



A Geographical Study of Road Transportation in Maharashtra State

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Introduction:

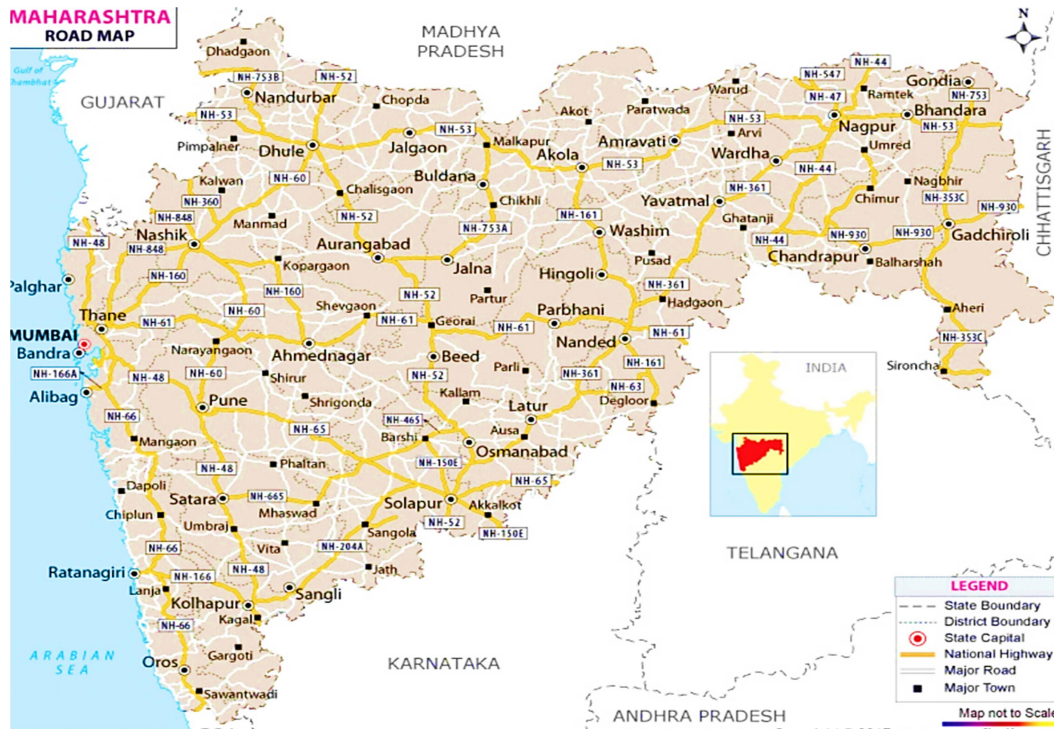
It is important to understand the structure of transportation of a region, as the Transportation is also known as lifeline of the economy, we should be more concerned about the quality of the transportation systems available for the public. The invention of wheels changed the whole idea of transportation. In the 21st century, Efficient transportation system ensures the growth of fundamental sectors like Education, Health, Agriculture, Industrialization, Business, etc. The term transportation could be used for transporting anything like Human, Animals as well as Goods (non-living things) where the mode of transportation could be different. Land, air and water are the main three modes of transportation, which includes Railways, Roadways, Waterways, Airways, etc. Pipelines and cable transport, Space transport are also there as modes of transportation. But generally, we count the Transportation term for moving people, animal and goods from one place to another place visibly. Every mode of transportation has its own technological solution and requires different environment like Infrastructure, Vehicles, Operators, etc. Maharashtra is the second most populated state in India, and third largest state in terms of land area. There are three prominent modes of public transportation available, that is Roadways, Railways and Airways. The structure of transportation in Maharashtra, according to the medium of transportation, the present research paper reveals "The Road Transportation in Maharashtra".

Objectives:

- 1) To study the concept of Transportation
- 2) To study various kinds of roadways in Maharashtra state.

About Maharashtra State:

Maharashtra is located in west region of India, occupies 3,07,713 sq km of area which is third largest state in the country. The state is gifted with 720km of coastline along Arabian sea. Goa, Andhra Pradesh, Chhattisgarh, Gujrat, Karnataka, and Madhya Pradesh are the neighboring states with borders. Physiographical Maharashtra could be divided in three natural divisions, the Coastal strip (Konkan), The Sahyadri (Western Ghats) & Deccan Peninsular. Most of the population of state rely on agriculture (about 54.78%). Therefore, roads are the most convenient mode of transportation for their education, health and Livelihood or Business. Maharashtra has an extensive road network that includes national and state highways, major district roads, city roads, and village streets. Over 80% of travelers and 60% of cargo traffic utilize roads as the dominant transportation mode.



Maharashtra’s road network aggregates almost 3,09,541 km, where the National highways passing through Maharashtra measure about 18,459 km, connecting to important cities across all the states. Also, Maharashtra is in the first place in total National highways available in the country according to length. As of 2020, Maharashtra has India’s biggest road network based on total state highway length (22.14%).

Maharashtra Road Network by Roads Category as of 2022:

According to the categories of road, lets study the important National and State highways and Expressways present in Maharashtra.

Road Category	National Highways	Major State Highways	State Highway	Major District Roads	Other District Roads	Rural Roads	Total
Length (Km)	18,459	3,862	30,588	52,637	58,116	1,45,879	3,09,541
Distribution in (%)	5%	1%	10%	17%	19%	48%	100%

(Source: Public Works Department, Government of Maharashtra)

National Highways:

Maharashtra state has good road network, there are 102 national highways in the state. National highways are constructed by the Central Government of India and it connects important State Capitals, major cities, Rail Junctions and Ports as well as link up with border roads and foreign highways. National Highways are also known as backbone of road infrastructure. National Highways Authority of India is mainly responsible for development, maintenance and management of national highways. The total length of national Highways (Including Expressways) in the Country is 1,32,499 km.

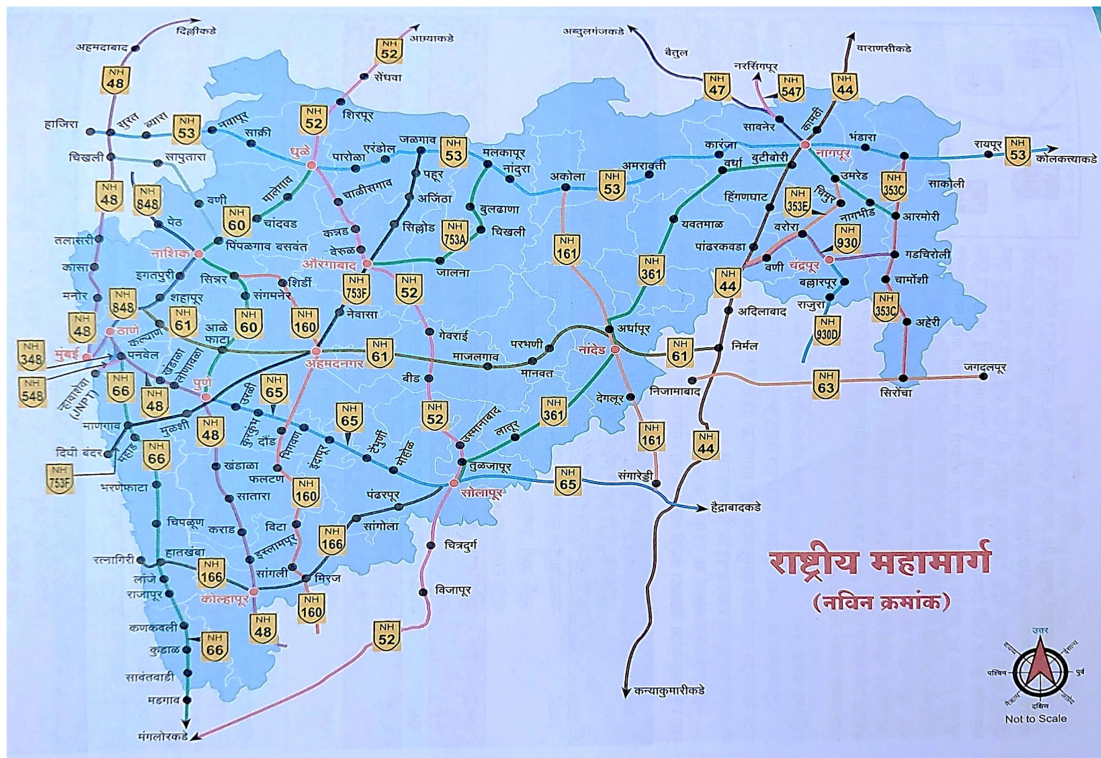
**Important National highways in Maharashtra:**

Sr. No.	National highway	Length (Km)	Route
1	NH 44	268.4	MP Border – Bandra – Mansar – Nagpur – Butibori – Sonegaon – Jamb – Hinganghat – Wadner – Pohna – Wadki – Kinhi- Andhar Kawada – Bori – Andhra Pradesh Border.
2	NH 48	501	Gujarat Border – Amgaon – Talasar – Karakhu – Mandvi – Thane – Boriyali – Malad – Andheri – Greater Mumbai- Thane- Mumbra – Panvel – Chauk – Lonavla – Pune – Khed – Bhatgaon – Khandla – Satara – Valase – Borgaon – Umbraj – Karad – Itakare – Wadgaon – Kolhapur – Kagal – Karnataka Border
3	NH 52	573.4	Karnataka Border-Nanandi-Hattur-Solapur – Tuljapur – Osmanabad – Terkhed – Samarkundi – Pali – Beed – Pachegaon – Gevrai – Warigodri – Adul – Aurangabad – Daulatabad – Khuldabad – Ellora – Kannad – Bhamarvadi – Chalisgaon – Vinchur – Dhule-Songir-Nardana-Shivpur0Sangvi-MP Border
4	NH 53	797	Gujarat Border – Visarwadi – Kondaibari – Sakri – Shevali – Kusumbe – Dhule – Parola – Erandol – Varad – Jalgaon – Bhusawal – Edalabad – Malkapur – Nandura – Khamgaon – Balapur – Akola – Murtazpur – Amravati – Nandgaon – Panjara – Nagpur – Bhandara – Lakhni – Sakoli – Duggipar – Deori – Chhattisgarh Border
5	NH 61	605.7	Kalyan (NH-3) – Murbad – Ghatghar – Ale – Ahmadnagar – Shivgaon – Gevrai – Pachegaon – Majalgaon – Pathri – Prabhani – Nanded – Bhokar – Andhra Pradesh Border
6	NH 66	475.2	Panvel – Pen – Negothane – Indapur – Kolad – Mangaon – Dasgaon – Mahad – Ambavli – Poladpur – Khed – Asurda – Ankhali – Udgi – Lanja – Vaked – Rajpura – Wargaon – Nandgaon – Kankavli – Kasal – Vengurla – Goa Border
7	NH 160	440.2	Junction with NH-60 near Sinnar – Shirdi, Ahmadnagar, Kolgaon, Daund, Phaltan, Dahiwandi, Vita, Tasgaon, Miraj – Chikhodi -junction with NH-48
8	NH 161A	489.4	Junction with NH-548C Akot, Patsul, Bhod- Akola, Barshi Takli, Shelu bazaar, Mangrulpir, Manora, Digras, Arni, Dhanoda (Overlap), Mahur, Sarkhani, Kinvat, Islapur, Himayatnagar, Bhokar, Mudkhed (Overlap), Nanded, Osmanpur, Kautha, Mukhed, Barhali, Mukrabad, Lakhmapur, Sawarmal, Nangarga, vazzar -junction with NH-161C near Aurangabad
9	NH 166 E	289.4	Junction with NH-166C near Guhagar – Chiplun, Patan, Karad, Kadegaon, Vita, Khanapur, Nagaj, Jat -Karanataka Border.
10	NH 361	478.6	Solapur – Nanded – Yavatmal – Boti Bori on NH-44

Sr. No.	National highway	Length (Km)	Route
11	NH 548B	404	Junction with NH-548C near Mantha – Deogoan Fata, Selu, Pathari, Sonpeth, Parali Vaijnath, Ambajogai, Renapurphata, Latur (NH-361), Ausa, Omarga, Yenegur, Murum, Alur, Akkalkot, Nagasur -junction with NH-52 near Bijapur (Vijapur)
12	NH 548C	589.8	Junction with NH-48 near Satara-Koregaon, Mhaswad, Malshiras, Akluj – Tembhurni – Kurudwadi, Barshi, Yermala, Kalamb, Kaij, Dharur, Majalgaon – Partur – Watur – Mantha – Lonar – Mehkar – Janephal – Khamgaon – Shegaon– Akot – Anjangaon – Wadgaon – junction with NH-47 near Baitul
13	NH 153F	538.8	Junction with NH-53 nea Jalgaon – Pahur, Ajanta, Sillod, Phulambri, Aurangabad, Newasa, Wadala Bahiroba, Ghodegaon, Ahmednagar, Shirur, Ranjangaon, Shikrapur, Pune, Paud, Mulshi, Tamhini, Nijampur, Mangaon, Mhasla – Dighi Port on NH-166C
14	NH 752 I	406.5	Junction with NH-752G near Kopargaon -Vaijapur, Lasur, Aurangabad, Jalana Watur, Mantha, Jintur, Aunda Nagnath, Basmat, Ardhapur, Tamsa, Himayatnagar, Dhanki Phulsawangi, Mahur -junction with NH-361 near Dhanoda

(Source - Annual Report 2022-23, Ministry of Road and Highways)

Network of National Highways in Maharashtra

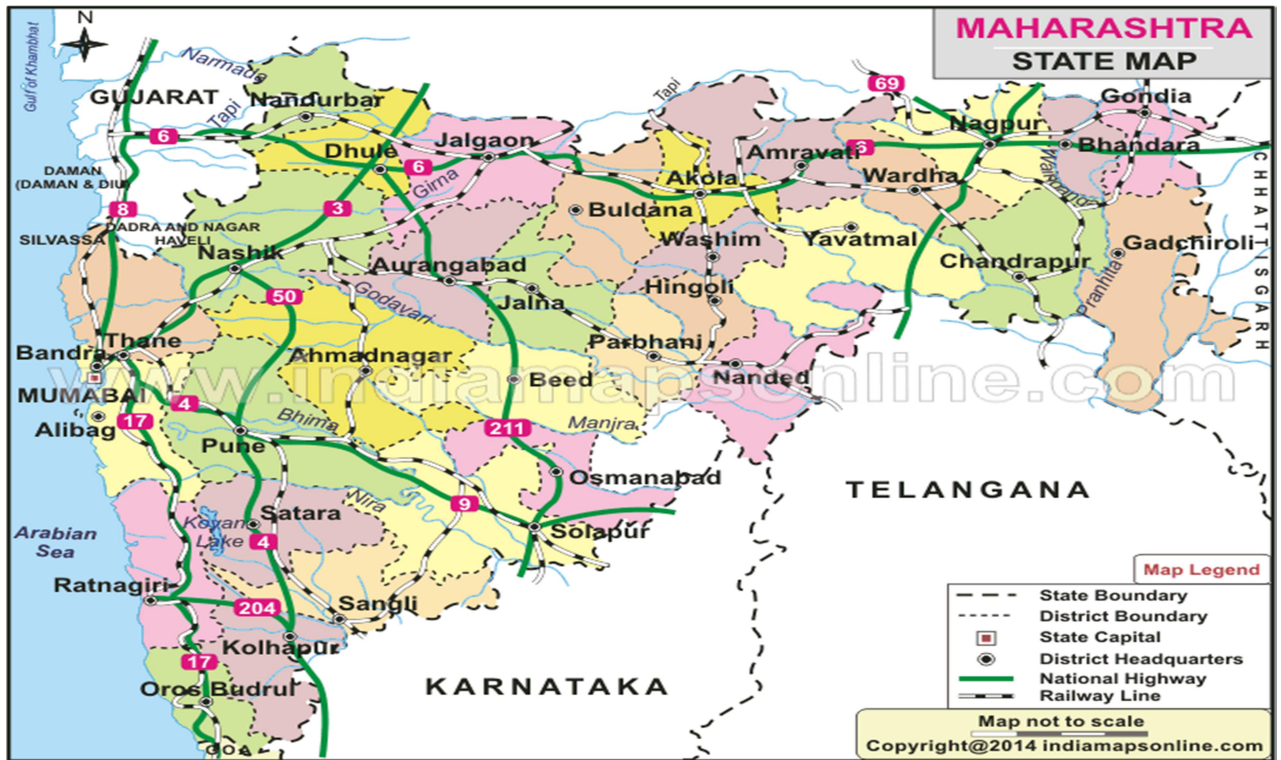


State Highways:

The highways which link up the major districts and important cities in the state, that are mainly constructed and maintained by Maharashtra Public Works Department (MPWD) are known as State highways. State highways not only connects major cities but also important National Highways in the state, that is essential for Agriculture, Business and Industrial mobilities. Maharashtra has done good job in building good network of roads as Maharashtra has the longest network of State Highways (34,450 km). The Maharashtra Rural Road Development Association, under the Rural Development and Panchayat Raj Department, is responsible for developing and managing District Roads as well as Rural roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY), the Prime Minister’s rural road program. District and local administrations manage other rural and village roads.

State Highways in Maharashtra State

Sr. No.	State Highway	Districts connected	Route
1	MH MSH 1	(Dhule, Nandurbar)	Songir – Chimthane – Dondaicha – Nimgul – Shahada – Dhadgaon – Kathi – Molgi – Wadifali – Uptill Maharashtra – Gujarat state border.
2	MH MSH 71	(Pune, Solapur, Sangli)	Via NH 9 From Indapur – Vadapuri – Bavda – Akluj – Velapur – Maloli – Falwani – Kolegaon – Mahud – Shivane – Sangole – Kadlas – Sonand Uptill – Jath,
3	MH MSH 2	(Thane, Ahmednagar, Beed)	From Kalyan – Murbad – Ale Phata Uptill Ahmednagar - Pathrdi – Beed
4	MH MSH 3	Nagpur (Osmanabad, Latur, Nanded, Yavatmal, Wardha, Nagpur)	Via NH 211 From Solapur – Tuljapur – Ausa – Latur – Chakur – Ahmadpur – Nanded – Umardhed – Mahagaon – Arni- Yavatmal – Wardha – Uptill Butibori – Via NH 7
5	MH MSH 6	(Amravati, Yavatmal, Chandrapur)	Maharashtra – Madhya Pradesh border – Paratwada – Amravati – Yavatmal – Chandrapur
6	MH MSH 8	(Aurangabad, Jalgaon, Nandurbar)	Aurangabad – Ajanta -Fardapur – Pahur – Jamner – Bodwad – Muktainagar -Maharashtra – Madhya Pradesh state border.
7	MH MSH9	(Chandrapur, Nagpur)	Nagpur – Umred – Nagbhid- Chandrapur
8	MH MSH 10	(Amravati)	Via NH 6 From Nadgaon – Morshi – Warud – Maharashtra – Madhya Pradesh state border.
9	MH MSH 24	(Buldhana, AkolaJalgaon, Amravati)	Ajanta (Buldhana District) – Buldhana – Warwand – Khamgaon – Shegaon – Deori (Buldhana District) – Akot -Anjangaon – Paratwada – Maharashtra – Madhya Pradesh state border.



Important State highways in Maharashtra:

Maharashtra state is having the biggest network of State and National Highways in India. As fundamental sectors of society like Agriculture, Business, Industrial zones and many more rely on quality and availability of road networks, Maharashtra is creating a comfortable environment for growth and development for the public.

Important Express Highways in Maharashtra.

1) Mumbai Nagpur Expressway:

The Mumbai Expressway route passes through 10 districts and 390 villages, it measures about 701Km long. It starts from Nagpur and then passes through Wardha, Amravati, Washim, Buldhana, Jalna, Aurangabad, Nashik, Ahmednagar and Thane. There are three wildlife sanctuaries on the way. This project is going to reduce the travelling time upto 8 hours, now it takes 16hrs. The expressway is officially known as "Hindu Hrudaysamrat Balasaheb Thackeray Maharashtra Samruddhi Mahamarg". It is expected to be inaugurated in Dec 2023.

2) Mumbai- Pune Expressway

This expressway connects the two important cities in Maharashtra, that is Capital Mumbai and Pune. This six-lane high speed road is the India's first fully operational access-controlled toll road. It takes less than 3hrs for 168Km distance. This Expressway is officially known as "The Yashwantrao Chavan Mumbai- Pune Expressway".

3) Nagpur-Aurangabad-Mumbai

Nagpur-Aurangabad-Mumbai Highway connects the two major Maharashtra cities Nagpur & Aurangabad via capital Mumbai. Travelling through NH6 makes it possible to save around 65 km distance that helps to save near about 1.5 hour.

4) Eastern Express Highway

This is 24km long express way present in Mumbai city. It joins to NH3 at last, with 12 flyovers and six lanes this expressway saves the passenger from traffic and saves time.

5) Western Express Highway

Western Express Highway is an eight to ten lane expressway road present in Mumbai. It is a 27km long highway from Bandra suburban area in south Mumbai to Mira-Dahisar in north Mumbai. This important road for the passengers of Mumbai, later joins to NH8 in north then travels to Delhi.

6) Yedshi-Latur-Nanded Highway

Part of the Marathwada Integrated Road Development Project, Yedshi-Latur-Nanded Highway is a 240km long expressway in the state of Maharashtra that connects two major cities, Latur and Nanded and further joins to National Highway 9. This four-lane highway saves more than 1.5 hrs. of travel time between the city of Latur and Mumbai

7) Mumbai Nashik Expressway

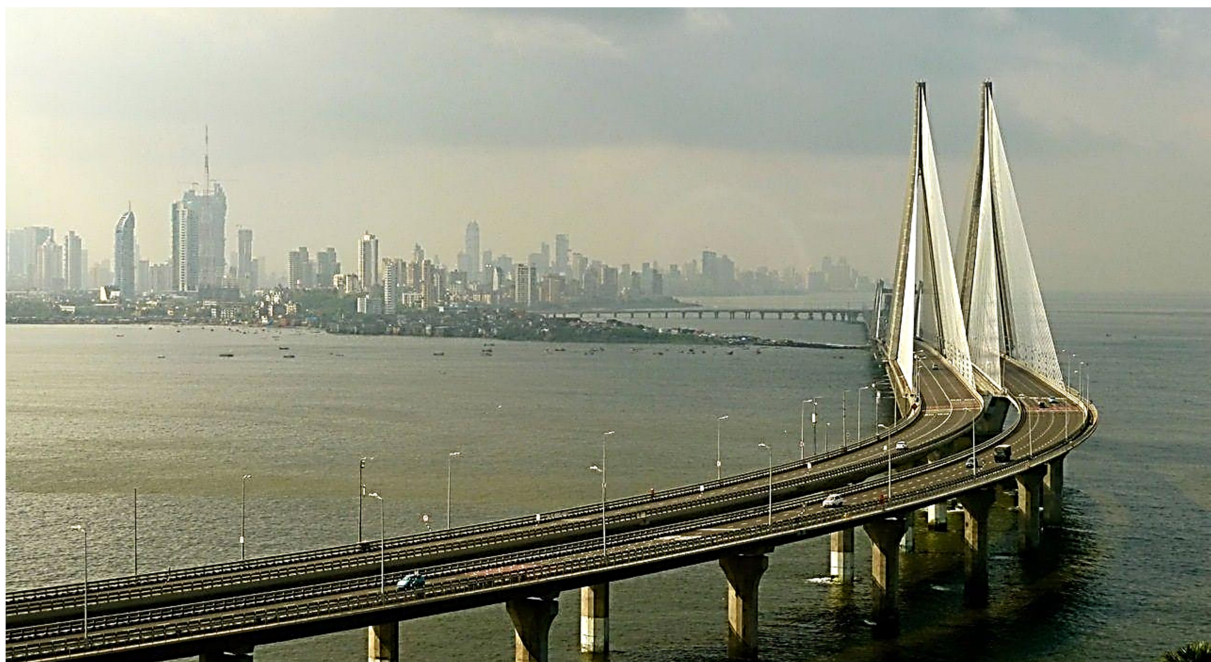
This was India's largest BOT (Build-operate-transfer) road project; 150 km (93 mi) long Expressway connecting Mumbai to Nashik.

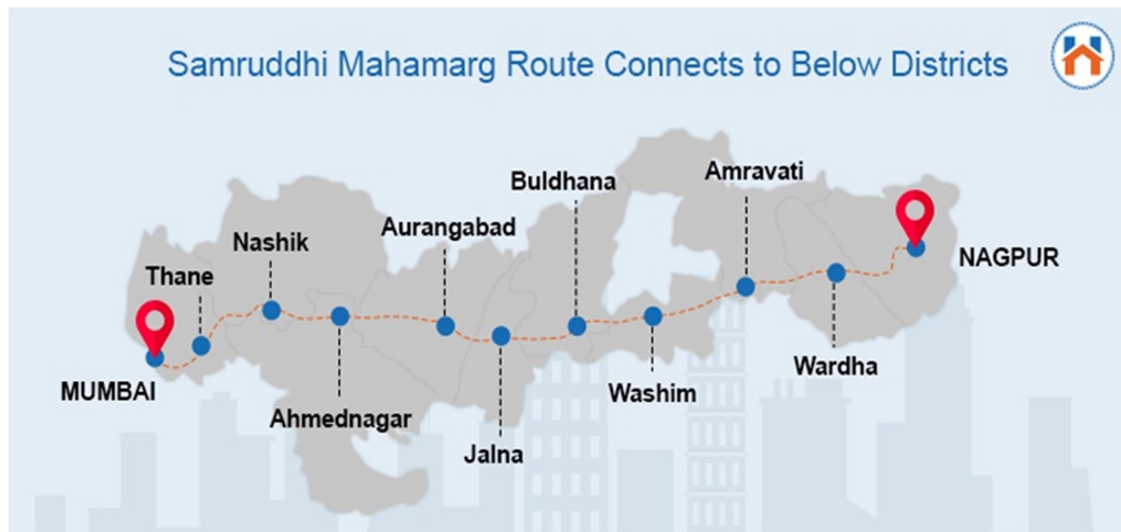
8) Mumbai-Vadodara Expressway

This Expressway is also the part of the Golden Quadrilateral Project by NHAI and it connects Mumbai to Vadodara in Gujarat.

9) Bandra-Worli Sea Link

This eight-lane bridge that connects Bandra to Worli, connects Bandra in Western Mumbai to Worli in south Mumbai, BWSL officially known as Rajiv Gandhi Sea Link. It saves the passenger from traffic and reduced the travelling time near about 30 to 40min.





Construction and Management of Roads:

Ministry of Road Transport and Highways (MORTH) is a central government organisation that involved in construction and maintenance of all national highways. Along with MORTH, development and management of major national highway is handled by the National Highway Authority of India, and also by the Maharashtra Public Works Department (MPWD) in certain regions, which builds and manages all state highways and district roads in Maharashtra. The Maharashtra Rural Road Development Association, under the Rural Development and Panchayat Raj Department, is responsible for developing and managing rural roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY), the Prime Minister's rural road program. District and local administrations manage other rural and village roads.

Road transport demand:

Maharashtra is witnessing increase in traffic demand along with the state's economic growth. The total number of registered vehicles in the Maharashtra in year 2018 was 31.4 million. The number of registered vehicles (Bike, Car, Bus, Taxi, etc.) has increased in huge amount, growing at over 9% per year.

Conclusion:

- 1) Total Length of road Network in Maharashtra: 3,09,541 km
- 2) Length of National Highways Network in Maharashtra: 18,459Km
- 3) State Highways: 34,450Km
- 4) Length of District and Rural Roads in Maharashtra: 2,56,632Km
- 5) Total Number of national Highways Passing though Maharashtra: 102
- 6) Maharashtra has India's biggest road network based on total state highway length (22.14%)



References:

- 1) Annual Report of Ministry of Roads and Highways, Government of India (2022-23)
- 2) Maharashtra State Road Transport Corporation Reports (MSRT) (2018-19)
- 3) Highway Police Maharashtra State Website
- 4) Standardization of the Baseline Study to Plan for Roads and Transportation in Villages: Case of Chikurde and Bhulane in Maharashtra - Nishant Maloo, Sandhya Seetharaman, Bakul Rao, Dharmendra Kumar, Indrayani Jayant Nishane (Research Article- Science Direct)
- 5) Urban public transportation systems - Vukan R Vuchic (Research Article- Reconnecting America.org)
- 6) Introduction to transportation systems -Joseph Sussman (Artech House Publications) (Reference Book)
- 7) Maharashtracha Bhugol - Dipak Bawiskar, Dilip Patil (Dipstambh Publications) (Reference Book)
- 8) Prakritik Bhugol - Dr. Shankar Chaudhary, Dr. Mishrilal Chavan (Prashant Publications) (Reference Book)