1. Key development issues and rationale for Bank involvement

A  Country Context

1.1 The total road network in India is about 3.3 million km\(^1\), out of which about 2\% are National Highways (NH) and Expressways. About 60\% of the freight and 87\% of passenger traffic in India is carried by the roads, out of which 40\% of the total road traffic ply on NH network. Considering the vehicle growth of about 10\% per annum in recent years, the share of road traffic on NH network is likely to further increase. However, about 30\% of the total NH network is still single lane, 53\% is double lane (single carriageway) and only 17\% is four lane/six lane/eight lane (dual carriageway). The NH network not only needs significant capacity expansion but also substantive improvements in the capacity utilization, asset management practices and safety.

B  Sectoral and Institutional Context

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\(^1\) Annual Report of the Ministry of Road Transport and Highways, 2008-09
1.2 Realizing the condition of the NH network, as one of the key economic constraints in achieving target of 8-9% growth, India launched the National Highway Development Project (NHDP), the largest highway project ever undertaken in the country, in the year 2000 and entrusted the responsibility for its implementation to the National Highways Authority of India (NHAI). The prime objective of the NHDP was to undertake capacity augmentation of the strategic NH corridors. The Central Road Fund (CRF) was created from collection of Cess on Petrol and High Speed Diesel to finance majority of the NHDP cost but in addition, the central government also advocated and approved, different financing options i.e. market borrowings, multilateral loans and private participation.

1.3 As of March 31, 2010, about 14000 km of existing NH have been upgraded under the NHDP. One of the key achievements of NHAI has been in generating private sector financing for highway development. As of March 31, 2010, NHAI has awarded 104 build-operate-transfer (BOT) Toll Projects, out of which 32 projects have been completed. About 28 projects have also been taken up on BOT (Annuity) basis, out of which 13 have been completed. The scope of NHDP (and thereby the mandate of NHAI), kept on increasing over the years, resulting in a current balance work of about 12000 km of four laning; 1000 km of expressways and; about 6500 km of six laning under different phases of NHDP.

1.4 The senior decision makers in the Government and policy think tank of the country, have however, expressed concerns regarding the slower pace of the NHDP implementation (the NHAI has been upgrading/constructing only about 3 km NH/day) and the Government has recently desired to speed up the development of highways and upgrade 20 km NH/day, almost 6 times increase from the 2008-09 pace.

1.5 Lesson Learned from Bank’s previous engagements and sector issues Prior to the NHDP, the road sector has had persistent under funding and poor institutional capacity to manage. Asset management is also often underfunded and neglected – long history of building, neglecting and re-building. The capacity constraint in construction industry, especially after launch of NHDP and during the construction boom in the early half of this decade has further aggravated these constraints. The industry has been grappling with weaknesses in project preparation and implementation which include poor quality of design; large variations; ineffective contract administration; large contractual disputes; human resource constraints; lack of safety awareness and; significant problems in pre-construction activities e.g. land acquisition, resettlement and rehabilitation and utility relocation. In addition, the sector is also vulnerable to the governance risks.

2 The National Highways Authority of India was constituted by an act of Parliament, the National Highways Authority of India Act,1988. It is responsible for the development, maintenance and management of National Highways entrusted to it and for matters connected or incidental thereto. The Authority was operationalised in Feb, 1995.
1.6 Various studies\textsuperscript{3} and Bank’s engagement with NHAI through four lending projects\textsuperscript{4} (3 completed, one ongoing), have confirmed these issues which has resulted in significant time and cost overruns in the implementation of NHDP projects. Some of these issues can be attributed to the capacity of the construction industry and its constraints, but many are also linked to the institutional capacity of the NHAI, whose mandate kept on increasing, without any reorganization or change in the agency’s lean structure. The Bank funded Lucknow Muzaffarpur National Highway Project (LMNHP), which is being restructured, was also affected by such issues, which included poor quality of design, poor contractor’s performance, ineffective contract management and the lack of emphasis on safety.

1.7 Considering the high growth scenario of the sector, it is estimated that about 400 large contracts (of average size exceeding $28m) will be awarded annually, 90% of which will be under NHAI mandate. The experience of NHDP implementation of last 9 years suggests that managing these many contracts in stipulated time and cost will be a difficult challenge for NHAI. The recent AAA report on the road construction industry\textsuperscript{5} has estimated that about 80% of ongoing and completed contracts in the sector (NHAI + State Government Contracts) have a time delays and cost overruns of about 50%. It has also been reported by various industry associations that about US$12 billion are locked up in disputes on infrastructure projects in India.

1.8 \textit{Changing Role of NHAI – from a “road builder” to an “Asset Manager”} Currently most of the NH network under NHAI is in pre-construction or construction stage, however it is estimated that by 2015-20, most of the network owned by NHAI will be in operation stage and NHAI will face new challenges which will include effective asset management, new technologies, more user interface, intelligent traffic management system and information.

1.9 \textit{Governance Challenges} Worldwide, the transport sector has been, and still is associated with many both real and perceived governance risks. Some of the key cited evidences of these risks include low competition in bidding processes, unsatisfactory quality of works, and large cost/time overruns. By essence, transport infrastructure projects also have a very direct impact on local communities due to land acquisition and construction activities in their close neighborhood. These aspects of project implementation open up another area of governance challenges in the sector, which requires more attention on projects’ social and environment dimensions. Further, the poor relationship observed between the Central Government and the States on the one hand, as well as between these States and their Technical Departments on the other, -- essentially due


\textsuperscript{4} Bank has supported the implementation of the NHDP since its inception through four loans Third National Highway Project (2000-2007); Grand Trunk Road Improvement Project (2001-2008); Allahabad Bypass Project (2003-2009) and the Lucknow Muzaffarpur National Highway Project (2004-ongoing)

to cumbersome legislations, approval procedures and practices -- poses further governance challenges, particularly during the pre-construction stage.

1.10 The ambitious target of 20 km/day, combined with the ongoing implementation issues, construction industry constraints, governance challenges and changing role of NHAI from a ‘road builder’ to an ‘Asset Manager’, necessitates a major reform agenda in the NH sector. Realizing this, the Central Government/NHAI has already been taking several steps. In 2008, cabinet has approved a report of the Inter Ministerial Committee on the Restructuring of NHAI⁶, implementation of which is being overseen by the Ministry of Road Transport and Highways (MORTH). The report has made major recommendations, which among others include fixing tenure of the Chairman; strengthening and expansion of the NHAI Board by increasing part time members from non-government sector as well as full time members; increase in the core cadre of NHAI over time and; introduction of regional set up. The government also set up a high level committee to resolve procedural impediments to the NHDP and undertake a holistic review of its financing need⁷. The recommendations of the first report of this committee on speeding up NHDP and remove procedural impediments have also been adopted by the Government. The committee has also submitted its second report on dispute resolution. The Government has also set up another committee, headed by the Unique Identification Authority of India (UIDAI) Chairman Nandan Nilekani, to identify the toll collection system that can unify toll plazas across India. The committee will submit its report in the next three months.

2.  Proposed objective(s)

2.1 NHAI adopts improved and innovative practices that would enhance its program management and operational efficiency.

B.  Key Results

2.2 Following outcome and indicators will be used to reflect and measure the success in the achievement of PDO

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Contract Administration and Governance practices of NHAI.</td>
<td>Fully functional and resourced Design Review Cell and Road Safety Cell at EOP</td>
</tr>
<tr>
<td></td>
<td>Risk Management Framework established at NHAI by EOP</td>
</tr>
<tr>
<td>NHAI staff more skilled, exposed and equipped to address sector challenges</td>
<td>Training and Exposure Plan Implemented by the EOP</td>
</tr>
<tr>
<td></td>
<td>NHAI pilots a project with new contracting modality.</td>
</tr>
</tbody>
</table>

3.  Preliminary description

⁷ B K Chaturvedi Committee on NHDP, as constituted by the Prime Minister on August 8, 2009
The current capacity constraints of the road construction industry combined with the ambitious target of constructing 20 km/day poses two level of challenges to the NHAI as an institution – (i) Planning, Policy and industry level challenges and; (ii) the Institutional level challenge at NHAI. There are various Government initiatives, being undertaken to address these challenges at various levels as explained in paragraph 1.10. The scope of the proposed project therefore, will rather be limited to the institutional level issues, and will include technical assistance to NHAI in adopting new and innovative practices to improve its operation efficiency. The intention of keeping this level of engagement is to have some demonstration effects in the key areas of current concerns, which can help Government to build upon these practices and open up new avenues in the broader NH reform agenda.

3.2 Simple and Flexible Design Approach. As the NHAI embark upon the reform agenda, probability of new challenges emerging cannot be ruled out in the future. In order to cater for those challenges, the project design should not pose any constraints to include any need-of-the-hour activities. The project therefore will have a simple and flexible design approach. There will be three broad thematic components (a) Program Level Technical Support; (b) Institutional Strengthening and Capacity Building and; (c) Technology and Innovation. Interventions, in each of the three components have been designed to demonstrate new and innovative practices in the key areas of existing challenges.

3.3 Component 1 Program Level Technical Support (US$ 5m)

- Design Improvements
  (i) Supporting NHAI to operationalize the Design Review Cell
  (ii) Pilot program on 2000 km Kolkata-Mumbai corridor to create database of national highway land assets, utilizing latest survey technologies and data verification techniques.
- Establishment of a Performance Evaluation System of Consultants, Contractors and Concessionaires
- Preparation of a Project Preparation Manual
- Strengthening the Third Party Quality Audit System
- Assistance on the proposed Express Way Authority and structuring selected Mega Projects.
- Improvement of Environmental and Social Safeguards Management.
- Strengthening Stakeholder Participation in NHAI operations
- Socio-economic Impact of National Highway on Rural Population – Phase II
- Impact Evaluation of the EMP measures in Gautam Buddha Wildlife Sanctuary

3.4 Component 2 Institutional Strengthening and Capacity Building (US$ 20m)

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8 These activities were planned under the Bank-funded Grand Trunk Road Improvement Project (Closed), but could not be completed prior to the loan closing. During the recently concluded negotiations of the LMNHP, it was agreed that these will be undertaken through the proposed NHAI Technical Assistance Project.

9 See 5 above
Support to facilitate implementation of key recommendations of the Report of the Inter Ministerial Committee on Restructuring of National Highways authority of India, March 2008, particularly in the key areas of capacity building and strengthening of systems and procedures to address changing environment of NHAI operations.

- Implementation of Enterprise Resource Planning
- Preparation and implementation of a comprehensive exposure and training plan for NHAI staff including twining arrangements with agencies/institutions of repute abroad.
- Support to engage experts from open market in identified area.
- Strengthening of Road Safety Cell
- Support to populate and update the existing Road Information System (RIS) of NHAI
- Support on HIV/AIDS
- Corporate Governance Assessment including designing a Risk Management Framework for NHAI

3.5 Component 3 Technology and Innovation (US$ 5m)

- Implementation of the Nandan Nilekani committee recommendations on Nation-wide Tolling Strategy and interoperability of toll collection systems.
- Preparation work for piloting new contract modalities including new forms of PPPs, DBMOT (Output and Performance Based Road Contracts)
- Review of Concrete Pavement Manuals and Codes
- Review of other Technical Manuals and Codes, e.g., Bridges, Road Safety, Construction sites safety, signaling of traffic diversion, etc…
- Piloting Value Engineering
- Use of alternative materials for road construction
- Partnership and support to research and training institutions of the sector in India.

4. Safeguard policies that might apply

[Guideline: Refer to section 5 of the PCN. Which safeguard policies might apply to the project and in what ways? What actions might be needed during project preparation to assess safeguard issues and prepare to mitigate them?]

5. Tentative financing

<table>
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<th>Source</th>
<th>($m.)</th>
</tr>
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<tr>
<td>Borrower</td>
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<tr>
<td>International Bank for Reconstruction and Development</td>
<td>30</td>
</tr>
</tbody>
</table>

Total 30

6. Contact point

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