CRISIL Infrastructure Advisory

Key Trends and Outlook – Indian Roads Sector
Overview of the Presentation

– What is the update on road development (NHDP and state road projects)? What are the key trends? What are the opportunities that these throw up?

– What is the impact of the economic slowdown and financial crisis on road infrastructure development?

– What are the major issues that remain to be addressed?
Background
### Road sector statistics and investment projected

#### Relevant statistics

<table>
<thead>
<tr>
<th></th>
<th>National Highways</th>
<th>State Roads, rural and other roads</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length (kms)</strong></td>
<td>68354</td>
<td>599622</td>
</tr>
</tbody>
</table>

#### Road density (roads in kms/000 people)

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>World average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road density</strong></td>
<td>2.75</td>
<td>6.7</td>
</tr>
</tbody>
</table>

#### Road density in terms of land (kms/000 sq kms of land area)

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>World average</th>
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<tbody>
<tr>
<td><strong>Road density</strong></td>
<td>770</td>
<td>841</td>
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</table>

#### Status of national and state highways

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<table>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>Length of national highways as a % of total road network- India</strong></td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td><strong>% of total traffic handled by national highways</strong></td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td><strong>% of national highways that are four laned</strong></td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td><strong>% of state highways that are four laned</strong></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td><strong>% of national highways that are double laned</strong></td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td><strong>% of state highways that are double laned</strong></td>
<td>22%</td>
<td></td>
</tr>
</tbody>
</table>

#### Projected investment in the Indian Roads sector in the Eleventh Plan

- National Highways: 49.47%
- State Roads: 37.22%
- Rural Roads: 11.79%
- North-east Roads: 1.53%

Out of the projected investment of Rs 3668 billion in the roads sector in the XIth plan, about 1/3rd is expected to be brought in by the private sector.
Update on Road Development and Key Trends
Present status of National Highway Development Program (NHDP)

- **Status of the NHDP**
  - In the past one year, National Highway Development Programme (NHDP) witnessed a delayed progress in awarding of road projects due to litigations, restructuring of projects and liquidity crunch. Thus, out of 60 projects which were under bidding in 2008, only ten projects have been awarded till date. 3 projects have bids being processed and 6 projects have bids being evaluated.
  - Around 44 per cent of total length under NHDP still remains to be awarded.
  - Nearly, 33 per cent of the total length under NHDP was completed as on March 31, 2009
  - The Golden Quadrilateral, linking the four metro cities of India is almost complete.
  - The focus of implementation has shifted to the North-South-East-West (NSEW) Corridor (Phase II) and Phase III. Around 47 per cent in Phase II and only 7 per cent in Phase III have been completed as on March 31, 2009. Close to 12 per cent in Phase II remains to be awarded.
  - Awarding in Phase III and Phase V has still not picked up pace, as close to 79 per cent and 84 per cent, respectively are balance for award. (Source: NHAI, CRISIL Research)

<table>
<thead>
<tr>
<th>Status of the NHDP (as of 30th June, 2009) (km)</th>
<th>Total length</th>
<th>Total four laned</th>
<th>Under implementation</th>
<th>Balance length for award</th>
</tr>
</thead>
<tbody>
<tr>
<td>GQ</td>
<td>5,846</td>
<td>5,729</td>
<td>117</td>
<td>0</td>
</tr>
<tr>
<td>NSEW</td>
<td>7,300</td>
<td>3,762</td>
<td>2,648</td>
<td>732</td>
</tr>
<tr>
<td>Phase III</td>
<td>12,109</td>
<td>890</td>
<td>2,037</td>
<td>9,181</td>
</tr>
<tr>
<td>Phase V</td>
<td>6,500</td>
<td>130</td>
<td>904</td>
<td>5,466</td>
</tr>
<tr>
<td>Phase VI</td>
<td>1,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Phase VII</td>
<td>700</td>
<td>360</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Port Connectivity</td>
<td>380</td>
<td>235</td>
<td>139</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>962</td>
<td>821</td>
<td>121</td>
<td>20</td>
</tr>
<tr>
<td>Total by NHAI</td>
<td>34,797</td>
<td>11,567</td>
<td>5,985</td>
<td>15,405</td>
</tr>
</tbody>
</table>

Source: NHAI, *includes partially completed stretches*
Development of National Highways-Key Trends

Level of private participation:

- Out of the projected investment of Rs 3668 billion to have come into the roads sector during the eleventh plan, about one third was to have come in from the private sector. Private sector investment in the sector has been affected owing to issues such as:
  - Slowdown and difficult access to financing
  - Higher cost of financing.
  - Tendency to conserve cash/affected developer sentiment
  - Shift in emphasis to construction contracts.
  - Tendency to avoid bidding for the less lucrative stretches in view of the slowdown as well as the restrictive clause in the new MCA.
  - High document cost/bid preparation cost a deterrent for several road developers

The same has been demonstrated by limited developer response to NHAI road projects after the slowdown. Out of 60 projects that were tendered by NHAI, 38 received no bids while 7 recd only a single bid each.
Key trends (Contd)

Increasing foreign participation:

- NHDP Phase I and II saw participation from other Asian developers. A number of Malaysian companies led the pack of contractors with Thai, Indonesian, South Korean and Chinese companies making up the rest. Majority of these projects were either sponsored by ADB or by NHAI itself. There were some BOT projects in these phases. However the participation of international developers was not significant. However the participation of international players is gradually increasing:
  - Only 2 out of 9 projects were awarded to international developers in phase 1 of NHDP.
  - Only 1 out of 15 projects was awarded to an international developer in phase 2 of NHDP.
  - 4 out of 31 projects have been awarded to international developers in phase 3 of NHDP so far. (Till Nov 2008)
  - 4 out of 7 projects have been awarded to international developers in phase 5 of NHDP so far. (Till Nov 2008)

- This interest from international developers is fuelled by various factors such as:
  - Increasing project sizes- While the average project length in the GQ was 50 kms and the longest stretch was 150 kms, in NHDP phase V, the average project length is 150 kms with the longest stretch at 290 kms.
  - India offers attractive infrastructure development opportunities.
Key Trends (Contd)

Initiatives by the government to facilitate private investment

- **Actions by NHAI**
  
  In view of inadequate response from developers post the slowdown where several stretches did not receive even a single bid, NHAI has taken several steps such as:
  
  - Increased the concession period for several stretches (about 10) from 15-18 years to 20-30 years.
  - Restructuring project configurations with regard to the number of lanes, bridges, etc.
  - Upward revision of project costs: Revision of 10% for 2007 and 20% for 2006 based project cost estimates.
  - Clause 2.1.18 deleted with prospective effect in September. 2 rounds of substitution have been introduced (Nov 08), with most of the applicants freed of Clause 2.1.18 if substitution goes to 2nd round

- **New Tolling Policy**
  
  - The rate of toll for the use of permanent bridges, bypass or tunnel constructed with the cost exceeding Rs10 crore will be different from the tariffs prescribed.
  
  - Toll charges will be allowed to escalate each year by 3% simple interest plus 40% of the Wholesale Price Index (WPI) during the year.
  
  - Broadly speaking, the toll tariffs fall into two categories: one relates to national highways of four or more lanes, and the other to bridges, bypasses and tunnels.
  
  - The first has a basic toll charge which is not significantly different from the tariffs currently in force. In case it’s just a two-lane road, the tariff that can be levied shall be 60% of the base rate prescribed.
  
  - The second is for other types of roads where the tariff is based not just on the length of the road, but also on the capital cost incurred.
  
  - *Attractive from a developer’s point of view given higher escalation, higher tolls for stretches with roads, bridges, etc*
Pradhan Mantri Gram Sadak Yojana (PMGSY)

About PMGSY

• The Pradhan Mantri Gram Sadak Yojna (PMGSY) was launched on 25 December 2000 as a fully funded Centrally Sponsored Scheme.

• The primary objective of the PMGSY is to provide connectivity to all the eligible unconnected habitations of more than 500 persons in the rural areas (250 persons in the hilly and desert areas) by good quality all-weather roads by 2009.

• An Action Plan has been prepared for connecting 66,802 habitations with 1,46,185 km of all-weather roads. This Action Plan also envisages upgradation/renewal of 1,94,130 km of the existing rural road network.

• Based on ground verification by states and roads covered under other schemes, the revised target is to connect 59,564 habitations at an estimated investment of about Rs.48,000 crore.

• PMGSY focusses on qualitative construction through a three tier process
  – Technical assessment by local divisional engineers
  – Quality approval by State and National Quality control wings
  – 5 years maintenance of completed PMGSY roads also mandatory under the work agreement.

Status of PMGSY

• Against a target of 3,40,316 kilometres in the last four years (2005-09) only 2,40,424 kilometres could be constructed. Similarly for 2007-09 against a target of 2,23,577 km, only 1,52,742 kilometres could be constructed
Factors influencing progress of PMGSY

- In Orissa, 7 PMGSY projects have been tendered thrice since January 2009. Not a single bid has been received.
- Central grants worth Rs 20 crores lying unspent as the tendering process could not be completed for these projects.
- Contractors are of the view that stringent quality control for PMGSY projects plus extortion by local crime syndicates leave very little margin and render the effort unviable.
- Similar issues in states such as Jharkhand, where fresh projects have been put on hold pending completion of 600 projects awarded between 2001-2007.
- Non-availability of sufficient qualified technical personnel including engineers with the contractors
- Inadequate delegation of financial power to other agencies causing delay in award of the projects
- Non-availability of land
- Issues related to environmental clearances for forest areas
- Issues related to non-availability of labour in areas like the North eastern states.
- Inadequate institutional and limited contracting capacity of the state governments
Status of development of state highways

- **Karnataka**
  - Karnataka Road Development Corporation Limited (KRDCL) has taken up widening and up-gradation of State highways for a length of 1055 Kms, out of which a length of 601 Kms has been completed already.
  - KRDCL has taken up construction/reconstruction of bridges on SH's and MDR's throughout Karnataka in 4 phases where Phase I has been completed, Phase II: Advanced stage of completion and Phase III & IV is in progress.
  - State Highway Maintenance for 7300 Kms in Phase-I (2001-04) is completed. Maintenance for 14500 Kms in Phase-II (2005-08) is under progress.
  - KRDCL proposes to develop 10,000 km of the core road network and 2866 kms of rural connectivity with private sector participation on a Design, Build, Operate and Transfer framework. Bids for 51 packages to be submitted by 30th Sept, 2009.

- **Andhra Pradesh**
  - The GOAP proposed a second project i.e. AP Road Sector Project (APRSP) with the loan assistance of World Bank for improvement and better management of the roads chiefly targeted to further strengthen the objectives set forth in the previous project (APSHP). The cost of the project is estimated at Rs 1600 crores to be completed over a five year period from April 2008 onwards and including the following components:
    - Up-gradation and Improvement (2 lanes and 4 lanes) 600 Kms
    - Widening of Roads to 4 lanes under Public Private Partnership (PPP) 1252 Kms (Divided carriageway).
    - Long Term Performance Based Maintenance Contract (LTPBMC) 6523 Kms
    - Institutional Strengthening
  - The program to also include four laning of 1252 kms through PPP, 11 BOT projects and four annuity projects among others.
  - Out of 21 projects to be developed through BOT, tendering for 10 projects is over and at various stages of approval. The balance projects are at various stages of feasibility/DPR preparation, bid process, etc.
  - Andhra Pradesh has received 20 bids for its project to develop three road stretches totalling 450 km and involving an investment of Rs 2,000 crore.
Status of state highways (Contd)

- **Gujarat**
  - Has recently completed the World Bank Funded Gujarat State Highways project which involved upgradation and periodic maintenance of 850 and 1000 kms of state highways respectively at a cost of US $ 408 million against the original cost of US $ 533 million. This has helped reduce travel time by 16%.
  - Limited private sector interest in the state highways so far with only 9 projects completed so far at a cost of Rs 588 crores.
  - Gujarat has planned nine projects worth Rs 4000 crores to be taken up through PPP and has received 46 bids from 19 companies for its 637-km project involving an investment of Rs 1,540 crore (annuity projects)

- **Madhya Pradesh**
  - MPRDC has mobilized private investment of Rs 3000 crores in 23 projects through the BOND-BOT scheme out of which 11 projects with an investment of Rs 822 crores have been completed.
  - MPRDC has also taken up ADB assisted projects with a total project cost of Rs 922 crores- the first phase covering 332 kms is complete and the second phase covering 1270 kms is substantially complete.
  - Another ADB assisted project to rehabilitate 1800 kms of state roads is expected to be completed by 2010.

- **Rajasthan**
  - The Rajasthan Mega Highways Project involving development of five state highways covering 1053 kms at an investment of Rs 1500 crores on BOT (Toll) basis has been developed.
  - Rajasthan has additionally already completed 32 road projects on PPP basis and mobilized private investment of Rs 427 crores.
  - The second Mega Highways Project is also being undertaken through PPP and involves widening 7 state highways to two lane with hard shoulders covering 1267 kms at an estimated cost of Rs 1258 crores.
  - The Missing Link project which is a government funded project covering 2715 kms of road length is almost complete.
Observations on the above state-level initiatives in the roads sector.

- While projects are being taken up through PPP, a substantial share of projects is also being funded through multi-lateral assistance, state budgetary support, etc.
- Projects being taken up through PPP are increasing in size/investment mobilized as evidenced by the Rajasthan Mega Highways Project (Rs 1500 crores) and the Second Mega Highways Project (Rs 1258 crores), Tamilnadu IT Corridor Project (Rs 1700 crores), etc.
- VGF has enabled taking up of state level projects that would have otherwise been commercially unviable.
- Funding for state sector road projects an issue and lenders’ concern driven by lower creditworthiness of most state authorities vis-à-vis national authorities, lack of homogenity in procedures adopted by states as well, etc.
- Post the slowdown, state level initiatives in the roads sector through PPP have seen better response due to various factors such as:
  - Annuity model being adopted stabilizes the revenue streams.
  - Higher degree of assurance regarding land availability. For eg. GSHDP assures 95% land availability at the commencement of the project.
  - Fewer restrictive clauses: AP permits all technically qualified bidders to submit financial bids.
  - Andhra Pradesh has also done away with the clause that makes it mandatory for the developer to put in an additional capital if the actual traffic on the highway exceeds the estimates before the concession period is over. “In NHAI projects, if the concession period is 12 years and the traffic estimated by the end of 12 years exceeds that limit in eight years, the developer has to put in an additional investment to expand the project to meet the new demand.
  - Incentives: States such as Karnataka also propose to award land pockets for setting up of roadside amenities which would enable ancillary revenue.
Impact of the economic slowdown & financial crisis on road development
Financing of road projects

- Financing of road projects is typically debt intensive with debt to equity ratio of 70:30 or even higher.
- The long gestation period of road projects makes it difficult to raise equity unless very high returns are offered.
- Equity for road projects is typically brought in by the developer and often raised through public equity issues, private placements or brought in by way of internal accruals.
- Substantial investments are required in the form of debt as well as equity to fund and implement the projects planned during the eleventh plan period.
- Based on a 70:30 debt to equity ratio, the proposed investment of Rs 3668 billion in the roads sector over the XIth plan period would translate into a debt requirement of about Rs 2568 billion and an equity requirement of Rs 1100 billion.
- The comfortable liquidity position over the last few years had also led to competitive cost of and access to resources and the buoyant economy had aided private interest in taking up road development through PPP.
- However, the Global Financial Crisis triggered by the U.S sub-prime mortgage crisis has led to an unprecedented resource constraint worldwide. This has had an effect on India too, particularly in financing large infrastructure projects including road projects.
Impact of slowdown on funding availability

Equity share issuances
- The BSE Sensex has declined from a peak of 21206.77 to a low of 7697.3 in the last twelve months (9385 on 14th Nov, 2008). Rs 1509 crores was raised by 13 companies through IPOs between April-Jun 2008 as against Rs 13073 crores by 20 companies in the same quarter of the previous year. This change in the overall scenario had restricted corporates’ access to the equity markets.
- However, in the first four months of 2009-10, Rs 30,168 crore ($6.3 billion) was raised through various equity and equity convertible tools (excluding private placements).

Private placement of equity
- Slowdown in the number of private equity placements in India in line with the decline in the stock markets in 2008. As per Venture Intelligence estimates, venture capital firms invested $117 million over 27 deals in India during the six months ended June 2009 compared with $413 million being invested across 67 deals in the first half of 2008. Deals are now flowing in and expectations are more realistic, deal sizes are getting smaller.

Borrowings from commercial banks/financial institutions
- Given the credit crunch, slowdown in the economy and higher perceived project risks, borrowings are restricted to the best corporate/projects and cost of borrowing is higher, by about 225-250 basis points on an year-on-year basis (Nov-07 to Nov-08). Term sheets are being revised by banks post sanctions; there is a reluctance to convert in principle sanctions into final sanctions and an insistence on higher promoter equity contribution as well as higher level of collateral to reflect the higher risk premium.
- During 2008-09, the total flow of financial resources to the commercial sector declined as compared with the previous year, reflecting moderation in both bank credit and funds from other sources. While credit conditions have eased, the declining trend continued through Q1 of 2009-10, reflecting subdued credit demand conditions.
- Rough estimates show that the effective average lending rate for the scheduled commercial banks has declined from 12.3 per cent in March 2008 to 11.1 per cent by March 2009. The effective lending rate is expected to have declined further in Q1 of 2009-10.

External Commercial Borrowings (ECBs)
- Revised all-in-cost ceilings for ECBs (For eg. 6 month LIBOR+ 500 bp for minimum average maturity between 3-5 years (ceiling increased by 150 bp) reflect the higher cost of borrowings through ECBs given international liquidity constraints. Indicative cost of borrowing through ECBs has increased by about 250-300 bp on an year-on-year basis. Total funds raised through ECBs by companies in India declined substantially from $11.85 billion in April-July 2007-08 to $6.52 billion in the same period of 2008-09. There was also a decline in the number of companies raising capital through ECBs by 54.29 percent from 280 companies in the first four months of last fiscal to 128 in the same period of this financial year (Source: Assocham-Eco Pulse (AEP) study.)
- ECBs by Indian companies rose 19 per cent to $1.92 billion (around Rs 9,200 crore) in June 2009, the first time since the global crisis deepened in Sept 2008. Given the limited number of lenders now, the cost is in the range of 350-450 basis points over LIBOR.
Impact envisaged on road projects in light of the global slowdown

**ECONOMIC IMPACT**
- Overall economic slowdown
- Downward revision of growth projections
- Impact on road traffic
- International liquidity constraints expected to continue in the medium term
  Limited access to equity until markets recover.
- Banks’ ability to fund expected to be restricted given the likely decline in overall level of savings/deposits and competing demand for credit from various sectors.
- Tax/revenue collections expected to decline due to lower growth.

**FINANCIAL IMPACT**
- Decline in revenues from projects in the short to medium term given the likely decline in traffic.
- Increased financing costs
- Time and cost overruns on projects due to delays in bidding and financial closure.

**OVERALL IMPACT**
- Previously viable projects could become unviable.
- Previously viable projects could require VGF.
- VGF could need to be enhanced for other projects.
- Financial closure may not happen within the envisaged time frame.
- Loss of developers’ interest likely.
- Govt’s ability to fund non-viable projects could decline.
Issues to be addressed

MCA & regulatory issues

• Given the enthusiastic participation of developers in PPP projects in a buoyant economy, there was an impression that there was a strong market for such projects. In this backdrop, the new MCA raised several concerns from developers such as:
  – Issues related to termination of concession
  – Penalties for delays in financial closure
  – Cap on upside in traffic with limited downside protection.
  – Capital costs based on 2006 estimates by NHAI for benchmark calculation and consequent impact on the VGF that would be available. (as a % of project cost)
  – There were also issues related to stringent pre-qualification criteria in the standard RFQ and limits on the number of developers who could be shortlisted to submit the proposal.

  The consequent response from developers and steps later taken to resolve these issues highlight the need for a participatory approach as well as the need for addressing the interest of all stakeholders’ concerned.

• From a public perspective the absence of an independent regulatory authority in these sectors also brought to the fore issues of monitoring the quality of projects being built, the safety standards being followed etc.

Issues related to clearances

• Delays in land acquisition as well as obtaining environmental and other clearances

Availability and cost of financing

• While the availability of various sources of finance appears to have eased post the financial crisis, it is necessary that the project viability be thoroughly established.

• Lenders have become more stringent with doubts emerging about the ‘optimistic’ assumptions taken by developers.

• The drying up of the equity market and the risk averseness of the Private Equity funds and FII’s have created a problem in raising equity for the infrastructure projects post the slowdown. The slow revival of equity markets in the past few months and the raising of funds through the QIP route (Qualified Institutional Placements) by the developers has eased the situation somewhat but finding the equity required to take up projects will remain a challenge.

• Increase in Minimum Alternative Tax from 10% to 15% in the recent budget will also impact project viability.
Way forward

• There has been a gain in momentum post the elections with several proactive steps being taken to expedite development of infrastructure including roads. These include:
  – Increase in budgetary allocation to the roads sector (to quantify)
  – Banks have been allowed to seek refinancing from IIFCL thereby potentially fulfilling a long standing demand for take out financing by commercial banks.
  – Initiatives to enhance project viability post slowdown through various measures indicated earlier.

• However given that infrastructure has a significant multiplier effect and can thus act as a stimulus in the present times there is need to do more to promote its rapid development, especially through the PPP route.
  – The government urgently needs to tackle the problem of land acquisition head on (as it is trying to do through a new bill).
  – Also delays in projects resulting from litigations, time taken in seeking approvals, utility shifting etc. needs to be minimized.
  – Innovations in financing are required so that investors like infrastructure funds are able to take up projects, construct and operate them for a few years (when the project risks are maximum) and then allowed to exit so that risk averse investors can take these projects up.
  – Also the efforts towards development of bond markets for long term financing needs to be continued.
  – Emphasis on PPP as a means of bringing efficiency and innovation in the creation and operation of infrastructure to be maintained
Thank You