

## Roads

9.44 India has one of the largest road networks in the world, aggregating to 3.34 million kilometers. The country's road network consists of Expressways, National Highways, State Highways, Major District Roads, Other District Roads and Village Roads. The road network comprises 66,590 km of National Highways, 1,28,000 km of State Highways, 4,70,000 km of Major District Roads and about 26,50,000 km of other District and Rural Roads. National Highways comprise only about 2 per cent of the total length of roads and carry about 40 per cent of the total traffic across the length and breadth of the country. Out of the total length of National Highways,

32 per cent is single lane/intermediate lane, 56 per cent is 2-lane standard and the balance of 12 per cent is 4-lane standard or more.

9.45 The National Highways Development Project (NHDP) – the largest highway project ever undertaken by the country – which is being implemented by the National Highway Authority of India (NHAI), consists of the following components:

- NHDP Phase I & II envisage 4/6 laning of about 14,279 kilometer of National Highways, at a total estimated cost of Rs.65,000 crore (at 2004 prices) These two phases comprise of Golden Quadrilateral (GQ), North-South and

East-West Corridors, Port Connectivity and other projects. The Golden Quadrilateral (GQ-5,846 km) connects the four major cities of Delhi, Mumbai, Chennai and Kolkata. The North-South and East-West Corridors (NS-EW-7,300 km) connect Srinagar in the North to Kanyakumari in the South, including spur from Salem to Kochi and Silchar in the East to Porbandar in the West.

- Government has approved upgradation of 4,035 km under NHDP Phase III-A at an estimated cost of Rs. 22,207 crore as also to take advance action in the form of preparation of the DPRs for the balance length (7,078 km) under Phase-IIIB.
- Government on October 5, 2006 has approved six laning of 6,500 km of national highways comprising 5,700 km of GQ and balance 800 km of other sections under NHDP Phase-V at a cost of Rs.41,210 crore.
- Government on November 2, 2006 has approved construction of 1,000 km of expressways with full access control on new alignments at a cost of Rs.16,680 crore under NHDP-Phase VI.

9.46 By November 30, 2006, 6,776 km of national highways pertaining to NHDP had been completed, the bulk of which (5,475 km) lie on the GQ ( Table 9.17). Constraints faced in the timely completion of NHDP include

delays in land acquisition, removal of structures and shifting of utilities, law and order problem in some States, and poor performance of some contractors. Nearly 93 per cent works on GQ have been completed by November 2006, and the NS and EW corridors are expected to be completed by December 2009.

9.47 With the completion of about 93 per cent of the GQ, a substantial impact upon the economy is already visible. At this stage there is a need to focus attention on corridor management and road safety, and NHA has already put in place a corridor management policy.

### Corridor management

9.48 The substantial completion of NHDP Phase-I, i.e. GQ, has called for a shift in emphasis to corridor management, i.e. the technique of managing the highways so as to deliver maximum throughput in terms of speed and traffic volume, while minimizing operational cost and enhancing road safety. The concept of corridor management is applied on the completed sections of NHDP through O&M contracts. The scope of work, inter-alia, includes road maintenance, road property management, incident management, traffic management and engineering improvements.

### Financing of NHDP

9.49 For implementation of NHDP Phases I and II, the main source of finance of NHA is the fuel cess (Table 9.18). The present rate of

**Table 9.17 : Progress of NHA projects : status as on November 30, 2006**

	NHDP						NHDP Total
	GQ	NS&EW Phase I & II	NHDP Phase III-A	NHDP Phase V	Port connectivity	Other	
Total length (km)	5846	7300	4035	6500	380	945	25006
Already four laned (km)	5474	853	30	-	131	287	6776
Under implementation (km)	371	5295	1090	148	228	638	7770
Contracts under implementation (No)	35	145	17	2	7	16	216
Balance length for award (km)	-	1053	2915	6352	21	-	10341

**Table 9.18 : Financing of NHAI**

Year	Cess funds	External assistance		Borrowings	Budgetary Support
		Grant	Loan		
1999-2000	1032	492	-	-	-
2000-01	1800	461	120	656.62	-
2001-02	2100	887	113	804.44	-
2002-03	2000	1202	301	5592.94	-
2003-04	1993	1159	290	-	-
2004-05	1848	1239	361	-	-
2005-06	3269.74	2400	600	10.1	1400.00
2006-07	6407.45	1582.5	395.5	-	110.00

*(Rs. crore)*

cess is Rs. 2 per litre on both petrol and diesel. A part of this cess is allocated to NHAI to fund the NHDP. This cess is leveraged to borrow additional funds from the domestic market. Besides, the Government of India has also negotiated various loans from World Bank (US\$1,965 million), Asian Development Bank (US\$1,605 million) and Japan Bank for International Cooperation (Jap. Yen 32,060 million) for financing various projects under NHDP. These loans from the multilateral institutions are passed on to NHAI by the Government partly in the form of grant and partly as loan. NHAI also negotiated a direct loan of US\$165 million from ADB for one of its projects. The funds provided to NHAI, including its borrowings from the market, are utilized for meeting project expenditure as well as debt servicing.

#### **Public-private partnership (PPP):**

9.50 Historically, investments in infrastructure, particularly in the highways, were being made by the Government mainly because of the large volume of resources required, long gestation period, uncertain return and associated externalities. The galloping resource requirements and the concern for managerial efficiency and consumer responsiveness in recent times have led to an active involvement by the private sector also. To encourage participation of the

private sector, the Department of Road Transport and Highways has laid down comprehensive policy guidelines for private sector participation in the highway sector. Government has also announced several incentives such as tax exemptions and duty-free import of road building equipments and machinery to encourage private sector participation. It has been decided that all the sub-projects in NHDP Phase-III to Phase-VII would be taken up on the basis of PPP on Build Operate and Transfer (BOT) mode. The private sector participation envisaged in Phase-II of NHDP has also been increased.

#### **Special Accelerated Road Development Programme in the North Eastern Region (SARDP-NE)**

9.51 The SARDP NE envisages widening of 3,228 km of national highways, improvement including widening of 2,500 km of State roads and 2-laning of 1,888 km of roads of strategic importance in the north-eastern region. This programme will provide at least 2-lane road connectivity to all State capitals and district head-quarters of all the eight North Eastern States, apart from providing improved connectivity to the backward areas and neighbouring countries. This programme will be implemented in two phases as follows:

Phase A: It consists of 1,110 km of national highways and 200 km State/general staff (GS) roads costing an estimated Rs. 4,618 crore.

Phase B: It involves improvement of 2,118 km national highways and 4,188 km State/GS Roads.

Government approved implementation of Phase A on September 22, 2005 and gave approval for preparation of DPRs for phase B on May 18, 2006.

9.52 A high-powered Inter-Ministerial Committee has been set up to approve and co-ordinate individual sub-projects under SARDP-NE. Up to December 27, 2006, the Committee has approved various sub-projects covering 452 km length at an estimated cost of Rs. 1,140 crore under Phase "A" of the programme.

#### **Future plans**

9.53 Government has set ambitious plans for upgradation of National Highways in a phased manner in the years to come. A presentation was made before the Committee on Infrastructure proposing the following projects in addition to the completion of the

ongoing works included under NHDP Phase-I and Phase-II:

- 4-laning of 11,113 km (NHDP Phase-III) including 4,035 km already approved.
- Accelerated road development programme for the North Eastern region.
- 2-laning with paved shoulders of 20,000 km of national highways (NHDP Phase-IV).
- 6-laning of GQ and some other selected stretches covering 6,500 km (NHDP Phase-V).
- Development of 1,000 km of express ways (NHDP Phase-VI).
- Development of ring roads, bypasses, grade separators, service roads etc. (NHDP Phase-VII).

As a policy, Government has decided to take-up future phases of NHDP proposals mainly on a PPP basis. Implementation of projects through construction contracts will be only in exceptional cases where private sector participation is not possible at all.