EXECUTIVE SUMMARY

Second largest road network
- In 2015, India has the second largest road network in the world, spanning a total of 4.87 million kilometres. This is used to transport over 65 per cent of all goods in the country and 80 per cent of the total passenger traffic.

Rising investments in the road sector
- In FY15–16, infrastructure investments will rise to USD11.61 billion from the central funds and internal resources of Central Public Sector Enterprises.

Growing private sector involvement
- The private sector is emerging as a key player in the development of road infrastructure in India.
- As on August 2015, India has completed 112 PPP projects and 149 PPP projects are under progress.
- Investment of USD31 billion is expected in PPP during the next five years (by 2020) for national highways.

Rapid growth in national highways
- National highways are expected to reach 100,000 kilometres by the end of the 2017 from 97,135 kilometres in FY15.

Overseas Investment for infrastructure development
- CPPIB (Canada Pension Plan Investment Board) plans to invest USD322 million for infrastructural development in India.
- The Government has received public sector undertakings from countries like Malaysia and Japan for funding the upcoming highway projects in India. Malaysia is expected to fund these projects internally through the hybrid – annuity model. 60 per cent of the investment is borne by the private investors and 40 per cent by NHAI in five equal instalments.

Source: MoRTH, NHAI, Make in India, TechSci Research

For updated information, please visit www.ibef.org
Robust demand
- Greater connectivity between different cities, towns and villages has led to increased road traffic over the years
- Growth in automobiles and freight movement commands a better road network in India
- Rise in the number of two and four wheelers, increasing traffic supports the growth

Attractive opportunities
- Roads and bridge infrastructure industry to be worth USD19.2 billion by FY17
- After elections, the Central government has fast tracked at least 24 roads and highways projects

Increasing investments
- Infrastructure expenditure estimated at USD1 trillion over FY13–17
- Government of India aims to develop a total of 66,117 kilometres of roads
- Growing participation of the private sector through Public-Private Partnership (PPP)

Policy support
- Road infrastructure has been key government priority; sector received strong budgetary support over the years
- Financial institutions received government approval to raise money through tax-free bonds
- 100 per cent FDI is allowed under automatic route subject to applicable laws and regulations

Notes: NHAI - National Highways Authority of India, MoRTH - Ministry of Road Transport and Highways, E- Estimated

Source: NHAI, Make in India, MoRTH, Business Monitor International, TechSci Research

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ROAD NETWORK IN INDIA IS SUB-DIVIDED INTO THREE CATEGORIES

- **State highways**
  - Total length: 1,46,100 kilometres
  - Share: 3.0 per cent of the total roads in India

- **National Highways**
  - Total length: 97,135 kilometres
  - Share: 2.0 per cent of the total roads in India

- **District and Rural roads**
  - Total length: 46,26,500 kilometres
  - Share: 95.0 per cent of the total roads in India

*Source: Ministry of Road Transport and Highways (MoRTH), TechSci Research*
*Note: *As on July 2015*
India has the second largest road network in the world (4.87 million kilometres)

Roads constitutes about 80 per cent of the country’s passenger traffic and 65 per cent of freight traffic

<table>
<thead>
<tr>
<th>Description</th>
<th>FY03</th>
<th>FY15</th>
<th>FY16</th>
<th>FY16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of National Highways (kilometres)</td>
<td>58,112</td>
<td>97,135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger vehicle sales (million)</td>
<td>0.71</td>
<td>2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHDP toll collection (USD million)</td>
<td>64.5</td>
<td>1078.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highway projects awarded (kilometres) by NHAI</td>
<td>677</td>
<td>7980</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of infrastructure in total bank funding (%)</td>
<td>2.3</td>
<td>8.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: National Highway Authority of India (NHAI), National Highway Builders Foundation, Reserve Bank of India (RBI)
STRONG MOMENTUM IN EXPANSION OF ROADWAYS

- Value of total roads and bridges infrastructure in India is expected to expand at a CAGR of 13.6 per cent over FY09–17 to USD19.2 billion
- Projects worth USD32.69 billion was awarded through Public Private Partnership (PPP) mode as on March 2015
- In FY16, road projects worth USD2.21 billion has been awarded under Public Private Partnership (PPP) mode
- As on August 2015, 149 Public Private Partnership projects were under construction and around 112 Public Private Partnership projects were implemented
- Increasing industrial activity, increasing number of two and four wheelers would support the growth in the road transport infrastructure projects

Roads/bridges infrastructure value in India (USD billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Value (USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY09</td>
<td>6.9</td>
</tr>
<tr>
<td>FY10</td>
<td>6.8</td>
</tr>
<tr>
<td>FY11</td>
<td>8.3</td>
</tr>
<tr>
<td>FY12</td>
<td>8.6</td>
</tr>
<tr>
<td>FY13</td>
<td>8.6</td>
</tr>
<tr>
<td>FY14</td>
<td>11</td>
</tr>
<tr>
<td>FY15E</td>
<td>13.4</td>
</tr>
<tr>
<td>FY16F</td>
<td>16.1</td>
</tr>
<tr>
<td>FY17F</td>
<td>19.2</td>
</tr>
</tbody>
</table>

Source: Business Monitor International (BMI), Ministry of External Affairs, TechSci Research
Notes: CAGR - Compounded Annual Growth Rate, FY - Indian Financial Year (April - March), F - Forecast, NHDP - National Highway Development Project, SARDP-NE: Special Accelerated Road Development Programme for the North Eastern Region and LWE - Left Wing Extremism Programme; Figures are as per latest data available
National highways account for 1.9 per cent of the total road network in India.

The size of national highway is expected to reach to 100,000 kilometres by the end of FY17 from 97,135 kilometres as on FY15.

NHAI has planned to award projects covering 5,300 kilometres – 2,800 kilometres under EPC mode, 1,000 under BOT mode and 1,500 kilometres under hybrid mode in FY16.

Double-lane highways constitute the largest share of highways in India (40,658 kilometres).

Double-lane highways are followed by single/intermediate-lane (19,330 kilometres) and four/six/eight-lane (19,128 kilometres) highways.

The Government has proposed to upgrade two-lane national highways into four-lane national highways for which USD65 billion has been allocated. This step is expected to reduce the passenger car units (PCU) to 10,000 per day.

**Source:** MoRTH, TechSci Research

**Notes:** *As per latest available data*
The National Highway Authority of India (NHAI), a government agency, is responsible for construction, maintenance and development of highways.

Government of India has formulated a seven-phase programme, ‘National Highway Development Project (NHDP)’, vested with NHAI, for the development of National Highways in the country.

**Golden Quadrilateral (GQ):** It is the highway network that connects four major metropolises.
- Total Length – 5846km (As on October 2015)

**North South & East West Corridor (NS – EW NHDP Phase I and II):** It connects the country’s extreme ends.
- Total Length (NS & EW) – 7300km (As on October 2015)

**NHDP Phase III to VII:** Construction and improvement of roads in the remaining urban and suburban regions.

Source: NHAI, TechSci Research
### NHAI’S SUCCESSFUL IMPLEMENTATION OF PROJECTS … (1/2)

<table>
<thead>
<tr>
<th>NHDP phase/Year of Approval</th>
<th>Project description</th>
<th>Total length (Kms)</th>
<th>Cost</th>
<th>Development model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I / December 2000</td>
<td>Development of Golden Quadrilateral, North South &amp; East West (NS-EW) corridor, port connectivity and other National Highways</td>
<td>13,390</td>
<td>USD5.6 billion</td>
<td>Engineering-Procurement and Construction (EPC)</td>
</tr>
<tr>
<td>Phase II / December 2003</td>
<td>Development of North South &amp; East West (NS-EW) corridor and other National Highways</td>
<td>7,142</td>
<td>USD6.3 billion</td>
<td>EPC</td>
</tr>
<tr>
<td>Phase III / April 2007</td>
<td>Development of four-lane National Highways</td>
<td>12,109</td>
<td>USD18.5 billion</td>
<td>PPP (Build-Operate-Transfer)</td>
</tr>
<tr>
<td>Phase IV / February 2012</td>
<td>Upgradation of single lane to two-lane</td>
<td>13,203</td>
<td>-</td>
<td>PPP</td>
</tr>
</tbody>
</table>

Source: NHAI, TechSci Research
Note: Data is as on 30th November 2015
### NHAI’S SUCCESSFUL IMPLEMENTATION OF PROJECTS … (2/2)

<table>
<thead>
<tr>
<th>NHDP phase / Year of Approval</th>
<th>Project description</th>
<th>Total length (Kms)</th>
<th>Cost</th>
<th>Development model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase V / October 2006</td>
<td>Upgradation of four-lane highways to six-lane and port connectivity</td>
<td>6,500</td>
<td>USD9.3 billion</td>
<td>PPP</td>
</tr>
<tr>
<td>Phase VI / November 2006</td>
<td>Development of expressway The project is targeted to be completed by December 2015</td>
<td>1,000</td>
<td>USD3.8 billion</td>
<td>PPP-(Design-Build-Finance-Operate)</td>
</tr>
<tr>
<td>Phase VII / December 2007</td>
<td>Development of ring roads, bypasses and flyovers</td>
<td>700</td>
<td>USD4.2 billion</td>
<td>PPP (Build-Operate-Transfer)</td>
</tr>
</tbody>
</table>

Source: NHAI, TechSci Research
Note: Data is as on 30th November 2015
The Special Accelerated Road Development Programme for the North Eastern region (SARDP-NE) is aimed at developing road connectivity between remote areas in the North East with state capitals and district headquarters.

SARDP-NE is vested with the development of double-/four-lane national highways of about 4,798 kilometres and double-laning/improving about 5,343 kilometres of state roads.

Implementation of the road development programme would facilitate connectivity of 88 district headquarters in North Eastern states to the nearest National Highways.

The project would be undertaken in following three phases:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Project description</th>
<th>Total length (Kms)</th>
<th>Date of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Improvement of National Highways</td>
<td>2,041</td>
<td>March 2017</td>
</tr>
<tr>
<td></td>
<td>Improvement of state roads</td>
<td>2,058</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Development of double-lane of National Highways</td>
<td>1,285</td>
<td>Investment decision is yet to be taken by government</td>
</tr>
<tr>
<td></td>
<td>Double-laning and improvement of state roads</td>
<td>2,438</td>
<td></td>
</tr>
<tr>
<td>Arunachal Pradesh package of roads and highways</td>
<td>Development of roads</td>
<td>2,319</td>
<td>March 2017</td>
</tr>
</tbody>
</table>

Source: NHAI, MoRTH Annual Report 2013-14, PPPinIndia, TechSci Research


**ROADS**

**LEFT WING EXTREMISM (LWE) PROGRAMME**

- The government approved a Road Requirement Plan (RRP) for the development of 1,126 kilometres of National Highways and 4,351 kilometres of state roads in Left Wing Extremism (LWE) affected districts.

- The project has been implemented in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh at a total cost of USD1.2 billion.

- The project would be vested with the Ministry of Road Transport and Highways (MoRTH) and is scheduled for completion by FY15.

- Total outlay of USD196 million has been allocated for this programme in 2014-15.

<table>
<thead>
<tr>
<th></th>
<th>Total length (Kms)</th>
<th>Total cost (USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>5,477</td>
<td>USD1.2</td>
</tr>
<tr>
<td>Awarded</td>
<td>5,077</td>
<td>USD1.3</td>
</tr>
<tr>
<td>Completed (in February 2015)</td>
<td>3,471</td>
<td>USD0.8</td>
</tr>
</tbody>
</table>

Source: NHAI, MoRTH, PPPinIndia, TechSci Research

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**ROADS**

DECREASE IN PUBLIC PARTICIPATION IN THE SECTOR … (1/2)

* As of August 2015, India constitutes 112 completed and 149 ongoing PPP projects dedicated to roads and highways.
* Project awarded under BOT is 50.56 percent of the total awarded projects in the year 2015.

**Total PPP projects in India (November 2015)**

- Roads and bridges: 45.24%
- Others: 54.76%

*Source:* MoRTH, TechSci Research

**DECREASE IN PUBLIC PARTICIPATION IN THE SECTOR … (2/2)**

- Roads and bridges: 45.24%
- Others: 54.76%

*Source:* MoRTH, TechSci Research
For updated information, please visit www.ibef.org

ROADS

DECREASE IN PUBLIC PARTICIPATION IN THE SECTOR … (2/2)

Road construction projects awarded to BOT companies recorded a CAGR of 1.15 per cent during FY06–16*

The total projects awarded by both NHAI and the Ministry of Road Transport & Highways stood at 2599.58 km in FY15

In 2015-16*, only 7 projects (33.58%) of the total 2599.58 kms of NHAI projects awarded has been allocated to BOT mode

NHAI is planning to allocate 10 projects under BOT mode covering 1,000 kilometres by FY16

Projects awarded to BOT private players (in Kms)

CAGR: 1.15%

Source: NHAI, Crisil, ITNL Company Annual Reports, TechSci Research
Note: FY13 - Projects awarded by NHAI
FY16*: Till 30th September 2015
PRIVATE PLAYERS GAINING TRACTION IN THE ROADS SECTOR

- Until 2005, the road construction market was dominated by public sector companies.
- With the emergence of private players over the last decade, the road construction market has become fragmented and competitive; players bidding for projects also vary in terms of size.

**Major private sector players**
- IRB Infrastructure Developers Ltd
- IL&FS
- Ashoka Buildcon Limited
- HCC
- GMR

**Major projects**
- IRB: Mumbai–Pune BOT Project, Pune–Nashik BOT Project, Bharuch–Surat BOT Project, Thane–Bhiwandi by-pass Four-Lane Project, Thane Ghodbunder BOT Project, Ahmedabad–Baroda NH-8, 6 laning of Agra - Etawah bypass
- IL&FS: North Karnataka Expressway, West Gujarat Expressway, Noida Toll Bridge, Ahmedabad - Mehsana Toll Road, East Coast Road, Kotakatta Kurnool Road Project, East Coast Road, Hazaribagh Ranchi Expressway Limited, Karnataka Toll Bridges
- Ashoka: NH6 Dhankuni to Kharagpur, Sambalpur Baragarh, NH4 Belgaum Dharwad, NH-3 Pimpalgaon – Nashik – Gonde road (JV with L&T), Jaora – Nayagaon Road, Chennai Outer Ring Road, Modhul – Nippani Road, Indore Edalabad Road, Wainganga Bridge, Ahmednagar Aurangabad Road
- HCC: Bandra–Worli Sea Link, Badarpur Elevated Highway Project, Delhi Faridabad Elevated Expressway, Breakwater construction for new port at Ennore, Chennai, New Railway Line Project from Jiribam - Tupul
- GMR: Tuni–Ankapalli Highway, Tambaram–Tindivanam Highway, Ambala–Chandigarh Highway

Source: TechSci Research
Note: NH – National Highway

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### NOTABLE TRENDS IN THE ROAD SECTOR

**Increasing private sector participation**
- The government’s policy to increase private sector participation has proved to be a boon for the infrastructure industry with a large number of private players entering the business through the Public Private Partnership (PPP) model.
- The type of PPP models used in road projects are Build Operate Transfer (BOT) toll and BOT annuity.
- During the next five years, investment through PPP is expected to be USD31 billion.

**Partnerships between Indian and foreign firms**
- With the Government of India permitting 100 per cent FDI in the road sector, most foreign companies have formed partnerships with Indian players to capitalise on the sector’s growth.

**India’s renewed focus on infrastructure**
- Infrastructure is the key to supporting double-digit GDP growth in India during the medium to long term.
- The government has made infrastructure development a key policy issue and has earmarked USD1.0 trillion during FY13–17 for the sector.
- Infrastructure development cost is estimated to be USD19 billion during FY12-17.

**Success of India’s Five-Year Plans**
- The total length of national highways is expected to reach 100,000 kilometres by the end of the 12th Five-Year Plan.
- In September 2015, government set a target of building national highways of 30 km per day.
- By the end of August 2015, government constructed national highways close to 16 kilo metres.

**Infrastructure initiatives**
- Programmes like “Bharat Nirman”, JNNURM are designed to pursue nation wide rural connectivity, linking all the unconnected villages with fair weather roads.

*Source: NHAI, MoRTH, TechSci Research
Note: FDI - Foreign Direct Investment*
Competitive Rivalry
- Competitive rivalry between big players is quite intense as far as winning projects is concerned due to high price sensitivity.
- Few large players have the expertise for undertaking bigger projects; hence, competition is higher in case of large infrastructural projects.

Threat of New Entrants
- With liberalisation, rules have been eased for the entry.
- Big players block the entry of new players in the roads segment, especially in large projects.

Substitute Products
- Threat of substitutes is low.
- Even if government wants to renovate rather than going for reconstruction, it is highly likely to go to the same players.

Bargaining Power of Suppliers
- Bargaining power of suppliers is very low.
- Several small players exist in the suppliers section that weaken their power.

Bargaining Power of Customers
- Bargaining power is strong due to robust price sensitivity and low costs.
- Buyers are government organisations or major agencies that enhance their buying power.
STRATEGIES ADOPTED

JANUARY 2016
**ROADS**

**STRATEGIES ADOPTED**

**Diversification**
- Most players are now opting for inorganic growth routes, and are diversifying into other businesses (IIML, a subsidiary of IL&FS is into private equity business with over USD3.2 billion under management)
- Many players are entering into technical partnerships with foreign players to match their R&D levels with MNCs

**Training of labour**
- Companies are hiring and training staff to reduce the shortage of skilled manpower, and focusing on policies to retain labour
- Firms plan to increase minimum wages in the construction sector as well as women participation
- Companies are partnering with technical institutes and colleges such as CSTI (L&T & Govt. of Odisha)

**Promotion of R&D**
- Companies are ramping up investment for better and cost effective ways of road construction
- Stepping up R&D to develop better roads in areas which suffer from congestion, delays and accidents, according to World standards

**Geographical expansion**
- Indian companies are increasing their footprints abroad, thus tapping outside market
- IL&FS won a road contract worth USD216.7 million in Botswana, through its subsidiary Elsamex SA
- In FY15 total 6300 km of construction is completed for National Highways

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GROWTH DRIVERS
**STRONG DEMAND AND POLICY SUPPORT DRIVING INVESTMENTS**

**Growing demand**
- Rise in two-wheeler and four-wheeler vehicles
- Increasing freight traffic
- Strong trade and tourist flows between states

**Policy support**
- Greater government focus on infrastructure
- Standardised processes for bidding and tolling; clear policy framework
- Tax sops, FDI, FII encouragement

**Increasing investments**
- NHAI implementing one of the largest road projects
- Rising private sector participation
- Strong projected demand making returns attractive

Source: Make in India, TechSci Research
KEY CATALYSTS BEHIND INCREASING DEMAND FOR ROADWAYS

- Higher individual discretionary spending has led to increased spending on cars, motorbikes and scooters
- Growing domestic trade flows have led to a rise in commercial vehicles and freight movement
- Increasing financing on vehicle loans
- Road’s traffic share of the total traffic* in India has grown from 13.8 per cent to 65 per cent in freight traffic, and from 32 per cent to 80 per cent in passenger traffic over 1951–2015

Source: MoRTH, World Bank, Make in India, TechSci Research
Note: *Including rail and road transport
RISING VEHICULAR TRAFFIC KEY FACTOR FOR EXPANSION OF ROADWAYS

- Sales of passenger vehicles increased at a CAGR of 10.3 per cent to 3.2 million during FY05–15
- Sales of commercial vehicles increased at a CAGR of 4.2 per cent to 6,97,083 during FY10–15
- Rising per capita income and growing middle class coupled with easier access to finance and a wider price range of vehicles have boosted car sales

Trends in passenger vehicle sales (in million)

<table>
<thead>
<tr>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>1.3</td>
<td>1.3</td>
<td>1.6</td>
<td>1.8</td>
<td>2.4</td>
<td>3.0</td>
<td>3.1</td>
<td>3.2</td>
<td>3.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

CAGR: 10.3%

Trends in commercial vehicle sales (in ’000)

<table>
<thead>
<tr>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>567.6</td>
<td>760.7</td>
<td>929.1</td>
<td>832.6</td>
<td>699.0</td>
<td>697.1</td>
</tr>
</tbody>
</table>

CAGR: 4.2%

Source: SIAM, TechSci Research
Strong Growth Momentum in National Highway Construction

Road additions in the 3rd Five-Year Plan was just 179 kilometres; this increased to 10,228 kilometres in the 11th Plan.

Overall physical target for development of National Highways, as included in the 12th Five-Year Plan:

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widening to 2-lane (km)</td>
<td>14,800</td>
</tr>
<tr>
<td>Widening to 4-lane (km)</td>
<td>9,826</td>
</tr>
<tr>
<td>Widening to 6-lane (km)</td>
<td>5,590</td>
</tr>
<tr>
<td>Strengthening / Improvement of Riding Quality Programme (IRQP) (km)</td>
<td>8,500</td>
</tr>
<tr>
<td>Construction of bridges (in No’s)</td>
<td>50</td>
</tr>
<tr>
<td>Construction of bypasses (in No’s)</td>
<td>5</td>
</tr>
</tbody>
</table>

Length of national highway added under various Five-Year Plans (kilometres)

Source: NHAI, MoRTH, TechSci Research
Note: * - Estimated

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INFRASTRUCTURE DEVELOPMENT: A PRIORITY FOR GOVERNMENT

- Infrastructure is a priority for the government’s economic policy; funding from private as well as public sectors is set to increase sharply in the near term.

- Infrastructure’s total share in bank funding rose from 3.74 per cent in 2002 to about 8.7 per cent in 2016.

- It is estimated that total spending on infrastructure would reach USD19 billion during FY12-17.

Source: RBI, TechSci Research

*FY16: - Till November 2015
The government has aimed to attract funding from the private sector for infrastructure projects and thereby reduce strains on the budget.

The PPP model has emerged as the favoured one for private sector participation in road projects.

As a result of government’s initiative, India has completed 112 PPP projects and 149 PPP projects are under progress.

Notes: PPP - Public Private Partnership, NHDP - National Highway Development Project, BOT - Build Operate Transfer

Source: RBI, TechSci Research
E – RBI Estimates (Median Forecast)
PRIVATE FUNDING BEING ENCOURAGED TO REDUCE FINANCE CONSTRAINTS … (2/3)

FDI inflows into the construction development sector, including roads and highways, has increased at a CAGR of 20.1 per cent from USD8.06 billion to USD24.16 billion over April 2000 to September 2015.

FDI Inflows (USD billion)

<table>
<thead>
<tr>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.06</td>
<td>9.18</td>
<td>11.43</td>
<td>22.08</td>
<td>23.31</td>
<td>24.07</td>
<td>24.16</td>
</tr>
</tbody>
</table>

Source: DIPP, TechSci Research
FY16*-Till September 2015
Private funding being encouraged to reduce finance constraints … (3/3)

- NHDP’s Phase I and Phase II were mostly developed by public funds with BOT’s share at 14.8 per cent and 29.6 per cent, respectively.

- The PPP model will be the favoured route for executing the remaining phases of NHDP.

### % of BOT share in different phases of NHDP

<table>
<thead>
<tr>
<th>Phase</th>
<th>BOT Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>14.8%</td>
</tr>
<tr>
<td>Phase II</td>
<td>29.6%</td>
</tr>
<tr>
<td>Phase III</td>
<td>95.9%</td>
</tr>
<tr>
<td>Phase IV</td>
<td>83.1%</td>
</tr>
<tr>
<td>Phase V</td>
<td>100.0%</td>
</tr>
<tr>
<td>Phase VI</td>
<td>100.0%</td>
</tr>
<tr>
<td>Phase VII</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: NHAI, MoRTH, TechSci Research
Note: NHDP - National Highway Development Phase, BOT - Build Operate Transfer
Year of Approvals for Phase I: December 2000
Phase II: December 2003
Phase III: April 2007
Phase IV: February 2012
Phase V: October 2006
Phase VI: November 2006
Phase VII: December 2007
Infrastructure – a key government priority

• Infrastructure investment is a major focus area for the government
• The government earmarked USD500 billion for infrastructure in the 11th Five-Year Plan (FY08–12); the amount is set to double to USD1 trillion in the 12th Five-Year Plan (FY13–17)

Support from the Union Budget

• The planned outlay under the Union Budget 2015-16 for the road transport and highways has been stepped to USD7.12 billion
• Connection of 1,78,000 unconnected habitations by all weather roads which would require completion of existing 1,00,000 kms of roads under construction plus sanctioning of additional 1,00,000 kms of roads

Rural development

• The Prime Minister’s Gram Sadak Yojana (PMGSY) is a scheme for development of rural roads in India
• The Construction of Rural Roads Project (CRRP) is another initiative focused on rural development; USD2.4 billion has been allocated for PMGSY in Budget 2015

Taxes and other sops

• Companies enjoy 100 per cent tax exemption in road projects for five years and 30 per cent relief over the next five years
• Companies have been granted a capital of up to 40 per cent of the total project cost to enhance viability

Source: Make in India, Union Budget 2015-16, TechSci Research,
Notes: FDI - Foreign Direct Investment, FII - Foreign Institutional Investors
Issue of tax-free infrastructure bonds

- Infrastructure finance companies, such as India Infrastructure Finance Corporation (IIFCL), National Highways Authority of India (NHAI), Housing and Urban Development Corp (HUDCO), Power Finance Corporation (PFC) and India Railway Finance Corporation (IRFC), have been permitted to issue tax-free bonds for a total value of USD3.27 billion for FY15; promotion of infrastructure debt funds is the top agenda.

Encouragement of Infrastructure Debt Funds (IDFs)

- Government of India has set up the India Infrastructure Finance Company (IIFCL) to provide long-term funding for infrastructure projects.
- Interest payments on External Commercial Borrowings for infrastructure are now subject to a lower withholding tax of 5 per cent vis-à-vis 20 per cent earlier.
- IDF income is exempt from income tax.

Central Road Fund (CRF)

- The Central Road Fund (CRF) assists the state government and union territories in the development of state roads.
- For FY15, USD4.4 billion was allocated for road development.

Investment in roads and other infrastructure

- Existing excise duty on petrol and diesel has been changed to road cess to the extent of INR 4 per litre to fund investment in roads and other infrastructure.
- Allocation of additional USD6.63 billion has been made available for roads and infrastructure sector.
## Recent BOT Projects Awarded by NHAI

<table>
<thead>
<tr>
<th>Project</th>
<th>Length (kilometre)</th>
<th>Cost (USD million)</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Laning of Fagne - Mah-Guj Border (PKG-3)</td>
<td>140.79</td>
<td>308.83</td>
<td>M/s IL&amp;FS Transportation Networks Ltd</td>
</tr>
<tr>
<td>8 Laning of Mukarba Chowk to Panipat</td>
<td>69.84</td>
<td>348.63</td>
<td>M/s Essel Infraprojects Ltd</td>
</tr>
<tr>
<td>6 Laning of Agra - Etawah bypass</td>
<td>124.5</td>
<td>NA</td>
<td>M/s IRB Infrastructure Developers Ltd</td>
</tr>
<tr>
<td>Four Laning of Solapur - Bijapur</td>
<td>109.8</td>
<td>228.5</td>
<td>Uniquist Infra Ventures Pvt Ltd</td>
</tr>
<tr>
<td>4 Laning of Guna to Biaora</td>
<td>93.5</td>
<td>168.03</td>
<td>M/s Dilip Buildcon Ltd</td>
</tr>
<tr>
<td>4 Laning of Biaora - Dewas</td>
<td>141.26</td>
<td>262.73</td>
<td>M/s Oriental Structural Engineers Pvt Ltd</td>
</tr>
<tr>
<td>Vadodara-Surat Section</td>
<td>6.7</td>
<td>86.9</td>
<td>HCC Concessions Ltd</td>
</tr>
<tr>
<td>Walajapet-Poonamalee</td>
<td>93.0</td>
<td>236.6</td>
<td>ESSEL Infra Projects Ltd</td>
</tr>
<tr>
<td>4 Laning of Coimbatore- Mettupalayam</td>
<td>53.9</td>
<td>108.8</td>
<td>Transstroy-OJSC Consortium</td>
</tr>
<tr>
<td>4-Laning of Goa/Karnataka Border-Kundapur Section</td>
<td>187.3</td>
<td>304.1</td>
<td>IRB Infrastructure Developers Ltd</td>
</tr>
<tr>
<td>Four lanning of Walayar - Vadakkancherry section</td>
<td>54.0</td>
<td>125.3</td>
<td>KNR Constructions</td>
</tr>
<tr>
<td>2-Lane with paved shoulder with provision of Capacity Augmentation of Rajasthan Border-Fatehpur-Salasar Section</td>
<td>154.1</td>
<td>97.4</td>
<td>Galfar Engineering Contracting SAOG</td>
</tr>
<tr>
<td>4-Laning of Kashipur-Sitarganj Section</td>
<td>77.2</td>
<td>111.3</td>
<td>Galfar Engineering Contracting SAOG</td>
</tr>
<tr>
<td>4-Laning of Rajsamand-Gangapur-Bhilwara</td>
<td>87.2</td>
<td>124.5</td>
<td>Sadbhav Engineering Limited</td>
</tr>
<tr>
<td>4-Laning of Rohtak-Hissar Section</td>
<td>98.8</td>
<td>176.2</td>
<td>Sadbhav Engg. Limited</td>
</tr>
<tr>
<td>4-Laning of Khed-Sinnar Section</td>
<td>137.9</td>
<td>247.7</td>
<td>IL&amp;FS Transportation Networks Ltd</td>
</tr>
</tbody>
</table>

Source: NHAI, MoRTH, TechSci Research
Notes: BOT - Build Operate Transfer, UB - Union Budget
For updated information, please visit [www.ibef.org](http://www.ibef.org)
ROADS

🌟 Roadways has been the key focus area for budget allocations over the years

🌟 As per Union Budget 2015–16, the government have provided an outlay of USD7.1 billion for the road sector

🌟 The budget outlay for road transport and highways increased at a robust CAGR of 14.3 per cent between FY09 and FY16

🌟 In FY15, the government plans to construct about 8,500 kilometres of national highways. However, at the end of FY15, National Highway Authority of India (NHAI) and Ministry of Road Transport and Highways(MoRTH) has awarded only 5,000 kilometres

**BUDGETARY OUTLAY FOR ROADS**

Outlay for roads under the respective Union Budgets (USD billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Outlay (USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY09</td>
<td>2.8</td>
</tr>
<tr>
<td>FY10</td>
<td>3.5</td>
</tr>
<tr>
<td>FY11</td>
<td>3.2</td>
</tr>
<tr>
<td>FY12</td>
<td>8.0</td>
</tr>
<tr>
<td>FY13</td>
<td>7.8</td>
</tr>
<tr>
<td>FY14</td>
<td>6.6</td>
</tr>
<tr>
<td>FY15</td>
<td>6.5</td>
</tr>
<tr>
<td>FY16</td>
<td>7.1</td>
</tr>
</tbody>
</table>

CAGR: 14.3%

Source: Respective Union Budgets, TechSci Research

Note: CAGR - Cumulative Annual Growth Rate

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FUTURE PROSPECTS REMAIN BRIGHT FOR THE ROAD SECTOR … (1/3)

* National Highway Development Project (NHDP) is a seven phase project amounting to USD60 billion. The projects aims to widening, up-gradation, and rehabilitation of 47,054 kilometres of national highways

* National Highway Authority of India (NHAI) aimed to award 8,500 kilometres of projects by FY15. However, National Highway Authority of India (NHAI) and Ministry of Road Transport and Highways(MoRTH) has awarded road projects of length 5,000 kilometres in FY15

* NHAI plans to award 58 road projects that covers 5,300 kilometres in FY16

Projects awarded (in kilometres)

| Projects awarded (in kilometres) by NHDP as of 30th September 2015 |
|-------------------------|-------------------------|-------------------------|-------------------------|
| FY12                   | FY13                   | FY14                   | FY15                   | FY16*                   |
| 6491                   | 1165                   | 1435                   | 5000                   | 2600                   |
| NS & EW Ph. I & II     | NHDP III               | NHDP IV                | NHDP V                 | NHDP VI                |
| 7142                   | 12109                  | 13203                  | 6500                   | 1000                   |
| FY16* - As on 30th September 2015 |

Source: NHAI, MoRTH, TechSci Research
Notes: NHDP stands for National Highways Development Project, E – Estimate

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FUTURE PROSPECTS REMAIN BRIGHT FOR THE ROAD SECTOR … (2/3)

* Development of National Highways through PPP is expected to remain the key focus area for the government

* During the next five years (2014-15 to 2018-19), investments through PPP are expected to be over USD31 billion for National Highways and around USD10 billion for state highways

* NHAI gives nod to 9 road projects to in order to replan premium payment

PPP opportunities over the next five years (2014-15 to 2018-19) (USD billion)

<table>
<thead>
<tr>
<th>National Highways</th>
<th>State Roads and Rural Roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>84</td>
</tr>
</tbody>
</table>

Source: NHAI, MoRTH, Make In India, TechSci Research
In India, roads remain the most important means of transport, accounting for around 80 per cent of the passenger traffic and 65 per cent of the freight traffic.

Number of total vehicles in India increase at a CAGR of 10.5 per cent during the period of FY05-15, from 8.6 million to 23.3 million.

Two wheelers accounts 79.2 per cent of the total number of vehicles.

Bifurcation of vehicles by category: FY15

- Two Wheelers: 79.2%
- Passenger Vehicle: 13.7%
- Commercial Vehicle: 3.0%
- Three Wheelers: 4.1%

Source: SIAM Report, TechSci Research
Note: SIAM - Society of Indian Automobile Manufacturers
OPPORTUNITIES AND THE REASSURANCE OF CONTINUED POLICY FOCUS*

**Significant potential for construction & EPC companies**
- Under the 12th Five-Year Plan, the government targets to develop national highways at the rate of 20 km per day
- India’s construction sector, is projected to grow at 7 – 8 per cent each year over the next decade (till 2025); the sector is now expected to become the world’s third largest by 2025
- India’s construction market was USD157 billion for FY14, an increase of USD4 billion over FY13

**Strong focus on infrastructure**
- Infrastructure spending is expected to reach USD1 trillion in the next Five-Year Plan (FY12–17)
- Under Union Budget 2015 – 16, government plans to connect 1,78,000 unconnected habitations by all weather roads. This would require completion of existing 1,00,000 kms of roads under construction plus sanctioning of additional 1,00,000 kms of roads

**Major government initiatives to boost private and foreign investment**
- An increase in FII limit in infrastructure corporate bonds from USD5 billion to USD25 billion in FY12 was a step in the right direction
- Cumulative FDI inflows, from April 2000 to September 2015, in construction development & infrastructure sector (including roads and highways) has reached USD24.16 billion
- New wing to oversee the development of roads in strategic areas

Source: NHAI, MoRTH, Union Budget, TechSci Research, News articles,
* - Figures mentioned in this slide are as per latest data available
IRB Infrastructure is one of the leading BOT operators in India, with a built-length of around 9,784 lane kilometres

Currently, IRB has 23 BOT projects, of which 17 are operational

As of 31 March 2015, IRB Infrastructure’s order book aggregated USD2.1 billion

The company has an 11.07 per cent share in the Golden Quadrilateral project

During FY10-15, company’s revenue increased at a CAGR of 12.2 per cent

Revenue Trend: IRB Infrastructure Limited (USD million)

Source: Company Annual Report & Corporate Presentation, TechSci Research
Notes: CAGR - Compounded Annual Growth Rate, BOT - Build Operate Transfer
FY16*: April-September 2015
IRB INFRASTRUCTURE LIMITED  ... (2/2)

• Won the first ultra-mega NHAI road project worth USD750 million
• Received financial closure for Ahmedabad Vadodara Project
• Acquired MVR Infrastructure and Tollways Pvt Ltd
• Signed contract with NHAI for the four-laning of NH-17 from Goa/Karnataka to Kundapur
• Preferred Bidder for the Six-Laning of Agra–Etawah section of NH-2 project
• In FY16*, revenue from operation reached USD369.8 million

Source: Company Annual Report, News articles, TechSci Research

FY16*: April-September 2015
**IL&FS TRANSPORTATION NETWORKS LIMITED (ITNL) … (1/2)**

* ITNL has the largest BOT road asset portfolio (in terms of lane kilometres) in India, with presence in 17 states

* The company has 14,680 lane kilometres under its road asset portfolio, comprising 30 BOT road projects

* In 2013, ITNL signed a MoU with a Japanese expressway development company, Nippon Expressway Company (NEXCO East) to work on PPP projects

* ITNL emerged as the lowest bidder for two highway projects in Maharashtra worth USD692.43 million in June 2015

**Revenue trends: IL&FS Transportation Networks Limited (USD million)**

<table>
<thead>
<tr>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>255</td>
<td>502</td>
<td>843</td>
<td>1222.1</td>
<td>1250</td>
<td>1128.5</td>
<td>1132.7</td>
<td>340.1</td>
</tr>
</tbody>
</table>

Source: Company website, Company Annual Report, TechSci Research

Notes: CAGR - Compounded Annual Growth Rate, BOT - Build Operate Transfer, Km – Kilometers

FY16*: April-September 2015
IL&FS TRANSPORTATION NETWORKS LIMITED (ITNL) … (2/2)

• Was awarded a contract for 1,086 lane kilometres for a total consideration of USD1.5 billion

• Was awarded an order for 1,129 lane kilometres for a total value of USD1.5 billion

• Four-laning of Beawer-Gomti Road Project

• Won a USD312 million contract for the six-laning Barwa-Adda-Panagarh sector of National Highway 2

• Won a road contract worth USD216.7 million in Botswana, through its subsidiary Elsamex SA

• Commercial operation of Warora Chandrapur Ballarpur Bamni Road Project has been started

• Won a project to widen roads of 127 km long Patna-Gaya-Dobhi section of NH 83 in Bihar for a consideration of USD205 million

• In FY16*, revenues stood at USD340.1 million

Source: Company Annual Report, TechSci Research
FY16*: April-September 2015

For updated information, please visit www.ibef.org
**ROADS**

**NOIDA TOLL BRIDGE COMPANY LIMITED (NTBCL)**

- Infrastructure Leasing and Financial Services Ltd (IL&FS) promoted National Toll Bridge Company Limited (NTBCL) as a special purpose vehicle (SPV) for the development of the 22-km Delhi-Noida Direct (DND) flyway on a Build Own Operate Transfer (BOOT) basis.

- Incorporated in Uttar Pradesh, India, in 1996, NTBCL is a publicly listed company and operates only in the country.

**Salient features**

- Eight-lane dual carriageway connecting Noida and Delhi
- One major and three minor bridges over Yamuna river
- Eight-lane approach road on embankment
- 31-lane, 200m-wide, fully computerised toll plaza
- Extensive tree planting and landscaping
- Noise barriers and river training works

**Revenue trends: Noida Toll Bridge (USD million)**

CAGR: 2.9%

<table>
<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.2</td>
<td>17.9</td>
<td>18.9</td>
<td>19.9</td>
<td>19.8</td>
<td>19.4</td>
<td>20.4</td>
<td>10.7</td>
<td></td>
</tr>
</tbody>
</table>

Source: Company Annual Report, TechSci Research
FY16*: April-September 2015

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INDUSTRY ASSOCIATIONS

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E-mail: ifcmost@nic.in

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New Delhi – 110 075
Phone: 91-11-25074100, 25074200
Fax: 91-11-25093507, 25093514

Indian Roads Congress
Sector 6, (Near RBI Quarters), RK Puram, New Delhi – 110022
Phone: 91-11-26185303
Secretariat: 91-11-26716778, 26183669, 26185273, 26185315,
26185319
Fax: 91-11-26183669
E-mail: secretarygen@irc.org.in
GLOSSARY

*BOT*: Build Operate Transfer

*CAGR*: Compound Annual Growth Rate

*EPC*: Engineering, Procurement and Construction

*FDI*: Foreign Direct Investment

*FY*: Indian Financial Year (April to March) – So FY10 implies April 2009 to March 2010

*GOI*: Government of India

*INR*: Indian Rupee

*LCV*: Light Commercial Vehicles

*MoRTHA*: Ministry of Roads Transport and Highways

*NH*: National Highway

*NHAI*: National Highway Authority of India

*NHDP*: National Highway Development Project

*USD*: US Dollar – Conversion rate used: USD1 = INR54.43
# Exchange Rates

## Exchange rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004–05</td>
<td>44.81</td>
</tr>
<tr>
<td>2005–06</td>
<td>44.14</td>
</tr>
<tr>
<td>2006–07</td>
<td>45.14</td>
</tr>
<tr>
<td>2007–08</td>
<td>40.27</td>
</tr>
<tr>
<td>2008–09</td>
<td>46.14</td>
</tr>
<tr>
<td>2009–10</td>
<td>47.42</td>
</tr>
<tr>
<td>2010–11</td>
<td>45.62</td>
</tr>
<tr>
<td>2011–12</td>
<td>46.88</td>
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<tr>
<td>2012–13</td>
<td>54.31</td>
</tr>
<tr>
<td>2013–14</td>
<td>60.28</td>
</tr>
<tr>
<td>2014–15</td>
<td>61.06</td>
</tr>
<tr>
<td>2015-16(Expected)</td>
<td>61.06</td>
</tr>
</tbody>
</table>

## Exchange rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>43.98</td>
</tr>
<tr>
<td>2006</td>
<td>45.18</td>
</tr>
<tr>
<td>2007</td>
<td>41.34</td>
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<td>2008</td>
<td>43.62</td>
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<td>2009</td>
<td>48.42</td>
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<td>2010</td>
<td>45.72</td>
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<tr>
<td>2011</td>
<td>46.85</td>
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<td>2012</td>
<td>53.46</td>
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<tr>
<td>2013</td>
<td>58.44</td>
</tr>
<tr>
<td>2014</td>
<td>61.03</td>
</tr>
<tr>
<td>2015(Expected)</td>
<td>63.72</td>
</tr>
</tbody>
</table>

Source: Reserve bank of India, Average for the year

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