

December 5, 2018 | Industry Research

Roads & Highways: Road construction rate to peak in FY19

Contact:
Madan Sabnavis
Chief Economist
Madan.sabnavis@careratings.com
+91-22- 6754 3489

Ashish K Nainan
Research Analyst
ashish.nainan@careratings.com
+91-22-6754 3443

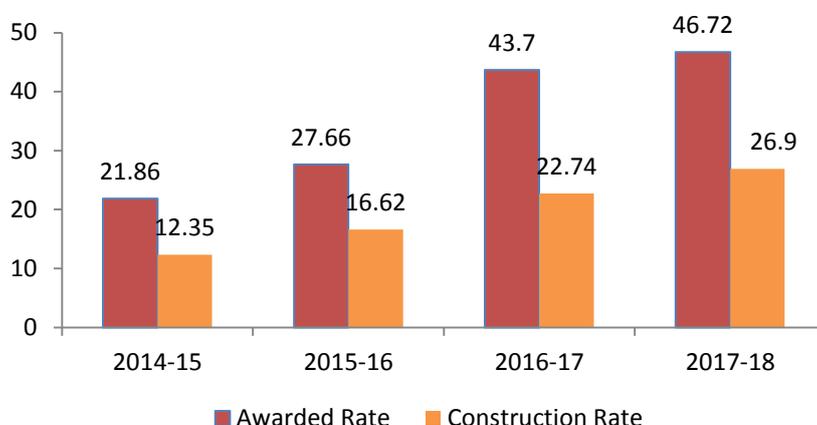
Guided by:
Ratnam Raju Nakka
Associate Director: Corporate Ratings

Mradul Mishra (Media Contact)
mradul.mishra@careratings.com
+91-22-6754 3515

Key insights and highlights for the sector:

- As the sector witnesses a shift from Engineering Procurement and Construction (EPC) Model of construction to Hybrid Annuity Model (HAM), the rate of construction of roads per day is expected to further increase in FY19, albeit at lower pace. We expect construction rate to peak in FY19 at 30-32kms/day. The construction rate for FY18 was at 27 kms/day and construction rate for first seven months of FY19 was 23kms/day.

Graph 1. Rate of Award and Construction (length in KM)



Source: Compiled by CARE

- The overall pace of construction is expected to decline in FY20 on account of funding shortage for new projects. Funding will be constrained by the limited number of banks which are in a position to lend outside the Preventive Corrective Action (PCA) framework. Further, tight liquidity situation in the NBFC space will constrain future lending. The budgetary support may not be able to compensate for this shortfall.

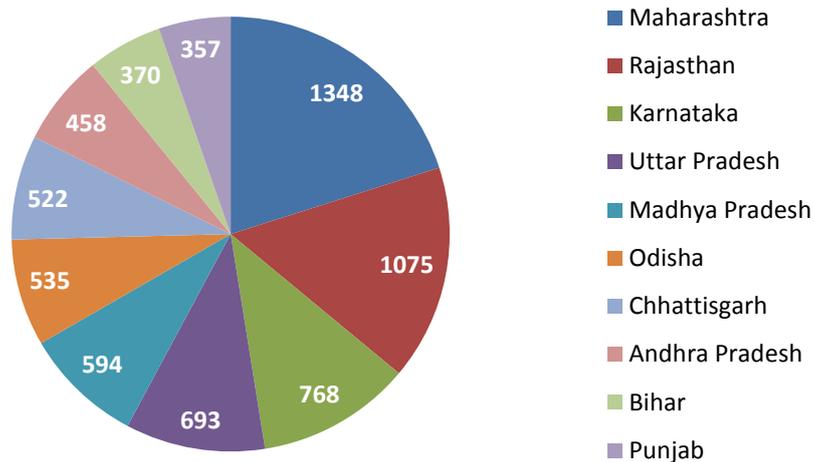
- The national highways construction and project award targets have been set at a higher level. However, NHAI's progress in land acquisitions has stalled due to sharp rise in average cost of land acquisition by around 300% over the last 4 years on an average.

- Factors like delay in obtaining pre-requisite land for awarding new projects under EPC and HAM and **increased** financing risks stemming from ballooning order books of a few mid-sized infrastructure developers/concessionaires leading to over leverage, continued risk aversion of public sector banks (PSB) towards infrastructure projects and private bank's selective funding to infrastructure **are** likely to act as impediments in achieving construction target of 45kms/day in FY19.

Strengthening the road-map:

- Ministry of Road, Transport and Highways (MoRTH) plans to award 20,000 km length of National Highways during 2018-19. The target is 17.27% higher than the length awarded in 2017-18 and 20% lower than the set target in 20018-19. During 2017-18, 17,055 km length of National Highways were awarded, of which 8652 km length of NHs were awarded by the MoRTH, 7397 km by NHA and 1006 km by NHIDCL.
- Construction target for FY19 has been set at 16,418 km, which is 67% higher than the construction achieved in FY18. During 2017-19, 9829 kms length of National Highways were constructed.
- The allocation of funds and expenditure incurred for development of NHs / roads under the various schemes by MoRTH during 2017-18 was Rs. 1,09,453 crore and Rs. 1,00,179 crore respectively including Internal and Extra Budgetary Resources (IEBR). We expect the expenditure to be higher than the allocation of Rs 1,20,557 crore in 2018-19 for the year on the back of election, which in turn may lead to a higher outgo for land acquisition to speed-up award of projects.
- An additional 2,700 km of new highway network under the Bharatmala Pariyojana is expected to be awarded by the end of 2018.

Graph 2. Top 10 states by National Highways Constructed in FY18 (in KM)



Source: MoRTH

- Maharashtra, Rajasthan, Karnataka, Uttar Pradesh, Madhya Pradesh, Odisha and Chhattisgarh were the key states which witnessed over 500 km of national highways being constructed in FY18. 4 out of the top-10 states are coastal states with more than two large ports being situated in each of them. Development of better highways in coastal states is expected to improve hinterland connectivity, thus improving efficiency in transporting goods to-from ports. This in turn is also expected to improve some productivity of some major and non-major ports especially on the eastern corridor.
- The Government expects to complete 295 projects by the end of March 2019.

Bharatmala Pariyojana: Status

- The Government has successfully awarded 4,466km of highways under “Bharatmala Pariyojana” till August, 2018 since the launch of the scheme.

- Under the Bharatmala Scheme, which was introduced in the second half of 2017- Rajasthan, Maharashtra, Uttar Pradesh, Odisha and Karnataka were among the largest states in terms of length of roads. The top 10 states account for 90% (~4,000km) of the total projects awarded under the scheme. Other states include Gujarat, Andhra Pradesh, Jharkhand, Madhya Pradesh and Telangana.
- The seven states in the North-East region are yet to witness any award of projects under the “Bharatmala Yojana. These seven states together account for 4,747 km of road-network under the scheme of over 34,000 kms. Other states where Bharatmala projects are yet to take off are Chhattisgarh, Goa, New Delhi and Uttarakhand.

Table 1. States with Bharatmala Projects yet to be awarded

State	Total Under Bharatmala	Total Length Pending Award	State	Total Under Bharatmala	Total Length pending Award
Assam	1,190	1,190	Meghalaya	493	493
Chhattisgarh	342	342	Nagaland	406	406
Mizoram	1,067	1,067	Tripura	525	525
Goa	55	55	Uttarakhand	205	205
Manipur	901	901	Sikkim	165	165

Source: MoRTH

Project monitoring and progress during FY19

- Total number of projects being actively monitored by the Central Government with an outlay of over Rs. 150 crore has grown to 591 in August 2018 from 543 in April 2018.
- Number of delayed projects has increased from 32 to 71 in the first 5 months of the year. Cost overruns on the other hand continue to be marginal at 1.5%.
- Total outlay of the road projects being monitored by the Central Sector has grown to Rs. 4.03 trillion. We expect the same to reach Rs. 5 trillion by the end of FY19.

Table 2. Status of Projects under Central Sector

Particulars	
Number of Projects (Rs. 150 cr or more)	591
Number of projects (Rs. 1,000 cr or more)	128
Original Cost(In ₹ cr.)	3.97 lac
Anticipated Cost(In ₹ cr.)	4.03 lac
Cumulative expenditure (In ₹ cr.)	1.39 lac
Projects with cost overruns	45
Projects with time overrun	71

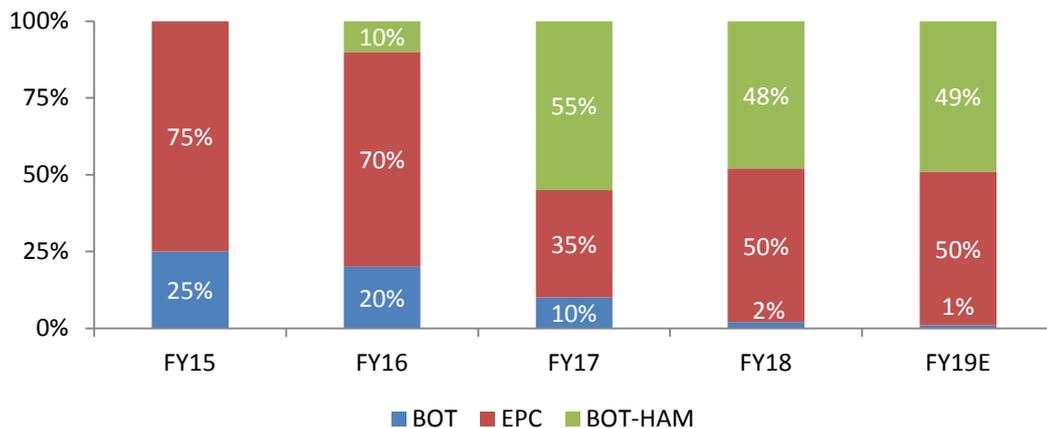
Source: MOSPI (Infra & Project monitoring division) Flash Report August 2018

Graph 3 shows the implementation model under which NHAI has awarded highway projects over the last 4 years.

- The share of projects implemented under BOT model has been brought down to 2% in FY18 from approx. 25% in 2015.
- EPC projects which require the implementation authority to bear the entire cost of the project over the period of construction, has witnessed its share coming down from 75% in FY15 to around 50% in FY18 in terms of projects awarded.

- Hybrid Annuity Model or HAM’s share, which is a combination of EPC (40%) and Annuity (60%) with reduced capital requirement from concessionaire (~60% vs 100% in case of BOT); has increased from 10% in FY16- when it was first introduced; to approximately 47-48% in FY18 in terms of length of projects awarded.
- This reconfiguration in the share of model of implementation of projects has helped bring down the overall capital requirement to be incurred by MoRTH and NHAI during a year, by at least 5% between FY14 & FY18.

Graph 3. National Highway Awarded by Model of Implementation (2014-19)

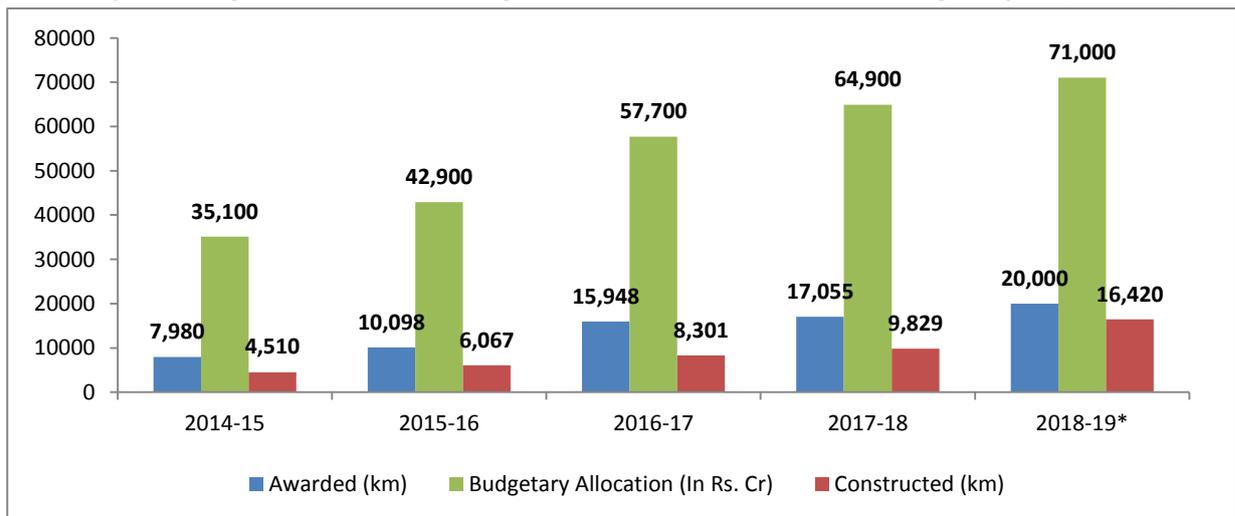


Source: NHAI & MoRTH, CARE Ratings Compilation

Implementation of projects:

The overall budgetary allocation for development of national highways seems inadequate if one were to take into consideration three important factors i.e Change in model of implementation of road projects (BOT/EPC to EPC/HAM), sharp rise in compensation for acquired land and the reduced appetite from financial institutions to fund the projects in infrastructure segment.

Graph 4. Budget Allocation, NH Length awarded and Constructed during the year (2014-19)



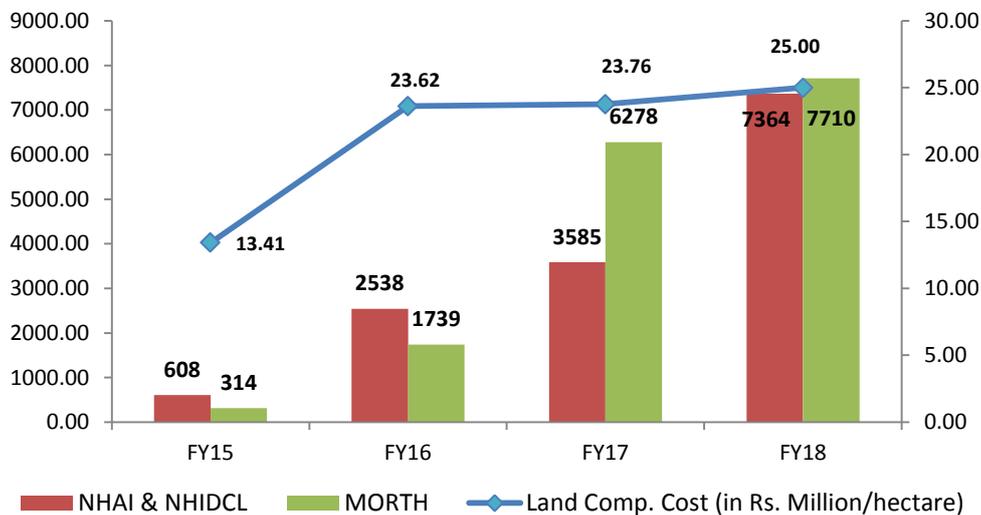
*Target Set by MoRTH for 2018-19

- Ministry of Roads, Transport and Highways (MoRTH) along with their implementing body namely NHAI and NHIDCL has over the last 4 years awarded over 51,000 kms of national highways. Award rate has climbed from 21.9 km/day to around 46.7km/day. Construction rate too has increased from 12.4 km/day to 26.9 km/day. The award rate has

grown 113% and the construction rate has increased by 117%. These two parameters taken in isolation indicate a sizeable improvement in development of road network. Additionally, budgetary allocation has doubled from Rs. 35,000 crore in FY15 to Rs. 71,000 crore in FY19 which is a 100% increase over the 4 year period.

- Total roads constructed have increased from 4,510 km in FY15 to over 9,829 km (expected) in FY18 which is a 118% increase. With share of BOT projects reduced to 1% of the total length awarded, the overall capital requirement is only expected to increase. The implementing authority is now required to contribute 40% and 100% for HAM and EPC models respectively. This coupled with the increased land cost would come in the way of award and construction of more projects in future.
- Concessionaires are required to mobilize funds in the form of equity and debt in order to achieve financial closure for awarded products especially in HAM model, where the concessionaire mobilizes 60% of the project cost. With elections across states and a pending general election in early FY20, we expect more projects especially the ones awarded in FY16 and FY17 to be completed during FY19.

Graph 5. Land Compensation & Projects pending (un-awarded) for the year



Source: NHA

- Projects pending award have increased by over 12 times for NHA and 20 times in case of MoRTH between 2014 and 2018. The increased financial cost of compensation for land acquired to construct roads is a key factor which has led to the Authorities inability to achieve the performance targets set by MoRTH.
- An additional 26 projects totalling around 2,700 km are expected to be awarded under the HAM model in the remaining 4 months of FY19 which in turn is expected to improve the award rate for the year. But implementation of these would remain questionable along with the other projects which are stuck due to non-receipt of appointed dates and financial closures.

Awarded but awaiting implementation:

- As per ministry data, 1,837 projects with an outlay of Rs.6.45 lakh crore having lengths of 61,164kms are ongoing projects for development of National highways in the country. 20% of these projects continue to remain without appointed date, which leaves the concessionaire’s capital locked into such awarded projects, slowing the overall pace of development. This in turn would mean, projects under EPC which requires lesser capital would evince more interest going forward.

- As of September 2018, 342 projects under implementation for development of national highways are yet to get an appointed date.
- *Appointed date* is starting date of a project, when the NHA hands over its contract letter to a developer/ concessionaire. All future payments, annuities and repayments by NHA is processed on the basis of this appointed date.

Table 3. Projects Awarded but yet to get appointed date	
As of Sept. 2018	Number of projects
Bharatmala Economic Corridor	92
Bharatmala	82
BRT	20
NH(O)	33
NHDP (I-VII)	86
Others	28
Port Connectivity	1
Total	342

Source: NHA

- Bharatmala and Bharatmala Economic Corridor projects alone account for more than 50% of the projects without appointed dates. These projects have been awarded over the last 18 months. These projects are part of the Rs. 5.35 trillion road network development mega-scheme introduced by MoRTH in 2017. Schemes under Port connectivity have progressed satisfactorily. Over a decade old NHDP scheme continues to account for 25% of the projects without appointed date, which also are now a part of the Bharatmala Scheme.
- Eleven state-run banks are under the prompt corrective action (PCA) framework of the RBI. This also has partly led to slowdown in achieving financial closure of projects. Banks under PCA are mandated to cut lending to corporates and focus on reducing concentration or excess exposure to few sectors. As these banks continue to be under the mandated regulatory clampdown, lending to roads sector from PSBs would continue to remain strained in the coming months.

Road Network Density: Development opportunities and way forward

The road sector going forward would witness restructuring and diverge into three business segments mentioned below:

1. **Construction Business:** Opportunity in this segment is not limited to but is expected to witness a robust order-book on the back of “Bharatmala” Scheme. 35,000 km of road network worth Rs. 5.35 trillion is a sizeable business opportunity and would require more players to enter the sector for faster implementation of projects. We expect technology driven and companies with proven track-record of execution to benefit from the development business. Additionally, over 35,000 km of highway network is expected to be upgraded to 4/6 lane highways over the decade.
2. **Maintenance and Operation:** The business would have a large role to play and can be looked upon as a steady revenue stream for developers in the road business. With over 5.5million km of road network in the country, maintenance operation business would witness double-digit growth over the next decade.
3. **Asset Management:** Asset management business in roads pertains to investment managers stepping in as concessionaires to manage annuity yielding road projects. Apart from the existing operational BOT projects which are already generating toll, an additional 15,000 km of projects would be operational over the next 4-5 years. These projects under HAM-BOT would have fixed annuities and would not bear any kind of traffic or interest rate risk for the

concessionaire. Private equity players are increasing evincing the interest in Toll-operate-Transfer (ToT) model to manage road assets in India since it eliminates construction risk and minimises revenue risk.

Major developments in the industry:

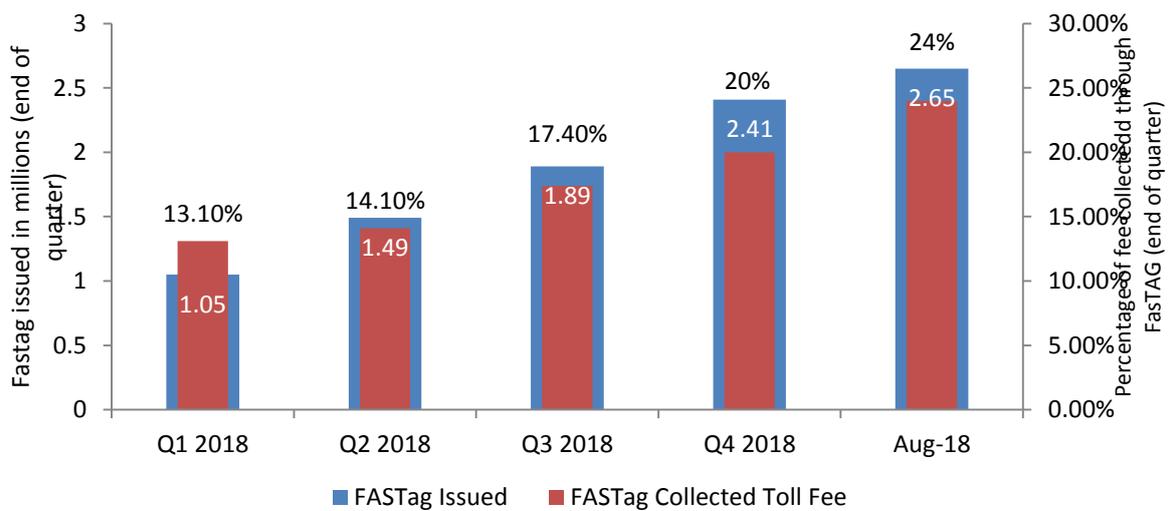
Toll-Operate-Transfer: (TOT)

- With the sharp increase in award and construction of highway projects, the Government has been rapidly trying to monetize existing road projects to meet the excess capital requirements to fund new projects. It has been successful in doing so by awarding the first bundle of highways under the TOT model. The first bundle with 9 projects totalling approximately 680 km of roads in the two highly industrialized states of Andhra Pradesh and Gujarat was awarded in March 2018.
- The first bundle of projects fetched Rs. 9,861 crore which was 1.5 times the estimated turnover. The high interest for TOT in these states could be attributed to their traffic profile and prospect, given the high rate of industrialization and development and aggressive bidding to certain extent.
- A second bundle with 586 kms of highways spread across four states of Rajasthan, Gujarat, West Bengal and Bihar is currently open for bidding and is expected to be awarded over the next 2 months to prospective buyers. However, we do not expect aggressive bidding in the second bundle as bidders would be more cautious going forward given the lessons learnt from the first bundle.
- More TOT project bundles across other coastal states are expected to follow and may evince higher interest. But the scope to raise funds through this medium may be short term and has limited prospect given the limited number of projects which can be bundled and offered by the NHAI.

FASTag: Collecting fast and efficiently

- FasTAG aims at improving and enabling Electronic Toll Collection. NHAI has been able to achieve a major milestone by enabling one dedicated FASTag Lane at all its toll plazas. FASTag enabled vehicles can pass through the dedicated FASTag lane without stopping at toll plazas.
- As of August 2018, the total share of toll collected through FASTag has increased to 24% and it is expected that the same would increase to 30% by the end of FY19.

Graph 6. FasTAG Issued and Toll Collected through FasTAG



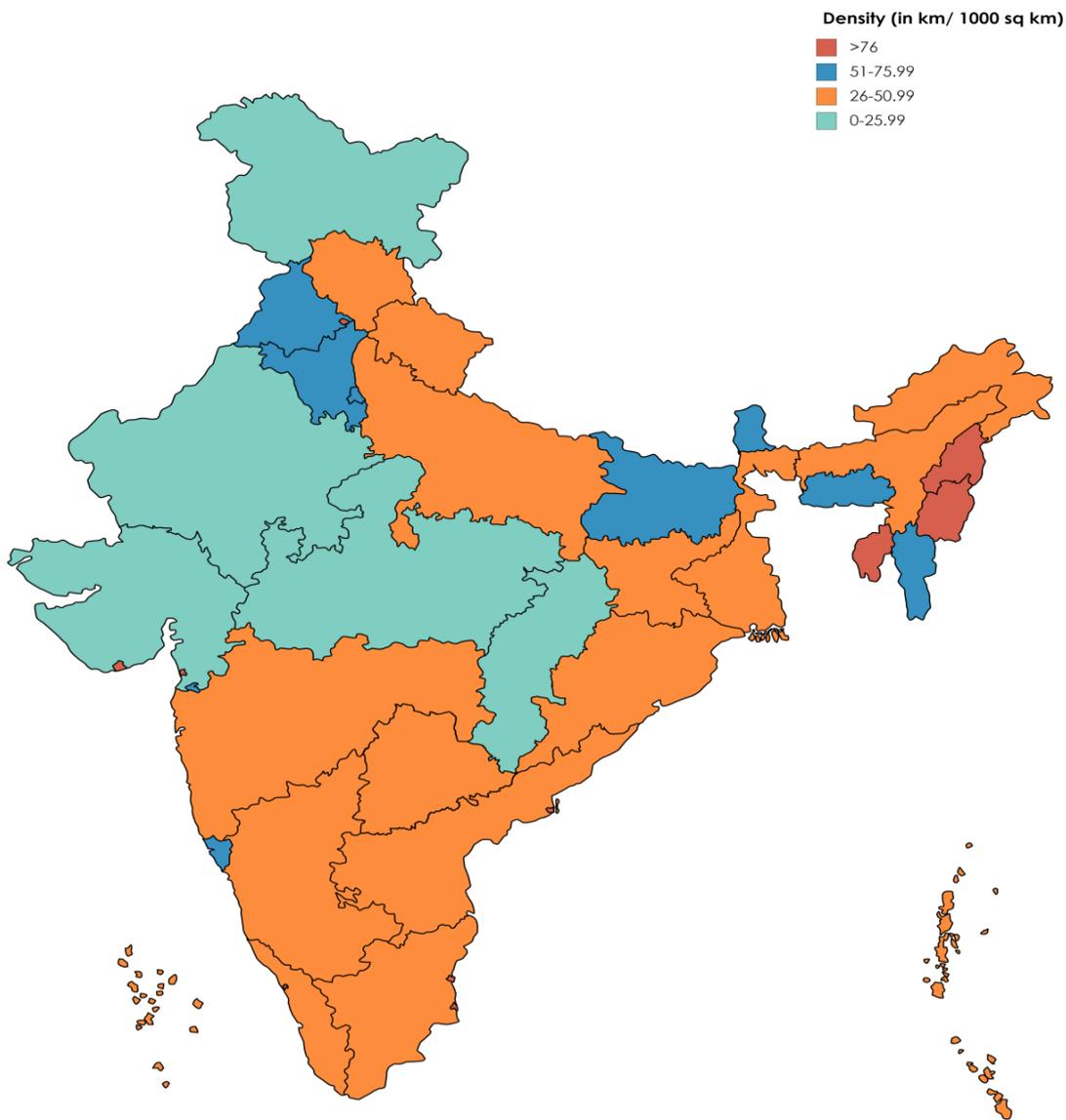
Data Source: MoRTH

Opportunity in Roads and Highway Development:

The road density in India is one of the the highest among the major economies in the world. A well-connected road network is vital for a country. But India’s road network length is more concentrated in rural roads and roads managed by local bodies. 92% of the road network in India is two lane or narrow roads across rural and urban centres which are inadequate to handle the large volume of industrial/logistics traffic.

National highway Density: State-wise, J&K has the lowest road density at 11.7 km per 1000 sq km area. This is 1/3rd the national average of 35.1 km per 1000 sq. km.

Illustration 1. Road Density across states in India



Created with mapchart.net ©

Source: NHAI, Compiled by Care Ratings (As of March 31st 2018)

A low national highway density in a State may not be indicative of the strength of the highway network, but does offer an insight into opportunity for development on a macro-level. The density only takes into consideration the national highway density and may not indicate other state highways and road network.

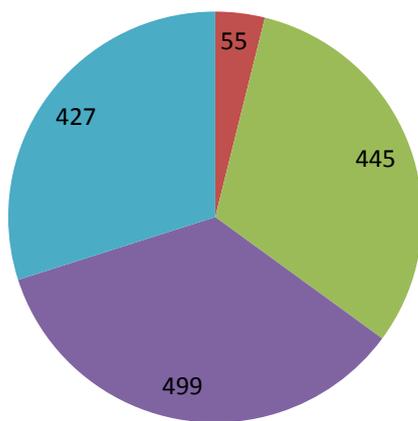
One such example is Gujarat which is among the most industrialized states in the country, is also among the bottom 5 states in national highway density. But there is a high potential to create new network and upgrade the existing network which would further unlock the value for its industrial users, developers and other stakeholders.

The highway network in India not only awaits the major expansion it is currently undergoing but also a major upgrade. Out of 1,20,000 km of national highways in the country, 77% of the total network are 2-lane or less than 2-lane highways. Only 2% of the total network or 2,450 km of national highways have 4 or more lanes. National highways are the arterial road network for movement of goods and services across the country. 65% of the freight and 80% of the passenger traffic in the country uses the road network.

Gradually, the entire national highways would have to be upgraded to expressways. This in turn would mean, 2 or less-lane national highways would gradually have to be upgraded to 4/6 lane highways over the next decade to decongest and augment capacity of major national highways. Major economies like China and USA have close to 1,00,000 km of expressways which in turn means faster movement goods. High capacity road network brings down the overall cost for the consumers and also makes the highways future-proof in terms of handling traffic volumes.

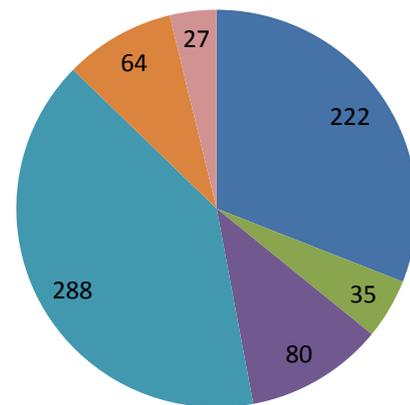
Development of coastal roads and port connectivity projects across the coastal states: Future coastal road projects in Gujarat, Maharashtra, Odisha and Tamil Nadu under the Bharatmala Pariyojana have an aggregate length of 1,500 kms. Apart from coastal roads, port connectivity projects totalling over 700 kms provide sizable order for the industry over the next 3-4 years.

Graph 7. (a) Coastal Road



■ Gujarat ■ Maharashtra ■ Odisha ■ Tamil Nadu

(b) Port Connectivity Road Projects



■ Andhra Pradesh ■ Karnataka ■ Maharashtra ■ Odisha ■ Goa ■ Gujarat ■ West Bengal

Source: MoRTH, Compiled by CARE

Coastal road and port connectivity projects are a favourable road development segment given the relative ease developing these projects. Additionally, since road connectivity is value accretive for land owners in a region, the ease to acquire land in completely under-penetrated region is relatively easy with lowered compensation.

Other road development segments with sizeable opportunity are Expressway development under the Bharatmala Pariyojana in the NCR region, coastal states of AP, Gujarat, Karnataka, Maharashtra, Tamil Nadu and the northern state of UP with an aggregate length of 1,535 km. These are 6/8 lane highways with controlled access, connecting major cities and industrial hubs. These stretches are expected to be developed under HAM Model.

The above discussed projects for coastal roads, port connectivity and expressways are expected to be completed under the 1st phase of the Bharatmala Pariyojana. These three segments of road development have an outlay of over \$10-12 billion.

Concluding remarks:

- We expect the highway construction rate to peak at 30-32 km/day for FY19. Despite slow down in construction rate to 23 km/day rate for the first 7 months of the year due to monsoons and seasonal disruption, we expect the execution to pick-up over the next 4months, which would push the overall road construction rate to an all-time high in FY19.
- Although, NHAH would be able to collect toll on the HAM projects achieving completion by the end of FY19, we believe that there would be cash flows mismatch for NHAH during ramp-up of these projects.
- Factors like delay in obtaining pre-requisite land for awarding new projects under EPC&HAM and achieving financial closure due to risk aversion of PSBs would continue to negatively impact the overall development in the sector.

CARE Ratings Limited (Formerly known as Credit Analysis & Research Ltd)

Corporate Office: 4th Floor, Godrej Coliseum, Somaiya Hospital Road, Off Eastern Express Highway, Sion (East), Mumbai - 400 022. CIN: L67190MH1993PLC071691

Tel: +91-22-6754 3456 | Fax: +91-22-6754 3457

E-mail: care@careratings.com | Website: www.careratings.com

Follow us on  [/company/CARE Ratings](https://www.linkedin.com/company/CARE-Ratings)
 [/company/CARE Ratings](https://www.youtube.com/channel/UC...)