Basic Road Statistics of India (2016-2017)





GOVERNMENT OF INDIA MINISTRY OF ROAD TRANSPORT & HIGHWAYS TRANSPORT RESEARCH WING

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BASIC ROAD STATISTICS OF INDIA 2016-17



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FOREWORD

A good road network is an essential requirement for the rapid growth of the economy. Roads provide connectivity to remote areas; open up of backward regions and facilitate access to markets, trade and investment. Roads should not be looked at in isolation, but as part of an integrated multi-modal system of transport system which provides crucial links with airports, railway stations, ports and other logistical hubs.

The Ministry of Road Transport & Highways is mandated with the development & maintenance of road network especially that of National Highways. There has been a consistent increase in the budgetary allocations for construction and maintenance as also in the expenditure incurred in the sector. The Ministry implements programmes like the Special Accelerated Development Programme in the North East (SARDP-NE), Development of the Left Wing Extremism, Bharatmala Pariyojna which aims to bridge the critical infrastructure gaps in areas of intense economic activity, places of religious and tourist interest, border areas, backward and tribal, coastal areas and trade routes.

To hasten the pace of construction of Highways, Ministry has introduced a proactive sector policy, including, process streamlining indicating approval authorities with enhanced delegation of approval limits, putting in place mechanisms for inter-ministerial coordination, detailing steps to be taken for languishing projects, introducing innovative project financing for leveraging both private and public funding, streamlining land acquisition processes, issue of explicit guidelines on standards of road construction in hill areas as also to do away with sub optimal alignments etc.

The present issue of "Basic Road Statistics of India 2016-17" provides comprehensive information in respect of the total road network in the country which stood at 58.98 lakh kms as on 31st March 2017. The country's road network comprises of national highways, state highways, district roads, rural roads, urban roads and project roads. The issue brings out different dimensions of Road development, growth and its financing in the country.

It is hoped that this publication is useful to administrators, policy makers and the academia especially those interested in infrastructure development. I gratefully acknowledge the cooperation of different agencies involved in road construction. Contribution of the officers and staff of the Transport Research Wing involved in the work related to this publication is also recognized and deeply appreciated.

New Delhi

Date: March, 2019



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Government of India
सङ्क परिवहन एवं राजमार्ग मंत्रालय
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PREFACE

The Basic Road Statistics of India is an annual publication on the road sector, brought out by Transport Research Wing of the Ministry of Road Transport & Highways. The present issue 'Basic Road Statistics of India, 2016-17 provides detailed State/UT-wise data in respect of various categories of roads at national, state, district and local levels (municipal and panchayat).

As per the report, India's road network as on 31.3.2017 was 58.98 lakh kms of which National Highways constituted 1.94%, State Highways constituted 2.97%, District Roads constituted 9.94%, Rural Roads (including JRY) constituted 70.65%, Urban roads constituted 9.27% and Project Roads constituted 5.58%.

The publication presents, inter-alia, an overview of the composition and growth of the road sector over a period of time, State/UT-wise spread of different category of Roads, International comparisons positioning Indian Roads viz-a-viz other countries, a chapter on recent initiatives taken by Ministry of Road Transport and Highways for improving Road network in the country including also the budgetary provisions and expenditure incurred, the various sources of finance for Highway development etc. The same is presented in the nine sections of the publication as laid out in the list of contents.

The present document contains substantial upgradations over the previous versions. The chapter on International comparisons has been recast, additional information is available on sources of financing of Highway Construction and the document has tried to rationalize the trends in data wherever possible as may be seen in the case of decline in State Highways, falling private Investment etc.

The data given in this publication is based on the information sourced from various Agencies both Central and State Government viz National Highways, State Highways, District Roads, Rural Roads, Urban Roads & Project Roads. I express my deep gratitude to all data source agencies for sharing the valuable data/information in support of our efforts to bring out this Publication. The officers and staff of the Transport Research Wing deserve a special mention, for the considerable effort put in by them, leading to the finalisation of this publication.

Constructive suggestions from the users of this document in improving its quality and coverage are welcome.

Babni Lal)

New Delhi, March, 2019

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EXECUTIVE SUMMARY

A good road network is essential for rapid growth of the economy. Roads should not be looked at in isolation but as a part of an integrated multi-model system of transport.

- 2. Various construction programmes for different classes of roads over the past two-and-a-half decades have yielded a significant expansion in network size in India. Efforts are being made for a balanced development of road network (primary, secondary and tertiary systems). Further, through recent initiatives, the development of the primary road network is being tied up with the railway's dedicated freight corridors/other segments of rail network, connectivity with ports, airports, logistic hubs, major tourist centres and linkage with neighbouring countries.
- 3. Development & maintenance of roads are undertaken by various agencies of both Central and State Governments. The main agencies are: State PWDs, National Highways Authority of India, National Highway Infrastructure Development Corporation, Border Roads Organisation, National Rural Development Agency of Ministry of Rural Development, State Forest Departments, Railways, Port Trusts, Municipal Corporations, PSUs etc.
- 4. The Ministry of Road Transport & Highways is primarily responsible for development and maintenance of National Highways. It has been making continuous efforts, through a pro-active sector policy, leveraging both public and private investment, to expand and upgrade the road network specially that of National Highways, which has increased from a length of 70,934 km in 2010-11 to 1,14,158 km as on 31.03.2017.
- 5. India's road network as on 31.03.2017 was 58.98 lakh km. The break-up category-wise is given below:

Category of Road	Length of Roads (km)	% share of Total Roads
National Highways (NHs)	1,14,158	1.94
State Highways (SHs)	1,75,036	2.97
District Roads	5,86,181	9.94
Rural Roads (including JRY Roads	41,66,916	70.65
Urban Roads	5,26,483	8.93
Project Roads	3,28,897	5.58
Total	58,97,671	100

India's road network of 58.98 lakh kms is the second largest in the World after the United States of America which has a road network of 66.45 lakh kms.

- 6. Using Road length in India as on 31.3.2017, India's road density is estimated at 1.80 km per sq km which is equivalent to that of Germany.
- 7. Adjusted for its population as provided in Census 2011, India has approximately 4.87 km of roads per 1000 people in 2017 which is much lesser than Australia, Cannada and US.
- 8. The paved/surfaced road length in India based on the data reported as on 31.3.17 is estimated 63.24per cent of the total road length is much lesser than that of UK and France at 100%.
- 9. National Highways in India with a length of 1,14,158 kms (ranks second after Australia) and accounted for 1.94 % of the total length of Road Network in India as on 31st March, 2017 with Rural Roads accounting for 70.65%

Section – 1

Overview of Road Network in India

- 1.1 As on 31.3.2017, the existing stock of road length in India was 58.98 lakh kms.
- 1.2 The road network of the country consists of National Highways (NH), State Highways (SH), District Roads, Rural Roads, Urban Roads and Project Roads with percentage share of different type of Highways given Table 1.1 and Chart 1.3.
- 1.3 The development and maintenance of roads in India are undertaken by various agencies of both Central and State Governments. The Ministry of Road Transport & Highways is primarily responsible for the development and maintenance of National Highways and executes the same through the agency of National Highways Authority of India Ltd, National Highway Infrastructure Development Corporation Ltd. (NHIDCL), State PWDs (2 lane NH), & Border Roads Organisation etc. State Roads are executed through the State Public Works Departments (PWDs). District Roads are constructed & maintained by Public Works Department of States while Rural Roads are executed by Panchayati Raj Departments, State PWD/RWD departments & National Rural Road Development Agency (NRRDA) of Ministry of Rural Development.
- 1.4 Table 1.1 shows the progress of road length under different categories during the period 31st March, 1951 to 31st March, 2017.

Table 1.1: Road Network by Categories (in kms) – 1950-51 to 2016-17

Road Category	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2013-14	2014-15	2015-16	2016-17
National	19811	23798	23838	31671	33650	57737	70934	91287	97991	101011	114158
Highways	(4.95)	(4.54)	(2.61)	(2.13)	(1.45)	(1.71)	(1.52)	(1.69)	(1.79)	(1.80)	(1.94)
State Highways	۸	۸	56765 (6.20)	94359 (6.35)	127311 (5.47)	132100 (3.92)	163898 (3.50)	170818 (3.16)	167109 (3.05)	176166 (3.14)	175036 (2.97)
District	173723	257125	276833	421895	509435	736001	998895	1082267	1101178	561940	586181
Roads	(43.44)	(49.02)	(30.26)	(28.40)	(21.89)	(21.82)	(21.36)	(20.03)	(20.12)	(10.03)	(9.94)
Rural	206408	197194	354530	628865	1260430	1972016	2749804	3304328	3337255	3935337	4166916
Roads(*)	(51.61)	(37.60)	(38.75)	(42.34)	(54.16)	(58.46)	(58.80)	(61.16)	(60.99)	(70.23)	(70.65)
Urban	0	46361	72120	123120	186799	252001	411679	457467	467106	509730	526483
Roads		(8.84)	(7.88)	(8.29)	(8.03)	(7.47)	(8.80)	(8.47)	(8.54)	(9.10)	(8.93)
Project Roads	0	0	130893 (14.31)	185511 (12.49)	209737 (9.01)	223665 (6.63)	281628 (6.02)	296319 (5.48)	301505 (5.51)	319109 (5.70)	328897 (5.58)
Total	3,99,942	5,24,478	9,14,979	14,85,421	23,27,362	33,73,520	46,76,838	54,02,486	54,72,144	56,03,293	58,97,671

Note: Figures in parenthesis indicate percent to total road length.

^{(*)-} Total includes 9 lakh Km of Rural roads constructed under Jawahar Rozgar Yojana)

1.5 The total road length of the country increased significantly from 3.99 lakh km in 1951 to 58.98 lakh km in 2017, growing at a Compound Annual Growth Rate (CAGR) of 4.2%. The long run trend of growth in road length for the period 1951-2017 are presented in Chart 1.1 and CAGR for the period 1951-2017, along with decadal CAGRs, are given in Table 1.2.

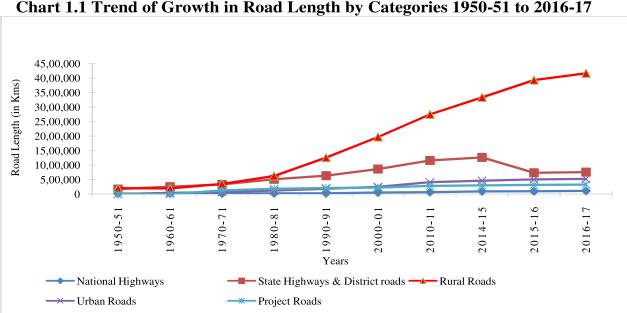


Chart 1.1 Trend of Growth in Road Length by Categories 1950-51 to 2016-17

Table 1.2 CAGR (in %) of Road Networks -1951 to 2017

Period	NHs	SHs & District Roads	Rural Roads	Urban Roads	Project Roads	Total
2017/1951	2.7	2.3	4.7	NA	NA	4.2
1961/1951	1.9	4.0	-0.5	NA	NA	2.7
1971/1961	0.0	2.6	6.0	4.5	NA	5.7
1981/1971	2.9	4.5	5.9	5.5	2.1	5.0
1991/1981	0.6	2.1	7.2	4.3	1.2	4.6
2001/1991	5.5	3.1	4.6	3.0	0.6	3.8
2014/2004	3.4	3.9	4.4	4.3	1.3	4.1
2015/2005	4.1	3.1	3.9	5.0	1.5	3.7
2016/2006	4.3	-2.5	5.5	5.7	2.0	3.7
2017/2007	5.5	-2.6	5.7	5.8	2.0	3.9

^{*} Note: Since the year 2015-16 the category Other PWD Road (OPWD) has been discontinued and PWD road, other than SHs, are categorized under District Roads and Rural roads under PWD. Because of this change, the figures in respect of OPWD, District Road & Rural Roads are not comparable with figures of previous years

1.6 Decadal analysis:

During the decade, 2007-2017, the highest CAGR was that of urban roads (5.8%) followed by rural roads (5.7%) and National Highways (5.5%). As seen from Table 1.1, the length of National Highways was 70,934 kms in 2010-2011 and has increased consistently to 114158 kms in 2016-17.

- 1.7 The proactive policy steps, leveraging of private and public Investment, innovative financing models, have resulted in increase in the pace of development of National Highways in recent years. The details of Investment in National Highways is given in Table 1.3.
- 1.8 The data reveals that the combined public and private investment has increased during 2012-13 to 2016-17 @ CAGR of 21.8%. However, the share of private sector Investment in the construction of National Highways has gone down from 48.35% in 2012-13 to 17.37% in 2016-17 while that of public sector Investment has increased from 51.65% in 2012-13 to 82.63% in 2016-17.

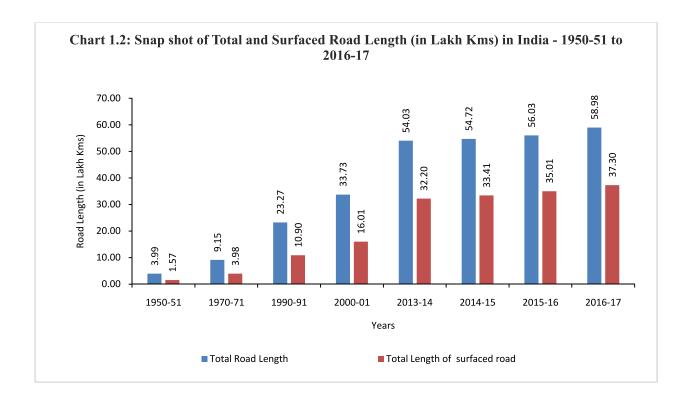
Table 1.3 Investment in Highways in both Public and Private from 2012-13 to 2017-18 (in Crores)

		Expenditure							
Sr. No.	Year	Private Sector Investment	Public Sector Investment(including Plan, non plan and IEBR)	Total					
1	2	3	4	5					
1	2012-13	20304.66(48.35)	21693.74(51.65)	41998.4					
2	2013-14	22515.05(42.56)	30385.64(57.44)	52900.69					
3	2014-15	19232.44(38.83)	30295.26(61.17)	49527.7					
4	2015-16	29770.00(30.97)	66369.14(69.03)	96139.14					
5	2016-17	16028.64(17.37)	76275.26(82.63)	92303.9					
	C	21.8							

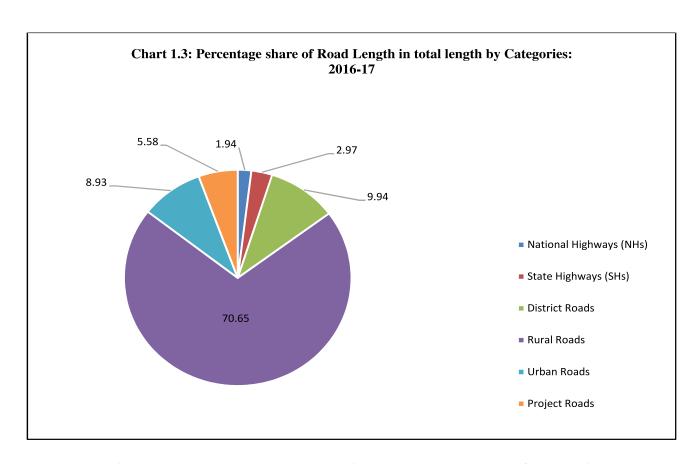
Source: Calculation based on the Expenditure statement of Roads Wing (Annexure 8.1 at the end of the Report) Note: Figures in parenthesis indicates the percentage share in total

1.9 Details of Road Length and Road Categories – 2016-17

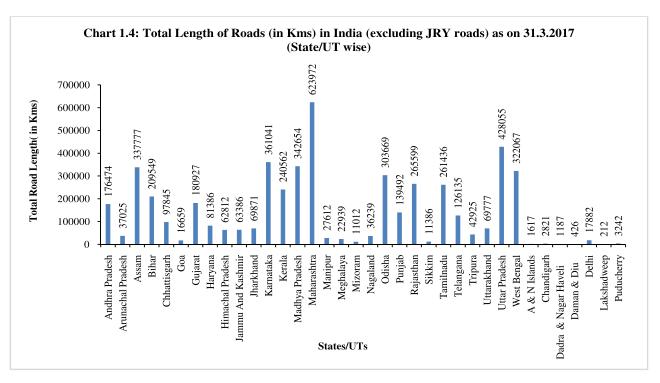
Along with the increase in the total road length, the paved/ surfaced road length has also increased. The latter grew from 1.57 lakh kms as on 31st March 1951 to 37.29 lakh kms as on 31st March 2017. Surfaced roads formed 39.26% of the total road length as on 31st March, 1951 which has increased over the years to 63.24% as on 31st March, 2017. The snap shot of total and surfaced road length (in Kms) during the period 1950-51 to 2016-17 has been graphically represented in Chart 1.2.



1.10 The data in Table 1.1 reveals that the share of rural roads (70.65%) was the highest in the total road length followed by district roads (9.94%) and urban roads (8.93%). The share a different category of roads in total road length is presented in Chart 1.3



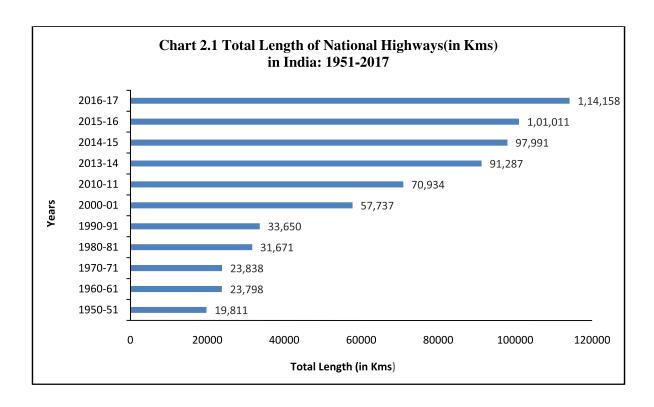
1.11 State wise break up total road length (excluding JRY roads) shows that for the period up to 31st March 2017, Maharashtra (623972Km) accounted for the largest share (12.49%) in total followed by Uttar Pradesh (8.57%), Karnataka (7.22%), Madhya Pradesh (6.86%) and Assam (6.76%) (chart 1.4 and Annexure 1.3 refers). These five states with the largest road networks accounted for a combined share of about 41.89%.



Section - 2

National Highways in India

2.1 National Highways constitute the primary system of road transportation in India. These are the main highways running through length and breadth of the country connecting capitals of States and UTs, major ports, rail junctions, industrial and tourist centres and link up with border roads and highways of neighboring countries. Ministry of Road Transport & Highways, Government of India, is responsible for the development and maintenance of NHs in India. The growth of National Highways since 1951 is depicted in Chart 2.1.



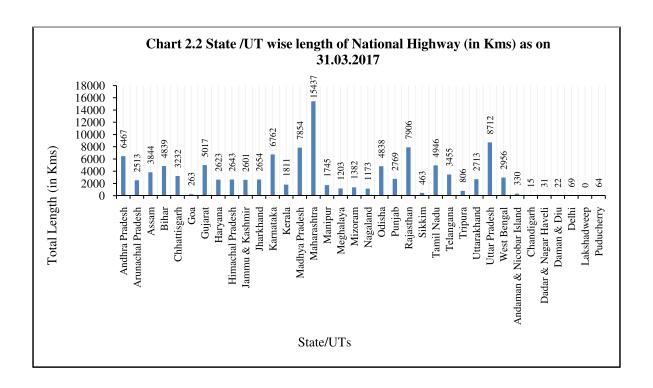
- 2.2 National Highways comprise of 1.94% of total road network in the country. The data in Chart 2.1 reveals that the total length of National Highways as on 31.03.2017 was 1,14,158 Kms which is an increase of about 13.02 percent over the year 2015-16 (1,01,011 kms).
- 2.3 National Highways can be classified into three categories depending upon the type of lane i.e Less than two lane, Two-Lane and four-Lane & above. Category wise comparison of the different types of Highways for the years 2015-16 and 2016-17 is present in Table 2.1.

Table 2.1: Lane-wise Break-up of National Highways - 2015-16 & 2016-17

Lane wise Category of National Highways	As on 31 st March, 2016	As on 31 st March, 2017	Year on Year growth
Less than Two Lane	20,703 (20.49)	28,901 (25.32)	39.61
Two –Lane	55,603 (55.05)	58,910 (51.60)	5.95
Four- Lane & Above	24,705 (24.46)	26,347 (23.08)	6.65
	1,01,011 (100)	1,14,158 (100)	13.02

(Figures in parentheses indicate percentage share in total length of NH)

- 2.4 The data in Table 2.1 reveals that the biggest increase of 39.61 percent in 2016-17 has been in the category of less than two lanes as compared to 2015-16. The increase in 2016-17 in the other two categories of National Highways i.e. Two-Lane and Four-Lane & above has been 5.95 % and 6.65 %, respectively.
- 2.5 The State/UT wise length and share in National Highways is at Annexure 2.1 while the State/UT wise and Lane wise breakup of National Highways is at Annexure 2.2. Chart 2.2 is the pictorial presentation of State/UT wise length of national highways as on 31.3.2017.

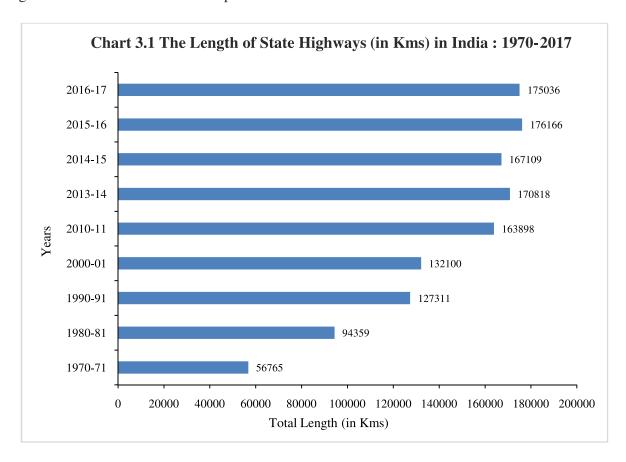


- 2.6 The data in Annexure 2.1 and chart 2.2 reveals that Maharashtra accounted for the largest share (13.52%) in the total length of NHs as on 31st March 2017, followed by Uttar Pradesh (7.63%), Rajasthan (6.93%), Madhya Pradesh (6.88%) and Karnataka (5.92%). These five States accounted for about 40.88% of the total road length of Nhs.
- 2.7 The data in Annexure 2.2 reveals that Maharashtra ranks first in two different categories of National Highways i.e in "less than two lane" with a total length of 8260 Km and in "Four-Lane and above" with a total of 3530 km. Uttar Pradesh with total 5480 kms takes the first place in "Two-Lane" category of National Highway.

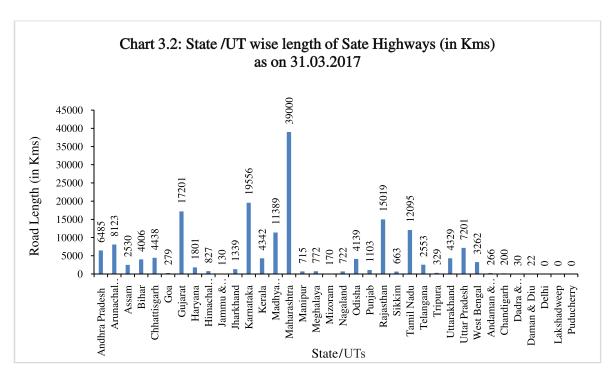
Section – 3

State Highways in India

3.1 State Highways together with major district roads constitute the secondary system of road transportation in the country. These roads are administered and financed by State Governments through the State Public Works Departments (PWDs). The State Highways provide links with NHs, district headquarters of State, important towns, tourist centres and minor ports. The growth of SH since 1970-71 is depicted in Chart 3.1



3.2 The total length of State Highways as on 31st March, 2017 is 1,75,036 kms which is a decrease of about 0.64 percent as compared to 31st March, 2016. The reduction can be explained by the fact that the Ministry provides for conversion of State Highways into National Highways in the case of satisfaction of certain well established principles including requirements such as provision of connectivity with adjacent countries, national capital, state capitals, major ports, non-major ports, large industrial centers/tourist centers etc as also interse priority and availability of funds. The State wise breakup of State Highways is at Annexure 3.1. The details of type of surface of the State highways are at Annexure 3.2 and the pictorial presentation of state wise distribution of State highways is in Chart 3.2.



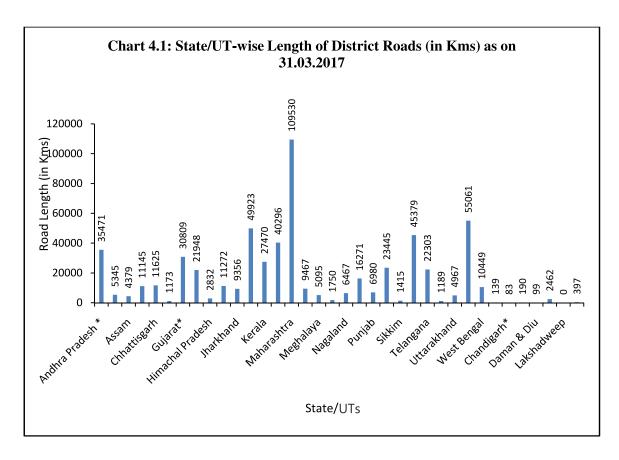
Note: Arunachal Pradesh has not classified its PWD roads into State Highways and District Roads. The total length of PWD Roads of 8123 kms. has been reflected under State Highways.

- 3.3 The data in Chart 3.2 reveals and State/UT-wise break-up of State Highways at Annexure 3.2 reveals that as on 31st March, 2017 Maharashtra accounted for the largest share in the total length of SH roads (22.28%), followed by Karnataka (11.17%), Gujarat (9.83%), Rajasthan (8.58%) and Tamil Nadu (6.91%). These five States accounted for about 58.77% of the total length of SHs.
- 3.4 The State/UT-wise details of State Highways at Annexure 3.2 also reveals that as on 31st March, 2017, out of total length of State Highways (175036 kms) around 96.61% of SH roads (169096 Kms) were surfaced. Out of total length of surfaced SHs, Bituminous Top (BT) and Cement Concrete (CC) roads accounted for about 98.45% and the remaining 1.55% were Water Bound Macadam (WBM) roads.

Section – 4

District Roads in India

- 4.1 District Roads constructed & maintained by Public Works Department of States and UTs, together with the State Highways, account for the secondary system of road transportation in the country. District Roads comprising of Major District Roads (MDRs), Other District Roads (ODRs) provide connection between district and taluk headquarters with the State highways and National Highways. These roads which run within districts contribute significantly to the economy and country's industrial development by connecting areas of production with markets and enabling movement of raw materials and finished products. As per the classification of roads broadly the MDRs are to have a minimum width of 15 metres with traffic density of less than 10,000 PCUs but more than 5000 PCUs.
- 4.2 The details of State/UT-wise length of District Roads as on 31.03.2017 are at Annexure 4.1 and also presented in Chart 4.1, while the details of type of surface of district roads across different States is at Annexure 4.2..



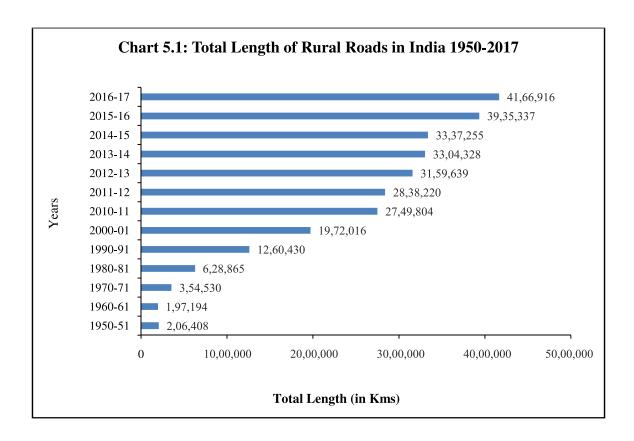
Note: Arunachal Pradesh has not classified PWD roads into State Highways and District Roads. The length of PWD roads in the State have been reflected under State Highways

- 4.3 The data in Annexure 4.1 and chart 4.1 reveals that the total length of District Roads as on 31st March, 2017 was 586181 kms out of which. Maharashtra accounted for the largest share in the total length of District roads (18.69%), followed by U.P (9.39%), Karnataka (8.52%), Tamil Nadu (7.74%) and Madhya Pradesh (6.87%). These five States together account for about 51.21% of the total length of District Roads in India.
- 4.3 The details of State-wise and type of surface of District Roads at Annexure 4.2 reveals that 94.99 % of the total length of district roads is surfaced road. Out of the total surfaced length of 556794 km of District roads, Bituminous Top (BT) and Cement Concrete (CC) roads accounted for about 95.55% and the remaining 4.45% are Water Bound Macadam (WBM) roads.

Section - 5

Rural Roads in India

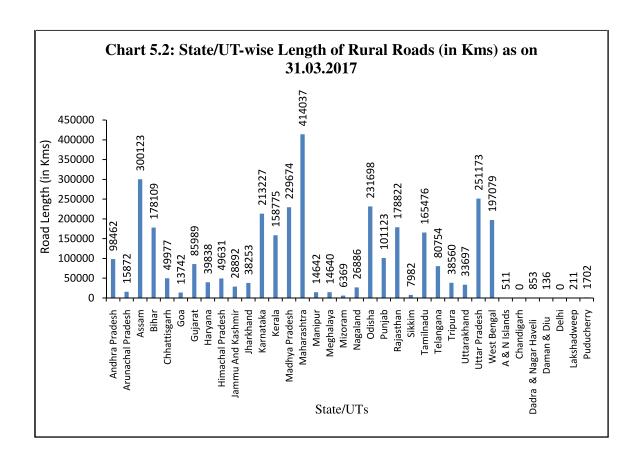
- 5.1 Rural Roads connectivity is a key component of rural development, since it promotes access to economic and social services, thereby generating increased agricultural productivity, non-agriculture employment as well as non-agricultural productivity, which in turn expands rural growth opportunities and real income through which poverty can be reduced.
- 5.2 Rural roads consist of Panchayati Raj roads, (Zilla Parishad, Panchayat Samiti, Gram Panchayat); roads of the Pradhan Mantri Gram Sadak Yojana (PMGSY) and those constructed by the State PWDs. The growth of rural roads since 1950-51 is presented in Chart 5.1



- 5.3 The data in Chart 5.1 reveals that the total length of Rural Roads as on 31st March, 2017, was 41,66,916 km as compared to 39,35,337 km in 2015-16 which is an increase of about 5.88 percent. It can also be seen from the data at Annexure 5.1 that in 2106-17 the percentage of surfaced rural roads to the total rural road length (excluding 9 lakh kms of JRY) was 66.23% which in absolute terms is 21,63,920 km.
- 5.4 The PMGSY of the Ministry of Rural Development a major scheme for providing all weather rural roads was launched in 2000 and the State/UT-wise details of PMGSY Roads

Rural Roads built by PWD/RWD and Panchayati Raj Roads are at Annexure 5.2, 5.3 and 5.4, respectively. It can be seen from data at Annexures 5.2 to 5.4 that out of a total length of 41,66,916km of rural roads6,84,343 kms of PMGSY Roads have been reported by the National Rural Road Development Agency (NRRDA) of Ministry of Rural Development (annexure 5.2 refers), 6,46,880 km of road built by the State PWD/RWD departments (annexure 5.3 refers), 19,35,693 kms of Panchyati Raj Roads have been reported by the States/UT Panchayati Raj Departments (Annexure 5.4 refers) and the remaining 9 lakhs kms (nine lakh kms) of roads was constructed under the erstwhile Jawahar Rozgar Yojana (JRY) scheme.

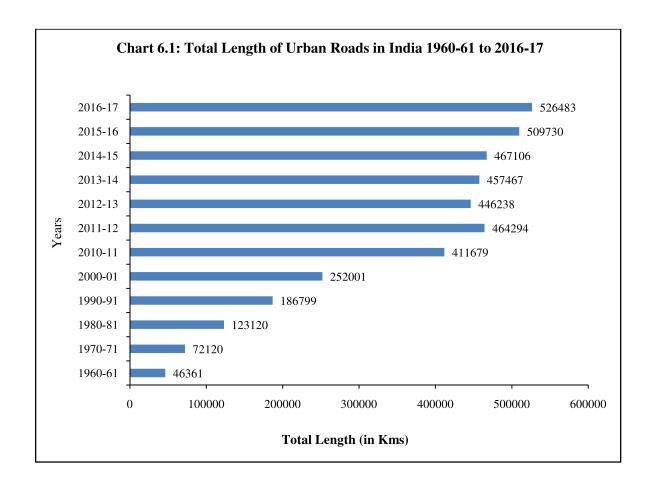
5.5 The State/UT-wise break-up of Rural Roads (excluding 9 lakh kms of JRY) is at Annexure 5.1 and also depicted in Chart 5.2. The data in Annexure 5.1 reveals that Maharashtra accounted for the largest share (12.67%) in 2016-17 followed by Assam (9.19%), Uttar Pradesh (7.69%), Odisha (7.09%), and Madhya Pradesh (7.03%). These five States account for about 43.767% of the total length of Rural Roads.



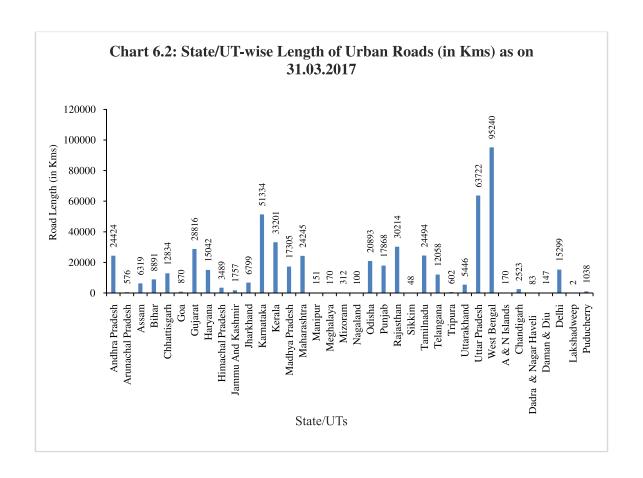
Section - 6

Urban Roads in India

- 6.1 Urban Roads consist of Municipal Roads under Urban Development Departments of States and UTs; roads in Railway Zones; MES roads constructed by Military Engineering Services (MES) and Major and Minor Port Roads. The total length of urban roads increased from 509730 Kms on 31.03.2016 to 526483 Kms on 31.03.2017. Among the category of roads the share of Urban roads in the total road length has decreased from 9.10% 2015-2016 to 8.93% in 2016-17.
- 6.2 The details of length of urban roads since 1960-61to 2016-17 is shown in Chart 6.1.



6.3 The data in Chart 6.1 reveals that the total length of urban roads increased from 509730 kms as on 31.03.2016 to 526483 kms. on 31.03.2017, which is an increase of about 3.29 %. The State/UT-wise details of urban roads is given in Annexure 6.1 and also presented in Chart 6.2.

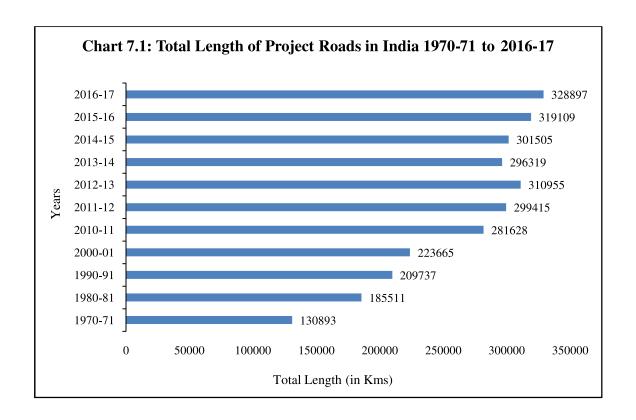


- 6.4 The State/UT-wise break-up of Urban Roads (Annexure 6.1 & Chart 6.2 refers) reveals that West Bengal accounted for the largest share (18.09%) in total length of Urban Roads as on 31st March 2017, followed by U.P. (12.10%), Karnataka (9.75%), Kerala (6.31%) and Rajasthan (5.74%). These five States accounted for about 51.99% of the total length of Urban Roads.
- 6.5 The details of different categories of roads considered under Urban road is given at Annexures 6.2 to Annexures 6.6. The details reveal that within the category of Urban Roads as on 31.03.2017, municipal roads accounted for the highest share of 93.70%, followed by MES roads (3.52%), railway roads (2.56%). Major and Minor port roads taken together account for a share of only 0.22%.

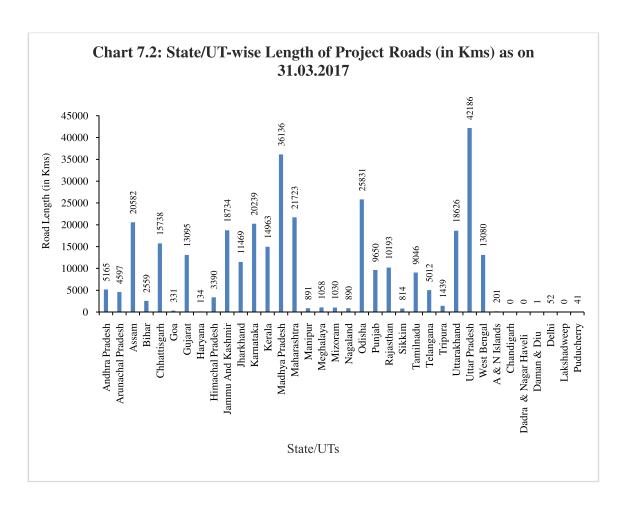
Section – 7

Project Roads in India

7.1 Project Roads largely include roads built/coming under the purview of Central and State Government agencies and departments. These include roads of Forest Departments; Irrigation Departments; Electricity Departments; roads in coal fields and coal mines of Coal India Ltd., roads under the plant areas of Steel Authority of India Limited (SAIL), National Mineral Development Corporation (NMDC); Sugarcane Departments of States/UT and Border Roads Organisation (BRO). The growth in the length of Project Roads since 1971 is depicted in Chart 7.1.



7.2 The data in chart 7.1 reveals that the total length of Project Roads increased from 319109 km in as on 31.3.2016 to 328897 kms as on 31.3.2017, which is an increase of about 3.09 %. The State/UT –wise details of Urban Roads are given at Annexure 7.1 and in Chart 7.2



- 7.3 The State/UT-wise break-up of Project Roads in Annexure 7.1 and Chart 7.2 reveals that Uttar Pradesh accounted for the largest share (12.83%) in total length of Project Roads as on 31st March 2017, followed by Madhya Pradesh (10.99%), Odisha (7.85%), Maharashtra (6.60%) and Karnataka (6.15%). These five States together account for about 44.53% of the total length of Project Roads as on 31.03.2017.
- 7.4 The details at Annexure 7.2 to 7.8 and the summary in Annexure 1.1 reveals that out of the total length of 3288966 km of Project Roads, as on 31st March, 2017 Forest Roads (1,74,825 km) approximately account for about 53.16% followed by Irrigation Department Roads with a share of about 31.76% and BRO Roads having a share of about 5.98%. The remaining 9.10% of project roads come under the purview of coal fields and mines of Coal India Ltd.; SAIL and NMDC; Sugarcane and Electricity Departments of States and UTs.
- 7.5 Since forest roads run through reserved forest areas and wild life sanctuaries, only a small share (30.04%) are surfaced. Of the surfaced length of forest roads of 53072 km, the larger share is of Water Bound Macadam roads (69.39%) and the remaining (30.97%) are B.T./C.C. roads.

Section - 8

International Comparison of Road Network

- 8.1 The chapter on International comparison of Road network is based on data published in respect of 196 countries in the International Road Federation (IRF) Geneva publication titled, World Road Statistics for 2018. The data published in this document pertains to the year 2016 with small variations and positions India globally viz-a -viz other countries in respect of parameters such as total road length, road length per 1000 people, length and share of National Highways, share of paved roads, motorways, road density etc.
- 8.2 The major road related indicators, arranged in descending order of total road length across 15 top countries is given in Table 8.1 below:

Table 8.1: Major Road Indicators across Select Countries

	Total Roa	d length		Roads (in	National I	Iighways		Motor	ways1	
Name of the Country	Road length in KM	World Ranking	Population 2016	KM) per '000 people	Road length in KM	% share in total road length	Share of Paved road (%)	Road length in KM	% share in total road length	Road Density
1	2	3	4	5	6	7	8	9	10	11
United States	6645709	1	323405935	20.55	29599	0.45	66.02	77002	1.16	0.68
India **	5897671	2	1210193422 ^{\$}	4.87	114158	1.94	63.24	NA(*)	NA(*)	1.8
China	4696263	3	1378655000	3.41	99152	2.11	75.9	130973	2.79	0.49
Brazil	1512371	4	207652865	7.28	76515	5.06	17.3	NA	NA	0.18
Russia	1498727	5	144342396	10.38	51959	3.47	70.3	1105	0.07	0.09
Canada	1126000	6	36264604	31.05	38049	3.38	39.9	NA	NA	0.11
France	1088089	7	66859768	16.27	8219	0.76	100	12356	1.14	1.98
Australia	873561	8	24210809	36.08	181688	20.8	NA	51540	5.9	0.11
Spain	666536	9	46484062	14.34	23856	3.58	NA	3039	0.46	1.32
Germany	642970	10	82348669	7.81	38068	5.92	NA	12996	2.02	1.8
Indonesia	537838	11	261115456	2.06	47017	8.74	60.7	NA	NA	0.28
Thailand	506538	12	68863514	7.36	70077	13.83	NA	208	0.04	0.99
United Kingdom	422097	13	65595565	6.43	48902	11.59	100	3764	0.89	1.73
Poland	420236	14	37970087	11.07	17751	4.22	70	1637	0.39	1.34
Mexico	393451	15	127540423	3.08	40681	10.34	41.8	9796	2.49	0.2

Source: IRF, World Road Statistics, published by International Road Federation Geneva

^{(*):} In India, as per information available in MORTH, 236.12 kms of Expressways have already been completed, another 73.33 kms of expressways are at different stages of completion and another 3264.34 kms are at different stages of planning.

^{(**):} Figures for India updated to 31.3.2017 as against 31.3.2016 given in WRS 2018. \$: pertains to the year 2011.

¹Motorway is a road specially designed and built for motor traffic, is specially sign-posted as a motorway, is reserved for specific categories of road motor vehicles and has no crossing at the same level with any road, railway of tramway track, or footpath

- 8.3 It will be observed that India, with a total road length of 58.97 lakhs ranks second out of 196 countries reported in the World Road Statistics, after US.
- 8.4 In terms of road length per thousand persons, India is positioned 96th in the world, with a road to per thousand persons ratio of 4.87 as against Australia which leads at 36.08 km per thousand people, followed by Canada at 31.05 km per thousand people and United States at 20.55 km per thousand population.
- 8.5 In terms of length of National Highways, India with a length of 1,14158 kms and share of 1.94% in total road length ranks 2nd after Australia with a length of 1,81, 688 kms and share of 20.8% in total road length and is followed by China with a length of 99,152 kms and share of 2.11% at the 3rd position.
- 8.6 The paved/surfaced road length in India was 63.24 per cent of the total road length which is much lower when compared with advanced countries like that of France (100 %), United Kingdom (100 %), China (75.9%) etc.
- 8.7 India's road density at 1.80 km/km2 is equivalent to Germany (1.80 km/km2), higher than United Kingdom at (1.73km/km2) and China (0.49 km/km2), USA (0.68 km/km2) but is lesser than that compared to France (1.98 km/km2) which is geographically much smaller.

Section – 9

Initiatives taken by Ministry of Road Transport and Highways for improving National Highways in the country

- 9.1 The Ministry of Road Transport and Highways is primarily responsible for development and maintenance of National Highways and discharges this responsibility through the National Highways Authority of India ltd. (NHAI), the National Highways and Infrastructure Development Corporation Ltd. (NHIDCL), State PWDs and Border Roads Organisation on an agency basis. While projects involving widening to 4 lane or more and Expressways are handled by NHAI, NHIDCL handles projects in the North East, Hill States & Andaman & Nicobar Islands, State PWDs/ State road Construction Departments handle development of 2 lane NH configurations while BRO handles construction of NH in the Border areas.
- 9.2. The Ministry has been making constant efforts to expand and upgrade the network of National Highways in the country. It implements several Central sector schemes such as the Special Accelerated Development Programme in the North East (SARDP-NE) including Arunachal Package, Development of the Left Wing Extremism, the Vijaywada Ranchi corridor etc. **Bharatmala Pariyojna** is a new umbrella programme for the Highway sector, approved by the CCEA in October 2017 which aims to bridge the critical infrastructure gaps like development of Ring Roads, bypasses, elevated corridors etc in areas of intense economic activity, places of religious and tourist interest, border areas, backward and tribal, coastal areas and trade routes. The Phase I of the **Bharatmala Pariyojna** (2017-2022) envisages construction of 34,800 kms at a cost of Rs 535000 crores.
- 9.3. The year-wise details of Award of NHs/Road projects and construction of NHs/roads during 2014-15 to 2017-18 are given below: -

Table 9.1

				(Length in km)				
Information regarding the period 2014 -15 to 2017-18								
	2014–15	2015–16	2016–17	2017-18				
Award of NHs/ Road projects (km)	7,972	10,098	15,948	17055				
Construction of NHs/ Roads (km)	4,410	6,061	8,231	9,829				
Road construction in km per day	12	17	23	27				

- 9.4. To begin with the following constraints were inter-alia faced in the expansion and up gradation of National Highways:
- Availability of funds for financing large projects
- Lengthy processes in acquisition of land and payment of compensation to the beneficiaries
- Environmental concerns
- Time and Cost overruns due to delays in project implementation due to multi stakeholder issues
- Procedural delays
- Lesser Traffic growth than expected, increasing the riskiness of the projects resulting in stalled and languishing projects
- Shortfall in funds for maintenance
- 9.5. The Ministry of Road Transport and Highways accordingly put in place a pro-active sector policy for the construction of Highways, leveraging both public and private funding; streamlining processes, introducing innovative financing measures; enhanced use of etechnology; continuous and systematic monitoring for streamlining the construction of Highways. Amongst the key initiatives taken are:
- 9.5.1 Process streamlining: MoRTH is now empowered to decide on mode of delivery of projects –PPP/EPC. It is also authorized to appraise projects up to Rs. 1,000 crores both for PPP and EPC mode in place of earlier Rs. 500 crores. Under Bharat Mala Pariyojna, further appraisal and approval limits have been defined. All PPP projects (BOT) projects are to be appraised and approved by NHAI Board and all BOT(Annuity) / Ham projects with project cost upto 2000 crore are to be appraised by an SFC headed by Secretary and approved by Minister, MORTH. Other BOT Annuity projects would be appraised by Secretary, DEA and approved by CCEA.
- 9.5.2 Enhanced inter-Ministerial coordination: In order to overcome multi stakeholder issues and enhance inter-ministerial coordination, an Infrastructure Group has been created under the Ministry headed by the Hon'ble Minister (RT&H) to resolve multi-stakeholder issues.
- 9.5.3 Revival of languishing projectshas been undertaken through
- (i) 100% equity divestment two years from start of operations to enable developers to take out equity and reinvest the same in the sector,
- (ii) Premium deferment allowing rescheduling of premium committed by concessionaires at the bidding stage

- (iii) Extension of concession period for languishing to the extent of delay
- (iv) one time fund infusion by NHAI in languishing projects which are 50% complete.
- 9.5.4 Introduction of Innovative project Financing models through risk rebalancing as in the case of Hybrid Annuity Model (HAM) wherein Government starts by providing 40% construction support to the private developer with the balance 60% being paid by the Government to the developer as annuity payment over the operations period with interest on the outstanding amount. Then there is the Monetisation of Assets through Toll Operate Transfer (TOT) Model under which CCEA allowed monetisation of NH stretches where the right of collection of Toll fees for a public funded project is assigned to a concessionaire for a predetermined period against upfront payment of a lumpsum.
- 9.5.5 Streamlining of the Land Acquisition process through the Standard operating Procedure being announced under the Grand Challenge mechanism for Bharatmala Pariyojna. The Ministry has also developed a online portal (Bhoomi Rashi) for processing land acquisition notifications and payment of compensation to the rightful owner of land. A Land Acquisition Manual has been created and shared with all field offices. In line with the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement (RFCTLARR) Act 2013 for LA of NH projects, guidelines have also been issued.
- 9.5.6 Further, explicit guidelines have issued in respect of standards for Road construction in hill areas to obviate prospects of hill-slope destabilization. To ameliorate environmental concerns, guidelines have also been issued that to the extent feasible, land for widening of an existing road should be acquired on one side so that tree-felling and utility shifting on the other side is avoided. To do away with sub optimal alignments, instructions have issued for using the concept of "as the crow flies" to designalignments so as to reduce the distance between two connected points the extent possible.
- 9.6. Details of Central Road Sector Outlay at the RE stage and Expenditure incurred are given in Table 9.2. It may be noted that the total budgetary support provided to MoRTH, Market Borrowings by NHAI and Expenditure incurred has been increasing consistently over the years with expenditure varying between 94% to 98% of the Budget at the RE stage in the last three years. Private sector Investments have slowed down somewhat due to difficulties in the market conditions i.e availability of finance from Banks in the face of growing NPAs, uncertainity in returns on account of projected traffic, investors preferring short term investment periods as against roads requiring long term financing etc.
- 9.7 The Expenditure (Actual) incurred in the Development and Maintenance of National

Highways by MoRTH by source of financing in the last 6 years is given in table 9.3 shows that Market Borrowing, Central Road Fund (CRF)Cess, and Permanent Bridge Fee Fund (PBFF) constitute important sources of financing for the maintenance and construction of Highways.

9.8 Development and maintenance of NHs of 2- lane and below are primarily assigned to State Governments viz. State PWDs for which Ministry provide funds from its budget to the respective States. Table 9.4 provides State-wise allocations and expenditure made by States for the period 2013-14to 2017-18 and shows an increasing trend in the total allocations and expenditure made to States for the construction of NH with the exception of the year 2017-18.

Table 9.2 Central Road Sector Outlay (at RE stage) and Expenditure (At Current Price) for the period 2014-15 to 2017-18

								Amoun	t in Rs. crore
01	Scheme	2014-15		2015-16		2016-17		2017-18	
SI. No.		RE	Expd	RE	Expd	RE	Expd	RE	Expd.
	Part A-Major Development Schemes								
1	EAP- (a) Externally Aided (RW)	175.00	138.93	250.00	216.42	290.00	289.12	1,213.00	1,010.46
	EAP- (b) Counterpart Fund (RW)	101.00	101.00	550.00	547.00	820.00	819.76	613.00	548.31
	Total EAP	276.00	239.93	800.00	763.42	1,110.00	1,108.88	1,826.00	1,558.77
2	<u>NH (O)</u>	4,881.59	4,835.99	6,491.06	6,335.44	19,860.00	19,326.46	18,049.31	18,034.64
3	Works under BRDB incl. Strategic Roads under BRDB	292.00	268.79	0.00	0.00	0.00	0.00		
4	Other Charges & IT	7.00	3.71	6.50	5.42	8.00	6.93	7.00	4.74
5	R&D & Training and Quality Assurance	7.00	4.65	68.20	40.90	83.00	16.79	78.32	8.05
6	Charged Expd.	6.00	4.93	10.00	6.92	10.00	8.22	10.00	5.54
7	NHAI (Investment) (Cess)	9,565.81	9,565.42	21,020.09	21,017.77	7,476.60	7,410.47	15,429.45	15,429.45
8	Remittance of toll receipts (NHDP + non-NHDP)	5,448.00	5,448.00	6,500.00	6,500.00	7,500.00	7,500.00	8,462.14	8,462.14
9	E&I for States from CRF	150.00	93.11	355.35	267.09	805.00	746.35	759.20	677.56
10	<u>Special Packages</u>								
(i)	SARDP-NE	3,000.00	2,843.33	4,900.00	4,845.88	4,520.00	4,464.71	5,265.00	5,237.77
(ii)	LWE (including TSP) incl. Vijayawada- Ranchi Road	1,174.00	1,164.59	1,121.00	996.11	760.00	739.27	1,050.00	901.86
(A)	Sub Total- Major schemes	24,807.40	24,472.45	41,272.20	40,778.95	42,132.60	41,328.08	50,936.42	50,320.52
	Part B- M&R, CRF(State Roads), Transport, Sectt.								
1	Maintenance & Repairs (M&R) incl. Swachhata Activities	2,585.16	2,534.24	2,698.40	2,527.99	2,845.23	2,502.99	2,966.75	2,654.78
2	Central Road Fund(CRF)	2,646.81	2,094.78	2,880.90	2,398.10	7,175.00	5,069.82	6,764.48	6,367.11
3	Permanent Bridge Fee Fund(PBFF)	100.00	37.98	50.00	48.29	100.00	72.29	37.86	21.42
4	NH Tribunals, NHs Administration, PIARC	0.56	0.30	1.57	0.00	3.57	0.00	3.57	0.22
5	Transport Wing	180.50	123.31	150.00	133.45	143.50	127.23	171.00	144.36
6	Secretariat Expenses	77.61	75.39	83.74	80.64	103.03	100.04	119.92	111.08
(B)	Sub Total- Part B	5,590.64	4,866.00	5,864.61	5,188.47	10,370.33	7,872.37	10,063.58	9,298.97
(2)	Total (Gross Budgetary Support-MoRTH)	30,398.04	29,338.45						59,619.49
(C)	IEBR / Borrowings by NHAI	7,611.11	3,343.40	42,694.50	23,281.00	59,279.00	33,118.00	59,279.00	50,533.00
(D)	Grand Total (Budget)	38,009.15	32,681.85	89,831.31	69,248.42	1,11,781.93			1,10,152.49
(E)	Total Private Sector Investments		19,232.44		29,770.00	26,850.00	16,028.64	32,400.00	16,500.64
(F)	Grand Total	38,009.15	51,914.29	89,831.31	99,018.42	1,38,631.93	98,347.09	1,52,679.00	1,26,653.13

Source: Planning Division, MoRTH

Table 9.3
Expenditure(Actual) incurred in the Development and Maintenance of National Highways by MORTH by
Source of Financing in the last 6 years

								Amount in Rs crore
Voor	Year CRF Cess A	Additional	GBS-NER*		Toll	Market	Pvt.	Total
rear		GBS	GDS-NEK	TOT	PBFF	Borrowing	Investment	TOTAL
2012-13	6,003.00	9,080.03	1,825.69	-	1,882.95	2,902.00	20,305.00	41,998.67
2013-14	6,857.45	7,746.98	3,009.27	-	4,829.81	7,942.00	22,515.00	52,900.51
2014-15	13,944.04	4,678.51	2,843.33	-	5,485.98	3,343.40	19,232.00	49,527.26
2015-16	29,879.06	2,714.91	3,945.88	-	6,548.29	23,281.00	29,770.00	96,139.14
2016-17	29,049.08	2,070.93	4,464.71	-	7,572.29	33,118.00	16,029.00	92,304.01
2017-18	35,910.91	2,687.14	5,237.77	-	8,483.56	50,533.00	16,500.00	119,352.38

Source: Planning Division, MoRTH TOT: Toll Operate Transfer PBFF: Permanent Bridge Fee Fund

^{*} exclusively under SARDP-NE, apart from this, NH works in NER is also taken up under NH(O) for which financing is from CRF cess and additional GBS.

Table 9.4
The State/UT-wise details of Fund Allocation/Utilized for Development of NHs)

										Amount	in Rs. crore
SI.	States/UTs/			Allocation					Expenditure	ı	
No.	Schemes/Agency	2013-14	2014-15	2015-16	2016-17	2017-18	2013-14	2014-15	2015-16	2016-17	2017-18
11	Andhra Pradesh	188.04	221.45	1,039.42	2,010.31	1,781.18	187.62	221.45	1,000.43	2,014.50	1,780.70
2	Arunachal Pradesh	1.09	0.50	2.40	100.00	62.05	1.09	0.50	1.83	90.66	62.05
3	Assam	205.10	141.76	78.79	177.44	308.05	199.41	141.76	78.09	137.80	307.75
4	Bihar	304.57	276.65	706.92	1,362.64	1,689.90	271.33	276.65	707.86	1,331.61	1,523.88
5	Chhattisgarh	43.35	71.25	359.94	1,553.30	1,107.93	25.29	71.25	339.80	1,495.68	1,071.58
6	Goa	20.66	17.72	120.00	400.00	527.48	20.66	17.72	119.98	434.51	527.48
7	Gujarat	146.54	206.96	228.60	251.87	166.08	140.91	206.96	225.77	213.41	163.29
8	Haryana	53.51	60.48	90.00	150.00	105.17	53.51	60.48	89.85	161.27	105.17
9	Himachal Pradesh	100.44 0.00	134.57 0.00	140.00 25.00	210.95 40.06	307.14 35.44	99.74	134.57 0.00	139.96 22.86	182.14	305.69 35.44
11	Jammu & Kashmir Jharkhand	70.32	63.83	35.00	200.00	260.88	0.00	63.83	38.08	23.16 212.50	260.88
12	Karnataka	165.85	269.72	633.43	783.52	1,240.99	70.32 164.55	269.72	639.55	871.96	1,202.70
13	Kerala	272.73	67.18	132.24	259.89	171.74	258.84	67.18	137.65	237.80	171.74
14	Madhya Pradesh	155.01	239.23	937.76	1,760.00	854.79	150.67	239.23	928.29	1,558.90	854.79
15	Maharashtra	177.23	190.04	431.20	1,371.92	2,966.03	177.01	190.04	423.28	1,154.00	2,964.15
16	Manipur	54.72	32.60	40.00	25.25	75.85	54.39	32.60	40.00	18.65	75.47
17	Meghalaya	35.70	43.30	15.00	41.27	30.22	33.61	43.30	15.00	28.44	28.28
18	Mizoram	22.11	39.53	35.00	40.00	41.00	20.57	39.53	28.50	46.13	41.00
19	Nagaland	44.65	46.20	50.00	50.00	38.27	44.65	46.20	46.27	38.84	38.27
20	Odisha	233.22	322,99	591.44	925.55	708.40	231.51	322.99	592.24	951.35	717.08
21	Punjab	113.78	2,328.04	1,852.26	2,740.50	746.02	113.24	2,328.04	1,855.24	2,702.48	745.80
22	Rajasthan	215.50	107.16	849.95	964.83	888.27	213.85	107.16	849.56	1,012.99	886.08
23	Sikkim	0.00	0.00	0.00	0.00	5.09	0.00	0.00	0.00	0.00	5.09
24	Tamil Nadu	210.24	167.13	337.02	575.00	664.48	210.24	167.13	336.47	640.11	664.48
25	Telangana	0.00	210.79	661.00	380.00	409.93	0.00	210.79	657.10	358.43	409.93
26	Tripura	0.00	0.00	5.00	5.00	61.00	0.00	0.00	0.00	2.38	61.00
27	Uttar Pradesh	289.54	493.81	1,530.34	1,849.02	1,110.79	284.35	493.81	1,527.74	1,820.85	1,106.96
28	Uttarakhand	87.84	169.51	245.92	332.62	980.67	85.90	169.51	245.69	314.48	980.14
29	West Bengal	134.10	283.61	808.95	1,333.62	1,229.89	134.10	283.61	811.98	1,223.19	1,184.69
30	Andaman & Nicobar Islands	0.00	14,61	2.00	0.13	0.00	0.00	14.61	1.53	0.13	0.00
31	Chandigarh	0.00	4.95	1.00	2.00	5.30	0.00	4.95	0.00	0.69	5.30
32	Delhi	0.00	0.02	1.00	1.00	36.00	0.00	0.02	0.00	0.62	23.01
33	Puducherry	0.00	12.73	20.00	20.00	13.63	0.00	12.73	18.10	14.28	13.63
A	Sub Total (Sr. 1 to 33)	3,345.84	6,238.32	12,006.58	19,917.68	18,629.66	3,247.36	6,238.32	11,918.70	19,293.94	18,323.50
34	Other projects under NH(O)*	341.42	761.17	515.00	781.38	214.00	341.30	715.68	445.55	779.72	211.92
35	National Highways Authority of India (NHAI)- Cess*	6,857.45	6,885.89	15,420.00	2,326.50	12,429.45	6,857.45	6,885.89	15,420.00	2,326.50	12,429.45
36	NHAI- Toll	4,770.00	5,448.00	6,500.00	7,500.00	8,462.14	4,770.00	5,448.00	6,500.00	7,500.00	8,462.14
37	NHAI- NH(O)	944.84	600.00	370.27	5,389.02	3,900.00	944.82	600.00	370.27	5,389.02	3,900.00
38	National Highways & Infrastructure Development Corporation Ltd. (NHIDCL) under NH(O)*	-	-	1.15	72.20	296.00	-	-	1.15	72.20	296.00
39	Border Roads Organization (BRO)*	434.00	292.00	0.00	0.00	0.00	414.25	268.79	0.00	0.00	0.00
40	Special Accelerated Road Development Programme for North- East Region (SARDP- NE) including Arunachal Package*	2,994.00	3,000.00	4,900.00	4,520.00	4,865.00	3,009.27	2,843.33	4,803.07	4,464.71	4,837.77

Table 9.4
The State/UT-wise details of Fund Allocation/Utilized for Development of NHs)

contd...

										Amount	in Rs. crore
SI. No	States/UTs/ Schemes/Agency					Expenditure					
•	,	2013-14	2014-15	2015-16	2016-17	2017-18	2013-14	2014-15	2015-16	2016-17	2017-18
41	Special Programme for development of Roads In Left Wing Extremism affected Area (LWE) including Development of Vijayawada-Ranchi Road	1,035.00	1,174.00	1,121.00	760.00	1,050.00	1,021.02	1,164.59	996.11	739.27	901.86
42	Externally Aided Projects - Head Quarters#, NHAI, NHIDCL	42.50	276.00	45.83	59.38	316.00	0.00	239.93	9.25	56.72	283.41
В	Sub Total (Sr. 34 to 42)	17,419.21	18,437.06	28,873.25	21,408.48	31,532.59	17,358.11	18,166.21	28,545.40	21,328.14	31,322.55
	Total (A+B)	20,765.05	24,675.38	40,879.83	41,326.16	50,162.25	20,605.47	24,404.53	40,464.10	40,622.08	49,646.05
43	IEBR / Borrowings by NHAI	8,000.00	7,611.11	42,694.50	59,279.00	59,279.00	7,942.13	3,343.40	23,281.00	33,118.00	50,533.00

Source: Planning Division MoRTH

^{*-} State/UT wise allocations are not made.

^{#-} State wise allocated funds under EAP have been added in the States

ANNEXURES

Section - 1

OVERVIEW OF THE COMPOSITION OF ROADS, STATEWISE DISTRUBUTION AND TRENDS

Total and Surfaced Road Length By Categories in India as on 31.03.2017

(in km)

Sl. No.	Category	Sub Category	Categor Road len share of Road le	gth (% Total	Category wise Surfaced road length (% age of col	
Col 1	Category Col 2	Col 3	Col		Col 5	
1	National High	nways	114158	(1.94)	114158(100)	
2	State Highwa	ys	175036	(2.97)	169096(96.6)	
3	District roads	5	586181	(9.94)	556794(95.0)	
4	Rural Roads*	¢	3266916	(55.39)	2163920 (66.2)	
		PMGSY Roads	6843	43	594927(86.9)	
		PWD/RWD Roads	6468	80	547391 (84.6)	
		Panchayati Raj Roads	19356	593	1021602(52.8)	
5	Urban Roads		526483	(9.27)	406867 (77.3)	
		Municipal Roads	4933	28	375315 (76.1)	
		MES Roads	1855	56	18002 (97.0)	
		Major Port Roads	781	Į	779 (99.8)	
		Minor Port Roads	361	[340 (94.2)	
		Railway Roads	1345	57	12431 (92.4)	
6	Project Road	s	328897	(5.58)	135743 (41.3)	
		Forest Department Roads	1748	25	53072(30.4)	
		BRO Roads	1967	72	17551 (89.2)	
		Coal Mine Roads	469	5	4404 (93.8)	
		Electricity Department Roads	750	5	6979 (93.0)	
		Irrigation Department Roads	1044	62	39779 (38.1)	
		Sugarcane Authorities Roads	1489)9	11269 (75.6)	
		SAIL & NMDC Roads	283	9	2690(94.8)	
7	Total* (Exclu	49970	671	3546579 (71.0)		
8	Total** (Incl	uding JRY Roads)	5897671	(100)	3729781(63.2)	

Note: (1) Totals may not add up due to rounding off of decimals.

^{(2) *} excludes 9 lakh km length of rural roads constructed under Jawahar Rozgar Yojana (JRY) from 1990-1999

^{(3) **} Includes 9 lakh km lengthof rural roads constructed under Jawahar Rozgar Yojana (JRY) from 1990-1999.

Road Length By Categories and By type of Surface in India as on 31.03.2017

(in km)

	Category	Sub Category	Total (6+7)		Surfaced		Un-
Sl.				TYPE CATE OF	DELCC.	7 7 ()	surfaced
No.				WBM/WMM	BT/CC	Total (4+5)	
1		2	3	4	5	6	7
1	National H	Highways	114158	0	114158	114158	0
2	State High	ıways	175036	2628	166468	169096	5940
3	District ro		586181	24774	532020	556794	29387
4	Rural Roa JRY)	ds* (excluding	3266916	509023	1654897	2163920	1102996
		PMGSY Roads	684343	90112	504815	594927	89416
		PWD/RWD Roads	646880	59389	488003	547391	99488
		Panchayati Raj Roads	1935693	359523	662079	1021602	914092
5	Urban Roa	ads	526483	41093	365774	406867	119616
		Municipal Roads	493328	39227	336088	375315	118013
		MES Roads	18556	278	17724	18002	554
		Major Port Roads	781	58	720	779	2
		Minor Port Roads	361	24	316	340	21
		Railway Roads	13457	1506	10925	12431	1026
6	Project Ro		328897	57539	78204	135743	193153
		Forest Department Roads	174825	36824	16248	53072	121753
		BRO Roads	19672	736	16814	17551	2121
		Coal Mine Roads	4695	588	3816	4404	291
		Electricity Department Roads	7505	1682	5297	6979	525
		Irrigation Department Roads	104462	17610	22169	39779	64684
		Sugarcane Authorities Roads	14899	5	11264	11269	3630
		SAIL & NMDC Roads	2839	94	2596	2690	149
Total* (Excluding JRY Roads)			4997671	635059	2911520	3546579	1451092
Total	l** (Includii	ng JRY Roads)	5897671	818261	2911520	3729781	2167890

Note: (1) Totals may not add up due to rounding off of decimals.

^{(2) *} excludes 9 lakh km length of rural roads constructed under Jawahar Rozgar Yojana (JRY) from 1990-1999.

^{(3) **} Includes 9 lakh km lengthof rural roads constructed under Jawahar Rozgar Yojana (JRY) from 1990-1999.

State/UT-wise, Total & Surfaced Length of Roads in India (excluding JRY Roads) as on 31.03.2017

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh	176474	122848
2	Arunachal Pradesh	37025	21763
3	Assam	337777	63947
4	Bihar	209549	117573
5	Chhattisgarh	97845	80061
6	Goa	16659	11452
7	Gujarat	180927	163172
8	Haryana	81386	77127
9	Himachal Pradesh	62812	43209
10	Jammu And Kashmir	63386	40133
11	Jharkhand	69871	55564
12	Karnataka	361041	218467
13	Kerala	240562	170950
14	Madhya Pradesh	342654	267934
15	Maharashtra	623972	495362
16	Manipur	27612	15632
17	Meghalaya	22939	10813
18	Mizoram	11012	7680
19	Nagaland	36239	17111
20	Odisha	303669	268837
21	Punjab	139492	130345
22	Rajasthan	265599	214019
23	Sikkim	11386	7133
24	Tamilnadu	261436	217643
25	Telangana	126135	86111
26	Tripura	42925	22967
27	Uttarakhand	69777	52140
28	Uttar Pradesh	428055	383488
29	West Bengal	322067	136155
30	A & N Islands	1617	1508
31	Chandigarh	2821	2821
32	Dadra & Nagar Haveli	1187	1187
33	Daman & Diu	426	426
34	Delhi	17882	17882
35	Lakshadweep	212	212
36	Puducherry	3242	2908
Total *		4997671	3546579

^{*} Excluding JRY Roads

Total Road Length and Percentage Share of each category of Road during (1951-2017)

(in km)

Year (as on 31st March)	National Highways	State High-ways	Other PWD Roads	District Roads	Panchaya t Raj Roads	JRY & PMGSY Roads*	Rural Roads built by State PWD / RWD	Urban Roads	Project Roads	Surfaced	Total (Col. 2+3+4+5+6+7+8 +9+10)
1	2	3	4	5	6	7	8	9	10	11	12
1951	19,811	#	1,73,723		2,06,408	0		0	0	1,57,019	3,99,942
	4.95	0	43.44		51.61	0		0	0	39.26	100
1961	23,798	#	2,57,125		1,97,194	0		46,361	0	2,63,052	5,24,478
	4.54	0	49.02		37.6	0		8.84	0	50.16	100
1971	23,838	56,765	2,76,833		3,54,530	0		72,120	1,30,893	3,97,948	9,14,979
	2.61	6.2	30.26		38.75	0		7.88	14.31	43.49	100
1981	31,671	94,359	4,21,895		6,28,865	0		1,23,120	1,85,511	6,83,676	14,85,421
	2.13	6.35	28.4		42.34	0		8.29	12.49	46.03	100
1991	33,650	1,27,311	5,09,435		9,31,288	3,29,142		1,86,799	2,09,737	10,90,167	23,27,362
	1.45	5.47	21.89		40.01	14.14		8.03	9.01	46.84	100
2001	57,737	1,32,100	7,36,001		10,68,020	9,03,996	ļ	2,52,001	2,23,665	16,01,745	33,73,520
	1.71	3.92	21.82		31.66	26.8		7.47	6.63	47.48	100
2002	58,112	1,37,711	6,95,335		11,34,326	9,26,697		2,50,295	2,24,124	16,61,555	34,26,600
	1.7	4.02	20.29		33.1	27.04		7.3	6.54	48.49	100
2003	58,112	1,34,807	6,96,960		11,55,491	9,26,697		2,97,259	2,59,328	17,01,258	35,28,654
	1.65	3.82	19.75		32.75	26.26		8.42	7.35	48.21	100
2004	65,569	1,33,177	7,19,257		11,89,058	9,51,511		3,01,310	2,61,625	17,60,768	36,21,507
	1.81	3.68	19.86		32.83	26.27		8.32	7.22	48.62	100
2005	65,569	1,44,396	7,86,230		12,99,463	9,66,976		2,86,707	2,59,815	17,95,298	38,09,156
	1.72	3.79	20.64		34.11	25.39		7.53	6.82	47.13	100
2006	66,590	1,48,090	8,03,669		13,18,258	9,89,867		2,91,991	2,62,186	18,58,684	38,80,651
	1.72	3.82	20.71		33.97	25.51		7.52	6.76	47.9	100
2007	66,590	1,52,235	8,35,003		13,72,867	10,20,621		3,00,580	2,68,505	19,44,758	40,16,401
	1.66	3.79	20.79		34.18	25.41		7.48	6.69	48.42	100
2008	66,754	1,54,522	8,63,241		13,88,750	10,61,809		3,04,327	2,70,189	20,36,063	41,09,592
	1.62	3.76	21.01		33.79	25.84		7.41	6.57	49.54	100
2009	70,548	1,58,497	9,62,880		15,14,952	11,14,213		3,73,802	2,76,617	23,24,504	44,71,510
	1.58	3.54	21.53		33.88	24.92		8.36	6.19	51.98	100
2010	70,934	1,60,177	9,77,414		15,18,205	11,74,330		4,02,448	2,78,931	24,32,813	45,82,439
	1.55	3.5	21.33		33.13	25.63		8.78	6.09	53.09	100
2011	70,934	1,63,898	9,98,895		15,30,366	12,19,438		4,11,679	2,81,628	25,24,682	46,76,838
	1.52	3.5	21.36		32.72	26.07		8.8	6.02	53.98	100
2012	76,818	1,64,360	10,22,287	1	15,87,787	12,50,433		4,64,294	2,99,415	26,98,590	48,65,394
	1.58	3.38	21.01		32.63	25.7		9.54	6.15	55.46	100
2013	79,116	1,69,227	10,66,747	1	17,25,318	14,34,321		4,46,238	3,10,955	31,71,002	52,31,922
	1.51	3.23	20.39		32.98	27.41		8.53	5.94	60.61	100
2014	91,287	1,70,818	10,82,267	1	18,00,747	15,03,581		4,57,467	2,96,319	25,335	54,02,486
	1.69	3.16	20.03		33.33	27.83		8.47	5.48	0.47	100
2015	97,991	1,67,109	11,01,178		18,31,043	15,06,212		4,67,106	3,01,505	33,41,008	54,72,144
	1.79	3.05	20.25	<u> </u>	33.46	27.53	ļ	8.54	5.51	61.05	100
2016	1,01,011	1,76,166		5,61,940	18,60,573	15,26,377	5,48,387	5,09,730	3,19,109	35,01,906	56,03,293
	1.8	3.14		10.03	33.2	27.24	9.78	9.1	5.7	62.49	100
2017	1,14,158	1,75,036		5,86,181	19,35,693	15,84,343	6,46,880	5,26,483	3,28,897	37,29,781	58,97,671
	1.94	2.97		9.94	32.82	26.86	10.97	8.93	5.58	63.63	100

[#] Included in Other PWD Roads.

Totals may not add up because of rounding off of decimals. JRY road lengths for years since 1996-97 are the same as on 31.3.1996

Note: The second row of each year indicates the percentage share of each category of roads to the total road length.

^{*} Includes roads constructed under PMGSY launched in December 2000 and JRY launched in 1989-90.

Section - 2

NATIONAL HIGHWAYS - STATEWISE AND LANEWISE DISTRIBUTION

Length of National Highways in India as on 31.03.2017 (State/UT-wise)

(km)

Sl. No.	Name of State/ UT	Length of NH	%share of NH
1	Andhra Pradesh	6467	5.7
2	Arunachal Pradesh	2513	2.2
3	Assam	3844	3.4
4	Bihar	4839	4.2
5	Chhattisgarh	3232	2.8
6	Goa	263	0.2
7	Gujarat	5017	4.4
8	Haryana	2623	2.3
9	Himachal Pradesh	2643	2.3
10	Jammu & Kashmir	2601	2.3
11	Jharkhand	2654	2.3
12	Karnataka	6762	5.9
13	Kerala	1811	1.6
14	Madhya Pradesh	7854	6.9
15	Maharashtra	15437	13.5
16	Manipur	1745	1.5
17	Meghalaya	1203	1.1
18	Mizoram	1382	1.2
19	Nagaland	1173	1.0
20	Odisha	4838	4.2
21	Punjab	2769	2.4
22	Rajasthan	7906	6.9
23	Sikkim	463	0.4
24	Tamil Nadu	4946	4.3
25	Telangana	3455	3.0
26	Tripura	806	0.7
27	Uttarakhand	2713	2.4
28	Uttar Pradesh	8712	7.6
29	West Bengal	2956	2.6
30	Andaman & Nicobar Island	330	0.3
31	Chandigarh	15	0.0
32	Dadar & Nagar Haveli	31	0.0
33	Daman & Diu	22	0.0
34	Delhi	69	0.1
35	Lakshadweep	0	0.0
36	Puducherry	64	0.1
	Total	114158	100

Source : Roads Wing : Ministry of Road Transport & Highways Note: All National Highways are surfaced

Lane wise Length of National Highways in India as on 31.03.2017

(in km)

			T - :-		(in km)
Sl.	Name of State/ UT	Total	Less than	Two-	Four-
No.		Length	Two-Lane	Lane	Lane and
					above
1	Andhra Pradesh	6467	1232	3357	1878
2	Arunachal Pradesh	2513	1917	577	19
3	Assam	3844	608	2603	633
4	Bihar	4839	690	3360	789
5	Chhattisgarh	3232	281	2585	366
6	Goa	263	32	194	37
7	Gujarat	5017	567	2057	2393
8	Haryana	2623	18	1432	1173
9	Himachal Pradesh	2643	1070	1538	35
10	Jammu & Kashmir	2601	685	1714	202
11	Jharkhand	2654	193	2150	311
12	Karnataka	6762	1370	3486	1906
13	Kerala	1811	331	1348	132
14	Madhya Pradesh	7854	3050	3403	1401
15	Maharashtra	15437	8260	3647	3530
16	Manipur	1745	272	1442	31
17	Meghalaya	1203	660	486	57
18	Mizoram	1382	1117	265	0
19	Nagaland	1173	1085	88	0
20	Odisha	4838	40	3959	839
21	Punjab	2769	129	1565	1075
22	Rajasthan	7906	120	5093	2693
23	Sikkim	463	216	247	0
24	Tamil Nadu	4946	48	2740	2158
25	Telangana	3455	970	1564	921
26	Tripura	806	580	226	0
27	Uttarakhand	2713	1961	666	86
28	Uttar Pradesh	8712	706	5480	2526
29	West Bengal	2956	321	1588	1047
30	Andaman & Nicobar Island	330	319	10	1
31	Chandigarh	15	0	0	15
32	Dadar & Nagar Haveli	31	31	0	0
33	Daman & Diu	22	22	0	0
34	Delhi Delhi	69	0	0	69
35	Lakshadweep	0	<u> </u>		3,
36	Puducherry	64	0	40	24
	Total	114158	28901	58910	26347
	าบเลา	114150	20901	30710	40347

Source : Roads Wing Ministry of Road Transport & Highways Note: All National Highways are surfaced.

Section - 3

STATE HIGHWAYS

Total and Surfaced Length of State Highways in India as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh	6485	6381
2	Arunachal Pradesh \$	8123	4043
3	Assam	2530	2202
4	Bihar	4006	4006
5	Chhattisgarh	4438	4353
6	Goa	279	279
7	Gujarat	17201	16983
8	Haryana	1801	1801
9	Himachal Pradesh	827	782
10	Jammu & Kashmir	130	130
11	Jharkhand	1339	1339
12	Karnataka	19556	19483
13	Kerala	4342	4342
14	Madhya Pradesh	11389	11389
15	Maharashtra	39000	38134
16	Manipur	715	715
17	Meghalaya	772	737
18	Mizoram	170	170
19	Nagaland	722	722
20	Odisha	4139	4134
21	Punjab	1103	1103
22	Rajasthan	15019	14939
23	Sikkim	663	663
24	Tamil Nadu	12095	12095
25	Telangana	2553	2553
26	Tripura	329	329
27	Uttarakhand	4329	4310
28	Uttar Pradesh	7201	7201
29	West Bengal	3262	3262
30	Andaman & Nicobar Island	266	266
31	Chandigarh	200	200
32	Dadra & Nagar Haveli	30	30
33	Daman & Diu	22	22
34	Delhi	0	0
35	Lakshadweep	0	0
36	Puducherry	0	0
	Total	175036	169096

State Highways are constructed by State PWD/ Roads & Bridges Depts.

Note: \$ Figure for Arunachal Pradesh pertain to roads under State PWD. Arunachal Pradesh has not yet made official classification of State Roads into State Highways, Major District Roads (MDR) and Other District Roads (ODR).

Length of State Highways in India - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

SL.	Name of State/UT	Total				Un-surfaced
No.	1 (0.222 01 2 0.000) 0 1	Length	WBM/WMM	BT/CC	Total	011 8011 1000
		(6+7)			(4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh *	6485	2	6379	6381	104
2	Arunachal Pradesh \$	8123	1286	2757	4043	4080
3	Assam	2530	0	2202	2202	328
4	Bihar	4006	0	4006	4006	0
5	Chhattisgarh	4438	249	4104	4353	86
6	Goa	279	6	274	279	0
7	Gujarat*	17201	29	16954	16983	218
8	Haryana	1801	0	1801	1801	0
9	Himachal Pradesh	827	0	782	782	45
10	Jammu & Kashmir	130	0	130	130	0
11	Jharkhand	1339	0	1339	1339	0
12	Karnataka	19556	226	19257	19483	74
13	Kerala	4342	0	4342	4342	0
14	Madhya Pradesh	11389	0	11389	11389	0
15	Maharashtra \$	39000	517	37617	38134	865
16	Manipur*	715	60	655	715	0
17	Meghalaya	772	0	737	737	35
18	Mizoram	170	0	170	170	0
19	Nagaland	722	199	524	722	0
20	Odisha	4139	21	4113	4134	5
21	Punjab	1103	0	1103	1103	0
22	Rajasthan	15019	4	14935	14939	80
23	Sikkim	663	0	663	663	0
24	Tamil Nadu	12095	0	12095	12095	0
25	Telangana	2553	3	2550	2553	0
26	Tripura	329	0	329	329	0
27	Uttarakhand	4329	27	4283	4310	19
28	Uttar Pradesh	7201	0	7201	7201	0
29	West Bengal	3262	0	3262	3262	0
30	Andaman & Nicobar		0	266		0
	Island	266			266	
	Chandigarh*	200	0	200	200	0
32	Dadra & Nagar Haveli	30	0	30	30	0
33	Daman & Diu	22	0	22	22	0
34	Delhi	0	0	0	0	0
35	Lakshadweep	0	0	0	0	0
36	Puducherry	0	0	0	0	0
	Total	175036	2628	166468	169096	5939

State Highways are constructed by State PWD/ Roads & Bridges Depts.

Note: \$ Figure for Arunachal Pradesh pertain to roads under State PWD. Arunachal Pradesh has not yet made official classification of State Roads into State Highways, Major District Roads (MDR) and Other District Roads (ODR).

^{*} Figures is as on 31/03/2016-Data not received.

^{\$} Figures is as on 31/03/2016-Data partially received.

Section - 4

DISTRICT ROADS

Total & Surfaced Length of District Roads as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh *	35471	34732
2	Arunachal Pradesh @	5345	3685
3	Assam	4379	3457
4	Bihar	11145	11145
5	Chhattisgarh	11625	11216
6	Goa	1173	1172
7	Gujarat*	30809	30228
8	Haryana	21948	21859
9	Himachal Pradesh	2832	2781
10	Jammu & Kashmir	11272	9376
11	Jharkhand	9356	9128
12	Karnataka	49923	48468
13	Kerala	27470	27470
14	Madhya Pradesh	40296	40296
15	Maharashtra	109530	99617
16	Manipur*	9467	4844
17	Meghalaya	5095	4016
18	Mizoram	1750	1541
19	Nagaland	6467	3691
20	Odisha	16271	15754
21	Punjab	6980	6980
22	Rajasthan	23445	22852
23	Sikkim	1415	660
24	Tamil Nadu	45379	45379
25	Telangana	22303	21797
26	Tripura	1189	1189
27	Uttarakhand	4967	4605
28	Uttar Pradesh	55061	55061
29	West Bengal	10449	10424
30	Andaman & Nicobar Island	139	139
31	Chandigarh*	83	83
32	Dadra & Nagar Haveli	190	190
33	Daman & Diu	99	99
34	Delhi	2462	2462
35	Lakshadweep	0	0
36	Puducherry	397	397
Total		586181	556794

Notes: The District Roads comprise Major District Roads & Other District Roads constructed and maintained by State PWD/Roads & Bridges Depts.

Differences in sum on account of rounding off of decimals.

[@] Arunachal Pradesh has not yet made official classification of State Roads into State Highways, Major District Roads (MDR) and Other District Roads (ODR).

^{*} Figures is as on 31/03/2016-Data not received.

Length of District Roads - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total Length (6+7)		Surfaced		Un- surfaced
		(3.17)	WBM/WM M	BT/CC	Total (4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh*	35471	241	34491	34732	739
2	Arunachal Pradesh @	5345	1555	2130	3685	1659
3	Assam	4379	0	3457	3457	922
4	Bihar	11145	0	11145	11145	0
5	Chhattisgarh	11625	495	10721	11216	409
6	Goa	1173	1	1172	1172	1
7	Gujarat*	30809	293	29935	30228	581
8	Haryana	21948	49	21809	21859	89
9	Himachal Pradesh	2832	30	2752	2781	50
10	Jammu &					
	Kashmir	11272	670	8706	9376	1896
11	Jharkhand	9356	606	8522	9128	228
12	Karnataka	49923	1467	47001.1	48468	1455
13	Kerala	27470	0	27470	27470	0
14	Madhya Pradesh	40296	0	40296	40296	0
15	Maharashtra \$	109530	15764	83853	99617	9913
16	Manipur*	9467	904	3940	4844	4623
17	Meghalaya	5095	204	3812	4016	1079
18	Mizoram	1750	0	1541	1541	209
19	Nagaland	6467	1780	1911	3691	2776
20	Odisha	16271	324	15430	15754	517
21	Punjab	6980	0	6980	6980	0
22	Rajasthan	23445	17	22835	22852	593
23	Sikkim	1415	97	562	660	756
24	Tamil Nadu	45379	0	45379	45379	0
25	Telangana	22303	221	21576	21797	506
26	Tripura	1189	0	1189	1189	0
27	Uttarakhand	4967	56	4549	4605	362
28	Uttar Pradesh	55061	0	55061	55061	0
29	West Bengal	10449	0	10424	10424	25
30	Andaman & Nicobar Island	139	0	139	139	0
31	Chandigarh*	83	0	82	83	0
32	Dadra & Nagar					
33	Haveli Daman & Diu	190 99	0	190 99	190 99	0
34	Delhi \$		0			0
35	Lakshadweep	2462	0	2462	2462	
36	•	0	1	206	0	0
30	Puducherry	397	24774	396	397 556704	-
	Total	586181	24774	532020	556794	29387

Notes: The District Roads comprise Major District Roads & Other District Roads constructed and maintained by State PWD/Roads & Bridges Depts.

^{*} Figures is as on 31/03/2016-Data not received.

^{\$} Figures is as on 31/03/2016-Data partially received.

Section - 5

RURAL ROADS

Total & Surfaced Length of Rural Roads as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh	98462	53366
2	Arunachal Pradesh	15872	7681
3	Assam	300123	48817
4	Bihar	178109	93275
5	Chhattisgarh	49977	43026
6	Goa	13742	8798
7	Gujarat	85989	82204
8	Haryana	39838	39749
9	Himachal Pradesh	49631	33178
10	Jammu And Kashmir	28892	18958
11	Jharkhand	38253	31730
12	Karnataka	213227	99604
13	Kerala	158775	101874
14	Madhya Pradesh	229674	184175
15	Maharashtra	414037	314371
16	Manipur	14642	7381
17	Meghalaya	14640	4461
18	Mizoram	6369	3582
19	Nagaland	26886	10586
20	Odisha	231698	218700
21	Punjab	101123	101123
22	Rajasthan	178822	136235
23	Sikkim	7982	4597
24	Tamilnadu	165476	126840
25	Telangana	80754	47499
26	Tripura	38560	20178
27	Uttarakhand	33697	21524
28	Uttar Pradesh	251173	249375
29	West Bengal	197079	47914
30	A & N Islands	511	491
31	Chandigarh	0	0
32	Dadra & Nagar Haveli	853	853
33	Daman & Diu	136	136
34	Delhi	0	0
35	Lakshadweep	211	211
36	Puducherry	1702	1427
Total ((Excluding JRY Roads)	3266916	2163920
	Including JRY Roads)	4166916	2347122

Notes: The Rural Roads comprise of PMGSY, rural roads built by State PWD/RWD & those constructed by Panchayati Raj Roads

Length of PMGSY Roads - By type of Surface as on 31st March 2017 (State/UT-wise)

(in km)

1	Name of State/UT			Surfaced		Unsurfaced
		Total Length (6+7)	W.B.M	BT/CC	Total (4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	19384	4824	13742	18566	818
2	Arunachal Pradesh	8201	23	5520	5544	2657
3	Assam	25429	0	16403	16403	9026
4	Bihar	55511	834	43001	43835	11676
5	Chhattisgarh	35048	3317	26990	30306	4742
6	Goa	207	26	155	181	26
7	Gujarat	18441	5813	12503	18316	125
8	Haryana	6974	1436	5538	6974	0
9	Himachal Pradesh	17774	1241	12202	13443	4331
10	Jammu And Kashmir	14881	887	7002	7890	6991
11	Jharkhand	23327	1733	15071	16804	6523
12	Karnataka	22847	4331	18515	22846	1
13	Kerala	3798	905	2825	3729	69
14	Madhya Pradesh	80337	6836	65782	72618	7719
15	Maharashtra	31012	4946	25489	30435	577
16	Manipur	9647	441	5578	6019	3628
17	Meghalaya	2484	25	1545	1570	914
18	Mizoram	3790	0	2622	2622	1168
19	Nagaland	3893	93	3461	3554	340
20	Odisha	60628	7481	40148	47630	12998
21	Punjab	8926	1811	7115	8926	0
22	Rajasthan	69846	4186	61637	65823	4023
23	Sikkim	4795	8	3204	3212	1582
24	Tamilnadu	17933	4160	13703	17862	70
25	Telangana	11254	761	9898	10659	595
26	Tripura	6479	1966	3860	5826	653
27	Uttarakhand	12040	160	7805	7965	4074
28	Uttar Pradesh	74113	22986	50295	73281	832
29	West Bengal	34995	8637	23138	31776	3219
30	A & N Islands	61	43	0	43	19
31	Chandigarh	0	0	0	0	0
32	Dadra & Nagar Haveli	182	182	0	182	0
33	Daman & Diu	0	0	0	0	0
34	Delhi	0	0	0	0	0
35	Lakshadweep	0	0	0	0	0
36	Puducherry	107	19	69	88	19
	Total	684343	90112	504815	594927	89416

Length of Rural Roads built by State PWD/RWD - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	C	(in km)		
5.No.	Name of State/U1	Total		rfaced	T-4-1	Un-
		Length (6+7)	WBM/WMM	BT/CC	Total (4+5)	surfaced
1	2	3	4	5	6	7
1	Andhra Pradesh					
2	Arunachal Pradesh	2426	451	468	919	1507
3	Assam	36933	0	20298	20298	16635
4	Bihar					
5	Chhattisgarh	14093	1574	10314	11888	2205
6	Goa	3328	34	2625	2659	669
7	Gujarat*	23114	499	21622	22121	993
8	Haryana	32864	0	32775	32775	89
9	Himachal Pradesh	30162	1639	17833	19472	10691
10	Jammu & Kashmir*	11272	670	8706	9376	1896
11	Jharkhand \$	14926	0	14926	14926	0
12	Karnataka					
13	Kerala					
14	Madhya Pradesh*	26482	4980	18762	23742	2740
15	Maharashtra \$	146135	47151	53830	100981	45154
16	Manipur					
17	Meghalaya	2937	132	1616	1748	1189
18	Mizoram	2578	0	960	960	1618
19	Nagaland	3538	431	0	431	3107
20	Odisha					
21	Punjab	30761	0	30761	30761	0
22	Rajasthan	64689	202	62051	62253	2436
23	Sikkim					
24	Tamil Nadu					
25	Telangana					
26	Tripura	6835	847	5590	6437	398
27	Uttarakhand	21657	763	12795	13559	8098
28	Uttar Pradesh	169051	0	169004	169004	47
29	West Bengal	1468	0	1454	1454	14
	Andaman & Nicobar					
30	Island	449	14	435	449	1
31	Chandigarh					
	Dadra & Nagar					
32	Haveli	671	2	668	671	0
33	Daman & Diu	44	0	44	44	0
34	Delhi					
35	Lakshadweep	211	0	211	211	0
36	Puducherry	254	0	254	254	0
	Total	646880	59389	488003	547391	99488

Note: This category of roads are built by State PWD/Rural Works Department of States/UTs.

^{*} Figures is as on 31/03/2016-Data not received.

^{\$} Figures is as on 31/03/2016-Data partially received.

Length of Panchayati Raj Roads - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

Sl.	Name of State/UT	Total		Surface	d	Unsurfaced
No.		Length	W.B.M.	BT/CC	Total	1
		(6+7)			(4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	79078	10129	24671	34800	44278
2	Arunachal Pradesh*	5245	0	1219	1219	4026
3	Assam*	237761	8378	3738	12116	225645
4	Bihar *	122598	7240	42200	49440	73158
5	Chhatisgarh	835	76	757	832	3
6	Goa	10207	1060	4897	5957	4250
7	Gujarat *	44434	5640	36127	41767	2667
8	Haryana					
9	Himachal Pradesh *	1695	72	191	263	1432
10	Jammu & Kashmir*	2740	1693	0	1693	1047
11	Jharkhand					
12	Karnataka	190380	26260	50498	76758	113622
13	Kerala	154977	14580	83564	98144	56833
14	Madhya Pradesh *	122855	0	87815	87815	35040
15	Maharashtra \$	236890	78635	104320	182955	53935
16	Manipur	4995	0	1362	1362	3633
17	Meghalaya \$	9219	460	683	1143	8076
18	Mizoram					
19	Nagaland *	19455	3141	3461	6602	12853
20	Odisha*	171070	171070	0	171070	0
21	Punjab	61436	0	61436	61436	0
22	Rajasthan \$	44287	3914	4245	8159	36128
23	Sikkim	3188	0	1385	1385	1802
24	Tamil Nadu *	147543	10155	98823	108978	38565
25	Telangana	69500	11751	25089	36840	32660
26	Tripura	25247	2227	5689	7916	17331
27	Uttarakhand					
28	Uttar Pradesh	8009	908	6182	7090	919
29	West Bengal *	160616	1910	12774	14684	145932
30	A & N Islands					
31	Chandigarh					
32	Dadra & Nagar Haveli					
33	Daman & Diu*	92	1	91	92	0
34	Delhi					
35	Lakshadweep					
36	Puducherry	1341	224	862	1085	256
	Total	1935693	359523	662079	1021602	914092

Note: Panchayati Raj Roads include Gram Panchayat, Panchayat Samiti & Zilla Parishad Roads

^{*} Figures is as on 31/03/2016-Data not received.

^{\$} Figures is as on 31/03/2016-Data partially received.

Section - 6

URBAN ROADS

Total & Surfaced Length of Urban Roads as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh	24424	19767
2	Arunachal Pradesh	576	464
3	Assam	6319	4056
4	Bihar	8891	3801
5	Chhattisgarh	12834	10997
6	Goa	870	775
7	Gujarat	28816	23506
8	Haryana	15042	10961
9	Himachal Pradesh	3489	2922
10	Jammu And Kashmir	1757	1744
11	Jharkhand	6799	4642
12	Karnataka	51334	35629
13	Kerala	33201	26255
14	Madhya Pradesh	17305	13569
15	Maharashtra	24245	19273
16	Manipur	151	96
17	Meghalaya	170	166
18	Mizoram	312	265
19	Nagaland	100	98
20	Odisha	20893	15849
21	Punjab	17868	16163
22	Rajasthan	30214	25668
23	Sikkim	48	46
24	Tamilnadu	24494	22783
25	Telangana	12058	8237
26	Tripura	602	445
27	Uttarakhand	5446	3806
28	Uttar Pradesh	63722	48741
29	West Bengal	95240	66950
30	A & N Islands	170	153
31	Chandigarh	2523	2523
32	Dadra & Nagar Haveli	83	83
33	Daman & Diu	147	147
34	Delhi	15299	15299
35	Lakshadweep	2	2
36	Puducherry	1038	987
	Total	526483	406867

Notes: The Urban Roads comprise of Municipal Roads; (coming under purview of Municipal Corporation under the Urban Development Department of States/UTs), Military Engineering Service Roads; Major & Minor Port roads and roads in Railways Zones.

Length of Municipal Roads - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

Sl.		Total	Su	rfaced		Unsurfaced
No.	Name of State/UT	Length	WBM/WMM	BT/CC	Total	Total
		(6+7)			(4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	23297	2202	16458	18660	4636
2	Arunachal Pradesh	478	19	350	368	110
3	Assam	4729	620	1890	2510	2219
4	Bihar*	8537	1112	2375	3487	5050
5	Chhattisgarh	12428	1024	9594	10618	1811
6	Goa	631	81	454	535	95
7	Gujarat	27558	2805	19446	22251	5307
8	Haryana*	13747	594	9114	9708	4039
9	Himachal Pradesh	1846	115	1208	1323	523
10	Jammu & Kashmir*	441	2	439	441	0
11	Jharkhand	6074	513	3467	3980	2095
12	Karnataka*	50343	6837	27833	34670	15673
13	Kerala	32745	3129	22745	25874	6871
14	Madhya Pradesh	15886	2172	10032	12204	3682
15	Maharashtra*	20958	4095	12382	16477	4481
16	Manipur*	122	22	46	68	54
17	Meghalaya*	30	0	26	26	4
18	Mizoram	297	0	254	254	44
19	Nagaland	0	0	0	0	0
20	Odisha	19915	3923	10992	14915	5000
21	Punjab	15181	881	12628	13509	1672
22	Rajasthan	27695	2819	20469	23288	4407
23	Sikkim*	48	0	46	46	2
24	Tamil Nadu*	23350	773	20939	21712	1638
25	Telangana	10859	0	7039	7039	3820
26	Tripura*	518	115	257	372	146
27	Uttarakhand	4804	391	2786	3176	1628
28	Uttar Pradesh*	59960	0	45220	45220	14740
29	West Bengal*	92963	4831	59928	64759	28204
30	Andaman & Nicobar Islands	68	0	52	52	16
31	Chandigarh	2334	0	2334	2334	0
32	Dadra & Nagar Haveli	83	0	83	83	0
33	Daman & Diu	46	0	46	46	0
34	Delhi	14336	0	14336	14336	0
35	Lakshadweep	0	0	0	0	0
36	Puducherry	1020	152	821	974	47
	Total	493328	39227	336088	375315	118013

Source: State & UT Urban Departments.

^{*}Figure is as on 31/03/2016- Data not received.

Length of Military Engineering Service Roads - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

Sl. No.	Name of State/UT	Total Length (6+7)		Surfaced		Unsurfaced
			W.B.M.	B.T./C.C	Total (4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	318	0	318	318	0
2	Arunachal Pradesh	94	0	94	94	0
3	Assam	976	1	969	970	6
4	Bihar	51	0	51	51	0
5	Chhattisgarh	2	2	0	2	0
6	Goa	124	0	124	124	0
7	Gujarat	999	0	999	999	0
8	Haryana	884	0	869	869	15
9	Himachal Pradesh	186	1	177	178	8
10	Jammu & Kashmir	1171	2	1169	1171	0
11	Jharkhand	131	0	131	131	0
12	Karnataka	571	45	519	564	7
13	Kerala	308	0	235	235	72
14	Madhya Pradesh	742	0	742	742	0
15	Maharashtra	2239	141	1761	1902	337
16	Manipur	25	0	25	25	0
17	Meghalaya	138	10	129	138	0
18	Mizoram	7	0	7	7	0
19	Nagaland	88	0	88	88	0
20	Odisha	205	0	205	205	0
21	Punjab	2362	0	2361	2361	1
22	Rajasthan	1822	0	1723	1723	99
23	Sikkim	0	0	0	0	0
24	Tamil Nadu	488	37	448	485	3
25	Telangana	480	0	480	480	0
26	Tripura	21	0	21	21	0
27	Uttarakhand	592	14	575	589	3
28	Uttar Pradesh	1456	9	1447	1456	0
29	West Bengal	970	14	954	967	2
	Andaman & Nicobar					
30	Islands	91	0	91	91	0
31	Chandigarh	181	0	181	181	0
32	Dadra Nagar Haveli	0	0	0	0	0
33	Daman & Diu	92	0	92	92	0
34	Delhi	740	2	738	740	0
35	Lakshadweep	2	0	2	2	0
36	Puducherry	0	0	0	0	0
	Total	18556	278	17724	18002	554

Source: Directorate of Works, Engineering in Chief's Branch, Integrated HQ of MoD (Army).

Length of Roads in Major Ports - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

Sl.No.	States/UTs	Major Port Trusts	Total Length (6+7)	Surfaced			Unsurfaced
				W.B.M.	B.T./C. C	Total (4+5)	
1	2	3	4	5	6	7	8
1	Andhra Pradesh	Visakhapatanam	73	0	72	73	0
2	Goa	Mormugoa	25	0	25	25	0
3	Gujarat	Kandla *	97	0	97	97	0
4	Karnataka	New Mangalore	47	3	44	47	0
5	Kerala	Cochin	36	4	32	36	0
6	Maharashtra	Jawaharlal Nehru Port Trust	40	0	40	40	0
		Mumbai Port Trust	67	0	67	67	0
7	Odisha	Paradeep	121	4	115	119	2
		Chennai Port	29	0	29	29	0
8	Tamil Nadu	Kamrajar Port (Ennore Port Trust)	14	0	14	14	0
		Tuticorin*	78	0	78	78	0
9	West	Kolkata Port	50	47	3	50	0
7	Bengal	Haldia Dock	104	0	104	104	0
		Total	781	58	720	779	2

Source: Individual Port Trusts

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads in Minor Ports - By Type of surface as on 31/03/2017 (State/UT-wise)

(in km)

Sl.No.	Name of	Name of the Ports	Total	Total Surfaced			Unsurfaced
	State/UT	Traine of the Lores	Length	W.B.M.	B.T./C.C	Total	
	2		(6+7)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2014 606	(4+5)	
1	2	3	4	5	6	7	8
		Bhavanapadu				17	
	Andhra	Kakinada	17	0			
1	Pradesh	Machilipatnam			17		0
		Nizampatnam	1				
		Tiracol					
		Chapora	1				
2	Goa *	Panajim	80	0	80	80	0
		Betul					
		Talpona					
		Jakhau					
		Mandavi	1				
		Mundra	1				
		Navalakhi	1				
		Okha	1				
		Bedi					
		Rozi	1				
		Porbandar					
		Veraval	1				
		Jafrabad	1				0
3	Gujarat *	Victor	154	7	147	154	
		Alang Ship Breaking	1				
		Yard					
		Bhavnagar					
		Dahej					
		Surat					
		Madalla					
		Dumas					
		Dholai					
		Onjal					
		Kosamba					
		Vizhinjam					
		Valiyathura					
		Kollam					
		Kochupilamooodu					
		Neendakara					
		Sakthikulangara					
		Pullikkada					
4	T7 1 4	Alappuzha	1 10		10	10	
4	Kerala*	Kodungallur	12	0	12	12	0
		Kayamkulam	1				
		Ponnani	1				
		Thalassery	1				
		Azhikkal	1				
		Kasaragod	1				
		Beypore	1				
		Kannur	1				

contd...

Sl.No.	Name of	Name of the Ports	Total		Surfaced		Unsurfaced	
	State/UT		Length (6+7)	W.B.M.	B.T./C.C	Total (4+5)	-	
1	2	3	4	5	6	7	8	
		Karwar						
		Old Mangalore						
		Belekeri						
		Honnavar						
5	 Karnataka	Bhatkal	15	0	15	7 15 29 10 8	5 15	0
3	Karnataka	Hangarakatta			15	13	8 8 0 17 0 1 1 0 0 1 0 0 1 0 0 1 0 1 0 1 0	
		Malpe						
		Tadadi						
		Padubidri						
		Kundapura						
6	Odisho*	Odisha* Gopalpur	46	13	16	20	17	
<u> </u>	Ouisiia	Dhamara	70	13	10		17	
		Port Blair						
	A & N	Campbell Bay		3	7	10	1	
7	Islands	Hut Bay	11					
	Islands	Rangat Bay						
		Car nicobar						
	Daman &	Daman	8	0	8	8	0	
8	Diu	Diu			Ü			
		D 1 1						
9	Puducherry	Puducherry	17	1	13	13	4	
		Karaikal						
		Cuddalore	-		0			
10	Tamil Nadu *	Nagapattinam	0	0		0	0	
		Rameswaram	-					
		Colachel	261	24	216	240	21	
	Total		361	24	316	340	21	

Source: State Maritime Boards incharge of Minor Ports

The roads under minor ports in Tamil Nadu are not under the purview of the state maritime boards but are under National Highways and State Highways.

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads in Railway Zones - By Type of Surface in India as on 31.03.2017 (State/UT-wise)

(in kms)

Sl.	Name of State/UT	Total		Surfaced		(in kms) Unsurfaced
No.	Name of State/O1	Length	W.B.M.	B.T./C.C	Total (4+5)	Unsurfaceu
110.		(6+7)	W.D.W.	B.1. /C.C	10tai (4+3)	
1	2	3	4	5	6	7
1	Andhra Pradesh	719	45	653	698	21
2	Arunachal Pradesh	4	0	2	2	2
3	Assam	615	36	540	576	39
4	Bihar	302	11	252	262	40
5	Chhattisgarh	404	38	339	377	27
6	Goa	10	0	10	10	0
7	Gujarat	8	1	4	5	3
8	Haryana	411	15	369	384	27
9	Himachal Pradesh	1457	8	1413	1421	36
10	Jammu & Kashmir	145	0	132	132	12
11	Jharkhand	594	100	432	532	62
12	Karnataka	358	48	285	333	24
13	Kerala	101	12	85	97	4
14	Madhya Pradesh	676	99	524	623	54
15	Maharashtra	941	197	590	787	154
16	Manipur	4	1	1	2	1
17	Meghalya	2	0	2	2	0
18	Mizoram	8	3	3	5	3
19	Nagaland	12	1	9	10	2
20	Odisha	605	58	523	581	25
21	Punjab	325	22	271	293	32
22	Rajasthan	697	82	575	657	40
23	Sikkim	0	0	0	0	0
24	Tamil Nadu	535	83	381	464	71
25	Telangana	720	51	667	718	2
26	Tripura	63	24	27	52	12
27	Uttarakhand	50	2	39	41	9
28	Uttar Pradesh	2306	340	1725	2065	241
29	West Bengal	1153	166	903	1069	84
30	Andaman & Nicobar Islands	0	0	0	0	0
31	UT Chandigarh	9	0	9	9	0
32	Dadra & Nagar Haveli	0	0	0	0	0
33	Daman & Diu	0	0	0	0	0
34	Delhi	223	64	159	223	0
35	Lakshadweep	0	0	0	0	0
36	Puducherry	1	0	1	1	0
	Total	13457	1506	10925	12431	1026

Source: Data based on Railway Zones which had reported.

Section - 7

PROJECT ROADS

Total & Surfaced Length of Project Roads as on 31.03.2017 (State/UT-wise)

(in km)

S.No.	Name of State/UT	Total	Surfaced
1	2	3	4
1	Andhra Pradesh	5165	2135
2	Arunachal Pradesh	4597	3377
3	Assam	20582	1571
4	Bihar	2559	508
5	Chhattisgarh	15738	7237
6	Goa	331	164
7	Gujarat	13095	5235
8	Haryana	134	134
9	Himachal Pradesh	3390	904
10	Jammu And Kashmir	18734	7324
11	Jharkhand	11469	6071
12	Karnataka	20239	8520
13	Kerala	14963	9198
14	Madhya Pradesh	36136	10652
15	Maharashtra	21723	8530
16	Manipur	891	851
17	Meghalaya	1058	229
18	Mizoram	1030	740
19	Nagaland	890	840
20	Odisha	25831	9562
21	Punjab	9650	2207
22	Rajasthan	10193	6419
23	Sikkim	814	703
24	Tamilnadu	9046	5599
25	Telangana	5012	2570
26	Tripura	1439	20
27	Uttarakhand	18626	15181
28	Uttar Pradesh	42186	14398
29	West Bengal	13080	4648
30	A & N Islands	201	128
31	Chandigarh	0	0
32	Dadra & Nagar Haveli	0	0
33	Daman & Diu	1	1
34	Delhi	52	52
35	Lakshadweep	0	0
36	Puducherry	41	33
	Total	328897	135743

Notes: The Project Roads comprise of Forest Roads, roads of Border Roads Organisation, Coal Departments, Electricity, Irrigation, Sugarcane Department and of Steel Authority of India Limited and National Mineral Development Corporation.

Length of Roads under Forest Departments - By Type of Surface in India as on 31.03.2017 (State/UT-wise)

(in km)

S.No	Name of State/UT	Total		Surfaced		Unsurfaced
	- 1000000 00 0000000 00 000000000000000	Length	W.B.M.	B.T./C.C	Total	
		(6+7)			(4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	4047	1133	64	1197	2849
2	Arunachal Pradesh*	1034	7	40	47	987
3	Assam*	18589	419	692	1111	17478
4	Bihar	2030	0	0	0	2030
5	Chhattisgarh	10868	5055	0	5055	5813
6	Goa	181	17	49	66	115
7	Gujarat *	3878	578	2052	2630	1248
8	Haryana	3	0	3	3	0
9	Himachal Pradesh*	2254	0	26	26	2228
10	Jammu &kashmir	11501	1308	35	1342	10158
11	Jharkhand	9442	1729	2470	4199	5243
12	Karnataka	9004	503	391	895	8109
13	Kerala	4759	875	476	1351	3408
14	Madhya Pradesh *	29798	2208	4946	7154	22644
15	Maharashtra	13592	4495	405	4900	8692
16	Manipur					
17	Meghalaya	746	66	33	99	647
18	Mizoram	42	6	12	18	24
19	Nagaland	249	0	249	249	0
20	Odisha	7575	1074	117	1190	6384
21	Punjab	707	0	0	0	707
22	Rajasthan *	5259	341	1578	1919	3340
23	Sikkim	6	0	4	4	3
24	Tamil Nadu *	3351	833	799	1632	1719
25	Telangana *	2252	611	160	771	1481
26	Tripura *	1345	0	11	11	1334
27	Uttarakhand	17332	13671	476	14148	3185
28	Uttar Pradesh	8601	1035	741	1775	6826
29	West Bengal	6203	751	400	1151	5052
30	Andaman & Nicobar Islands*	177	110	18	128	49
31	UT Chandigarh					
32	Dadra & Nagar Haveli					
33	Daman & Diu	1	1	0	1	0
34	Delhi					
35	Lakshadweep					
36	Puducherry					
	Total	174825	36824	16248	53072	121753

Source : State Departments of Forests

Blank cells refer to States and UTs who have not furnished data or have insignificant or nil forest roads

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads under Border Roads Organisation - By Type of Surface in India as on 31.03.2017 (State/UT-wise)

(in km)

S.No	Name of State/UT	Total		Surfaced		Unsurfaced
		Length	W.B.M.	B.T./C.C	Total	
		(6+7)			(4+5)	
1	2	3	4	5	6	7
1	Andhra Pradesh	0	0	0	0	0
2	Arunachal Pradesh	3563	69	3261	3330	233
3	Assam	298	21	236	257	41
4	Bihar	0	0	0	0	0
5	Chhattisgarh	0	0	0	0	0
6	Goa	0	0	0	0	0
7	Gujarat	0	0	0	0	0
8	Haryana	0	0	0	0	0
9	Himachal Pradesh	1037	20	783	803	234
10	Jammu & Kashmir	6811	509	5339	5849	963
11	Jharkhand	0	0	0	0	0
12	Karnataka	0	0	0	0	0
13	Kerala	0	0	0	0	0
14	Madhya Pradesh	0	0	0	0	0
15	Maharashtra	0	0	0	0	0
16	Manipur	891	0	851	851	40
17	Meghalaya	0	0	0	0	0
18	Mizoram	853	21	676	697	156
19	Nagaland	641	50	541	591	50
20	Odisha	0	0	0	0	0
21	Punjab	251	0	251	251	0
22	Rajasthan	3642	24	3537	3562	80
23	Sikkim	808	23	676	700	109
24	Tamil Nadu	0	0	0	0	0
25	Telangana	0	0	0	0	0
26	Tripura	12	0	0	0	12
27	Uttarakhand	719	0	539	539	180
28	Uttar Pradesh	0	0	0	0	0
29	West Bengal	122	0	122	122	0
	Andaman & Nicobar	24	0	0	0	24
30	Islands					
31	UT Chandigarh	0	0	0	0	0
	Dadra & Nagar	0	0	0	0	0
32	Haveli					
33	Daman & Diu	0	0	0	0	0
34	Delhi	0	0	0	0	0
35	Lakshadweep	0	0	0	0	0
36	Puducherry	0	0	0	0	0
	Total	19672	736	16814	17551	2121

Source : DG Border Roads

Blank Cells refer to States and UTs who have nil BRO roads

Length of Roads under coal fields/ coal units of Coal India Limited - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

No.	States/UTs (Names of Coal Fields)	Length (6+7)			Surfaced		
1	r ieius)	(0+7)	W.B.M.	B.T./C.C	Total (4+5)		
	2	3	4	5	<u>(4+3)</u> 6	7	
1	Andhra Pradesh	3	-	3	U	/	
1	Arunachal						
2	Pradesh						
3	Assam						
-	i. North Eastern Coalfields, Margherita- Tinsukia	51	2	42	44	7	
4	Bihar						
5	Chhattisgarh						
	i. South Eastern Coal Fields, Bilaspur	801	76	692	768	33	
6	Goa						
7	Gujarat						
8	Haryana						
9	Himachal Pradesh						
10	Jammu & Kashmir						
11	Jharkhand						
	i. Bharat Coking Coal Ltd., Dhanbad	546	48	415	463	82	
	ii. Eastern Coal Fields Ltd.	52	14	26	40	12	
	iii. Central Coal Fields, Ranchi	697	41	646	687	10	
12	Karnataka						
13	Kerala						
14	Madhya Pradesh						
	i. Western Coal Fields	207	11	196	207	0	
	ii. Northern Coal fields Ltd. Singarauli	301	26	212	238	64	
15	Maharashtra						
	i. Western Coal Fields Ltd, Nagpur	536	172	319	492	44	

Length of Roads under coal fields/ coal units of Coal India Limited - By Type of Surface as on 31.03.2017 (State/UT-wise)

(in km)

Sl.	Name of	Name of Total Surfaced				Unsurfaced	
No.	States/UTs	Length					
	(Names of Coal	(6+7)	W.B.M.	B.T./C.C	Total		
	Fields)				(4+5)		
1	2	3	4	5	6	7	
16	Manipur						
17	Meghalaya						
18	Mizoram						
19	Nagaland						
20	Odisha						
	i. Mahanadi Coal						
	Fields.	315	96	200	297	18	
	Sambalpur						
21	Punjab						
22	Rajasthan						
23	Sikkim						
24	Tamil Nadu						
25	Telangana						
	i. Singareni Coal						
	field,	906	70	833	903	3	
	Kothagudem,	900	/0	633	903	3	
	Bhadradri Dist.						
26	Tripura						
27	Uttarakhand						
28	Uttar Pradesh						
29	West Bengal						
	i. Eastern						
	Coalfields	284	32	234	266	18	
	Limited,	204	32	254	200	10	
	Burdwan						
30	Andaman &						
	Nicobar Islands						
31	UT Chandigarh						
	Dadra & Nagar						
32	Havelli						
33	Daman & Diu						
34	Delhi						
35	Lakshadweep						
36	Puducherry						
Total		4695	588	3816	4404	291	

Note: Western Coal fields are located in Maharashtra and in Madhya Pradesh.

Eastern Coal Fields are located in Jharkhand & in West Bengal.

Length of Roads under Electricity Departments of States/UTs - By Type of Surface in India as on 31.03.2017

(in km)

S.No	Name of State/UT	Total	Surfaced			Unsurfaced	
		Length (6+7)	W.B.M.	B.T./C.C	Total (4+5)		
1	2	6	4	5	3	7	
1	Andhra Pradesh	261	65	183	248	13	
2	Arunachal Pradesh					1	
3	Assam	113	21	77	98	15	
4	Bihar	529	148	360	508	21	
5	Chhattisgarh	169	27	140	167	2	
6	Goa	0	0	0	0	0	
7	Gujarat	449	234	206	440	9	
8	Haryana	131	9	122	131	0	
9	Himachal Pradesh	99	35	40	75	24	
10	Jammu & Kashmir	0	0	0	0	0	
11	Jharkhand	181	26	153	179	2	
12	Karnataka *	1,255	107	1,138	1,245	10	
13	Kerala	252	47	186	233	19	
14	Madhya Pradesh	1,127	421	652	1,073	55	
15	Maharashtra *	343	183	124	307	36	
16	Manipur	0	0	0	0	0	
17	Meghalaya	132	6	111	117	15	
18	Mizoram *	135	3	21	25	110	
19	Nagaland	0	0	0	0	0	
20	Odisha *	70	37	31	68	2	
21	Punjab	449	28	393	421	28	
22	Rajasthan	388	11	375	386	2	
23	Sikkim	0	0	0	0	0	
24	Tamil Nadu	837	239	523	762	75	
25	Telangana *	128	22	89	111	17	
26	Tripura	0	0	0	0	0	
27	Uttarakhand *	164	4	143	147	17	
28	Uttar Pradesh	23	0	18	18	5	
29	West Bengal	216	8	161	169	47	
30	Andaman & Nicobar	0	0	0	0	0	
21	Islands		0				
31	UT Chandigarh	0	0	0	0	0	
32	Dadra & Nagar Haveli	0	0	0	0	0	
33	Daman & Diu	0	0	0	0	0	
34	Delhi	52	1	51	52	0	
35	Lakshadweep	0	0	0	0	0	
36	Puducherry	0	0	0	0	0	
	Total	7,505	1,682	5,297	6,979	525	

Source: State Departments of Electricity

Blank cells refer to States and UTs who have not furnished data or have insignificant or nil electricity roads

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads under Irrigation Departments of States/UTs - By Type of Surface in India as on 31.03.2017

(in km)

S.No	Name of State/UT Total Surfaced					Unsurfaced
		Length (6+7)	W.B.M.	B.T./C.C	Total (4+5)	Total
1	2	3	4	5	6	7
1	Andhra Pradesh	848	434	249	683	165
2	Arunachal Pradesh					
3	Assam *	1,531	51	10	61	1,470
4	Bihar					
5	Chhattisgarh	3,023	111	296	407	2,616
6	Goa	151	18	80	98	53
7	Gujarat	8,768	1,340	825	2,165	6,603
8	Haryana	0	0	0	0	0
9	Himachal Pradesh	0	0	0	0	0
10	Jammu & Kashmir *	422	133	0	133	289
11	Jharkhand					
12	Karnataka	9,731	4,425	1,825	6,250	3,481
13	Kerala *	9,952	1,260	6,354	7,614	2,338
14	Madhya Pradesh	4,671	1,243	715	1,959	2,712
15	Maharashtra	7,234	1,804	1,017	2,821	4,413
16	Manipur					
17	Meghalaya *	180	6	7	14	166
18	Mizoram					
19	Nagaland *					
20	Odisha	17,387	4,429	3,113	7,542	9,845
21	Punjab	8,243	66	1,469	1,535	6,708
22	Rajasthan *	904	138	415	552	352
23	Sikkim					
24	Tamil Nadu	3,086	322	1,111	1,433	1,653
25	Telangana *	1,726	203	582	785	941
26	Tripura	82	0	9	9	72
27	Uttarakhand *	406	18	325	343	63
28	Uttar Pradesh	20,492	0	3,049	3,049	17,443
29	West Bengal	5,625	1,608	716	2,325	3,301
	Andaman &				<u> </u>	
30	Nicobar Islands					
31	UT Chandigarh					
32	Dadra & Nagar Haveli					
33	Daman & Diu					
34	Delhi					
35	Lakshadweep					
36	Puducherry					
	Total	1,04,462	17,610	22,169	39,779	64,684

Source : State Departments of Irrigation

Blank cells refer to States and UTs who have not furnished data or have insigificant or nil irrigation roads

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads under Sugarcane Departments of States/UTs - By Type of Surface in India as on 31.03.2017

(in km)

S.No	Name of State/UT Total Surfaced				(in kr Unsurfaced	
242.10	2 (0.1.1.2 0.2 0.3 0.3 0.3 0.3	Length	W.B.M.	B.T./C.C	Total (4+5)	
		(6+7)			,	
1	2	3	4	5	6	7
1	Andhra Pradesh					
2	Arunachal Pradesh					
3	Assam					
4	Bihar					
5	Chhattisgarh					
6	Goa					
7	Gujarat					
8	Haryana					
9	Himachal Pradesh					
10	Jammu & Kashmir					
11	Jharkhand					
12	Karnataka	108	0	0	0	108
13	Kerala					
14	Madhya Pradesh					
15	Maharashtra					
16	Manipur					
17	Meghalaya					
18	Mizoram					
19	Nagaland					
20	Odisha					
21	Punjab					
22	Rajasthan					
23	Sikkim					
24	Tamil Nadu*	1,676	0	1,676	1,676	0
25	Telangana					
26	Tripura					
27	Uttarakhand	4	0	4	4	0
28	Uttar Pradesh	13,069	0	9,555	9,555	3,514
29	West Bengal					
30	Andaman & Nicobar					
	Islands					
31	UT Chandigarh					
32	Dadra & Nagar Haveli					
33	Daman & Diu					
34	Delhi					
35	Lakshadweep					
36	Puducherry	41	5	28	33	8
_	Total	14,899	5	11,264	11,269	3,630

Source : State Sugarcane Departments

Blank cells refer to States and UTs who have not furnished data or have insigificant or nil Sugarcane authority roads

^{*} Figures is as on 31/03/2016-Data not received.

Length of Roads under SAIL & NMDC - By Type of Surface in India as on 31.03.2017

(in km)

S.No	Name of State/UT	Total		Surfaced		Unsurfaced	
		Length (6+7)	W.B.M.	B.T./C.C	Total (4+5)		
1	2	3	4	5	6	7	
1	Andhra Pradesh*	8	1	6	7	2	
2	Arunachal Pradesh						
3	Assam						
4	Bihar						
5	Chhattisgarh*	877	11	830	840	37	
6	Goa						
7	Gujarat						
8	Haryana						
9	Himachal Pradesh						
10	Jammu & Kashmir						
11	Jharkhand*	551	12	491	502	49	
12	Karnataka*	142	14	117	131	11	
13	Kerala						
14	Madhya Pradesh*	33	10	12	22	10	
15	Maharashtra*	18	3	8	11	7	
16	Manipur						
17	Meghalaya						
18	Mizoram						
19	Nagaland						
20	Odisha*	484	13	453	465	19	
21	Punjab						
22	Rajasthan						
23	Sikkim						
24	Tamil Nadu*	96	0	96	96	0	
25	Telangana						
26	Tripura						
27	Uttarakhand						
28	Uttar Pradesh						
29	West Bengal*	630	30.4	584.91	615	14.3	
30	Andaman & Nicobar Islands				-	1110	
31	UT Chandigarh		†				
32	Dadra & Nagar Haveli						
33	Daman & Diu		†				
34	Delhi						
35	Lakshadweep						
36	Puducherry						
	Total	2,839	94	2,596	2,690	149	
	I A VIII	_ _	, JT		40070	17/	

Sources:

- 1. Steel Authority of India Limited
- 2. National Mineral Development Corporation

Blank cells refer to States and UTs who have not furnished data or have insigificant or nil SAIL/ NMDC roads

^{*} Figures is as on 31/03/2016-Data not received.

Section - 8

MISCELLANEOUS

State/UT-wise details of NHs in country as on 31.03.2017

Sl. No.	Name of State	National Highway No.	Total Length (in km)
1	Andhra Pradesh	4, 5, 7, 9, 16, 18, 18A, 26 New, 42 New, 63, 163 New, 67 Ext. New, 150 New, 167 New, 167A New, 167B New, 205, 214, 214A, 219, 221, 222, 234, 326 New, 326A New, 67 New, 71 New, 161 New, 340 New, 340C New, 353 New, 363 New, 365 New, 365B New, 516D New, 516E New, 544D New, 563 New, 565 New, 716 New, 765 New	6,468
2	Arunachal Pradesh	52, 52A, 153, 229, 52B Ext, 37 Ext., 315A New, 713 New, 513 New, 313 New, 113 New & 713A New	2,513
3	Assam	6 New, 31, 31B, 31C, 36, 37, 37A, 38, 39, 44, 51, 52, 52A, 52B, 53, 54, 61, 62, 117A New, 127B New, 127E New, 151,152, 153, 154, 315A New, 127C New & 127D New, 208A New, 329 New, 329A New, 427 New, 627 New, 702 New, 702B New, 702C New 702D, 715A New	3,845
4	Bihar	2, 2C, 19, 20Ext New 28, 28A, 28B, 30, 30A, 31, 57, 57A, 77, 80, 81, 82, 83, 84, 85, 98, 99, 101, 102, 103, 104, 105, 106, 107, 110, 120 New, 122A New, 131A New, 133 New, 133B New, 219 New, 227 A New, 327A New, 327 Ext. New, 333 New, 333A New, 333B New, 527A New, 527C New, 727 A New, 766C New, 120 New	4,839
5	Chandigarh	5 New	15
6	Chhattisgarh	6, 12A, 16, 43, 45Ext New, 78, 111, 130A New, 130B New, 130C New, 130D New, 149B New, 163A New, 200, 202, 216, 217, 221, 343 New, 930New	3,232
7	Delhi	9 New, 19 New, 44 New, 48 New, 148 New	69
8	Goa	748 New, 66 New, 366 New & 566 New	262
9	Gujarat	NE-I, 6, 8, 8A, 8B, 8C, 8D, 8E, 14, 15, 56 New, 58 New, 58 Ext New, 59, 113 228, 251 New, 753B New, 848 & 848A New, 848B New, 341 New, 68Ext. New, 147 New, 147A New, 168 New, 168A New, 351 New, 927D New & 953 New	5,017
10	Haryana	1, 2, 8, 10, 11 New, 21A, 22, 54 New, 64, 65, 71, 71A, 72, 73, 73A, 71B, 148B New, 236, 248 A New, 254 New, 334B New, 352A, 444A New, 703 New, 709 Ext New, 709A New, NE-II	2,622
11	Himachal Pradesh	1A, 3 New, 20, 20A, 21, 21A, 22, 70, 72, 72B, 88, 73A, 154A New, 305 New, 503 New, 503A New, 503 Ext. New, 505 New, 505A New705 New, 907 A New	2,642
12	Jammu & Kashmir	1A, 1B, 1C, 1D, 3 New, 144 New, 144A New, 301 New, 444 New, 501 New, 701 New, 244 New	2,601
13	Jharkhand	2, 6, 20 Ext New, 23, 31, 32, 33, 43 New, 75, 78, 80, 98, 99, 100, 114A New, 133 New, 133A New, 133B New, 143 New, 143A New, 220 New, 333 New, 333A New, 343 New & 419 New	2,654
14	Karnataka	4, 4A, 7, 9, 13, 17, 48, 50 New, 63, 67, 67 New, 150 New, 150 Ext. New, 150A New, 160 New, 161A New, 166E New, 167 New, 169A New, 173 New, 206, 207,209, 212, 218, 234, 275 New, 367 New, 548B New, 561A New, 752K New, 766C New	6,761
15	Kerala	17, 47, 47A, 47C, 49, 183A New, 185 New, 208, 212, 213, 220	1,812
16	Madhya Pradesh	3, 7, 12, 12A, 25, 26, 26A, 26B, 27 New, 34 New, 43Ext. New, 45 Ext. New, 56 New, 59, 59A, 69, 69A, 75, 76, 78, 86, 92,135B New, 146B New, 161G New, 339B New, 346 New, 347A New, 347B New, 347C New, 543 New, 548C New, 552Ext. New, 752B New, 752C New, 752G New, 753L New, 927A New, 943 New	7,864

Annexure 8.1 (contd.)

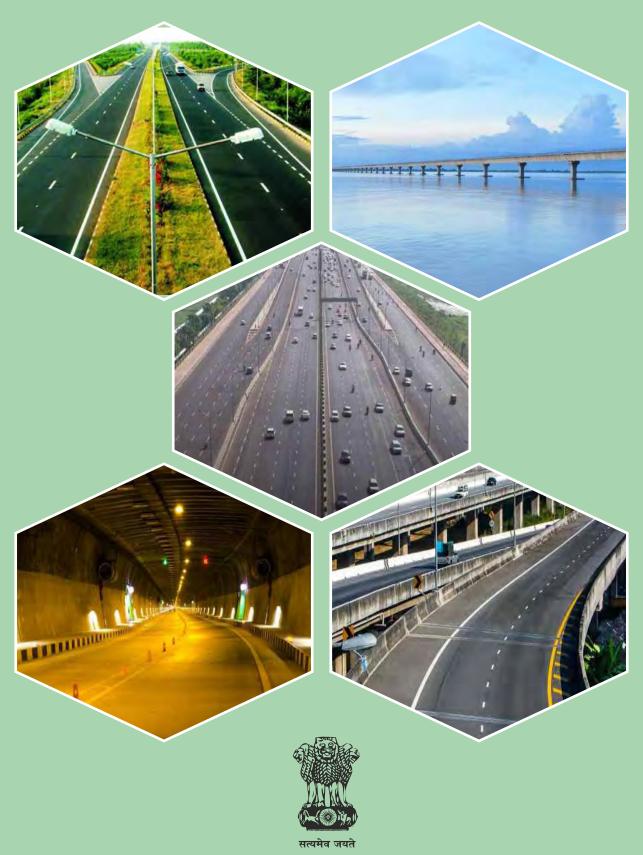
		Total	114,158
35	Daman & Diu	848B New, 251 New	22
34	Dadra & Nagar Haveli	848A New	31
33	A & N Islands	4 New	331
32	West Bengal	2, 2B, 6, 10 New, 31, 31A, 31C, 31D, 32, 34, 35, 41, 55, 60, 60A, 80, 81, 114A New, 116B New, 117, 131A New, 133A New, 317A New, 327B, 419 New, 512 New, 717 New.	2,956
30	Uttarakhand	9 New, 34 New, 58, 72, 72A, 72B, 73, 74, 87, 94,107A New, 108, 109, 123, 119, 121, 125, 309A New, 309B New, 334A, 707A New	2,714
		27, 28, 28B, 28C, 29, 34 New, 56, 56A, 56B, 58, 72A, 73, 74, 75, 76, 86, 87, 91, 91A, 92, 93, 96, 97, 119, 135B New, 219 New, 227 A New, 231, 232, 232A, 233, 235, 330 New, 330A New, 330 B New, 334 New, 334B New, 334C New, 552 Ext. New, 709 A New, 727 A New, 730 New, 730A New, 731 A New, 931 New, 931A New & NE-II	
31	Uttar Pradesh	2, 2A, 3, 123 New (3A Old), 7, 11, 12A, 19, 21 New, 24, 24A, 24B, 25, 25A, 26,	8,701
29	Tripura	765 New, 50 New, 563 New, 365A New 8 New, 108 New, 108A New, 208 New, 208A New, 108B New	806
28	Telangana	7, 9, 16, 63 New, 221, 216A New, 222, 326 New, 161 New, 161B New, 163 New, 167 New, 150 New, 353B New, 363 New, 365 New, 365B New, 565 New,	3,395
27	Tamil Nadu	4, 5, 7, 7A, 45, 45A, 45B, 45C, 46, 47, 47B, 49, 66, 67, 68, 205, 207, 208, 209, 210, 219, 220, 226, 226Ext., 227, 230, 234, 381 New, 532 New	5,006
26	Sikkim	10 New, 310 New, 310A New, 510 New, 710 New, 717A New, 717B New	463
25	Rajasthan	3, 11New, 123 New, 8, 11, 11A, 11B, 11C, 12, 14, 15, 25 Ext. New, 54 New, 65, 458 New, 71B, 76, 58 Ext New, 758 New, 79, 79A, 89, 90, 113, 112, 114, 116,148B New,148D New, 158 New, 162A New, 162 Ext. New, 168 New, 168A New, 248A New, 325 New, 709 Ext. New, 927A New	7,906
24	Punjab	1, 1A, 10, 15, 20, 21, 22, 64, 70, 71, 72, 95, 103 A New, 154A New, 205A New, 254 New, 344A New, 344B New, 503 Ext. New , 503A New, 703 New 703A New, 754 New & 148B New	2,769
23	Puducherry	45A, 66	64
22	Odisha	5, 5A, 6, 20 New, 23, 43, 55 New, 60, 130C New, 153B New, 157 New, 200, 201, 203, 203A, 215, 217, 220 New, 224, 326 New, 326 A New	4,838
21	Nagaland	36, 39, 61, 150, 155, 129 New, 229 New, 329A New, 702 New, 702A New & 702B New, 702D New	1,173
20	Mizoram	6 New, 44A, 54, 54A, 54B, 102B New, 150, 154, 302 New, 306 A New, 502A New	1,381
19	Meghalaya	40, 44, 217 New & 127B New	1,204
18	Manipur	39, 53, 102 New, 102A New, 102B New, 102 C New, 129A new, 108A New, 129 New, 137 New, 137A New, 150, 155, 702A New	1,746
17	Mana ashu a	Ext. New, 161 New, 161A New, 161E New, 161G New, 161H New, 204, 211, 222, 247 New, 348 New, 848 New, 160 New, 166 New, 166A New, 166E New, 266 New, 339B New, 347A New, 347C, 348 New, 348A New, 353B New, 353C New, 353D New, 353E New, 353I New, 353J New, 353K New, 361 New, 361B New, 361C New, 363 New, 361H New, 516A New, 543 New, 547E New, 548 New, 548A New, 548B New, 548C New, 548D New, 548E New, 561 New, 752E New, 752G New, 752H New, 752I New, 752K New, 753 New, 753A New, 753B New, 753E New, 753F New, 753J New, 753L New, 753M New, 848A, 930 New, 930D New, 953 New, 965 New, 965C New, 965G New	15,457
17	Maharashtra	3, 4, 4B, 4C, 6, 7, 8, 9, 13, 16, 17, 26B, 50, 50New, 63 New, 69, 130D New, 150	15,437

TERMS AND DEFINITIONS

Sl.	Terms	Definitions
No.	OADC	
	OADS	
1.	Track	A path on the land much trodden by persons and animals.
2.	Cart Track	A land way for use by carts.
3.	Road	A way on land with a right of way for the public.
4.	Urban Road	A road within the limits of the area of Municipality, Military Cantonment, Port or Railway Authority.
5.	Project Road	A road within the limits of the area of a development project of a public authority for the exploitation of resources such as forest, irrigation, electricity, coal, sugarcane, steel, etc.
B. H	IGHWAY CLAS	SSES BY FUNCTION
1.	Expressways	Expressways offer superior highway facility with higher specifications. It provides for more lanes, better surface, divided carriageway, controlled access grade separations at cross-roads and fencing etc. Expressways permits only fast moving vehicles and are meant to carry through traffic. The Expressway may be owned by the Central Government or State Government depending upon whether the route is a National Highway or a State Road.
2.	National Highways	The arterial roads of the country for inter-state movements of goods and passengers. They traverse the length and width of the country connecting the National and State capitals, major ports and rail junctions and link up with border roads and foreign highways.
3.	State Highways	The arterial roads in a State for inter-district movements. They traverse the length and width of a state connecting the state capital, district headquarters and important towns and cities and link up with the National Highways and adjacent State Highways.
4.	District Roads	The branch roads of the State and National Highways to serve as the main roads for intra-district movements. They traverse the length and breadth of a district to connect the area of production and marketing in the district to one another and to the National Highways.
5.	Village Roads	These roads serve as the feeder roads as well as the roads for inter village movements. They pass through rural areas connecting the village to one another and to the nearest road of higher category viz. District Roads, State Highways, National Highways, etc.

TERMS AND DEFINITIONS

C. HIGHWAY CLASSES BY WIDTH		
1.	Below	Surfaced roads having clear carriageway width of below 3.75 M.
	Standard	
	Single	
	Lane(BSSL)	
2.	Standard	Surfaced roads having clear carriageway width between 3.75 M and below
	Single	7.0 M.
	Lane(SSL)	
3.	Standard	Surfaced roads having clear carriageway width between 7.0 M and below
	Double Lane	10.5 M.
	(SDL)	
4.	Standard Multi	Surfaced roads having clear carriageway width of 10.5 M and above.
	Lane (SML)	
D. ROAD SURFACE		
1.	Bitumen or Tar	A type of construction in which the fragments of coarse aggregate are bound
	Macadam	together by bitumen applied either premix or grouting method.
2.	Bitumen	A type of construction in which coarse and fine mineral aggregates are mixed
	Concrete	with bitumen and laid not to the desired thickness.
	Surfacing	
3.	Black Top	The surface of roads made with bitumen as a binder.
	Surface	
4.	Brick Paving	A paving composed of bricks laid in regular courses.
5.	Cement Bound	A surface in which a matrix of a cement sand mixture is interposed between
	Macadam	two layers of road metal spread on the road and the whole mass watered and
		consolidated so that the matter works into the interstices of the road metal to
		produce a compact mass.
6.	Cement	A surface obtained by placing and consolidating cement concrete to required
	Concrete	thickness.
7.	Earth Road	A road with the carriageway composed of natural soil.
8.	Gravel Road	A road with the carriageway composed of a consolidated layer of gravel.
9.	Water Bound	A type of surfacing in which stone fragments are first inter locked by rolling
	Macadam	and then bound with smaller stone gravel etc. which enforced into the
		intersection by brimming, watering and rolling.
10.	Motorable	(i) For Plain Areas: Surfaced or unsurfaced road of minimum 3.0 M
		Carriageway width is motorable.
		(ii) For Hilly Areas: Surfaced or unsurfaced road of minimum 3.0 M
		Carriageway width having no horizontal curve of radii less than 14 M
		and grade not steeper than 7% is motorable. A bridle path is non
		motorable.
L	1	



GOVERNMENT OF INDIA MINISTRY OF ROAD TRANSPORT & HIGHWAYS TRANSPORT RESEARCH WING

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