads. A break up of NH carriageway is as below:

Table: IV-4

Qualitative Aspect of NH Stock in India

Existing Width of Category	For That Category NH length
Single lane	21674 km **(32.55%)**
Double/Intermediate Lane	36936 km **(55.46%)**
Four Lane/Six Lane/Eight Lane	7980 km **(11.98%)**
Total Length of NH	66590 km **(100 %)**

(Note: Single/One lane is 3.75 meter wide which is just sufficient to carry a truck at a time)

(Source: MOSRT&H Annual Report 2006-2007)

The lack of qualitative stock is evident in international comparison also where having merely 200 km of expressways India has no stand in comparative statistics. The Table: IV-5 expresses this fact though internationally, India is well placed at second position in terms of stock of road.

Table: IV-5

International Comparison of Expressways as in 2004 & % of Total Road Network

Nation	Expressways Km	Expressways As % Of Total Network
USA	96300	1.52
China	34221	1.85
Canada	16571	1.84
Germany	11400	1.74
France	10300	1.15
Spain	9063	2.61
Mexico	6335	1.96

(Source: Zhang 2005)

The fact is, about 65% of freight and 80% passenger traffic is carried by the roads and hence roads are very important mode of transportation. Number of vehicles has been growing at an average pace of 10.16% per annum over the last five years (2001 - 2006).This will require quantitative as well qualitative improvement of roads and specifically of NH. As noted before, National Highways constitute only about 2% of the road network but carry about 40% of the total road traffic. (This is similar to U.S. Interstate highways which accounts for only 1% of U.S. road mileage but it accounts for 24% of all vehicle-miles.) To cater to such mammoth volume in future also, the NH can grow either in terms of adding up lane capacity (widening) or by creation of new links to network. The Road Development Plan: Vision 2021 formulated by the Department of Road Transport & Highways proposes to reach a total National Highway network of about 80,000 km by the end of the year 2021 i.e. adding further around 14000 km of NH in next 14 years (GOI 2007: Working Group 11th Plan Report). Indian Vision Plan 2021 also focuses on widening and improvement of existing NH along with construction of meager 10000 km of expressways by 2021. Vision 2021 has stressed that more effort should go in the direction of augmenting the capacity and quality of various categories of roads rather than any large scale quantitative expansion. At policy level it is understood that there is need to identify a CORE NETWORK of major arterial routes covering National Highways and those state highways/major district roads which are either already experiencing high volumes of traffic or have such potential in the light of industrial and other growth

strategies by both the public and the private sector. Hence, each State may identify a CORE NETWORK considering the actual/expected flows of goods and passengers encompassing National Highways, state highways and selected major district roads which carry bulk of the road traffic and a Core Investment Programme undertaken for development of the identified core network. Thus Vision 2021 seems suggesting future development on corridor development basis integrating various important categories of roads (except rural roads) without adding much into total stock of road network.

4.5 GENESIS OF NATIONAL HIGHWAYS DEVELOPMENT PROJECT (NHDP):

The deficiency in roads sector in general and NH in particular was in view since early 1990s and there was concurrent thrust for development of infrastructure including roads in India. This was the period when infrastructure sectors were opened for private investment as per new industrial policy declared on July 1991. There were various **need assessments** for requirements of investments in roads. All of them basically meant huge unprecedented funding requirement for improvement of roads including NH and hence beyond the budgetary capacity of governments.

4.5.1 Need Assessment For Investment In NH Segment:

A) The economic survey of 92-93 mentions need for improvement of infrastructure capacity by at least 8% to meet targeted growth in national output by 5 to 6 %. This survey estimated that: about 12% of the total NH needed widening from single to double lane; about 56% of the total 2 lane NH needed strengthening; 44% of the NH were expected to carry more than 15000 PCU (Passenger Car Unit, it is used to explain traffic carrying capacity of a road on the basis of PCU= 1 for car & equivalent) per day by 1995 and hence normatively needed to be four lanned; some 3% of total NH might carry more than 40000 PCU per day and thus needed to be converted in to expressways. The Ministry had estimated cost of above improvements at Rs. 41390 crores (at 1991 prices). However, Planning Commission had approved an outlay of Rs. 2600 crores only in Eight plan (1992-97) and, total expenditure (Centre and States) in the Eighth Plan period was just around Rs. 13,000 crores.

B) Expert group headed by Rakesh Mohan[2] (1994) reported that the economic losses due to poor roads were estimated @ Rs. 20,000 to 30,000 crores per year and cost of avoiding these losses were estimated @ Rs. 120,000 crores in terms of improving/building/maintaining network of National & State highways. It was estimated to provide Rs. 32,000 crores in 1996-2001 and Rs.63,000 crores during 2001-2006 for construction of NH, SH and Expressways. More over for these two periods, provision for maintenance required was estimated Rs. 9000 crores and 11,500 crores respectively. The Rakesh Mohan committee thus estimated a need for Rs. 95,000 crores for National and State Highways over 1996-2006.

C) According to a study carried out by the sub-group for the 9th Five Year Plan on the road sector, a sum of Rs.74500 crores (at the 1996 price level) would be needed to address the deficiencies of the existing National Highway network(This estimate was revised at Rs. 1,65,000 crores in Tenth Plan document). The main focus of the road development programme in the Ninth Plan (1992-97) was on strengthening and improving the crucial sections of the highway network through phased removal of deficiencies and multi-lanning of high density corridors. This five year plan talked about a well defined plan taking a perspective of 15-20 years that would help to address the important issue of capacity constraint being experienced in roads sector (Economic Survey 1998-99). This was the first plan which talked about a long term commitment towards removing deficiencies in the road sector and NH in particular.

The evident need to invest heavily atleast in NH segment required some long term planning of investments. This was required under change in delivery system through autonomous agency with necessary legal backup.

4.5.2 Fundamental Changes in Legal Framework:

A) A major land mark was achieved by enacting up of National Highways Authority of India (NHAI) Act, 1988 which provides for the constitution of an Authority for the development, maintenance and management of National Highways and for matters connected therewith or incidental thereto. Hence during Eighth Plan itself, NHAI came into existence with effect from June 15, 1989 but it was operationalised only in February 1995 i.e. in the Ninth Plan.

The Authority was set up for a gradual assumption of direct responsibility for the development and maintenance of National Highways. The NHAI was constituted on project implementation unit basis rendering significant decision taking powers to limited officials working at project level.

B) Another land mark was amendment of 1995 to National Highways Act-1956 by insertion of new sections 8A-"POWER OF CENTRAL GOVERNMENT TO ENTER INTO AGREEMENTS FOR DEVELOPMENT AND MAINTENANCE OF NATIONAL HIGHWAYS": Section 8A:

(1) Notwithstanding anything contained in this Act, the Central Government may enter into an agreement **with any person** in relation to the development and maintenance of the whole or any part of a National Highway.

(2) Notwithstanding anything contained in section 7, the person referred to in sub-section (1) is entitled to collect and retain fees at such rate, for services or benefits rendered by him as the Central government may, by notification in the official Gazette, specify having regard to the expenditure involved in building, maintenance, management and operation of the whole or part of such National Highway, interest on the capital invested, reasonable return, the volume of traffic and the period of such agreement.

(3) A person referred to in sub-section (1) shall have powers to regulate and control the traffic in accordance with the provisions contained in Chapter VIII of the Motor Vehicles Act, 1988 (59 of 1988.) on the National Highway forming subject matter of such agreement, for proper management thereof.

So far development and maintenance of the whole or any part of a National Highway was under the purview of government body (Central or authorized local at State or below level). Now the NH segment was opened up to private sector participation beyond traditional employment for cash contract works. This was the foundation to emerge out of budgetary constraints in implementing a long term development programme and was immediately applied by MOSRT&H itself prior to NHAI. This Amendment (1995) bill was passed by Lok Sabha on 31-5-1995, three projects for private sector participation on BOT basis were taken up by MOSRT&H itself : first contract was signed on 9-12-1995 for Thane – Bhivandi (Maharashtra) bypass at estimated project cost of Rs. 103 crores ; second was signed on July 1996 for Udepur (Rajasthan) at estimated project cost of Rs. 24 crores and ;third contract was signed on 19-9-1996 for one ROB at Chalthan (Gujarat) at estimated project cost of Rs. 10

crores and all were awarded on BOT basis.(Economic Survey 1998-99) For NHAI, Durg Bypass in Madhya Pradesh at estimated project cost of Rs.68 crores was the first BOT project for private sector participation and the contract was signed on date 5.11.1997. Thus despite special purpose vehicle (i.e. NHAI) created by MOSRT&H, BOT works were first taken up by Ministry itself and NHAI took more than two years to sign first BOT project. Though NHAI was to assume all NH stretches, substantial stretches have remained under Ministry so far and up to 2005, many BOT projects are awarded by Ministry on NH stretches exhibiting some curbs in expanding NHAI to its fullest size.

It is necessary to note that India has no separate law[3] for signing a BOT type of contract with private investors but there is a general Indian Contract Law (1852) that enables to enter into BOT type of contracts for long term financial involvement of private sector. The NHAI Act for that matter serves institutional requirements for wading through PPP route. But the overall back ground set up for development of NH is not really aggressive for private investment under PPP.

C) To create acceptance to the concept of tolling under BOT but more from considerations of creating stable cash-inflow for the road sector, the Government decided to toll all four lane NH sections though built through budgetary allocations by enacting National Highways (Rate of Fee) Rules, 1997. These Rules specified maximum toll rates for various vehicles as on 1997 subject to revision as per increase in Wholesale Price Index. This was most crucial political decision confronting willingness to pay aspect on hitherto free NH roads. The issue has emerged like toll collected from a State having more four lane stretches and permanent bridges may not be allotted all money back in the State in want of maintaining poor stretches of other States. If a State does not develop four lanning, it can remain permanent recipient of funds collected from other stretches. The Table: IV-6 illustrates the State wise disparities in development of NH. As per this table, Gujarat stands at 10th highest rank in terms of total NH passing through State and that is merely 5% of total NH of India. But it has 916 km tollable NH and hence it shares 12% of tollable income from total 7698 km four lane NH of India. Of course, actual toll collection will depend upon traffic volume and toll realized in respective States.

Table: IV-6

Details of Four Lane and above National Highways in Various States of India (2006)

SR. No.	States	Total N.H. passing through state	Four Lane and above N.H. Length (km)	% of total N.H. length four lanned and above	% share in total NH length 66590 km	% share in total tollable length 7698 km
1	Andhra Pradesh	4472	1229	27%	6.72	15.97
2	Assam	2836	19	0.7%	4.26	0.25
3	Arunachal Pradesh	392	0.0	0%	0.59	0.00
4	Bihar	3642	221	6%	5.47	2.87
5	Chandigarh	24	15	63%	0.04	0.19
6	Chhattisgarh	2184	36	2%	3.28	0.47
7	Delhi	72	72	100%	0.11	0.94
8	Goa	269	26	10%	0.40	0.34
9	**Gujarat**	**3245**	**916**	**28%**	**4.87**	**11.90**
10	Haryana	1512	406	27%	2.27	5.27
11	Himachal Pradesh	1208	0.0	0%	1.81	0.00
12	Jammu & Kashmir	1245	0.0	0%	1.87	0.00
13	Jharkhand	1805	175	10%	2.71	2.27
14	Karnataka	3843	546	14%	5.77	7.09
15	Kerala	1440	54	4%	2.16	0.70
16	Madhya Pradesh	4670	125	3%	7.01	1.62
17	Maharashtra	4176	592	14%	6.27	7.69
18	Manipur	959	14	2%	1.44	0.18
19	Meghalaya	810	0.0	0%	1.22	0.00
20	Mizoram	927	0.0	0%	1.39	0.00
21	Nagaland	494	0.0	0%	0.74	0.00
22	Orissa	3704	330	9%	5.56	4.29
23	Pondichery	53	0.0	0%	0.08	0.00
24	Punjab	1557	268	17%	2.34	3.48
25	Rajasthan	5585	866	16%	8.39	11.25
26	Sikkim	62	0.0	0%	0.09	0.00
27	Tamil Nadu	4462	514	12%	6.70	6.68
28	Tripura	400	0.0	0%	0.60	0.00
29	Uttaranchal	1991	7	0.4%	2.99	0.09
30	Uttar Pradesh	5874	829	14%	8.82	10.77
31	West Bengal	2377	438	18%	3.57	5.69
32	Andaman Nicobar	300	0.0	0%	0.45	0.00
	Total	**66590 KM**	**7698 KM**	**12%**	**100.00**	**100.00**

(Source: Derived from data available under Lok Sabha Unstarred Question Nov 2006- No 1255 & MOSRT&H Offices)

4.5.3 Recommendations of Task Force on Infrastructure (1998) for NHDP:

In continuation of surge for a big investment program for development of NH network in India, Government decided to constitute a Task Force on Infrastructure with the aim of attracting investments for specific projects of national and regional importance, and ensuring their timely completion. To begin with the Task Force was to deal with projects announced by the Prime Minister on October 21, 1998, viz. Six lane expressway of 7,000 km Length, having North-South and East-West corridors, four-lanning of National Highways, and five world-class international airports. The Task Force was headed by Deputy Chairman, Planning Commission (then Shri Jaswant Singh) and was represented by members from Prime Minister Office, MOSRT&H, Infrastructure Development Finance Corporation (IDFC) , Ministry of Aviation, Mahindra-Ford group. This Task Force discussed two options and finally recommended a mix of them terming it "National Highway Development Project (NHDP)."

Proposal:1

With an aim to four lane all length of the four corridors (at that time about 1200 km was already four laned out of total 6000 km) forming the "Golden Quadrilateral" (GQ), cost of widening (the balance) 4,800 km of the Golden Quadrilateral from 2-lanes to 4-lanes was estimated at about Rs. 19,200 crores, assuming a cost of about Rs. 4 crores per km (NHAI estimate, assuming that no significant land acquisition is involved).The GQ consisted of 15% of NH network that time.

Proposal:2

The development of a new Expressway system along the North-South and East-West axes, estimated at about 7,000 km. The cost of developing an Expressway system of 7,000 km along the North-South and East-West axes was estimated at Rs.84,000 crores, assuming a cost of about Rs. 12 crores per km.

Alternative Proposal :

This proposal envisaged development of the "Golden Quadrilateral" as described above, plus the 4-laning of additional identified "spurs" from the Quadrilateral to cover other important sections and States within and outside the Quadrilateral.

Table: IV-7

Proposed Cost of Three Proposals (NHAI Estimates 1998 Basis)

Proposal	Details	Cost per km, Rs. crores	Length, km	Total Cost, Rs. crores
1.	Widening of GQ from 2-lane to 4-lane	4.0	4,800	19,200
2.	Development of a new 6-lane expressway on N-S & E-W axes	12.0	7,000	84,000
3.	**Widening of GQ as well as 4,100 km of additional spurs (NHDP)**	**4.0**	**8,900 (4800 km GQ; 4100 km Spurs)**	**35,600**

(Source: Task force on Infrastructure 1998)

The Task Force estimated funding requirements for NHDP proposal and possible sources of financing as below spread over 5, 7 and 10 year time span for investments. Keeping in view possibility of moderate availability of finances, the investment was advised to spread over span of 10 years.

Table: IV-8

Annual Sources of Investment Funds for Funding the NHDP (Amounts in Rs.crores)

Source	Expected Annual Investment in NHDP		
Financial Institutions	1,500(33.5%)		
Pvt. Sector Equity	500(11%)		
Insurance Sector and Provident Funds	1,500(33.5%)		
Commercial banks	1,000(22%)		
Total	4,500(100%)	4,500	4,500
Spreading over span	**5 years**	**7 years**	**10 years**
Annual Requirement	8,200	6,300	4,900
Annual Gap	**3,700**	**1,800**	**400**

(Source: Task force on Infrastructure 1998)

Note :

1. Investment from commercial banks, insurance sector and provident funds would mainly be in the form of Government bonds.
2. In the absence of a foreign exchange hedging mechanism, foreign equity investment may be limited and hence not considered.
3. The balance amount of Rs. 3,700 crores per annum would have to be mobilised from other sources including multi-lateral agencies and foreign banks. Alternatively, if the implementation time-frame was spread out over 10 years, the dependence on additional sources would reduce.

The above flow of funds assumed very good financial support from other than budgetary sources for project period up to 10 years with out any restrictive implications. As a major decision, it was expected that NHAI will be provided some dedicated stream of funds (Table: IV-9) which shall be levered out to garner finances stated under Table:IV-8. Thus, Task Force assumed various levies for generating a dedicated road development fund, called "National Highway Development Project Fund." This was very significant move by Task force to induce commitment of Government on long term basis.

Table: IV-9

Estimate Of Annual Revenue Availability For The National Highway Development Project Fund (NHDPF) (Amount in Rs. crores)

Source	Basis	Additional Revenue per annum	% column (3)* will be availed for National Highways	Amount available for National Highways per annum	% column (5)* will be availed for NHDPF	Amount available for NHDPF per annum
1	2	3	4	5	6	7
Petrol cess (existing)	Re.1 / litre	800	100 %	800	100 %	800
Diesel cess	Re 0.5 / litre	1,830	100 %	1,830	100 %	1,830
Tolls collected from NHDP	Rs. 0.4 / PCU / KM	520	100 %	520	100 %	520
Cess on public and private transport services	500	100 %	500	100 %	500	
Additional Excise duty on motor vehicles	Rs.5000/car Rs.10000/co-omercial vehicle	500	100%	550	100%	500
Total		4,150		4,150		4,150

* IDFC assumption

(Source: Task force on Infrastructure 1998)

Assumptions in estimating above revenues:

1. Funds from the Petrol cess to be introduced in 1998-99 representing additional resources in the sector.
2. Diesel consumption was assumed at about 30 million tonnes per annum at specific gravity 0.82. But if technological advances to replace diesel run trucks

by gas or alternative fuel, such assumption for consumption of diesel/petrol will require big corrections.

3. 20% of the NHDP, i.e. about 1,780 km, was assumed to be tolled. These sections were all assumed to be high density corridors with traffic of about 20,000 PCUs/ day. But this assumption was underestimation of toll revenues since Government had already declared to toll all four lane NH sections in addition to permanent bridges by 1997 Rules.
4. Cess on public transport services would be levied on State Road Transport Corporations (on revenues) and on private fleet operators (additional road tax/ cess), and would flow to State-level NHDP funds. In the absence of State-level figures, a broad estimate of Rs. 500 crores per annum had been made for the time being. Other possible sources could be additional vehicle taxes/ registration fees.
5. Excise duty was based on assumed annual production of cars at 400,000 numbers and buses/commercial vehicles at 300,000 numbers. However, given the present status of the automobiles sector it was considered to be possible to levy the same only after 2 years.
6. The above annual revenue stream was assumed to grow at 5% per annum over the next 20 years.
7. The annual revenue accretion as estimated above could support an investment program of about Rs. 29,600 crores (assuming a discount rate of 15% per annum over a period of 20 years, and taking into account an annual operation and maintenance cost of 2% of the capital cost) Hence, additional revenue mobilization of about Rs. 720 crores per annum (1998 prices) was estimated to be required to support the minimum investment program of Rs. 35,600 crores (1998 prices) as estimated earlier.

Hence a host of user charges were contemplated to be levied to pay off borrowings for NHDP and for maintenance & operations of the project. The Task Force noted that the National Highway Development Project Fund would need to be carefully designed. In this regard, it would be important to note that users of roads and owners of vehicles would be willing to pay into a road fund if they perceive that their contributions would be used for improving the road network. The Task force acknowledged that credibility of a road fund can be enhanced by:

i. Tight legal and administrative ring-fencing of the fund in the sense that expenditure from the fund will only be used for roads.

ii. Having strong "user group" presence in the committee that would oversee the use of funds.

Following points are noteworthy for undertaken study from suggestions of Task Force.

- Task Force estimated 63% of total Rs. 4150 crores to come from fuel cess fully dedicated for NHDP. In reality, fuel cess has been imposed on petrol & diesel from FY 1998-99 and being raised at higher rate than estimated. But it is not fully dedicated to NHDP as discussed in subsequent sections.
- Also, no other dedicated levies are imposed as thought out by Task Force.
- No private investment is advocated to reduce shortfalls in investments.
- Also, no user group as such is identified or established so far.
- The above estimates take share of toll revenues of 1780 km of four laned NH sections at Rs. 520 crores (i.e.13% of total Rs. 4150 crores) only. Considering 100% tolling of 8900 km of NHDP, Rs. 2600 crores could be derived which would have been highest among all sources. Also, the maintenance of NH stretches will be in need of large funds for which in fact, tolls are levied on completed four lanes. Hence, availability of toll income for new development can vary yearly as per maintenance needs. Task Force has not emphasized this aspect in detail.
- Hence, it can be deduced that Task Force had assumed NHDP implementation mainly through dedicated funds more under traditional delivery system and share of BOT type of toll projects under PPP route was not identified or advocated for reducing requirements of dedicated funds.

4.6 DEDICATED CESS FUNDS FOR NHDP:

As noted above, it is only dedicated cess funds that were strongly in minds of Indian planners while framing NHDP. But the cess on fuels was preexisting historically. The Central Road Fund (CRF) was constituted in 1929 to receive proceeds from duty of customs and excise levy on non-aviation motor spirit at 2.5 annas per gallon of taxed motor spirit in non lapsable manner. But it was revamped in Year 2000.The Central

Road Fund Ordinance, 2000 was promulgated on November 1, 2000 to give statutory effect to the creation of Central Road Fund. The bill to replace the said ordinance was passed by the two houses of the Parliament and an assured user charges in terms of additional cess is being levied on petrol and High Speed Diesel. An additional cess of Re. 1 per liter was levied on petrol with effect from as early as June 2, 1998 and similar additional duty of Rs. 1 per liter on imported and domestic High Speed Diesel Oil was levied with effect from March 1, 1999. The revenues from these levies are to accrue to a dedicated Central Road Fund. As a formula, 50 per cent of the cess on High Speed Diesel Oil is to be allocated for the development of Rural Roads. The balance of amount of 50 per cent on High Speed Diesel Oil and entire cess collected on petrol is to be allocated for the development and maintenance of National Highways (57.5 per cent), for construction of road over/under bridges and other safety works at unmanned rail road crossing (12.5 Per cent) and development and maintenance of State Roads including roads of economic importance (30 per cent). Out of this amount, 10% i.e., 3% of the total share of the State Roads shall be kept as reserved by the Central Government for allocation to States for implementation of State Road Schemes of Inter-State and economic importance to be approved by the Central Government. The allocation to the different States from the States' share of Central Road Fund is now based on the consumption of petrol and diesel and geographical area of the State concerned. Release of funds is project specific and further instalments are released subject to the receipt of the utilisation certificates.

The fund will be non-lapsable and will be used to fund the development of the total hierarchy of roads, right from National Highways through State Highways to Rural Roads. This cess was made Rs. 1.50 per liter of Petrol & Diesel in 2004-05 and out of this, Rs. 0.43 per liter of diesel and Rs. 0.86 per liter of petrol go to NHDP. The present rate of cess is Re.2.00 per liter on both petrol and diesel. This mechanism has remained a major source of financing of NHDP as was perceived e.g. during 2000-2001, an amount of Rs. 2,010 crores had been allocated for development of National Highways & out of this Rs. 1,800 crores had been given to NHAI for NHDP(Year wise cess details given under Table:IV-17). Such dedicated funds for highways are operational in many countries including US. The US Federal-Aid Highway Act of 1956 played a central role in financing highways in the US during the last 50 years, including financing over 46,000 miles of the Interstate Highway System. The Federal-

Aid Highway Act of 1956 created the Highway Trust Fund and dedicated to the fund all revenues from a set of excise taxes on highway fuels, vehicles, and parts, as well as an annual fee paid by operators of large trucks.

4.7 IMPLEMENTATION & FINANCING OF NHDP:

Finally, the programme was launched by then **Hon'ble Prime Minister Mr. Atal Bihari Vajpayee** on January 2, 1999. The implicit objectives of NHDP were GDP growth, improved nation wide connectivity, national integration, and employment generation etc. But the NHDP is evaluated more in terms of length targeted and actually completed under various phases. Quoting inadequacy of State PWDs, the NHAI was mandated to implement this project. For example, the Economic Survey 1997-98 reports-as on December 31, 1996 there has been an average time overrun of 18 months and an average cost escalation of 29 per cent leading to an additional burden of Rs. 31000 crores in 189 Central Sector Projects in various fields including roads costing Rs.100 crores and above. Hence under such a case the implementation of NHDP through autonomous special purpose agency namely NHAI was probably felt by planners most appropriate for Government. Hence NHAI started taking over NH stretches from States from year 2000 onwards as per inclusion of such stretches under any Phase of NHDP.

Initially, NHAI had been mandated to implement **NHDP Phase I** which was approved by Cabinet Committee on Economic Affairs (CCEA) in December 2000 at an estimated cost of Rs. 30,300 crores (1999 prices). It consisted of 5,846 km of Golden Quadrilateral connecting four metropolitan cities of Delhi, Mumbai, Chennai and Calcutta, 981 km of NS-EW corridors, 356 km of Port Connectivity and 315 km of other National Highways, a total of 7,498 km. This was expanded by adding North-South and East-West corridors (total 7,300 km), connecting Srinagar to Kanyakumari and Silchar to Saurashtra respectively and Salem to Cochin under Phase II. Now collectively NHDP was estimated to cost Rs 54,000 crores (1999 prices). Later, NHAI was also asked to four lane port connectivity of 400 km and other projects of 600 km at a cost of about Rs. 4,000 and thus revising cost to Rs. 58,000 crores.

The Golden Quadrilateral part was to be completed by 2003 and North- South & East – West corridor by 2007.

The Financing of NHDP Phase- I &II are announced by NHAI as below.

Table: IV-10

Financial Arrangement for NHDP (Phase- I &II) for cost at 1999 prices

Cess	20,000(35%)
World Bank/Asian Development Bank Loan Assistance	20,000(35%)
Market Borrowings	12000(20%)
Private Sector	6000(10%)
Total	58000 (100%)

(Source: www.NHAI.org accessed last on 22-8-07)

It is simple to see that even presently, NHAI does not estimate much of private funds beyond 10% though more than 5000 km of length is still to be awarded for Phase-I&II (for corridors, as per NHAI online status report ending Sept 2007).

4.7.1 Expansion of NHDP Regardless Of Slow Progress:

The NHDP has been expanded as below and it has seen many delays as summarized below. Nevertheless, under growing expectations for speedy NH development (despite failure of NHAI to complete even GQ under Phase-I) scope of NHAI is stretched up to Phase-VII that is up to December 2015. The declaration of NH stretch for inclusion in NHDP has one genuine problem. Once the stretches are identified under NHDP, though they are taken over from State, the outlay for maintenance is neglected keeping in view future upgradations by NHAI. For example, already four laned NH-8 between Vadodara- Bharuch- Surat was handed over to NHAI as back as in year 2001-2002 merely for toll collection under NH Fees Rules 1997 and six lanning was to come after seven to eight years. Meanwhile, maintenance aspect was found pitiable by road users as also reflected under Willingness To Pay surveys conducted for undertaken study. NHAI was either not fully equipped to maintain such heavy traffic carrying stretches or was waiting for private concessionaire to spend under its upcoming six lanning project of these stretches. The maintenance of NH included in NHDP but yet to be taken over from State has similar tale and here

MOSRT&H reduces maintenance grants in view of future NHAI works. Such thrifty measures affect the riding quality of NH severally. Since, recent policy shift led to declare implementation of Phase-III and onwards through BOT based PPP route, declaration of new stretches under various Phases really did not mean any obligation to the Government. There is no feasibility study to take up identified stretches of phase III onwards under PPP route which means delays in taking up PPP projects on such stretches. If seen otherwise, any revision of financial plan due to revised scope of NHDP provides platform to revise cost of on going Phase-I&II. The cost of these Phase-I&II is revised from Rs.58,000 crores to Rs. 64,639 crores as given under Table: IV-11.

Table: IV-11

NHDP Outline For All Phases I To VII.

NHDP Phase & Scope	Length Km	Approved Cost Rs. As on Date	Stipulated Dates for Completion	Status
Phase:I Four/six lane 5,846 km of Golden Quadrilateral, 981 km of NS-EW corridors, 356 km of Port Connectivity and 315 km of other National Highways	7,498 km	Rs. 30,300 crores (1999 prices) Approved on December 2000	Dec2003 Dec2004 Dec2005 Dec2006 Mar 2007 Dec2007	GQ 96%completed; other incl. NS-EW 22% completed. NHAI has often separated GQ and clubbed remaining of Phase I &II for reporting purpose.
Phase:II Four lane NS-EW Corridor (6,240 km) and other National Highways of 496 km length	6,736	Rs. 34,339 crores (2002 prices) approved by CCEA in December 2003	Dec2007 Dec2009	
Phase:III High density traffic corridors not included in Phases-I & II; (ii) Providing connectivity of state capitals with NHDP (Phases-I&II); and (iii) Connectivity of centers of tourism and places of economic importance. This whole Phase III will be on BOT.	IIIA = 4000 km identified IIIB = 6000 km identified Total = 10000 km	Total esti. cost Rs. 55000 crores(A+B) IIIA=Mar 2005 IIIB=Mar 2006	IIIA=Dec 2009 IIIB=Dec 2012	IIIA in progress; IIIB yet to start. 1845 km awarded on Bot(Toll) and 36 km awarded on Annuity basis. i.e. only 1881 km awarded; 266 km 4 lanned so far.
Phase:IV Selected stretches (not part of Phase I, II, or III.) to be improved to 2-lane standards with paved shoulders.	IVA = 5000 km IVB = 5000 km IVC = 5000 km IVD= 5000 km Total 20000 km	Total esti. cost Rs. 25000 crores(A+B+C+D) Approval pending IVA= Dec 2006 IVB= Dec 2007 IVC= Dec 2008 IVD= Dec 2009	IVA= Dec 2012 IVB= Dec 2013 IVC= Dec 2014 IVD= Dec 2015	Stretches yet to be identified.
Phase:V 6-laning of 6,500 km of selected stretches of existing 4-lane NHs on Design Build Finance &	6,500 km	Approved Rs. 41,210 crores, which includes budgetary support of Rs. 5,518	Dec2012	Work recently started on 148 km and 6352 km are yet to be awarded.

NHDP Phase & Scope	Length Km	Approved Cost Rs. As on Date	Stipulated Dates for Completion	Status
Operate (DBFO) basis. This includes 5,700 km of GQ and other selected stretches.		crores; balance Rs. 35,692 crores is to be mobilized through private sector participation. Nov 2005		
Phase: VI The Govt. has approved proposal for development of 1000 km of access controlled four / six lane divided carriageway expressways on BOT basis.	VIA = 500 km VIB = 600 km	Approved cost of Rs 16,680 crores (Rs 7,680 crores as contribution of Govt. / NHAI for utility shifting, land acquisition etc.; remaining Rs. 9,000 crores to be mobilized from private sector. VIA= Dec 2007 VIB= Dec 2008	VIA= Dec 2014 VIB = Dec 2015	VIA stretches identified; VIB to be identified
Phase: VII This proposed programme envisages construction of ring roads, flyovers and by-passes on selected stretches on National Highways and improvements to city road networks by adding ring roads,	VII A to VIIC	Estimated cost of Rs 16,680 crores. VIIA= Dec 2006 VIIB= Dec 2007 VIIC= Dec 2008	VIIA= Dec 2012 VIIB= Dec 2013 VIIC= Dec 2014	No stretches yet identified and no approval of this Phase so far.
Total Km and estimated cost identified as above(Phase-I to VII)	**51834 km** (total of Phase I to VI. The km under Phase-VII yet not known and hence not included)	**Rs. 202,529 crores** (total of Phase I to VI) (The estimated cost of NHDP is **Rs.219,209 crores** if estimates of Phase I to VII are added up.)		

(Source: compiled from Working Group 11th Plan Report 2007; NHAI update as on Sept 2007 on web site and Wikipedia, the free encyclopedia accessed through Google on date 25-7-07)

Looking to Table: IV-11 &12, it can be seen that NHDP has remained synonymous with GQ only since any thing apart from GQ is mostly at planning stage if minor progress on Phase II is ignored. But the substantial completion of GQ was not easy for NHAI though the corridor of GQ was most established one. The progress of GQ was only just around 45% at the end of Dec 2003 (i.e. original time limit). The dead line for completion is postponed many of times till March 2008. NHAI has effectively four lanned NH so far at the rate of 72 km per month and as at end of Sept 2007, yet 232 km of GQ are to be completed. The situation is worst for NS-EW corridors (placed under Phase-II) which are under green field conditions. As on end of Sept 2007, total 5727 km are yet under implementation and 822 km are yet to be awarded. Even if all 822 km are assumed as awarded, total pending length will be 6549 km. At the rate of 450 km per year it will require almost 15 years from this point, i.e. NS-EW corridors can not be completed before Sept 2022. This entire mean very uncertain scenario persists for NHDP under Phase II and onwards.

Table: IV-12

Progress of Golden Quadrilateral & NS-EW of NHDP Phase-I & II

Target : 5846 km GQ &7300 km corridors	**GQ Km**		**NS-EW Km (Phase-I & II)**	
	Cum. Km Completed	**Yet to be awarded Km**	**Cum. Km Completed**	**Yet to be awarded Km**
As on Nov 2001	1020	1065	Not available	5886
As on 31 July 2002	1159	136	Not available	5812
As on Nov 2002	1218	136	Not available	5812
As on 31 March 2004	2612	0.0	588	6211
As on 31 Jan 2005	4480	0.0	675	5768
As on Nov 2005	5097	0.0	788	2441
As on Nov 2006	5474	0.0	853	1053
As on Feb 2007	5540	0.0	1080	908
As on Sept 2007	5614	0.0	1573	822
Avearge per month production of 4 lannning (3/04 to 9/07)	3002 km completed in 42 months i.e. 72 km per month or 900 km per year		985 km completed in 42 months i.e. 24 km per month or 300 km per year. (Alternatively, from 11/05 to 9/07 @ 36 km per month or at most 450 km per year.)	

(Source: Derived from GOI Economic Surveys and NHAI online updates)

The problems narrated by NHAI for delays are –utility shifting, termination of 5 contracts in GQ (3 funded by ADB, one each by WB and NHAI), termination of 5 contracts in NS-EW (all funded by NHAI), land acquisition, contractor's sluggish progress etc. Significantly, no delay is apparently attributed to financial crunch once the projects are awarded but there are delays in awarding projects. These are all problems any State PWD would have faced and NHAI has not made any impact on progress of NHDP on the virtue of its Specialist stature. If details of financing of projects are observed, NHDP Phase I is found implemented on minor share of private sector participation and hence selected departmental way of working can be held as a attribute for delays. Regarding Phase II, the delay is enormous at award stage itself which is mainly due to selection of greenfield stretches. Under NHAI managed execution, the problems are in fact compounded because NHAI is set up with minimum Staff and designing-estimating- bidding-supervising-quality auditing etc. all important aspects are outsourced which were earlier undertaken by State PWDs. The site clearance and monitoring of outsourcing seems beyond the minimal size of NHAI.

4.7.2 Revised Financial Assumption For NHDP And Adoption Of BOT Route:

The expansion of NHDP is like an attempt to paint rosy picture for future of National Highways through all of a sudden leaning on BOT approach. The BOT approach is expected to make faster delivery of product that was missed under outsourcing based delivery system under Phase-I&II. The expansion of NHDP is envisaged at the approved cost of Rs. **203,155 crores** (up to Phase-VI but does not include Phase IV & VII in want of identification of stretches at approval stage of this cost; this is recent revision to earlier total estimate of **Rs. 202,529 crores** of Phase I to VI) based on financial support at 42% from cess &market borrowings, 7.6% from external assistance and 50 % through BOT route. The revised financial plan is given under Table: IV-13. If the phase III onwards financial assumptions of GOI are traced in the Table:. IV-13, the total project cost of these three Phase (Phase III, V & VI) is approved for Rs. 138516 crores and 31.5% of it is to be through cess and market borrowings whereas remaining 68.5% is assumed to be covered by private investment under BOT contracts. However, the BOT projects are not really to be awarded as assumed under above plan declared by MOSRT&H if estimates prepared by Working

Group of 11th Plan are viewed. The Working Group has acknowledged significant funds from cess and market borrowing to be used for remaining stretches under phase-II and hence, BOT projects are estimated to cover at the most 50% of total funding requirements if really the projects are awarded time to time.

Table: IV-13

NHDP Financing Revised Assumptions

Phase	Funding Arrangement	Approved Cost (Rs. in crores)		
NHDP - I	Cess and Market borrowings	18,846	(US$ 4.18b)	30300 [1999 Prices] (US$ 6.73b)
	External Assistance	7,862	(US$ 1.74 b)	
	BOT/SPV	3,592	(US$ 0.79 b)	
NHDP-II	Cess and Market borrowings	23,420	(US$ 5.20 b)	34,339[2002 Prices] (US$ 7.63b)
	External Assistance	7,609	(US$ 1.69 b)	
	BOT	3,310	(US$ 0.73 b)	
NHDP - III	Cess and Market borrowings	30,497	(US$ 6.78 b)	80,626(US$ 17.92b) [1.1.2006 Prices]
	Share of Private Sector (BOT Projects)	50,129	(US$ 11.14 b)	
NHDP - V	Cess and Market borrowings	5,519	(US$ 1.23 b)	41,210(US$ 9.16b)
	Share of Private Sector (BOT Projects)	35,691	(US$ 7.93 b)	
NHDP - VI	Cess and Market borrowings	7,680	(US$ 1.71 b)	16,680 [1.1.2006 prices] (US$ 3.71b)
	Share of Private Sector (BOT Projects)	9,000	(US$ 2.00 b)	
Total	Cess and Market borrowings	85,962	(US$ 19.10 b)	**203,155** (US$ 45.14b)
	External Assistance	15,471	(US$ 3.43 b)	
	Share of Private Sector (BOT Projects)	101,722	(US$ 22.60 b)	

Note:- US$ = Rs.45

(Source: Based on Basu 2007)

The requirement of funds during the 11th Plan (2007-2012) for implementation of NHDP has been worked out by the Working Group. The total amount required during this period is about Rs. 1,73,501 crores. The projected availability of fund from various sources during Eleventh Plan period (2007-1012) are assumed by the Working Group as below:

Table: IV-14

Financing Assumption of NHDP during Eleventh Plan Period (2007-12)

S. No.	Funding Source	Amount (Rs. Crores)	
1	Cess	36,589	(21%)
2	External Assistance	4,454	(2.50%)
3	Borrowings by NHAI	41,615	(24%)
4	Surplus from the user fee	3,108	(2%)
5	Share of private sector	87,735	(50.50%)
	TOTAL	**1,73,501**	**(100%)**

(Source: GOI 2007: Working Group 11th Plan Report)

The problems with NHDP can be viewed in terms of problems with the way NHAI was set up and asked to perform and also the delivery system assigned to NHAI to meet with targets. Looking to the expansion of NHDP in fact, NHAI has just concentrated on Phase –I & II that is 32% of total Rs. 203,155 crores programme for its first eight years out of its total stretched tenure of 16 years (i.e. January 1999 to December 2015). Now it aspires to achieve remaining 68% of unprecedented scale of investment in NH segment within next eight years that too mostly under changed delivery system of PPP. Since NHAI is permitting up to 40% of project cost as a grant to private concessionaire of PPP project, the cess, borrowing and surplus from user fee (after deducting for operation and maintenance) etc. are going to be equally relevant for sustainability of NHDP financing even if all the projects from Phase-III are possibly awarded on BOT basis. In the further sections, NHDP implementation problems with NHAI and converging role of NHAI with State PWD is analyzed in the NH sector.

4.7.3 Problems in Actual Implementation of NHDP:

The Planning Commission Core Group has brought to the notice that the policy framework for toll-based BOT projects was originally approved by the Cabinet in 1997(GOI Report 2006). Subsequently, in-principle approval of NHDP Phase I & II was given by the Cabinet on April 5, 2000 followed by CCEA approval of NHDP-I on December 12, 2000. Under the said approval of NHDP, contracts were to be awarded to the extent possible on BOT (Toll)/ BOT (Annuity) model. However, 5,810 km under NHDP-I have been four-laned through item rate construction contracts (i.e.

cash contracts) that were funded entirely from cess, borrowings from market and multilateral agencies like ADB. Basically borrowings/loans were secured by Government and all funds were directed to NHAI in terms of budgetary allocations. Some 476 km were taken up under the BOT (Annuity) mode that would require deferred payments over 15 years and hence it was suited to budgetary allocations. The total length of four-lanning through toll based BOT mode was merely 454 km. The departmental way of execution of Phase-I was not impressive and hence under next subsections, attempts are made to sort out problems with set up of NHAI and financing of NHDP.

4.7.3.1 Problems with Set up of NHAI Under NHAI Act, 1988:

National Highways Authority of India Act, 1988 provides for the constitution of an Authority for the development, maintenance and management of National Highways and for matters connected therewith or incidental thereto. Under the purview of Act, NHAI has been set up as below which misses many issues as observed hereunder:

1) **Organizational Set Up As Public Servants**: The Authority has a board comprising of a Chairman; not more than five full-time members; and not more than four part-time members, to be appointed by the Central Government by notification in the Official Gazette. Hence, NHAI carries lean and manager-oriented organizational set up. NHAI obtains staff primarily from two sources: (a) by open recruitment and (b) by borrowing from various departments and undertakings of Government of India and various State Governments. Also, Employees of the Authority are declared to be public servants. The employees are subject to transfers like any public servants. Given this set up, it is more like unit of State PWD but with great executive autonomy under stipulated policy of Central Government. As noted earlier, the lean structure of NHAI is not adequate to carry out turnkey based projects for Phase- I&II.

2) **Anomaly between Commercial and Public Purpose**: NHAI is constituted as a corporate body having perpetual succession and a common seal, with power, subject to the provisions of the NHAI Act. Most importantly, it is clearly mentioned under this Act, the Authority shall act, so far as may be, **on business principles**. However under this Act, land needed by Authority shall be deemed for a **public purpose** and such land may be compulsory acquired for the Authority under the provisions of the

National Highways Act, 1956. In case of BOT projects, land is made available to entrepreneur free of cost though the projects are framed on commercial basis. This issue will be more relevant from Phase III onwards when land acquired for public purpose is put to commercial use for long period and land owners are not paid on commercial basis. One more issue is, presently, the land acquired on public concern is not accounting for commercial appreciation of abutting land. If the land acquisition is planned as a part of area development, the issues of land acquisition and compensation to land losers can be integrated in to developmental externality of NHDP. But the area development is not viewed by NHAI as apart of NHDP. Hence, the externalities are encashed by land speculators which is partly shared by local statutory bodies at later stage. The area development based land development rather than land acquisition has mammoth scope for NHDP. This concept is already inbuilt under BOOT based or Corridor development based PPP projects. The land being "State subject" the role of NHAI (under Central Government) will require big amount of preparatory work that is missed under hasty schedule of NHDP and land has remained simply as an inert input material to Phase-I &II. As per Act, NHAI is authorized to construct offices or workshops and establish and maintain hotels, motels, restaurants and rest-rooms at or near the highways. But commercial development is not integrated with NH development as discussed above.

3) **Delays Due To Transfer of NH Alongwith Pending Issues**: The Central Government may, from time to time, by notification in the Official Gazette, vest in, or entrust to, the Authority, any National Highway or any stretch thereof as may be specified in such notification. The NH transferred with State level issues like utility shifting and additional land acquisition problems are beyond the lean administrative capacity of NHAI. The NHAI is engaging retired Government servants to ease the interdepartmental delays but the best agency for these purposes was State PWD who could have maintained the stretches till the hurdles were removed and till the contractor was awarded the NHDP work.

4) **Ownership of NH Assets**: The Act is no way transferring ownership of NH to Authority. In fact with out explaining to NHAI, a NH can be reverted back and handed over to suitable person/entity/concerned State Government with recourse to required money from Authority fund as decided by Central Government in future. More over, the Central Government may (by notification in the Official Gazette)

supersede the Authority for such period, not exceeding one year (subject to further extension) in case of say continued default by Authority in complying Central Government's instructions. These entire mean, Authority simply follows Central Government in framing its goals and carrying out operations and hence if it borrows it is in fact Sovereign debt with explicit guarantees made by Central Government. It goes with out saying that business principles will be always outweighed by policies of Central Government time to time. Similarly, cess funds are also not dedicated to NHAI. Hence, NHAI has no authority to leverage on cess income and also on NH assets by it self.

5) **NHAI as A Mini Public Investment Board**: The Authority shall submit budget for the next financial year, showing the estimated receipts and expenditure of the Authority and forward the same to the Central Government. The annual reports and audit reports shall be laid before each House of Parliament. This is like establishing public responsibility for otherwise expected business based operations of NHAI. For the development of the golden quadrilateral, government has given NHAI an overall project approval and has left it to the Board of NHAI to accord detailed approvals for each sub-projects. The NHAI has as its part time members- Secretary, Ministry of Road Transport and Highways; DG, Roads; Secretary, Expenditure; and Secretary, Planning Commission. Thus NHAI has been so constituted to function as a 'mini Public Investment Board'. This empowering of NHAI to accord project approvals within a framework of an overall project approval has very considerably facilitated the expeditious award of contracts for the NHDP (GQ) and their implementation. But it has not helped in designing proper framework for PPP.

6) **NHAI Debts Are Sovereign debts**: Regarding finance, the Act states that Central Government may, after due appropriation made by Parliament pay to the Authority, on such terms and conditions as the Central Government may determine, by way of loans or grants such sums of money as that Government may consider necessary for the efficient functioning of Authority. All these shall be credited to a fund called the National Highways Authority of India Fund. The money so credited will be utilized for servicing liabilities, salaries and expenses for assigned functions. The Authority may, **with the consent of the Central Government borrow money** from any source by the issue of bonds, debentures , recourse to overdrafts, such other instruments as it may deem fit for discharging all or any of its functions under this

Act. The Central Government may provide necessary guarantee in such cases. Using this provision of Act, NHAI has borrowed some funds from ADB and Indian market issuing Tax exempt bonds. The issue is it is the Government who borrows for development work irrespective of project economics of NHDP. The matter of underutilization of borrowed funds was brought out by CAG (CAG 2005) wherein it was revealed that after obtaining bond money, the lack of actual progress compelled NHAI to park the money in fixed deposits. The CAG observations are covered under subsection: **4.8.4.** The external assistance in terms of loan is supplied to NHAI in terms of grant and loan where loan proportion is minimal and thus NHAI has implemented NHDP so far basically on budgetary allocations. The year wise financing of NHAI operations is available under Table:IV-15. As per this data, borrowing of NHAI has been exceptional only during FY 2002-03.

Table: IV-15

Financing of NHAI (Rs. in crores)

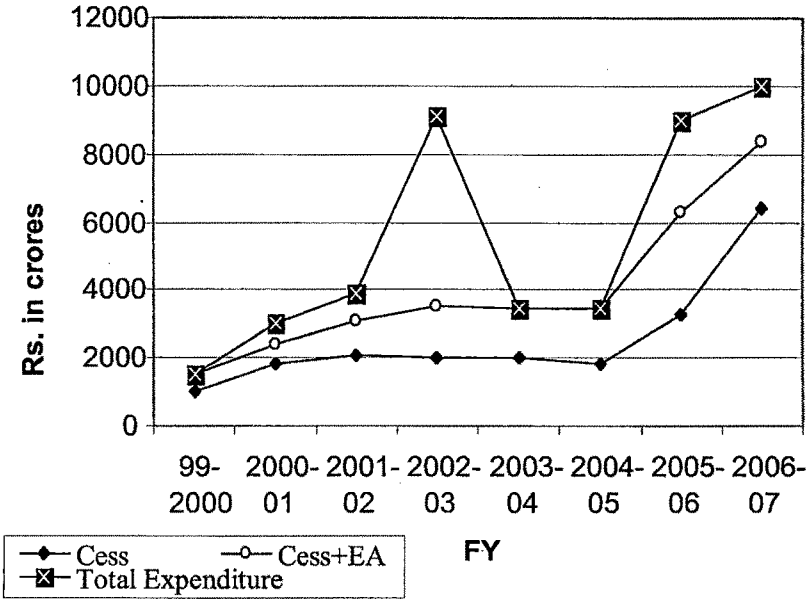
Year	Cess	External assistance		Borrowing against 54 EC Bonds	Budgetary Support	Total
		Grant	Loan			
99-2000	1032 (68%)	492 (32%)	0	0	0	1524 (100%)
2000-01	1800 (59%)	461 (15%)	120 (4%)	656.62 (22%)	0	3037.62 (100%)
2001-02	2100 (54%)	887 (23%)	113 (3%)	804.44 (20%)	0	3904.44 (100%)
2002-03	2000 (22%)	1202 (13%)	301 (3%)	5592.94 (62%)	0	9095.94 (100%)
2003-04	1993 (58%)	1159 (34%)	290 (8%)	0	0	3442 (100%)
2004-05	1848 (54%)	1239 (36%)	361 (10%)	0	0	3448 (100%)
2005-06	3269.74 (36%)	2400 (27%)	600 (7%)	1289.00 (14%)	1400 (16%)	8958.74 (100%)
2006-07	6407.45 (64%)	1582.5 (16%)	395.5 (4%)	1500.00 (15%)	110 (1%)	9995.45 (100%)
Total	**20450.19 (47%)**	**9422.5 (22%)**	**2180.5 (5%)**	**9843 (23%)**	**1510 (3%)**	**43406.2 (100%)**

(Source: Economic Survey 2006-07)

The actual financing of NHAI is summarized from Table: IV-15 schematically under Figure: IV-1. The area between the line of total expenditure and line of Cess+ External Assistance(loan and grants combined) gives market borrowings and budgetary support.

Figure: IV-1

NHAI Spending on NHDP



(Source: Economic Survey 2006-07)

4.7.3.2 Problems with Long Term Financing of NHDP:

The financing of NHDP so far raises many issues related to long term sustainability of NHDP.

- The spending capacity of NHAI has remained average about Rs. 5,000 crores per annum over the period 1999-2007 whereas Eleventh Plan Working Group expects investments of Rs. 17,000 crores per annum through NHAI (deducting for private investments during this Plan period) considering financial assumption under Table: IV-14.
- It was widely recognized by the Government that a simple reliance on competitive markets is unlikely to produce efficient outcomes in infrastructure, a sector with pronounced 'public goods' characteristics of "non-

rivalness" and "non-excludability" (Economic survey 03-04) and hence public financing was chosen in initial Phases. The summary of sources of finance available with the NHAI is all about public money mainly through cess and Sovereign borrowings. Hence both are subject to limit under given structure of taxation of Government. The direct tolls (after deducting operation and maintenance expenses) collected on completed stretches are estimated not to contribute much to support cash contracts. Hence the direct private investment based on tolling is being stressed by Government to push the NHDP further. But the ground efforts do not seem deep routed to harness PPP on wider scale. The Government stand was very significant at the end of Ninth Plan as felt from Economic Survey 1996-97. It says, during the period of transition from 100 per cent state investment in infrastructure towards increasing participation of the private sector, there will be continued need for state support in many infrastructure projects. In this regard, it is imperative to promote public-private partnerships. The Government should also take significant equity positions in projects to crowd in commercial equity and debt, and once the project becomes viable, disinvest and reinvest in new projects in the nature of a venture capitalist. (Economic Survey1997-98) But here, very less private sector participation is achieved and equity contribution is not found much demanded either (see Table: IV-17B above which says average awarded cost is hardly 10% of total project cost though the limit is up to 40%)i.e. only those projects seems taken up which are perceived viable. More over, refinancing type of exit for above said short tenure partnership of Sovereign is also not promoted so far. Here, Chinese way of Corporatization and securitization to divest the public body of the project once the project cash flow has stabilized seems relevant example and no such mechanism is embedded anywhere in Indian PPP policy so far. It is necessary to note that concession agreement for PPP now allow up to 40% of cost sharing but the risk of project formulation in terms of viability assessment is thrown to private sector alone from bidding stage itself When government is allowing own equity, it is nothing but reduced cost of project to that extent. The project viability concerns are far beyond reducing initial project cost. For innovation, NHAI has attempted Annuity based BOT projects with different mode of delivery as compared to is known mode of investor's toll based BOT. This is like British practice where direct

tolling is not preferred whereas India has committed direct tolling by applying 1997 fee rules on NH.

- In a meeting held under the chairmanship of the Prime Minister on March 15, 2005 (GOI Report 2006), it was decided that "As regards the issue of EPC versus BOT, it was agreed that for ensuring provision of better road services, i.e. higher quality of construction and maintenance of roads and completion of projects without cost and time overrun, contracts based on BOT model are inherently superior to the traditional EPC contracts. Accordingly, it was decided that for NHDP Phase-III and onwards, all contracts for provision of road services would be awarded only on BOT basis (either based on Toll or Annuity or a suitable Toll/Annuity hybrid), with EPC awards being made in specified exceptional cases only." Emphasizing on potential of PPP route, Government has put restrictions on Sovereign borrowings for NHDP. Core Group of Planning Commission (GOI Report 2006) has decided to allow all estimated future cess funds and toll revenues to be the borrowing limit so that debts are serviced from these projected funds. Core Group has estimated cash flow from 2005-06 to 2030-31 and has concluded that the borrowings within this limit will require all the projects from Phase-III onwards to be awarded on BOT (Toll) basis only. Again the PPP route is confirmed to be inevitable by Core Group and cess and toll revenues are found just sufficient to serve maintenance of completed stretches, grant portion of BOT(Toll) projects, Consultancy charges , land acquisition, utility shifting and servicing of market borrowings in case of annual deficit etc. However, the Eleventh Plan Working Group recognized that internationally, the share of Highways network which could be improved through PPP is limited to 15% to 20% and hence suggested to correct policy. Now it is decided to offer all projects first under BOT (Toll) route inevitably **based on feasibility studies** so that the serious bidders are met with. Then the annuity mode is verified before resorting to cash contracts. In such case, approvals are required for all revisions of decision. Hence it will consume lots of time and will lead to lack of seriousness among the bidders also. Thus only clarity seems existing at planning stage is BOT (Toll)format shall be tried out at feasibility level and instead of purely item rate cash contracts that exists under State PWD mode of

execution shall be totally replaced by outsourcing based EPC contracts that suits to lean set up of NHAI. In totality, it leads to conclude on future of NHDP that the GOI is yet not committed to PPP route because it has no innovations except meager application of BOT format (either on toll otherwise annuities) and hence, in future most of the green field projects will be taken up on cash contracts like it happened for Phase –I&II.

- If NHAI has future course of action involving lesser privately placed direct investments then current receipt based cess and other resources are small to cater to NHDP requirement of funds. Hence, NHAI will be required to borrow to carry out EPC and or annuity based projects (even grant portion of BOT (Toll) will require NHAI to borrow). The problem of NHAI is it has neither the assets nor right on dedicated cess funds. Hence, any borrowing will require approval of GOI is it would be GOI debt. This in turn is tantamount to cessation of NHDP in want of funds or subject to change in priority among other sectors, sudden demise of this ambitious project.
- Though the investment in highways is lumpy and on long term basis, NHAI has not explored market borrowings as a permanent source of financing. In fact India has no market existing (like US[4] where bond financing was found quite useful in constructing the Interstate highways leveraging on user charges) for such long term commitments based on securitization of cess and toll revenues.
- Thus not only Phase-I&II, cess is going to be long standing source of financing NHDP. But the cess is based on fuel consumption and any technological gain in fuel efficiency of vehicles or invention of new technology leading to non taxable (e.g. solar based) or bio fuels which will be promoted by Government itself , all such factors are not considered in framing cess revenue support to NHDP. The present cess is like fixed surcharge and is not even linked with increase in fuel prices or inflation. Hence, long term sustainability of financing of NHDP using cess revenues is not reliable. The anticipated outcome could be either increase in toll rates on completed stretches or increase in cess or halting of NHDP in want of adequate funds.

- Overall, hard budget constraint on borrowings, inadequacy and vulnerability of cess revenue, resistance to toll increases on completed stretches leaves it to private investments in BOT (Toll) projects as only tool available to push the NHDP further from 11th Five Year Plan onwards. Any decision to opt for BOT (Annuity) or EPC could mean unforeseen revenue requirements and may hamper the sustainability of NHDP.

The rhetoric declaration on PPP is not really found committed and it is most likely that cash contracts would dominate the NH development irrespective of continuation or discontinuation of NHDP and NHAI. This is what MOSRT&H has done through State PWDs who have been separated from NHDP for growth of NHAI. But as discussed below, the State PWDs are valuable species with tremendous executive capacity not only for cash contracts but also for PPP route. The involvement of State PWDs in NHDP seems a potential way for augmenting executive capacity of NHAI.

4.8 TWIN SUPPLIERS OF NH DEVELOPMENT & THEIR CONVERGENCE:

Presently, 43,705 km of National Highways are entrusted to the State Government / Union Territories for the stretches of National Highways passing through the respective States. The NHAI has been entrusted with 16,117 km of National Highways included in various phases of National Highways Development Project (NHDP) and other important National Highways. Other 5,512 km of National Highways in difficult 10 border areas are with the Border Roads Organization (BRO). Some 1256 km length of National Highways is yet to be entrusted to the implementing agencies (GOI 2007: Working Group 11th Plan Report). Thus, State PWDs on behalf of MOSRT&H and NHAI are two suppliers of NH development as far as undertaken study is concerned.

The mandate for NHAI to take up NHDP required shrinkage of MOSRT&H though Ministry has been engaged in maintaining & developing all N.H. from July 1942[5]. In the past, the respective State PWD carried out NH activity till NHAI really got operational in 1995[6]. The major activities of NHAI started from year 2000 onwards. The NHAI is presently (2007) entrusted only 25% of total NH in India while 65% of NH is still managed by State PWD. The performance of State PWDs has remained

impressive till NHAI got operational and divested them of NH stretches passing through their States.

4.8.1 Implementation of NH Works Through State PWDs:

Basically after emergence of NHAI, MOSRT&H has preferred to assign limited maintenance of NH in the hands of State PWD and few original works if the NH is not part of on going NHDP. Historically, NH has grown enormously since last fifty years as below since independence and so far NHAI has contributed almost nothing in this statistics.

Table:IV-16

Achievements of National Highways after Independence (Mainly through Budgetary Allocations)

Period	Total Length* (km)	Widening to two lanes (km) during period	Widening to four lanes (km) during period	Strengthening of pavement (km) during period	Major Bridges (Nos) during period
1947-1969	24,000	14,000**	Nil	Nil	169
1969-1990	33,612	16,000	267	9,000	302
1990-1997	34,298	3,138	483	5371	51
1997-2002	58,112	1,955	797	3511	91
2002-2003	58,112	710	418	1109	14
2003-2004	65,569	671	799	1489	17
2004-2005	65,569	221	841	1087	1

(Upto October,2004)

* Length at the end of the period. ** Includes a length of 6,000 km which were already two lane at the time of declaration as National Highways.

(Source: GOI Report (2005):National Road Transport Policy Document)

The above data includes NHAI operations in full swing after 2002. Before shrinkage of MOSRT&H (that is shrinkage of role of State PWDs) the role of State PWD is found very much impressive during 1997-2002 (Ninth Five Year Plan). The PWDs have more or less achieved NH targets inspired by massive NHDP movement initiated in that period.

Table: IV-17

Achievement of Whole NH Sector during Ninth Five Year Plan (1997-2002)
(Mainly Through State PWD)

Achievements during period 1997-2002	Widening to two lanes (km)	Widening to four lanes (km)	Strengthening of weak 2 lane pavement (km)	Bye-passes (No.s)	Constructing Major bridges/ROB /RUB & rehabilitations of bridges (No.s)
Target	1791	944	3042	59	633
Achieved (% of target)	1955 (109%)	797 (84%)	3511 (115%)	30 (51%)	442 (70%)

(Source: Based on GOI Report (2005): National Road Transport Policy Document)

The Tenth plan document also lauds achievements of State PWDs relating to four-lanning, two-lanning, strengthening of roads during the Ninth and Tenth Plan period, keeping in view the availability of funds. Some shortfalls in construction of bypasses and bridges are explained primarily due to the time-consuming process of land acquisition and shifting of utilities in the case of bypasses. Construction and design problems are also found responsible especially for major bridges. The point of reference is, one of the recommendation of Dr. Rakesh Mohan Committee (Mohan 1996), was to set free NH sector from State PWDs and vesting all interest and responsibilities to sole special purpose body i.e. NHAI.

The major difference in modus operandi of State PWD under administration of MOSRT&H and NHAI is, the former agency is traditional, more self servicing and seeking numerous approvals at competent levels while NHAI works more like self competent autonomous project implementation unit. NHAI carries minimal staff but tenders out all of its activities for speedier implementation.

The Table: IV-18 & 19 explain the difference between availability of scale of funds for NHDP and other NH managed through State PWD. Under NHDP alongwith cash contract, works under externally aided projects (EAP) has also suffered in terms of financial progress in Tenth plan period. Regarding NH (O) (i.e. NH other than BRO and NHDP), the budget approvals to works under various annual plans are only 86% (total BE is Rs. 7972.70 crores and total tenth plan outlay is Rs.11864.00 crores) of Tenth plan outlay as mentioned in Table: IV-19. This is not understandable since it is always made felt that other NH faces heavy resource crunch. The annual plans are approved

by MOSRT&H for the estimates submitted by States PWD. Hence, it is either State PWD has not proposed sufficiently to use the plan provisions or Ministry has gone thrifty in approving the State proposals. Compared to this, NHAI (Table: IV-19) has crossed Tenth plan outlay limits by 38% in approving annual plans and hence expenditure has also exceeded by 13.50% over Tenth plan outlay. As far as physical progress and achievements are concerned, annually, Ministry based projects (through State PWD) seems quite reasonable while NHAI could not achieve completion of Golden quadrilateral by Tenth plan is sufficient to describe lagging. As given under Table: IV-19, for NHDP Phase III (actually to be taken up on BOT basis), it was targeted to spend Rs. 1500 crores for preconstruction activities but could manage only Rs. 750 crores of expenditure.

Table: IV-18

Financial Performance of NH other than NHDP (i.e. without NHAI) during Tenth Plan (Rs. in Crores)

Year*	Outlay in Annual plan		Actual expenditure (%of BE)
	Budget Estimates (BE)	Revised Estimates (RE)	
2002-03	1594.80	1520.98	1434.74 (90 %)
2003-04	1604.80	1569.00	1500.59 (94 %)
2004-05	1595.50	1659.50	1448.65 (91 %)
2005-06	1627.30	1581.00	1573.68 (97 %)
2006-07 (upto31-1-07)	1550.30	NA	1008.99 (65 %) (upto31-1-07)
Tenth plan total approval: EAP: 3200.00 NH(O): 8664.00 TOTAL :11864.00	EAP: 529.10 NH(O): 7443.60 TOTAL : 7972.70	-	EAP: 15.55 NH(O): 6951.10 TOTAL : 6966.65

* These are year wise total amounts for External Assistance Program (which is insignificant) & NH (O) regular Head For State PWD (predominant). They combinely represent State PWD achievements on average. The Statistics For BRO are separate and not considered here.

(Source: GOI (2007):Working Group 11th Plan Report)

Table: IV-19

Financial Performance of NH under NHDP during Tenth Plan

(Year Wise Total Amounts for External Assistance Program, Cess /Investments & NHAI Phase III) (Rs. in Crores)

Year	Outlay in Annual plan		Actual expenditure (%of BE)
	Budget Estimates	Revised Estimates	
2002-03	4003.00	3503.00	3503.00(88 %)
2003-04	4287.74	3441.90	3441.90 (80 %)
2004-05	5058.00	3848.00	3447.58(68 %)
2005-06	7669.74	6919.74	6919.74(90 %)
2006-07 (upto31-1-07)	8495.45	NA	6850.00(81 %)
Tenth plan total EAP: 10789.50 Cess/investments: 10500 .00 NHDPIII:0.0 TOTAL :21289.50	EAP: 12485.74 Cess/investments: 15518.19 NHDPIII: 1510.00 TOTAL : 29513.93 (this is due to inclusion of NHDPIII from 2005-06)	-	EAP: 8501.48 Cess/investments: 14910.74 NHDPIII:750.00 TOTAL : 24162.22

(Source: GOI (2007): Working Group 11th Plan Report)

Looking to the above facts, State PWD seems quite valuable agency for NH sector which was ignored for realizing a massive unified highway programme like NHDP. Instead, creation of an autonomous and special purpose vehicle, NHAI is opted by the Government for implementation of NHDP.

4.8.2 Plight Of NH Vested in State PWD By MOSRT&H:

The NHAI is given very structured future plan of development of NH under NHDP (Phase I to VII) at an whooping estimated cost of Rs.173,501 crores to be invested during 2007-2012. Even after future transfer of NH from PWDs to NHAI for NHDP, MOSRT&H estimates huge funds requirements for improving other NH (NH(O) Head). The Ministry considers a length of 21,090 Km of National Highways will still

remain collectively with State PWDs and BRO (at present they manage 43,705 km & 5,512 km respectively) after transferring decided stretches to NHAI. If the deficiencies are to be removed from NH to be managed by PWDs and BRO in next two five year plans, Rs. 45,000 crores (at 2005 prices) or an average fund of Rs. 4,500 crores per year is required on NH other than NHDP. The reality is, average fund allocation under NH (O) Head is about Rs. 2,000 crores per year to this Ministry for Non-NHDP sections & thus a shortfall of Rs. 2500 crores under NH(O) head allocation every year is likely to exist. A financial crunch is also found on maintenance & repairs (M&R) of other NH. The actual funding under M&R need in 10th Plan has been only to the extent of 40% of requirement which is simply continuation of old tradition of losing priority in garnering scarce resources. Interestingly, the Department-related Parliamentary Standing Committee on Transport, Tourism and Culture (2003) quotes the MOSRT&H - "The requirement of funds for the maintenance and repairs of National Highways has gone up from Rs.55.50 crores in 1981-82 to Rs.2200 crores in 2002-2003. During this period, the length of National Highways has increased from about 29,000 kms. to 58,112 kms. The volume of traffic carried by the National Highways has also increased by 8-10% per annum thereby requiring more funds. Further, the rise in labour wages and steep increase in prices of materials particularly petroleum products in recent years, are reflected in the higher cost of maintenance and repair of National Highways. However, the actual availability of funds has been about 40 to 50% of the requirement. Therefore, within the available fund allocations the objective of preservation and proper up keep of National Highways on year-to-year basis is very difficult to be achieved." (Parliament of India (2003) :Demands For Grants Report 2003-2004)

A comparison of the year-wise fund provided for maintenance and repair of NHs from 2002-03 (i.e. from start of full swing operations of NHAI) to 2006-07 shows that (Table: IV-20) this varies to the tune of about Rs. 730 crores to Rs. 870 crores per annum as against the annual requirement of about Rs. 2,000 crores per annum as per the norms set up by the Department of Road Transport & Highways. The gap between the requirements as per norms and allocation has been accumulating over the years and now poses a threat to the system. Maintenance being a non-plan activity there is

also a tendency by the Government to apply *ad hoc* cuts in the face of resource constraints [Para 6.1.4 of 11th Five Year Plan document].

The fact is corroborated from details of the allocation proposed by the Ministry and the amount provided to them in this sector during the last few years (Table: IV-20).

Table: IV-20

Constrained Funding of M&R for NH Sector

Year	Normative Requirement Project to Finance (Rs. Crores)	Amount provided (Rs. Crores)	Shortfall (Rs. Crores)	% Shortfall
1998-99	1000.00	549.80	450.20	45.00
1999-2000	1250.00	703.00	547.00	44.00
2000-01	1350.00	702.50	647.50	48.00
2001-02	2000.00	725.00	1275.00	64.00
2002-03	2200.00	800.00	1400.00	63.64
2003-04	2200.00	731.74	1468.26	66.74
2004-05	2480.00	745.56	1734.44	69.94
2005-06	2100.00	868.10	1231.90	58.66
2006-07	2012.00	814.38	1197.62	59.52

(Source: Demands for Grants Report 2003-2004 and for 2002-03 and onwards from Working Group 11th Plan Report 2007)

Referring back to TableIV-3 above, it is seen that major declaration of NH occurred in Ninth Plan & then in Tenth Plan. The Planning Commission emphasizes in its document for Tenth Five Year Plan that the upgradations of large segments of State Highway to National Highway during the Ninth Plan has been a contributory factor to poor maintenance and riding quality of the non-NHDP National Highway network as the available resources are spread thinly. Hence, plight of NH roads under State PWD is compounded due to declaration of new NH with out proper financial commitment and the situation can remain so in future as newly declared NH is first handed over to State PWD.

The paucity of funds is really haunting the NH not yet taken over by NHAI or precisely, till anticipated development work is awarded by NHAI. In the process, the executive capacity of State PWD is ignored by divesting them of whole NHDP.

The Ministry continues to rely on the States PWD to develop and implement projects on National Highway stretches which remain within its jurisdiction. Of late, to repeat the fact, the Working Group on Roads (2007-2012) for 11th Five Year Plan admits that the PWDs are basically a strong institution and need to be preserved. Account codes and works manuals in the States PWD are well developed over a period of time. However, the Working Group suggests that they need review in the light of procedural changes made at the Central level to keep up with the latest technology. Also, there should be proper synchronization of the workings of the procedures and systems at the Central and State levels. Many State PWDs have established a separate organization for implementation of the works on National Highways. The Working Group also continue to suggest further that State Governments should develop these National Highway departments by posting the officers having experience only in roads and bridge works. Due to present emphasis on private sector participation for development and maintenance of National Highways systems and procedures in the State PWD are required to be amended. The recognition of State PWD as a strong institution for carrying out NH activities is quite a diverging stand taken by Working Group. Recalling the recommendation of Dr. Rakesh Mohan Committee to set free NH sector from State PWDs and various subsequent steps taken from late 1990s for limiting role of State PWD in NH sector (in terms of franchising out technical activities and only assigning job of shifting of utilities, removing of hindrances, co-coordinating land acquisition procedure etc.) was tantamount to killing this very skilled species from the arena of road sector. The rhetoric argument to shun government intervention is simply meant limiting traditional job of State PWD. Of course, handing over basic infrastructure to private sector has also its own problems as would be explored later. Before really analyzing PPP, the cash contracts executed by NHAI are worth understanding because this is the prime mode of delivery not only for State PWDs but also for NHAI given the scanty outcome of private sector investment in NHDP. Moreover, though a project is undertaken on BOT basis, the actual civil work is executed by local contractors who in turn sign typical cash

contract with BOT concessionaire and thus cost and time overruns are basically hinged with such contracts.

The role of State PWD was recognized right from initiation of operations of NHAI. The MOSRT&H Report (2003) for expenditure reforms while suggesting on 'Rationalization of The Functions, Activities And Structure Of The Ministry Of Road Transport And Highways ' quotes that- "The continuing division of responsibility for National Highway development between the Ministry of Road Transport and Highways and the National Highway Authority of India (NHAI) has resulted in different approaches to the delivery of road projects, including on technical and quality issues. Care should also be taken to ensure that NHAI does not become a behemoth, by itself wanting to develop and maintain the entire network. It should as far as possible resort to special purpose vehicles (SPVs) and the BOT and annuity routes for implementing projects. It should also encourage State Road Development Corporations to participate in the development of National Highway projects and use the state PWD, where appropriate, so that their expertise is also availed of. In developing and implementing projects, NHAI should as far as possible adopt a corridor approach and develop an entire corridor instead of small stretches at different places". Instead of expected convergence of roles of these two agencies, NHAI seems to be somewhat conflicting with State PWD in development of NH.

4.8.3 NHAI Way of Executing Construction Works (Other Than PPP):

The NHAI way of contract frame work and contract administration is quite similar to State PWD except that NHAI has to seek very less approvals once the project is approved. Also, NHAI has maintained lean staff structure favouring construction supervision and quality assurance through independent consultants and thus traditional role of Engineer -in- charge is outsourced. This is like separation of role of Employer (though itself is technically sound) from role of Engineer. This is an approach recommended by FIDIC (Federation Internationale des Ingenieurs Counseils i.e. The International Federation of Consulting Engineers). FIDIC conditions are framed to provide more equitable environment for Contractor. The appointment of Independent Engineer in terms of construction supervision consultant (CSC) is a major step in safe guarding claims of contractor for work done and reducing aspect of duress. The major aspects in NHAI operations are allowing defect liability from

substantial completion of stretches instead of waiting for overall completions of work. How ever, NHAI has deviated little from FIDIC practice by assigning duty of test checks to Project Director (NHAI) on the measurements recorded by consultant. The appointment of construction supervision consultant is not possible under State PWD execution because MOSRT&H is paying State about 9% of approved cost as an agency charges for activities like supervision and this is a major difference in operations of these two agencies. The comparison for working of NHAI and State PWD for non PPP work on NH is described below:

Table: IV-21

Modus Operandi for Cash Contracts

Aspect	NHAI	State PWD
Plans and estimate approvals	NHAI seeks annual gross approvals from Central Government (Finance department, MOSRT&H)	The annual plan approvals plus work wise technical proposal, detailed estimates, bid documents etc. is required to be approved from MOSRT&H and then from highest cadre of State PWD.
Bidding process and awarding the work	For work above Rs.10 crores, NHAI has own standard bidding document otherwise basically bidding forms and process is same as State PWD from bidder's perspective. The same technical specifications & standards are adopted by State PWD and NHAI as provided by Ministry of Shipping, Road Transport & Highways, Indian Roads Congress, or Bureau of Indian Standards. However NHAI frame work is more flexible to adopt latest international standards based on proposals of CSC who is generally multinational consultancy firm. The major difference between NHAI and State executed project is scale of project cost and almost all	After obtaining Job number (that is administrative approval for sanctioning estimated cost of a work from MOSRT& H), tendering is done at State level. As per amount of estimated cost, tendering is carried out at relevant level of State govt. If more than Rs. five crores, a standard biding document prescribed by MOSRT&H is used for inviting bid offers. This bid form is carrying essence of FIDIC practices and empowers Engineer (he is from State Government) for providing equitable conditions and minimized approvals. The awarding of work is through letter of acceptance from State Government and the contract is signed between Contractor and

Aspect	NHAI	State PWD
	projects taken up with preparation of Feasibility Study, Preliminary project report and then Detailed project report before inviting bids. All these reports are prepared by specialized consultants. These types of studies are rarely assigned for State executed projects. Before calling of bids for a project, approval of chairman NHAI for calling bids shall be taken in each case. The bid documents are approved by Member NHAI. The entire process from the date of receipt of bids to award of contracts should generally be completed within 40 days.	State Government. Hence, in case of disputes, State is respondent and liable for all operations of work. Though State has multi level approvals, it completes scrutiny of received bids and awarding of work even faster than NHAI.
Pre bid meeting	For tenders of maintenance works costing more than Rs. 20 crores or original works costing more than Rs. 50 crores or works of specialized nature, a pre-bid meeting at a specified place and time is conducted, any ambiguities felt by bidders are recorded in minutes. The Member NHAI will generally provide clarifications to all bidders and may issue modifications to bid documents.	The States often allow pre bid meeting for major works.
Pre-qualification for bidding	Pre-qualification is necessary for all works costing more than Rs.50 crores and other complex or special works, irrespective of their value. For works costing between Rs 5 crores to Rs. 50 crores, and for works under special circumstances, contractors shall be post-qualified. In first case, it is two	Pre-qualification is necessary for all works costing more than Rs.5 crores and other complex or special works.

Aspect	NHAI	State PWD
	stage bidding and hence only the prequalified bidders will submit financial bid. In case of post qualification, bidding is in two covers and only for those passing in technical bid, (i.e. first cover) the second cover of financial bid will be opened for evaluation. For works costing less than Rs 5 crores, under open bidding, bids from contractors already registered with the State PWDs, Railways, MES, CPWD and other engineering organizations approved by NHAI, are considered. The PQ details gathered by NHAI are more elaborative than State executed process.	
Land acquisition and utility hindrances	The Project Director (PD) of NHAI is fully responsible (PD is like Chief Engineer in State PWD) for handing over clear ground to the contractor. Removal of encroachment, unauthorized access etc. is managed by PD.	The Executive Engineer of PWD (it is district level position for State PWD) is fully responsible for handing over clear ground to the contractor and for removal of encroachment, unauthorized access etc.
Execution of civil work	The successful bidder will execute the work under stipulated tender conditions. The Engineer in charge is mostly independent Construction Supervision Consultant (CSC) appointed for the work. The Project Director (PD) of NHAI has limited obligation on test check basis for checking the quality and quantity of work.	The successful bidder will execute the work under stipulated tender conditions. The Engineer in charge is mostly Executive Engineer of PWD. Few contracts now allow independent quality Assurance consultants for quality auditing and quality control during execution. Traditionally, Executive Engineer is fully empowered in rejecting or approving work done for making payment.

Aspect	NHAI	State PWD
Measurements taken for payment	PD will issue Measurement Books, Level Books and Field Books to the CSC and CSC will work like PWD in terms of maintaining records and overseeing the construction. The CSC is required to exercise physical checking at various key personnel level before proposing the work done for payment. The team leader of the Supervision Consultant is required to check measure 5% of the value of the measurements and the Resident Engineer is required to check measure 10% of the value of the measurements before any Interim Payment Certificate (IPC) is submitted to NHAI.	Executive Engineer issues such books for records of work done to subordinating engineers. The books are verified by Executive Engineer while endorsing payments.
Check on Contractor by Employer	PD will random test check 3% of the measurements, including 3% test checking of all hidden items (i.e. items getting hidden or immeasurable with further progress) of the work and all items for which the quantity exceeds more than 25% of the tender quantity, before making payment of any running/final bill. Project Director shall also exercise test check at least 3 % of Original Ground Levels/Reduced Levels (like hidden items) recorded by the Supervision Consultant in the Level Book. PD also test checks quality control tests at least to the extent of 3%. This mean, PD is additional check on work done to be paid.	The Executive Engineer checks 10% of amount of work to be paid and 5 % of Original Ground Levels/ Reduced Levels where as his deputy checks 50% for bituminous items and 100% for hidden items. Here, the Employer is also Engineer in charge. All the testing is got done by the representative Engineer from office of Executive Engineer.

Aspect	NHAI	State PWD
Payment to contractor	The measurements recorded by CSC in measurement book are basis for making payment to contractor. All measurements should be recorded neatly in the Measurement Book. The signature of the contractor or his authorized representative is obtained in the measurement book for each set of measurements. The PD makes payment through Drawing & Disbursing Officer (DDO) after exercising checks as above or at least releases 75% of amount certified by CSC keeping pending 25% for scrutiny. This is like first pay and then verify approach.	The measurements recorded by representative of Executive Engineer in measurement book are basis for making payment to contractor. The signature of the contractor or his authorized representative is obtained in the measurement book for each set of measurements. Executive Engineer can also give similar type of payment for non availability of detailed measurements as an advance payment in specific cases only. For NH works, one Regional Officer is posted by MOSRT&H for certifying all bills of State PWD and payment is directly given by Pay & Accounts of Central Government to the contractor in the form of D.D. So payments to contractor get first go from Executive Engineer and then mostly smoothly followed through Regional Officer.
Post execution evaluation	The payment of CSC is based on man days and is through PD. On completion of the project, PD writes confidential performance appraisal report of the CSC and CSC writes for the contractor. The civil contracts provide for defect liability period of one to two years. But performance of CSC is accepted for making payment to contractor with out challenge.	This aspect is yet to be adopted by State PWD. But civil contracts provide for defect liability period of one to two years.

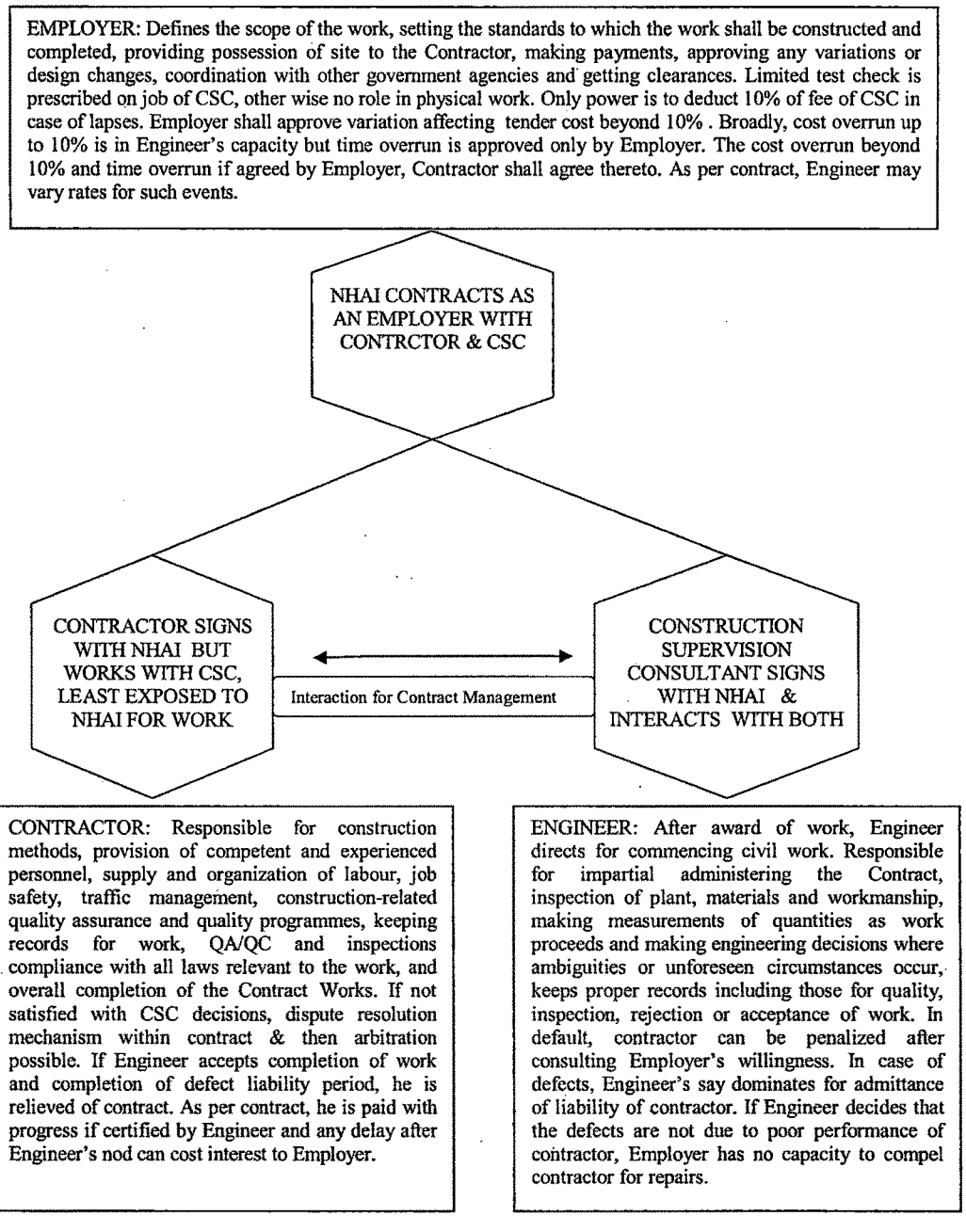
(Source: Derived from actual practices)

Thus it is evident that if a work is executed by NHAI for works other than PPP, there will be agreement between Contractor and NHAI as both are primary party interested

to be engaged in a construction work. One separate agreement between NHAI and CSC will also take place where CSC is just a mechanism as per original contract between Contractor and NHAI for fulfilling contractual obligations. The role of CSC and PD (NHAI) are totally taken over by State PWD if the MOSRT&H assigns the work to State PWD. In every case, the contract and laid down standards shall prevail if followed in spirit by executing agents. In figure IV-2, the role of each player is elaborated while carrying out road/ bridge work on NH by NHAI. As given below, though Employer NHAI is basically a technical body, it is not involved in execution activity and it prefers project formulation and monitoring. Except few test checks (3% and it is trivial to conclude about work done), NHAI will be paying contractor as certified by Engineer. In case of defects, the Engineer's decision is binding for fixing responsibility of contractor and for carrying out remedial measures. Thus if CSC and Contractor develop common interest, the contract management is not serving interest of Employer. At the most NHAI can penalize CSC for 10% of fees or can spoil credentials through making reports. But practically it is difficult to penalize and fix responsibility. Vice versa, the Employer though pays to contractor; he has limited influence on outcome of project. Earlier, MOSRT&H relied on State PWD for outcome of NH project by allowing full influence of PWD on contractor. Now in case of NHAI, it is relying on a private independent entity while spending multiple of what it had been spending through PWD.

Figure: IV-2:

Execution of NH Works by NHAI (non PPP)



(Source: Derived from actual practices)

The above role of Employer is like facilitator for providing smooth working of contract under the rule of contract and least influenced by Employer. The Employer or Contractor has to route any conflict through Dispute Resolution Board (DRB) which

is a panel of experienced representative of primary parties who were agreed upon by both parties during bidding process. The DRB is supposed to act in solution finding manner. The next stage for dispute resolution is Arbitration and it is more in legal terms and it is followed by Court of Justice if any party desires so. The contractor produces work programme incorporating all mile stones to be achieved in execution as prescribed in bidding document. The work programme is like bench mark for verifying time overrun and if there are events either due to underperformance of Contractor or beyond his control, Engineer specifies and attributes the cost of time overruns as per contract. If mile stones are missed out then contract provides for daily basis penalty (1/2000 of Contract price per day delay called Liquidated Damages) for time overruns due to Contractor and may freeze escalation cost for work executed in extended time period. The Liquidated Damages are maximum 10% of tender cost and escalation costs can be even higher if most of work is executed during extended time period. If time overruns are due to unforeseen reasons, late approvals, late hindrance clearances or change in scope, the Contractor can claim prolongation cost and escalations from Employer.

The cost overruns are attached to time overruns and are covered as above. The cost can also overrun if the Engineer suggests extra quantity or new items which were not included in bidding document. The Contractor is compensated by allowing fixation of appropriate rates for such variations. The cost overruns due to escalations are mostly covered under contract conditions. The problems may occur while fixation of rates if the Contractor is not agreeing with compensation. In case of State PWD they follow established schedule of rates which are generally lagging from current market rates. In NHAI case, the CSC has capacity to follow market trends and that is encouraging for Contractor. Generally contracts are found designed to safe guard cost overruns as above if Contractor follows time schedule as per agreed work programme. So, it is correctly stated that- **Time is Essence of Each Contract.**

To summarize, non PPP projects on NH are now adopting equitable conditions like international standard practices like FIDIC and dispute resolution is also now as per international practice through DRB & Arbitration & Reconciliation Act(1996) before exposed to traditional litigations. The time overruns and cost overruns are provided fair cover under contract. So, overseas investors can feel congenial ambience in taking

up such investment projects either through cash contracts or PPP route because construction practices under PPP route are more or less same as cash contracts. In case of State PWD, the local contractors have been used to produce goods so far and using updated standard bidding document for works from Rs. 5 crores to 100 crores (which also has essence of FIDIC & is at par with NHAI conditions except provision of independent supervision entity) the contract provisions are more explicit & safe guard legitimate interest of cost and time overruns for Contractor. States PWD do accommodate provision of independent third party (private) inspection for quality assurance and quality audits in lieu of minimizing role of Government in contract management. The intentions are aimed at better PSP for satisfactory implementation of NH works.

4.8.4 Performance of Changed Agency Preferred by NHAI:

Though at present, NHAI is implementing NHDP making a clear break from the State PWDs and has established a new paradigm for the delivery of road projects, generic problems are found same as faced during State PWDs execution. The NHAI has resorted to consultant based (alternatively to say outsourcing based) approach for almost every aspect of work including supervision but the out come is not encouraging as revealed by Comptroller and Auditor General of India[7] (CAG) report (CAG 2005). It is the supervision that was mainstay of State PWD in the development of NH and NHAI has replaced State PWDs with private Supervision Consultant. The supervision aspect is very critical area of whole contract for projects other than BOT. The supervisory authority verifies records and accepts the work for payment and that holds duress capacity too. Any time overrun, cost overrun and qualitative aspects are under the purview of supervisory authority. Even for BOT type of projects, if contract provides, such authority has some say before putting the facility open to traffic. The facts and issues in NHAI way of execution are brought to notice by CAG and are useful for undertaken study as CAG has access to many internal aspects of execution which are rarely known to any researcher.

1. NHAI follows FIDIC (International Federation of Consulting Engineers) system of project supervision and project execution. This is an internationally accepted form of contract which allows definition of Employer, independent Engineer and Contractor with their defined roles such that the contractor

works under equitable conditions and do not get exposed to duress of Employer i.e. Government body like NHAI or earlier it was PWD. Hence the project management including day-to-day supervision, quality assurance, issuance of working drawings, approval of mix formulae for road layers, approval of variations and their rates, measurements of work done and certification of payments to civil contractors, recommendation of Extension of Time (EOT), levy of liquidated damages (LD that is fine for time overrun) etc is entrusted to an independent technically qualified contractor called Project Supervision Consultant (PSC i.e. CSC) selected through competitive bidding. It shall be clear that role of PSC is larger than Employer who shall merely ensure hurdle free site to contractor and shall pay the contractor under stipulated time frame once the bill is certified by the Engineer i.e. PSC. The Employer (i.e. NHAI) is interacting with contractor through PSC and if PSC is satisfied with performance of contractor, Employer shall ignore any underperformance no matter if not found self convincing. CAG finds working of PSC dubious and imperfect project formulation (preparing feasibility and all kinds of project reports, finalization of quantity estimation and specification for bid purpose, etc.) by the project consultants.

2. Auditors were critical about performance of design consultants also. Preparation of accurate and realistic Detailed Project Reports (DPR) was missed by NHAI in many cases. Hence, executed cost of projects exceeded the awarded cost of project very widely – from 12.26 per cent to 86.82 per cent. The CAG probably views it as an incomplete base work before floating bids and hence wasteful payment for preparing DPR e.g. earthwork in excavation in two stretches varied by as much as 6,449 per cent in addition to other items, which varied between 83 per cent and 498 per cent. Similarly, construction of embankment in one stretch varied by as much as 1,08,150 per cent. In one case, NHAI itself did not rely on DPR prepared by consultant and bid was prepared differently. When this work was executed , the actual expenditure did not tally with bid or DPR. Ironically, the execution was done by same consultant who prepared DPR. Thus consultant and NHAI both could not anticipate nature of work involved. Any bidder would expect reasonable estimates of contract value and any variation would mean negotiating rates for excess quantities. Such variations could also mean changing requirements on

site under local demands or change in design parameters on site but in every case it can be a deterrent for a contractor who is interested in finishing out job at earliest. The effect of such variations can be fatal for a BOT concessionaire who wants to start tolling at earliest.

3. The perfunctory DPR had many omissions like- omission to include correct area of land in land acquisition map prepared by the DPR consultant for the two stretches. It led to delay in completion by four months in one stretch and revision of drawings for shifting of utilities at an excess cost of Rs.1.01 crores (over BOQ cost) led to delay of nine months in another stretch. In one more stretch, omission to provide additional land amounting to Rs.25.16 lakh for realignment resulted in delay of 12 months in handing over the site to the contractor; some discrepancy in sub-soil investigation for a bridge for the same project led to delay of six months and excess cost of Rs.1.75 crores; inaccurate estimates prepared for another stretch not only led to variation of Rs.15.11 crores but also resulted in execution of additional work of Rs.9.62 crores not provided for in DPR; the diameters of foundations for two bridges and design of foundations for three bridges for a stretch had to be changed during execution due to incorrect information provided by the DPR consultants. This enhanced the cost by Rs.12.48 crores, besides depriving NHAI of competitive rates at the time of initial award of contract.

4. The auditors lament that there were delays in award of contracts ranging from 1 to 30 months in respect of 30 stretches involving 2,889 km. There were instances of inadequate planning/inequitable tendering, ineffective contract management by NHAI and Project Supervision Consultants (PSC) and sub-standard quality of work executed by the contractors in the implementation of NHDP Phase-I. These resulted in delay in completion of the project and increase in the cost. Time overrun ranging from one to twenty eight months with a cost over-run of Rs.692.62 crores in 13 out of 27 stretches was mainly attributed by audits to above reasons.

5. After inviting bids from the pre-qualified bidders, NHAI should have awarded the contracts at the earliest or invariably within a period of 180 days as per the bid condition. NHAI delayed the award by two to seventeen months (average delay 5.7 months) after receipt of bids for 10 stretches leading to avoidable extra cost due to price escalation.

6. The auditors expected that NHAI could have standardized projects of similar nature for its costs and quality to facilitate cost comparison at the time of preparation of estimates, award and execution of works. The contracts for widening and strengthening of highways stretches were awarded in length ranging between 5 km and 126 km. An analysis of contracts for nine stretches relating to three sets of contiguous stretches awarded concurrently indicated that the cost per km varied widely from Rs.1.86 crores to Rs.4.20 crores. NHAI did not analyze the reasons for variations. In respect of three stretches in Vijayawada-Chilkaluripet, the same contractor executed the contracts but disparity in rates was noticed resulting in extra expenditure of Rs.26.34 crores. The audit generally calculates losses based on possible lowest rates. The audit considers such variations as inefficient project monitoring in public interest. Similarly, eleven contracts provided for price escalation on all permanent works, variation items, and day works. Two contracts provided for escalation on permanent works and variation only. Fifteen contracts provided for price escalation on variations only. Contract stipulations for many stretches quoted differently for estimating price escalations and recovery of advances and audits pressed for standardizations of such clauses to exclude possibility of subjectivity and anomalies.

7. From 1995, the Government has exempted all goods supplied and machinery used in highway projects approved by it and funded by World Bank and Asian Development Bank from levy of customs/excise duties. NHAI failed to include a clause in the notice inviting tenders that the bidders should quote the prices excluding customs/excise duties as exemptions were available to them for World Bank works and thus lost the opportunity to have reduced cost of contracts.

8. NHAI paid Rs.4.22 crores to the contractors in respect of two stretches on account of reimbursement of royalties of various materials, which were already included in the price variation payments. The NHAI has reportedly agreed to recover such amount.

9. NHAI awarded two bids to second lowest bidders at their bid prices not following its practice to bring down the second lowest bidders to match their rates with the lowest bidders who could not qualify due to lack of bid capacity.

10. NHAI could not effect recovery of Rs.14.14 crores in terms of contract clauses from a contractor as it did not keep the Bank Guarantees (BGs) submitted by the contractor alive for the required period. In another contract, the contractor submitted forged BGs and obtained payment of interest-free advance from NHAI. NHAI could not make recovery of Rs.10.30 crores because there was no security available with it. The auditors observed that NHAI continued accepting forged BGs up to July 2004. This is an indication of inadequate machineries at PIU level for NHAI.

11. The Government had instructed NHAI to restrict consultancy charges to six per cent of contract price. NHAI failed to restrict the cost of supervision consultancy to six per cent. The actual percentage ranged between 1.49 and 11.16 in 32 cases. This observation of audit needs mention that State PWD works for NH projects with 9% agency charges per contract.

12. NHAI granted extension of time (EOT) without invoking the contract provision for liquidated damages (LD) for delays attributable to the contractors. Despite delayed execution attributable to the contractors, the recovery was not proposed resulting in non-levy of Rs.51.49 crores in respect of five packages.

13. The PSC did not perform 8 out of 14 mandatory tests in two stretches. The modified bitumen used at site failed four out of seven tests conducted by technical audit. No evidences for PSC approval of Wet Mix Macadam (WMM i.e. a layer of metal surface) design before use were traceable. These shortfalls under the direct supervision of the PSC were felt by CAG defeating the purpose of engaging highly qualified PSC engineers.

14. On financial management side, auditors found undue parking of borrowed funds by NHAI. NHAI had a cash surplus of Rs.1,769.32 crores (including interest accrued and due) in March 2000. Subsequently, during the three years ended March 2003, it mobilized additional funds through market borrowings to the extent of Rs.7,054 crores through Capital Gain Bonds at interest rate ranging from 10.5 per cent to 7 per cent per annum. Further Bonds amounting to Rs.1,461 crores were raised during 2000-01 and 2001-02 by NHAI despite having net surplus of Rs.1,602.77 crores ending 2001-02. In the absence of matching financial progress of NHDP, these funds were parked in fixed deposits. NHAI subsequently redeemed bonds to the extent of Rs.656.61 crores during 2003-04 but the whole exercise revealed typical Government Touch to financial management of long term resources.

15. NHAI was slow to introduce tolling on the completed portions of the road and lost about Rs.42 crores due to delayed decisions/notifications. This was probably a question of willingness to charge on so far free roads. The audit estimates that owing to delays and overpayments, the projected cash surplus of Rs.13,239 crores in Phase-I by the end of 2011-12 (as claimed by NHAI) is not likely to be achieved and there is high probability of NHAI suffering cash deficit at the end of 2011-12 besides undischarged liabilities to the extent of Rs.1,940.62 crores.

16. Concluding on this audit, CAG remarked that imprecise terms of contract with the design consultants, who were responsible for preparation of detailed project reports (DPRs) and project supervision consultants (PSCs), who were responsible for supervision of the works and their underperformance constituted the foremost risk to the NHDP. The contract terms of both the consultants did not provide for performance warranty and penalty for underperformance. Specifically, underperformance by PSCs entailed a high risk of overpayments and quality compromise. The auditors feel that NHAI does not have a detailed corporate plan to carry out such a large investment programme.

All that Auditors mean, NHAI is not handling the NHDP as was envisaged and the PIU kind of limited staff set up with layers of outsourcing of planning and management of project is not working in correct spirit. One straight answer could emerge that if NHAI has been provided with thin administrative set up that suits best to BOT type of projects, expertise of State PWDs shall be employed for turn key projects at least where executive capacity of State PWD is evident. Ideally, State PWDs shall be encouraged to compete with private consultants for supervisory job, but that seems impossible due to shortage of staff in State PWDs for works under own Government. Also, question of State employment competing for Central work needs supportive policy framework.

One more evidence for underperformance of consultant based implementation of highway projects is provided by CAG but this time for State PWD project in Gujarat. Despite having proved executing capacity of State PWD, as per norms of World Bank funding State was compelled to engage design consultant and supervision consultant for executing World Bank assisted Highway project.

The auditors (CAG 2002-03) observed that:

1. The contracts are framed as per FIDIC specifications and any delay in payment to contractor by the Employer (here it is Government of Gujarat) would invite interest @ 12%. Due to delay in making payments to the contractors, Government had to pay interest of Rs.23 lakh to them. This is mainly due to State being not used to pay contractors in tight schedule.
2. The project design consultant provided design report and also provided bidding documents for widening and strengthening of some State Highways. But after some execution, many contractors reported inadequacy of designs and attributed pavement failures to them. The PSC and project design consultant revised the design and asked to insert a granular sub base layer which required removal of overlays due to progress of work achieved so far. The audits estimates additional financial burden of Rs.24.82 crores due to revision in design. This is significant remark of CAG Because, like NHAI, here also the design, supervision and quality assurance was vested with private consultants but with out accountability. The work progress of World Bank assisted contracts were also reported unsatisfactory and thus effectiveness of consultants was under question.
3. Though the item of Built up spray grout was to be followed by Open graded carpet, then no tack coat was required while laying OGC but the contracts were prepared for OGC with tack coat as per routine specification. In a work, though quarry was available near by, the estimates were prepared based on remote quarry with out justifications. Such technical blunders could have fixed whole set up of PWD staff if they were involved in design and supervision. Here, consultants are not held liable for such blunders due to incomplete contracts.

Basically, the imperfections in project planning and management are similar for State PWD and NHAI when both worked on the same platform of FIDIC with the help of consultants. For time being we can say that the consultancy business is not yet professionally matured to give desired outcome. However, the ignorance of traditional role of PWD in development of NH is the main issue in managing NH during and after completion of targeted development under NHDP.

4.8.5 Implementation of PPP Projects BY Both Agencies:

As noted before (section **4.5.2**), MOSRT&H was the pioneer in inviting private sector participation from 1995 when NHAI was also functional but was busy with ADB projects. The scope of all these pioneering BOT projects was more focused to construction of bridges and some bye-passes. Year wise PPP projects undertaken by MOSRT&H through State PWD are listed in Table: IV-22a. These 25 projects included 13 bridges; 6 bye-passes; 1 tunnel and only 5 projects of four lanning of road sections. The construction of bridges & bye-passes are generally conceived to be viable BOT toll projects due to element of monopoly. Since MOSRT&H has given first priority given to NHAI vis-à-vis State PWD route of execution, the quantum of private sector participation was never equitable looking to the executive strength of Ministry through State PWD. Notwithstanding this, except one ROB project delayed by few months the all remaining BOT projects are found well completed in time. As per records, MOSRT&H has not executed any annuity based BOT so far. One interesting fact comes to light that outlay of MOSRT&H (for NH other than NHAI) managed by State PWD was Rs. 7522.52 crores for period between 1996-97 to 2001-02 and Rs.11864 crores for Tenth Plan(2002-07) thus total Rs. 19386.52 crores for 1996-97 to 2006-07. These were the years when above said PPP has occurred (as deduced from approvals and project status) for Ministry amounting Rs.1406.31 crores. Hence MOSRT&H has seen PPP to the tune of 7.0% of total investment during this decade.

Table: IV-22: A

Public- Private Partnership in NH Development by MOSRT&H (BOT).

Calendar Year Of Approval	No. Of Projects Approved	Total Project Cost Rs. in Crores
1995	1	103
1996	2	34
1997	4	286.3
1998	6	225.06
1999	3	109.68
2000 & 2001	0	0
2002	1	48
2003	4	286.12
2004	2	167.15
2005	2	147
TOTAL	**25**	**1406.31**

(Source: Derived from MOSRT&H Annual Report 06-07)

Due to taking over most viable NH stretches from State PWDs, NHAI has seen manifold private investment under PPP route (Table: IV-22:B) but percentage share in total investments in NHDP has remained not really encouraging. For NHAI, the share of Annuity based projects has remained almost one third of total PPP. Now, annuity based projects are nothing but secured returns (Fixed Payback) on investments in deferred installments. Hence, any contractor who has been executing cash contracts of five or more years of contract period will consider it a case of delayed payment only but benefited by predecided returns on investments which was not always possible under cash contracts. Hence, admissibility of annuity projects as a PPP project is a dilution of original concept of PPP. Notwithstanding this, if NHAI achievements during 2006 are kept aside, NHAI has awarded only 19 BOT (Toll) projects and 20 Annuity based projects which mean total 39 projects in nine years.

Table: IV-22: B

Public- Private Partnership in NHDP by NHAI

Calendar Year Of Approval	No. of BOT Projects Approved			Total Project Cost Rs. in Crores		
	Toll based	Annuity	Total	Toll based	Annuity	Total
1998	1	0	1	18	0	18
1999	1	0	1	70	0	70
2000	0	0	0	0	0	0
2001	2	0	2	760	0	760
2002	4	8	12	2106	2353.7	4459.70
2003	1	0	1	644	0	644
2004	1	6	7	450	2126.71	2576.71
2005	4	1	5	1736.09	418.04	2154.13
2006	36	5	41	12403.60	2452.60	14856.2
2007	5	5	10	2655	2060.44	4715.44
TOTAL	**55 (69%)**	**25 (31%)**	**80 (100%)**	**20842.69 [69%]**	**9411.49 [31%]**	**30254.18 [100%]**
Total Project Cost is not actual Private Investment due to availability of grant.						
I) Awarded Project Cost (Except Negative Grant portion) i.e. Public Share Demanded by Entrepreneurs at Aggregate Level (Rs. In Crores)				2823	1286	4109
II) Negative Grant Offered by Entrepreneurs at Aggregate Level (Rs. In Crores)				-1223	0.0	-1223
Total (I+II) i.e. Net Awarded Project Cost (Rs. In Crores)				1600	1286	2886
Net Awarded Project Cost As a % of Total Project Cost At Aggregate Level				7.7%	13.7%	9.5%

(Source: Derived from MOSRT&H Annual Reports & NHAI Progress updates as on 30-9-07 accessed on www.nhai.org)

Going Phase wise, as on 30-9-07 (i.e. at nearly completion of GQ) - the total expenditure of GQ is reported to be Rs. 27484.91 crores (public funds) and net private investment (after deducting grants or adding negative grant offers) is Rs.3254 crores i.e. private investment is 10 % of total investment for GQ and thus NHAI has financed GQ basically from government allocations only. Since, Phase II has seen only 22% of progress; extent of private sector participation is very early to derive. But considering above details, the performance is likely to be better than GQ case. Thus whether it is MOSRT&H or NHAI, when government is spending for example Rs.

100 crores on NH it sees parallel private investment of around Rs. 10 crores only and it is not encouraging as a new paradigm for the delivery of road projects. The autonomous route of implementing NHDP then seems in need of corrections. It is clear that NHAI and Ministry both have preferred very fragmented approach for PPP by selecting scattered but obviously viable stretches in wide network. So, the PPP based investment in this decade has remained modest. Unlike MOSRT&H, NHAI was envisaged to derive ways & means of private sector participation for realizing historical level of investments under NHDP. But frame work never anticipated better than 10% of private share which was attained by MOSRT&H also in its scale with the help of State PWD. Extracting above data further, it is found that NHAI is far away from PPP so far. NHAI could arrange private investors as late as after 2001.

The recent reports of MOSRT&H and Planning Commission (GOI (2007):Working Group 11th Plan Report) emphasize on PPP for balance NHDP with more private investments. This seems now easier with some experience so far and mainly due to high density traffic on selected stretches in Phase-III,V &VI. The Phase III are high density traffic corridors not included in Phases-I & II; (ii) providing connectivity of state capitals with NHDP (Phases-I&II); and (iii) connectivity of centers of tourism and places of economic importance. The Phase V is six lanning of already crowded mainly GQ. Under Phase VI, access controlled four / six lane divided carriageway expressways are proposed. The financial assumptions under Table: IV-13 assumes private sector investment of Rs. 94820 crores in total under newly taken up Phase-III, V &VI up to Year 2015 and that is approx. 70% of total estimated cost of Rs.138516 crores for these three phases. This can be termed unprecedented but the selected stretches are commercially quite viable and hence we can expect better response from investors if properly invited. The awarding of stretches under Phase-IIIA & Phase-V is underway as given in earlier Table:IV-11. Almost 50% length under Phase-IIIA is awarded under PPP (total awarded km=1881; 36 km on Annuity basis and remaining on BOT (Toll)). While 148 km are awarded on BOT (Toll) under Phase-V and that is merely 2% of total 6500km. All these 148 km are awarded on negative grant because they are between Vadodara-Bharuch-Surat on NH-8 (i.e. high traffic density corridor). The Phase-IIIA & V were approved long back in 2005 and in that sense the NHAI seems lagging in awarding the stretches. No awarding is found under Phase-VI yet which is recently approved.

Though limited commitment is shown by Government for PPP projects as discussed above, three explicit steps are taken to encourage PPP in NH segment that has widespread impact on PPP projects for other roads also. Government has offered some incentives in PPP projects irrespective of specific needs of individual PPP project. They are mainly:

1. Road Sector has been declared as an Industry.
2. Foreign Direct Investment (FDI) up to 100% under automatic route.
3. Provision of Capital Subsidy up to 40% of the project cost to meet the viability gap funding.
4. Provision of encumbrance free site for work, i.e. Government bears expenses for land and pre-construction activities.
5. Easier external commercial borrowing norms.
6. Duty free import of high capacity and modern construction equipments & Excise exemption.
7. Higher concession period, up to 30 years.
8. 100% tax exemption in any consecutive 10 years out of 20 years.
9. Right to collect and appropriate toll revenues.
10. Arbitration and Conciliation Act 1996 based on UNICITRAL provisions.

Financially, the excise and customs exemption benefits on material and equipment; the tax holidays for ten years (now Minimum Alternative Tax is applicable in any case) and easier foreign investments are attractive benefits to concessionaire of PPP project. However, except tax holiday benefit, all incentives are admissible cash contracts as well. For PPP projects, all benefits and obligations are covered under a concession agreement which is contractual agreement between Government and concessionaire.

The second step is finalizing and implementing Model Concession Agreement for PPP projects which has long standing regulatory effect on development of roads in general and NH in particular. Third one is, the process of approval of PPP projects for NHDP costing from Rs. 250 crores onwards is routed through specialized committees

of members from various ministries and that has separated approval of PPP projects for NHDP from other public expenditure based projects.

4.9 USE OF MODEL CONCESSION AGREEMENTS FOR PPP IN NH SEGMENT AND ISSUES:

The earlier BOT projects were taken up by MOSRT&H based on a contract form on the lines of cash contract except some operational stipulations. Looking to the need for a standardized contractual format for wider scope of NHAI, a High Powered Committee (HPC) was constituted by the Government of India in 1997 to evolve the standard documents for PPP projects. This also included the Model Concession Agreement (MCA) which was finalized during the year 1999.The same has been revised by Planning Commission in 2006. The salient features of MCA (2006) are as below. Necessary comments are provided in analyzing the provision of MCA in respective paragraph whereas noteworthy issues are derived separately at the end of subsection.

1. **Bidding Criteria**: Instead of keeping concession period as a bidding criterion, the concession period is predetermined by Government based on prevailing traffic at the bidding stage subject to limitation that concession period terminates when the proposed road gets full design traffic. The MCA (i.e. for this study purpose it is revised in 2006) tentatively suggests twelve years of concession period for four lanning projects and twenty years of concession period for four lanning projects providing six lanning at later stage within concession period. MCA suggests within twenty years of concession period, six lanning shall be available by end of eleventh year of concession period. The inbuilt capacity augmentation clause is not stated as mandatory but it is supposed to phase out investments that can reduce grant requirement for viability. In any case, construction period is kept at two years for four lanning work that is included within concession period as above.

Thus, departing from usual practice of bidding based on concession period offer, it is the grant demanded from Government has been kept as a bidding criterion. This is exactly the point raised by Alfred Marshall (Kerf et al. (1998)) that **the competition for the franchise shall turn on the price or the quality, or both, of the services or the goods, rather than on the annual sum paid for the lease.** The MCA is missing

this point and hence the constitution of MCA is focusing on cost implication of concession and is silent over user's perspective.

2. **Base Case Submission by Bidders**: The bidders shall bid in a open competitive bidding with base case financial model indicating grant or negative grant required during the project period supported with bid security as an earnest money. Also, yearly concession fees payable to Government shall be quoted by the bidders. The base case shall atleast assume concession fees (a concept to achieve revenue sharing in progressive manner as the project progresses) of Rs. 1 per annum for first nine years and from then onwards 1%, 2%, 3% etc. per annum respectively of project revenues for tenth, eleventh, twelfth year etc. The base case shall specify Net Present Value (NPV) of base case and this NPV is protected under change in law type of events. The assumptions for calculating NPV (e.g. discount rate) are not specified by MCA. The base case shall have traffic projections based on generally yearly 5% compound growth rate and shall estimate revenues based on toll rates specified which are escalated at only 40% of increase in Whole Sale Price Index (WPI).

Thus MCA has standardized traffic projections and the bidder is inclined to estimate almost same revenues but bidders can differ on estimating WPI and input costs like construction costs. MCA is silent over debt financing of project cost leaving financing of project under the purview of concessionaire.

3. **Grant Amount to Concessionaire**: This is like viability gap funding availed to ensure that commercially less viable projects are also put under PPP route. The MCA provides capital grant at maximum 20% of total project cost (exclusive of anticipated equity support) as an equity support but not more than actually equity invested by concessionaire. MCA also provides for additional grant at maximum 20% of total project cost for O&M support admissible during operational period if specifically required for viability, case to case basis. It can be a negative grant case also.

Financially this provision can be viewed as reduction in project cost for the bidder to accommodate financial returns through predecided toll rate structure. However,

clauses like these need not usher in flow of private sector investment for green field projects if returns on investments are not seen secured by private sector. A bidder may appreciate same financial relief in terms of assured returns instead of cost sharing while working in greenfield conditions.

4. **Responsibilities of NHAI/ Ministry:** MCA is explicit regarding role of public authority granting concession. The way Concessionaire is supposed to maintain performance guarantee against possible under performance, MCA uses same performance guarantee as a base to punish public authority if right of way is not timely availed to concessionaire hurdle free. The public authority shall provide necessary coordination with other public bodies. The public authority shall maintain the facility up to award of work to the level existed at bidding stage. The role of public authority becomes most vital when *Force Majeure* events are met with. However, a major job of shifting of utilities met with during civil works is left to the concessionaire and any delay due to non cooperation of utility holders/owners is excused to the concessionaire.

The NHAI is having very thin organization and hence the role of utility shifting is passed on to the concessionaire if met during construction. This is major source of time overrun and occurs due to incomplete project preparation. Since NHAI has no hold over local conditions, MCA expect the concessionaire to toil for the problem. But involvement of local body (e.g. State PWD) can give relief to concessionaire in his obligations.

5. **Construction and Maintenance of Facility:** The specification and standards are listed by MCA but bidder can deviate if he can justify with cost implications. MCA provides for appointment of independent engineer (IE) to test check construction and ascertain proper maintenance. Independent engineer certifies completion of civil work to start tolling. Any delay in completion is liable to attract penalty to concessionaire in addition to reduction in toll period due to fixed total concession period. IE can allow tolling if facility is substantially completed and remaining work (that is listed under Punch list) can be completed within specified period. A change in scope is admissible in the interest of project and extra cost is compensated mostly in cash to the concessionaire. The maintenance of facility is governed

by maintenance manual and lane closure for more than reasonably allowed period for maintenance can attract daily fine at 0.1% of daily fee receivable per every 250 meter of road closed. Similarly, any default to maintain the facility free from damages will attract fine per day at specified % of average daily fee collection.

The issues are listed under subsection **4.8.4** as brought out by CAG (2005) due to thin set up of NHAI and heavy dependence on consultants like IE shall remain a sensitive issue for any project under PPP.

6. **User Fee** : Except exempted class of vehicles all vehicles are asked to pay tolls as per NH Fees Rules (1997) and base rates derived using the WPI at the time of opening to traffic are provided in the bidding document i.e. draft concession agreement. MCA provides for rebated user fee for frequent users and additional fees for over loaded vehicles. Now allowing overloaded vehicles involves Road Transport Offices of State Government but this complicated issue is linked with concessionaire's obligations. The MCA (1999) provided heavy rebates to local users but this revision exempts local traffic from paying tolls. The concessionaire is compensated for handling local traffic on monthly basis. Most significantly, MCA (2006) provides differential toll rates to distinguish between peak and off peak traffic. The peak hour premium is allowed up to 25% whereas off peak discount is stipulated double of peak hour premium. Also, off peak hours are stipulated to be taken as double of peak hour period. MCA is not defining peak period traffic in terms of traffic volume. During operations, fees are revised every year on account of variation in WPI. But the variation up to 40% of WPI variation for that year is applied to base rates.

Thus some effort is made by Government to incorporate value pricing and effect of WPI variation is given only to the extent of 40%. This means emphasis is given to efficiency aspect in this MCA. The value pricing however will require complete picture of availability of alternative routes and its service standards. A flat provision as above will be generally avoided by concessionaire.

7. **Free Service Roads**: If service roads are provided, local traffic will not be exempted on main carriageway. The service roads shall be useful to segregate and divert slow vehicles from main carriageway. A distance of maximum 10 km is treated toll free from entry point of facility to location of toll booth. Any extra toll cabins for catching evasion between two toll plaza is allowed at the risk and cost of Concessionaire.

Generally near urban intersections, local traffic creates many problems for the concessionaire and it is accepted by MCA by allowing them free and facilitating service roads for them. The estimation of tollable traffic is however not known to Government or bidders and that is detrimental to viability of PPP project. The above clause only reduces the operational resistance from local traffic.

8. **Traffic Risk Shared Partially**: This revision of MCA has most important feature of sharing traffic risk partially in terms of extending or reducing the concession period. Independent yearly traffic sampling to ascertain actual traffic was introduced in MCA (1999) which is also included in this revision. One of such traffic sampling is stated to be undertaken on a predecided target date (generally on completion of tenth year of signing of agreement). A target traffic is found applying 5% compound growth rate to base traffic on bidding date. If actually surveyed traffic falls short or exceeds target traffic by more than 2.5%, the concession period is adjusted for that correction. In such case every 1% of traffic shortfall is adjusted with increase in concession period by 1.5% but subject to maximum 20% of original concession period. Similarly for every 1% of excess traffic over target traffic, concession period is reduced by 0.75% but subject to maximum 10%. This clause shall not be misunderstood as a full traffic guarantee. The clause is measuring deficit in traffic realization at a specific point of time within the concession period and is compensating the deficit in terms of extension of toll period. If it turns out to be year of economic recession, MCA has no discrimination and the concessionaire could be a gainer. A separate stipulation asks to verify if actual traffic exceeds design capacity within any accounting year and it happens for three accounting years thereafter, the concession agreement is terminated with compensation to concessionaire.

Limiting of concession period based on actual traffic is very good provision for long term concessions otherwise, a toll project will be crowded up and sustainability of toll policy can be affected. In any case, annual cross verification of actual traffic helps in assessing losses to the concessionaire in the event of claims. However, applying 5% growth rate to arrive at anticipated traffic is ignoring potential of many busy corridors. In fact such percentages shall be stipulated based on potential of individual project.

9. **State Support Agreement and Construction of Additional Tollway:** MCA allows construction of competing tolled facility joining the same destination points not before 12 years of concession period for four lane project and 15 years of concession period for six lane project. A State support agreement is signed by concerned State not only for conferring upon monopoly power but also to support the development process of NH for utility shifting , land acquisition etc. The Sovereign also surrenders immunity to legal proceedings on this commercial but mutual agreement.. The additional tollway will increase the concession period (no cash compensation except termination case) and reduce concession fee payable to authority. The fees for additional tollway are predetermined at 1.25 times of fees on existing toll road for every category of vehicle. If the additional toll road connecting the same destination points is 25% longer than project highway, it can not be termed as additional competitive toll way for compensation.

The State support agreement is like surrendering State priorities of road development for sustainability of NH toll roads and hence it has met with loud resistance. Also, it can be adverse to development of CORE NETWORK advised to be developed under GOI Vision 2021.

10. **Subsistence Revenue and Revenue Shortfall Loans:** MCA agrees for definition of Subsistence Revenue as- the total amount of fee revenue that is required by the concessionaire in an accounting year to meet the sum of (a) O&M expenses subject to annual ceiling of 3% of the total project cost (inclusive of grant portion) for first operational year. For subsequent years, the same should be based on WPI. (b) Debt service in such accounting year but this sum shall be checked for already any compensation paid by authority on account of *Force Majeure* event. MCA offers revenue shortfall loans at 3%

above bank interest rate if after due diligence concessionaire could not realize revenues atleast required for subsistence. A sum equal to 50% of the "profit before tax" is required to be earmarked by concessionaire for repaying such loans with interest in each accounting year.

Actually this provision is taking cognizance of viability concern and Government is monitoring cost and revenues to some extent that is believed to be concern of concessionaire. The remedies are inadequate as it merely offers high interest loans but it brings transparency to private operations which is god for introduction of mechanism like refinancing etc.

11. **Risks and *Force Majeure:*** Like earlier versions of concession agreements, this MCA recognizes all Non- political events (e.g. acts of God. Epidemic, earthquake, floods etc); Indirect political events (e.g. war, invasion, blockade, riots, terrorist acts, State wide or industry wide strikes etc.); Political event(e.g. change in law, unauthorized/unlawful Government action etc.) The events listed are quite self explanatory but MCA requires the affected party to notify other party within seven days with explanation of financial implication of such event otherwise the claim is not admitted. The risk matrix is summarized from provision of MCA in Table: IV-23. In any case if event occurs before financial close, the date for the same is extended accordingly and both parties shall bear own costs thereof. It can be clearly observed that all that is discussed under *Force Majeure* is related to cost of civil work and short fall in revenues. The macro economic aspects of interest rate fluctuations and exchange rate risk etc. are not covered under MCA. Hence, financial risk is absolutely borne by the Concessionaire.

Table: IV-23

Risk Allocation under *Force Majeure*

Sr. No.	Category of Event	Effect on Concession	
		Before Project completion	**After Project Completion**
1	Non-political events	Project completion milestones are extended but no compensation to either party	Toll period is extended accordingly if toll collection is less than 90% of average daily collection. If terminated, authority pays 90% of debt less insurance.
2	Indirect political events	Project completion milestones are extended. Concessionaire shall claim from insurance and one half of remaining *Force Majeure* cost* shall be reimbursed by authority.	Toll period is extended accordingly if toll collection is less than 90% of average daily collection. If terminated, authority pays debt less insurance plus 80% of unpaid insurance claims plus 110% of adjusted equity**.
3	Political events	Full cost borne by authority	Toll period is extended accordingly if toll collection is less than 90% of average daily collection. If terminated, authority pays debt plus 150% of adjusted equity

* *Force Majeure cost* includes only interest portion of debt, O&M expenses and increase in civil costs but loss of fee revenue is not accounted for.

** Equity is adjusted for WPI and depreciation over the concession period.

(Source: MCA2006)

Regarding other risks, construction risk and design risk are borne by concessionaire. The revenue risk or demand risk or traffic risk or project risk (all of them basically mean risk in collection of tolls vis-à-vis anticipated tolls) is the theme of any BOT(Toll) project and it is first time attended under this revision of MCA though partly to begin with.

The *Force Majeure* provisions are this time suggesting to assure returns to the tune of 150% on equity in worst case and in general suggests monitoring of toll revenues for admissibility of above provisions. But the monitoring practice is not elaborated in MCA which needs some mechanism to be agreed upon from beginning itself. Like earlier version of concession agreements, here also insurance proceeds are taken up

seriously with out actual development of insurance industry to offer various policies suitable to PPP projects.

12. **Lender's Recourse**: The MCA provides for substitution agreement to safeguard debt obligation and all the financial operations are routed through Escrow account. A stipulation of maintaining financial position of concessionaire to the same level in the event of change in law also protects financial interests of all the parties as per agreed upon financial structure of project at bidding stage. The exact stipulation is, if a change in law effects in to aggregate financial plus or minus implication of Rs. 1.0 crores and 0.5% of the realizable toll fee of the accounting year, based upon NPV worked out in agreed upon financial statement, concession terms are changed or affected party is compensated outrightly. The MCA recognizes senior lenders and subordinated debts in case of terminations. Under substitution agreement, representative of senior lenders is allowed to take over concessionaire's rights and obligations before going for termination of contract.

Actually, MCA is not focused on financial aspects except mentioning acceptance of financial plan at bidding stage and protecting NPV. It is silent over aspects like debt/equity ratio and discount rate etc. For ascertaining bidder's sincerity, MCA stipulates equity of concessionaire firm or consortium in total paid up equity of project. The stipulations are- minimum equity of 51% during construction period in total equity (minimum 10% per each equity holder); minimum equity of 33% during first three years of operations and 26% during remaining period. This is for ensuring concessionaire's interest in the project which is not oriented towards refinancing type of mechanisms.

13. **User's Recourse**: The MCA is very silent over actual benefits being rendered to the road users but is it quite reasonable in terms of securing timely maintenance as decided by IE. The MCA worries about toll revision but first time it is limited to 40% of WPI increment. It agrees to maintain traffic cap to its designed capacity which can be very useful stipulation to thwart congestion in end portion of concession period. The MCA cares for safety and emergency services but the way side amenities are not addressed to. There is concern for safety beyond concessionaire's obligations and hence a dedicated safety fund

is suggested to be created from funds like reduction in cost of project due to change in scope and funds from authority. The safety requirements arising during concession period is to be met with from this fund. Typically a complaint register is required to be maintained at site and authority is stated to monitor the disposal of complaints. MCA mentions that user shall pursue the complaint under Consumer Protection Act 1986 at his own risk and cost.

The user's recourse in terms of securing services for the tolls being paid is not embedded in the agreement. The user may be stranded despite paying tolls and he has no say in tolling policy. The constitution of committee representing user group was suggested by Task Force on Infrastructure (1998) that is not materialized so far and also missed by MCA (2006).

14. **Dispute Resolution Mechanism:** MCA provides scope for amicable mutual understanding under provision of agreement. In case of dispute the Arbitration tribunal made of one member from each party and chairman is selected by these two arbitrators to form a three member Arbitration tribunal.

15. **No Partnership in PPP**: Though popularly BOT projects are labeled Public-Private Partnership projects and MCA itself is titled as "Public-Private Partnership in Highways- Model Concession Agreement", legally, the MCA clarifies that no partnership is created through this agreement. Exactly it states- "This agreement shall not be interpreted or construed to create an association, joint venture or partnership between the parties or to impose any partnership obligation or liability upon either party, and neither party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of , or to act as or be an agent or representative of , or to otherwise bind , the other party". This is significant stand clarified by Government after allowing cost sharing up to 40% of project cost.

Thus the MCA discussed above raises many issues as below:

- Basically, MCA is standardized with a vision to induce stagewise capacity augmentation and hence phased investment with a scope to match with changing trends of spatial developments. Also, the phased development is

expected to require lower grant and hence more projects could be taken up from available Government funds.

- The document is elaborative on civil and traffic aspects but it has not been viewed under project finance perspective assuming MCA shall be regulating civil work and cost thereof along with traffic operation and revenues thereof only. The MCA requires submission of financial base case but it has no practical use once the work is awarded. Under changing financial conditions or at regular interval, the financial model is not reviewed to influence the project economics.
- The MCA provides stringent clauses for obligations of both the parties for timely execution of agreement. But hindrances met with during execution are left to the concessionaire alone.
- The major deviation from practices so far being, fixing up concession period with scope of project and asking bids for minimum costs to the Government. MCA assumes that provision of partial traffic guarantee and selection of appropriate stretches will bring up viable PPP projects but this approach can not foster PPP development to cover all NH sections.
- Similarly the grant up to 40% alone can not provide sustainable PPP projects at unprecedented scale. The financial management of project cost and revenues is beyond the engineering culture of this MCA. A project specific financial analysis can bring out role of both the parties for sustainable PPP development which requires backing up of sound financial market also.
- The MCA has shortened the concession period up to twelve years for four lanning project inclusive of construction period. Except heavy traffic flow, such short period of concession may turn up to be a non viable proposal at given toll rate structure and ceiling on grant portion. Hence overall, the MCA is not conducive to foster PPP model for all traffic levels of NH. The MCA is not having vision to see that all four lanning projects are some how accommodated under PPP model using project specific solutions.
- The practice of short concession period is in contrast to very long term concessions being offered in Western countries. The US and European practice of awarding concession up to 99 years reduces financial limitations on structuring a PPP project and concessionaire is tied up for future long term

maintenance and that can lead to sustainable PPP of NH projects. As a standard practice, authority will put the transferred facility under O&M contract and tolling will continue on that road for long period. This aspect is merged in long term concessions to extract full benefits of economical life of asset. This MCA states that short concession period can give predictability of traffic and it assumes from concessionaire perspective that long toll periods will mean lower NPV of future revenues which can distract them from bidding.

Thus an attempt is made by Government to make PPP more viable based on provisions of MCA but user's recourse is missed as was asserted by Alfred Marshall. The regulation of road as a public utility is governed by such concession agreements and the MCA referred herewith is imposing price capping by predetermining toll rates. Additionally, it is curbing revenues also by predetermining of concession period. The returns are also attempted to be monitored and controlled by limiting concession period to the date of facility reaching design capacity. More over the traffic monitoring and partial traffic guarantee is part of regulating returns on the project investment. All these stipulations are guided by inherent feeling of superfluous profit in operating such facility. For enabling PPP on unattractive stretches, the provision of grant for making up viability gap is envisaged to deliver the goods. However the Government approach for PPP seems in reverse gear when the focus of agreement is seen limited to least cost to Government rather than fostering value based pricing for commercial operation of roads. The MCA is attempting to ensure natural monopoly by securing State support agreement. For controlling pricing, it is limiting tolls and its yearly increment. Since, roads have remained even at this stage more available as a free commodity and proportion of toll roads is yet limited to few roads hence except user's recourse after paying tolls is the only concern seems largely unattended. The Demsetz auctioning is partially followed by inviting competitive bids but then the project is not exposed to market conditions since the concessionaire can continue to reign for atleast twenty years as per MCA. The optional pull out offered to concessionaire for not investing in six lanning upgradation is in fact good scope to expose the agreement once again to open competition if the re-auctioning is compulsory to assess real worth of project and possibility of sharing benefits with actual users by reducing tolls if possible in remaining term of concession period. For

positive aspect of such re-auctioning, the ruling concessionaire who has invested in four lanning may be given preemption right to continue with next investment for six lanning but on agreement with lowest offer received through open competition.

4.10 APPROVAL OF PPP PROJECTS BY PUBLIC PRIVATE PARTNERSHIP APPRAISAL COMMITTEE:

Pursuant to the decision of the Cabinet Committee on Economic Affairs (CCEA) in its meeting of 27th October, 2005 a Public Private Partnership Appraisal Committee (PPPAC) has been set up comprising of the following:

[a] Secretary, Department of Economic Affairs
[b] Secretary, Planning Commission
[c] Secretary, Department of Expenditure;
[d] Secretary, Department of Legal Affairs; and
[e] Secretary of the Department sponsoring a project.

The Committee may co-opt experts as necessary. The Committee would be serviced by the Department of Economic Affairs, who has set up a special cell, called the PPPAC Secretariat for servicing such proposals. The Ministry of Finance is the nodal Ministry responsible for examining concession agreements from the financial angle, deciding on guarantees to be extended, and generally assess risk allocation from the investment and banking perspectives. It would also ensure that projects are scrutinized from the perspective of Government expenditure. Ministry of Law and Justice, Department of Legal Affairs, would also be represented on the PPP Appraisal Committee, as the concession agreements would require careful legal scrutiny.

Approval of PPPAC:

1. The Central Government has notified a system for appraisal/ approval of projects to be undertaken through Public Private Partnership (PPP).The guidelines were notified[8] by the Ministry of Finance, Department of Economic Affairs vide O.M. No. 1/5/2005-PPP dated 12th January 2006. The procedure specified herein will apply to all PPP projects with capital costs exceeding Rs.100 crores. [This is now modified by decision of CCEA in its meeting of 22.3.2007 and as per revised guidelines issued vide DEA notification No.

10/32/2006-inf dated April 2, 2007, projects of cost Rs.250 crores or more and less than Rs.500 crores (for NHDP it is for more than Rs. 500 crores) will be submitted to PPPAC for approvals.]

2. As per PPPAC guidelines, pre-feasibility/ feasibility report and a term-sheet containing the salient features of the proposed project agreements shall be submitted for 'in principle' approval. Only after obtaining 'in principle' clearance of PPPAC, the Administrative Ministry may invite expressions of interest in the form of Request for Qualification (RFQ) to be followed by short-listing of pre-qualified bidders. The 'in principle' clearance stage will require 3 weeks of time after receiving proposal. In cases where the PPP project is based on a duly approved Model Concession Agreement (MCA), 'in principle' clearance by the PPPAC would not be necessary. But, final approval of PPPAC is required before inviting financial bids.

3. Now it is stage for RFP (Request for Proposals), i.e. invitation to submit financial bids. It involves project document preparation and includes a copy of all the agreements that are proposed to be entered into with the successful bidder. After formulating the draft RFP, the Administrative Ministry would seek clearance of the PPPAC before inviting the financial bids.

4. This RFP is appraised by Planning Commission and it will forward its Appraisal Note to the PPPAC. Also, Ministry of Law and any other Ministry/ Department involved will also forward written comments to the PPPAC. This stage is expected to take four weeks for appraisal at above said bodies. If there are queries, it will be complied by Administrative Ministry.

5. Now the compliance with project documents is resubmitted to PPPAC for approval, the approval is expected within three weeks. After approval by the PPPAC, the project would be put up to the competent authority for final approval. The competent authority for each project will be the same as applicable for project's approval by Public Investment Board. Financial bids are invited after obtaining final approval of the competent authority.

This process is almost continued but now a specialized advisory group from Planning Commission, Finance Ministry and Department of Legal Affairs is set up for formulation, appraisal and approval of Public Private Partnership (PPP) projects for projects of lower costs as below.

Revised Guidelines for Formulation, Appraisal and Approval of Smaller PPP Projects:

PPP Highway project Approval process finalized by Department Of Economic Affairs (DEA) Ministry Of Finance Government Of India as notified vide DEA notification No. 10/32/2006-inf dated April 2, 2007 is involving larger role of various Ministries of Government (Inter-ministerial consultations) as earlier but is facilitated by setting up one composite advisory group.

These revised guidelines are applicable to PPP projects:

(ii) Of all sectors costing more than Rs.100 crores and less than Rs.250 crores

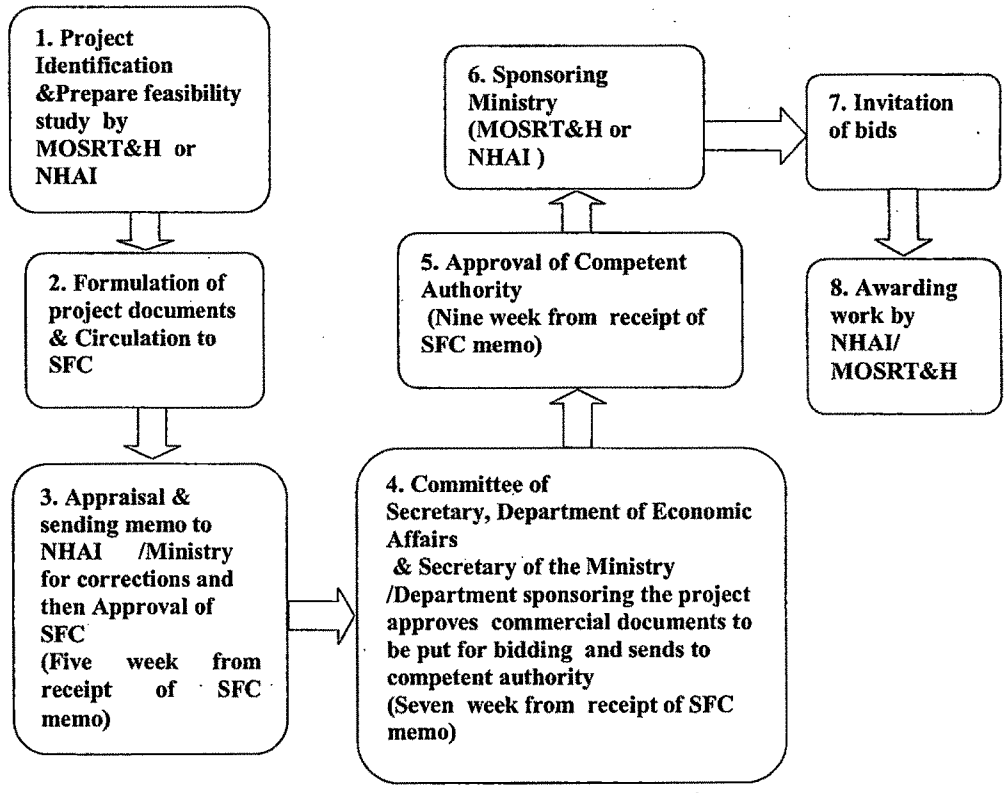
(iii) For NHDP costing Rs.250 crores or more and less than Rs.500 crores when project documents are as per MCA; specifications are as standardized and bidding is stated to occur in two stages to incorporate prequalification of bidders. In case of no confirming these requirements, the project is referred to PPPAC for all sectors including NH

Thus process of project formulation for smaller PPP projects encircles specialized advisory group from Planning Commission, Finance Ministry and Department of Legal Affairs. In fact this is set up of a Standing Finance Committee (SFC) who scrutinizes very important aspects of bidding documents, mainly financial documents prepared by MOSRT&H or NHAI. The role of PPPAC is performed by SFC for smaller projects which is explained hereunder. The memorandum for scrutiny of SFC includes aspects like: type of PPP (BOT etc.) proposed, estimated cost, necessity of investment and possible alternatives, project cash flow considering 12% discount rate, FIRR, EIRR (if available), sources of financing and response of financial institutions, tariff fixation methods with justification, guarantee and support required from Government, bidding criteria, method of awarding work, land acquisition and all other clearances to be required time allowed for achieving financial close, all deviation from model concession agreement (MCA), O &M aspects of proposed project, provisions, if any, for mitigating the risk of lower revenue collection, issues of competing facilities, contingent liability on Government on termination of contract, dispute resolution mechanism etc. Such an exhaustive list of parameters for appraisal within five weeks at SFC level or for that matter additional two weeks available at

next committee seems inadequate if there are many projects to be appraised at a time. No wonder if it turns out to be merely a ticking of checklist (YES/NO). The next stage of appraisal will be evaluation of bidding documents through a committee of members from Department of Economic Affairs and sponsoring ministry and then routed to competent authority for accord to investment proposal.

Figure:IV-3

PPP approval process for NH



(Derived from notified approval process)

For NH projects costing Rs. 250 crores onwards, route of SFC (cost up to Rs. 500 crores) and route of PPPAC (cost more than Rs. 500 crores) both of them require around six months to reach the stage of invitation of bids. The PPP approval/appraisal process as above is seems yet on learning curve and it raises many issues.

- The PPP projects are stated to be viewed with due diligence and despite creation of NHAI, the MCA are published through Planning Commission for NH works and PPP guidelines are prescribed through Inter-ministerial consultations. Also, the Ministry of Finance seems playing larger role than NHAI to see that the projects are taken up under specified uniform framework with standing commitment of Government. Whether it is SFC or PPPAC, the term paper of concession agreement and financial viability is ascertained before putting the project open for bidding. Attempts are made to see that approvals are given in time bound schedules. If the list of aspects to be appraised is studied as given under above guidelines, it is exhaustive but not objective to conclude on comparative merits of taking up of a project. No bench marking of evaluation criteria is yet done.

- The basic input to any PPP project in Highways would be estimates of capital costs derived by consultants (as per current practice of NHAI) which are likely to misguide at appraisal stage. Because, as seen earlier, the estimates of consultants often turn up unrealistic. A use of point estimates of costs under appraisal shall be replaced with band of probable costs. Similarly, traffic counts are vital for sustainability of PPP projects. At present, neither GOI nor any State Government has reliable traffic counts and forecasts. This is a major source of project risks and no allowance is applied while appraising the proposals. For that matter, no risk assessment for any event and deciding on allowance for them is worked out to check the viability of project.

- These are PPP projects where at least 60% of investment is to flow from private investors. But the guidelines do not entertain early contractor involvement for deriving value for money and Public Sector Comparator type of critical analysis is not accommodated before putting the project on PPP route. Under Early Contractor Involvement (ECI) award, the successful contractor prepares a preliminary cost estimate. This gives an early indication of potential problems in the scheme and its estimates. ECI is basically a partnering approach in which the contractor is appointed at an early stage of project development to assist in planning, assessing buildability and cost estimating in advance of route development and the statutory process. The

contractor is then incentivised to design and construct the scheme within an agreed Target Price, based on a pain/gain share formula (Nichols 2007).

The Public Sector Comparator compares the NPV of the concessionaire's proposal with the traditional cost of design, construction, maintenance, and operation in the traditional method. It is thus useful in comparing PPP proposals for various bidders and also for comparing with traditional mode of state execution. GOI seems to accord the project approvals on standardized fashion to avoid delays. But that method may not attract bidders especially on moderate return projects and the private investment may remain limited as seen so far. The short listing of bidders shall be done on project specific documents so that decision to go for PPP is meticulously derived.

- The whole process seems ascertaining cost of these projects to the public money (subject to maximum 40%) and roughly estimating financial viability (for private investment of minimum 60%) of the projects. Once SFC/PPPAC has approved the project, remaining committees generally approve the proposal after verifying remaining limited aspects. Then NHAI will simply go for invitation of bids on prescribed formats and will award the work based on comparative offers on predefined bid criteria. No post approval examination of outcome is seen required as per guidelines. If a highway project is approved through above process and there are no takers, the above exercise is not helping to see why the bidders are not attracted for investments.
- Most importantly, what is PPP concept in above modalities? The Government thinks that this road shall be developed /widened with prescribed standards and investors will receive returns as per number of various types of users of the facility. The feasibility is ascertained based upon consultant's reports. The bidding criterion is mostly single, i.e. toll period offered or minimum cost to Government. But it does not allow a private investor to choose his way any alignment and setting up of business terms to suit the case to case basis realities. In fact this is the biggest inhibiting regulation in formulating a PPP project.
- The above guidelines do not embed full-fledged service standards (lane availability, level of congestion, reduction in accidents etc.) as a basis of

project formulation. This is an emerging practice in UK & Europe. Hence congestion problems are likely to surface in future for such projects.

- Strangely, Private Sector Participation projects are labeled by Government as PPP projects but role of partners are not accentuated in above approval process. The Government is treating the PPP project just as a private toll road project with view to transfer all pain & gain to private investors. Logically when both partners carry diverging interests (Governments supposedly working for public interests and private for profits), the partnership deed shall be explicit and role of Government can not be limited to supplying land and offering subsidy for reducing cost of project to private investors. In above process of PPP project formulation, role of Government is not proactive. Once viability of project is assessed by Government it simply checks commitment of public funds (like cash contracts) and possibility of legal problems as seen in above procedure. But success of project in implementation is not assessed at any stage and not covered under concession agreement.

- The PPP approval process standardized by GOI is put up against guiding questions listed by Prieto(2005) for PPP from contractor's perspective in US. This assessment explains the taste of Indian PPP for NH and is found too simplified on the line of public goods. Some important questions are yet to be replied from concession agreement.

Table: IV-24

Driving Factors for Investors in PPP for Highways

Sr. No.	Driving Questions sought by investors for Success of PPP as per Prieto (2005)	Answers derived from GOI practices for NHDP
1	Does political will exist?	Yes. It is over & above enabling legislation.
2	Does a potential project exist?	Yes. Feasibility is assessed before bidding is opened. As far NHDP is concerned, now Phase-III, V &VI are on anvil and all are carrying heavy traffic. Remarkable is, Phase-I consisted of such attractive traffic potential but meager PPP was achieved. Since, no reports of non responsive bidding for private investments are found, presumably, Government did not go for PPP rigorously. Also, though the PPP will incorporate private partner with commercial interests, Government is not promoting any project on commercial basis for itself and hence aspects like pre- marketing and marketing are missing. Hence, there may be a chance, good projects may be pushed through cash contracts in want of private bidders.
3	Will stakeholders support the project?	GOI has many successfully operating projects under NHDP. So, presently stakeholders do support such projects with little exception. However, issues like land acquisition, utility shifting, environmental regulations, delivery and contracting method, right to toll, access to other revenue mechanisms are needed to be assessed by bidders before putting a bid.
4	Are there any fatal flaws?	The Government is solely depending on Model Concession Agreement (MCA) for PPP and it is on learning curve. As discussed later, though no major flaws as such are observed from investor perspective but existing incomplete contract conditions can lead to disputes.
5	Will it make financial sense?	Regarding financial format, Government it self was never able to produce financially sensible projects for itself and now the PPP

Sr. No.	Driving Questions sought by investors for Success of PPP as per Prieto (2005)	Answers derived from GOI practices for NHDP
		process evaluates financial viability on Government's terms and that may suggest need for own assessment from bidders. Issues like subsidies and concession fees etc. are part of concessions but reach to financial markets is exogenous factor where an individual will have different scope. Unlike US tax exempt funds are not yet available in India for infrastructure projects on wider scale.
6	Is the regulatory framework well designed?	There is no regulator for highway sector and it can be adverse for bidders in case of incomplete contract clauses. Here, pricing is pegged to savings to facility users and savings is derived from per km cost of running a vehicle. Since many of times distance is not saved, this criterion may hamper support of stakeholders if no explicit saving is perceived by users. In UK, pricing is pegged to service standards and hence varies on scale. In India variable pricing regulation is non existent.
7	Can we close it?	The exit clauses for investors are not explored well under MCA except relief on debt obligation in case of unforeseen events. The exit aspect for sustainable financing of PPP is not well defined which we may see for any deep discount bond offer for similar period (e.g. refinancing options).

(Source: Based on Prieto(2005) and GOI practices in NH segment)

4.11 CONCLUSIONS:

The NHDP is India's most ambitious programme for development and maintenance of National Highways and Expressways (i.e. superior roads) which was flagged off on January 2, 1999. The NH being trend setter for other category of roads, study of NHDP is useful in understanding sectoral policy perspective and issues in development of roads. Like US financing Interstate Highways, India has started

NHDP mainly financed from enhanced user charges like fuel cess. For implementation of NHDP, a specialist highway agency (NHAI) is created which is deliberately provided with thin structure (somewhat similar to Highway Agency of UK) for adopting outsourcing based operations meanwhile respective State PWDs (traditional body for constructing and maintaining NH at behest of MOSRT&H) are divested of the NH stretches covered under NHDP. Knowing the paucity of public funds and no further possibility to enhance user charges, private sector participation on financial front is accepted as only recourse. Despite rhetoric support to PPP route, NHAI has not really realized more than 10% of investment in recently completed Golden Quadrilateral (GQ) under Phase-I from private sector. The GQ is the only portion completed by NHAI under NHDP so far in last eight years. This private investment has been found on piecemeal basis (like Spain and Mexico) where commercial viability was evident and hence, there is faster development on busy corridor like National Highway No.-8 (Delhi- Mumbai corridor). But on such busy corridor also, development has been on piecemeal basis. The most striking fact is, famous Golden Quadrilateral network under the Phase-I took more than double time for completion with substantial cost overrun. The GQ was to be implemented under established and favourable conditions whereas Phase-II is to be implemented under greenfield conditions. Despite slow progress in Phase-I and II, the original scope of 14234 km under Phase-I and II is expanded to 51834 km that is almost four times expansion of NHDP. Due to recent thrust for PPP, Government has expected NHAI to take up all the investment from Phase-III onwards on BOT basis which is unprecedented even on international scale. The Government has prepared Model Concession Agreement for PPP projects and has structured route of approval of PPP projects forming a Committee of members from various Ministry. But Government has no plans to rationalize levies on road users in lieu of toll payments to BOT operators. To induce tolling culture, Government has already implemented perpetual tolling of four lane NH and major permanent structures on NH. The poor rate of progress in NHDP and commercial unattractiveness of many stretches selected under NHDP raise many doubts for actual response from private sector for investment in NH development. If the National Highways (despite being commercially recognized category of roads) are not able to attract private funds under a nationally declared programme, adoption of PPP for next hierarchy of roads seems discouraging. Hence,

financing of roads in India in coming days is going to continue from public funds only.

Following conclusions are made from study of Indian scenario of development of NH segment.

1. The Indian roads are quantitatively leading the world chart but it has no place in international comparative for superior roads. The National Highways are superior category of roads in India and carry 40% of road traffic though they are only 2% of total road network. The NH segment has however seen resource crunch since atleast last two (Ninth and Tenth) Five Year Plans wherein NH stock has doubled but central funding has not kept pace with even routine maintenance requirements. Hence, almost one third of NH stock is found of village road standards. The commercial importance of NH in overall economy has compelled planners to upgrade NH stock mainly through four lanning works under special programme namely NHDP.
2. The private sector participation in PPP form is asserted by Government by amending NH Act in 1995 for allowing concession to any person. The highway financing is basically matter of matching financial terms for the long term gestation period of heavy upfront capital investments with steady current receipts from user charges which may be backed up by budgetary support like grant to the BOT operator or cess and other budgetary allocations if NHAI or any public agency invites financing. The Task Force on infrastructure (1998) had anticipated financing of NHDP based on access to long term institutional finance like commercial banks, insurance and provident funds which were supposed to have matching terms of repayment with road project and were in need of stable source of returns for long time. The repayment to such institution was estimated to come from cess and other user charges (including tolls) and in this concept the private sector equity was estimated only around 10%. In reality, no such leverage is enabled either by NHAI or through private investors under BOT projects. So far the users charges collected on current receipt basis are directly employed to pay the capital expenditure of contractors under cash contracts. This mechanism has not produced sufficient output where deficient executive capacity of NHAI has also played major role.

Since the production of tollable four lane got slow, it directly affected the inflow of toll income and hence the current receipt under cess got under sever pressure to see the cess reaching level of Rs. 2.0 per liter of petrol and diesel.

3. In fact NHAI managed to raise long term debts in terms of capital gain bonds but funds were found mismanaged since the actual progress could not absorb these funds on capital account.

4. Since borrowing for NHDP is like Sovereign debt (owing to outright guarantee by GOI) and hence GOI has limited extent of borrowing to the extent of anticipated current receipts from users charges (cess, tolls etc.) and it is expected that private sector shall invest own equity and debt funds under BOT projects from NHDP Phase III onwards for next eight years starting up to year 2015. Here also, going through various reports on NHDP, Government is not found committed to sheer BOT mode and public financing of NHDP on larger scale in terms of cash contracts is felt going to be mainstay for NHAI. For realization of such leverages, yet no financial market is established and investment in roads has remained a lumpy investment. A supportive financial market for financing and refinancing of such investment leveraged on current receipts of project is required (like primary and secondary mortgage markets in housing loans) irrespective of type of player involved i.e. public player like NHAI or private player like individual BOT concessionaire. The international experience suggests that NHAI should create many public concession companies to tap these long term resources with the help of GOI based on leverage on project revenues (and cess support). For example France has done this and divested public investment at proper stage from such toll companies. The pooling of NHDP inflow at national or such large scale can help in ascertaining financial viability of long term finance gathered from financial institutions. Otherwise scattered type of present PPP will be limited to attractive stretches and are susceptible to viability concern (as found in case of Mexico and Spain). Alternatively, large private consortium if handles many stretches bundled from viability perspective, the overall spread of PPP may get penetration into greenfield conditions. This level of private financing of highways may require foreign investment which was arranged by China by linking the PPP projects to capital market. All these mean, basically creation of proper financial market which was contemplated by Task Force (1998) in

the terms of operation of IDFC. But the present scenario is limited to awarding concession for attractive stretches on Build-Operate -Transfer basis and NHAI awarding cash contracts to the maximum extent possible under given public resources.

5. NHAI is drawing satisfaction by executing cash contracts using outsourcing type of consultancy services at the cost of removal of State PWD from execution of such projects. But the outcome is not encouraging for continuation of this approach. For speedier implementation of NHDP either on PPP route or by cash contracts, State PWD is felt proper partner in development of NH. It is felt that NHAI should concentrate on PPP route using public concession companies like France and shall invite private sector competition **for the field** of NH segment. The cash contracts shall be left to traditional players like State PWDs. If the supervision is to be outsourced then State PWDs shall be inspired to compete with private consultants for supervisory job so that this valuable public agency is put to task.

6. In fact in whole approach to NHDP tends not to expose the field to the market at larger scale. The PPP route envisaged through MCA is an attempt to regulate the natural monopoly conferred upon to BOT concessionaire to control superfluous profits but it has no jurisdiction to foster PPP by linking the project with market. The MCA calls it leveraging over public funds (cost sharing in terms of grant support) to attract private investments. But leveraging on equity funds or toll revenue to involve cheaper debt resources in a BOT project is not attended in this MCA. Hence, the approach for PPP is a piecemeal approach that can not meet expected investments under NHDP. If the NHDP is going to depend upon budgetary allocations like public financing, the sustainability of NHDP and NHAI is vulnerable. The tenure of NHDP so far is very short as compared to US and China who required two decades or more to construct the system of superior roads. Hence, NHDP can be taken up cautiously applying corridor approach or package of many routes so that field on wider scale is exposed to market forces and competition for field is materialized in case of natural monopoly conditions.

7. The NHDP is in fact good ground for inducing private sector participation in various categories of roads. The local bodies and State PWDs shall be made partner in this process who can carry lessons to their jurisdiction of remaining

categories of roads. Considering importance of State PWD in fostering PPP at State level (for State roads), NHAI shall atleast involve State PWDs in their set up (may be on loan service basis) so the PPP at NH level gets sound local support and State PWDs get valuable exposure to NH PPP which in turn can help PWDs to develop State roads in convergence with NH.

8. The steps taken by Government in terms of implementation of MCA and provision of priority route of investment approval are aimed in facilitating PPP but as seen in relevant subsections, they are not focused to large scale private sector participation. Present delivery system under non PPP route is not efficient and need project level careful estimation and design of projects through responsible consultants if outsourcing is opted for. The consultants shall be made responsible in their performance for effective outcome in non PPP route.

This Chapter discussed in detail the initiatives taken in India for PPP, establishment of NHAI, Private Sector Participation other than PPP, importance of State PWD and status of NH development. In the next Chapter, an attempt is made to analyze the four case studies of Public Private Partnership.

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Endnotes:

1. The above categories do not include urban roads within a city which are managed by respective urban authorities. The updates of tabulated data are available at internet website:www.nhai.org
2. Government of India constituted an expert group in October 1994 under the chairmanship of Mr. Rakesh Mohan, Director General, National Council of Applied Economic Research to give suggestions for commercializing infrastructure. The Rakesh Mohan report is very basis of many onwards decisions by Central Government.
3. The government of the Philippines created a novel institutional structure to support the country's large private infrastructure program under the 1989 BOT Law and Regulations. There is a "BOT centre" and down the line each Sectoral agency has a specialist "BOT Unit" responsible for marketing,

coordinating the design and implementation of its projects. National, provincial, and municipal authorities select and award projects under the framework. The BOT law also helped in taking up many unsolicited new concept based BOT projects in Philippines but subject to condition that no guarantee, equity or subsidy are directly required from Government. Indian planners are not really keen for PPP *ab initio*. Hence, Philippines approach is too bold for Indian context.

4. US have seen past fifty years of Interstate highway financing using mainly user charges like fuel taxes under "pay as you go" concept. For raising debts, States in US may issue debt backed by anticipated federal grants [known as GARVEEs (Grant Anticipation Revenue Vehicles)], and federal law provides for the creation of state infrastructure banks (SIBs), revolving funds capitalized partially with federal grants that states and local governments can borrow from for highway construction.

5. The Department of War Transport was established that time to look after major ports, railways, road and water transport, petrol rationing, etc. The function of the department was broadly to coordinate the demand for all modes of transport during the Second World War. In 1957, the department was named as the Department of Transport, and placed in the Ministry of Transport and Communications. Since then the department has seen many changes in its name and variations in the scope. Now the Ministry sees a need to rationalize its scope for N.H. works in view of expanding role of NHAI.

6. NHAI was set up under "The National Highways Authority of India Act, 1988" and it became operational in February 1995 when 5 ADB funded projects (331 km) costing about Rs.800 crores in 5 States viz., Haryana, Rajasthan, Bihar, West Bengal and Andhra Pradesh were entrusted to it.

7. The audit was done on selected 32 stretches spread over 12 States and covered 21 Project Implementation Units (on site presence of NHAI) with total contract value of Rs.4,508 crores (15 per cent of Rs.30,300 crores, the estimated cost of NHDP, Phase-I).These 32 samples included 21 completed stretches executed by NHAI, (GQ=13 stretches, NSEW = eight stretches) and 11 ongoing works (where the physical progress was 50 per cent or more) (GQ = nine stretches, NSEW = two stretches). The CAG audit is limited for other than BOT projects.

8. These documents are available on GOI portal : www.infrastructure.gov.in.

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