



## A study on development of road infrastructure in Himachal Pradesh

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### Abstract

The study on development of road infrastructure in Himachal Pradesh aims to analyze the current state of road infrastructure in the state and identify strategies for its improvement. Roads under different categories have been identified and assessment of road infrastructure has been done over a specific period. The study highlights the importance of road infrastructure to control traffic and promote hassle free travelling for commuters. Overall, the study provides insights and recommendations that can inform the development of policies and programs for road infrastructure development in Himachal Pradesh, ultimately improving the state's connectivity and driving economic growth. The main focus of the research is to study the extent of road length under different categories of roads and to evaluate the periodic & overall growth in the road length for accomplishing the main thrust. The analyses have been drawn on the secondary data taken from the official sources w. e. f. 2001 to 2020.

**Keywords:** Road Infrastructure, periodic growth of road length, extent of road length

### Introduction

The world is moving at a greater pace than ever before and a governance model of this sort is detrimental for the well being of an already under developed economy. In the present scenario, of course, all the participants of the economic and socio-economic structure have to come together with a focused long term vision to collaborate and work towards a common goal of social and economic well being and raise their concern over the critical elements of governance and delivery of public services which need immediate attention. The contemporary era, as compared to earlier centuries is different in all aspects of human life and interactions of elements supporting existence of human life on this planet. There is a lot more vigor and dynamism in the world today with evolving new skills and innovations in all walks of human life. Automation and mechanization has reduced human effort to unimaginable levels. The time saved, as a result of this, has given mankind the opportunity to further innovate and create for betterment of the world and make living more enjoyable and comfortable.

Transportation is the driver of such a changed environment and is the pivot of development. Movement is the feature of a growing economy and transport is the main facilitator. Mobility is supported by motives which help in growth, prosperity, comfort, exposure and development. Large scale economic activity encourages development of businesses and business connections and thereby pushes mobility of people within and across cities and towns. For the functioning of the government sector also transport and transport management has an important role to play. As the level of development of any economy moves from primary to tertiary sector, the concentration of people increases in fancy office locations giving rise to ever increasing daily commuters. Transport is the mode to facilitate the mobility of people from home to the other places especially for employees from home to their offices.

Himachal Pradesh, located in the northern part of India, is a mountainous state that faces challenges in terms of road

infrastructure development due to its difficult terrain and harsh weather conditions. The state government and the central government have taken several initiatives over the years to improve the road infrastructure in the state. Apart from these, the state government has also undertaken several road widening and improvement projects, and has improved the maintenance of existing roads to ensure safe and efficient transportation. Overall, the road infrastructure development in Himachal Pradesh has been an ongoing process, with the government working towards improving connectivity and accessibility to all parts of the state, however, the traffic demand and number of vehicles has been increasing day by day, contributing to rising traffic problems and congestion issues.

### Objectives of the study

The study was conducted to achieve the following objectives with the purpose to assess the road infrastructure in Himachal Pradesh:

- To study the extent of road length under different categories of roads
- To evaluate the periodic & overall growth in the road length

### Scope and methodology

The scope of the study is limited to the assessment of road infrastructure in Himachal Pradesh only and it assesses the change in the road length for different categories of roads since the year 2001 till 2020 covering a time period of two decades. Secondary data was used for the purpose of this study from the available state government publications and the data was then analyzed using required statistical methods to assess the level of road infrastructure in the state.

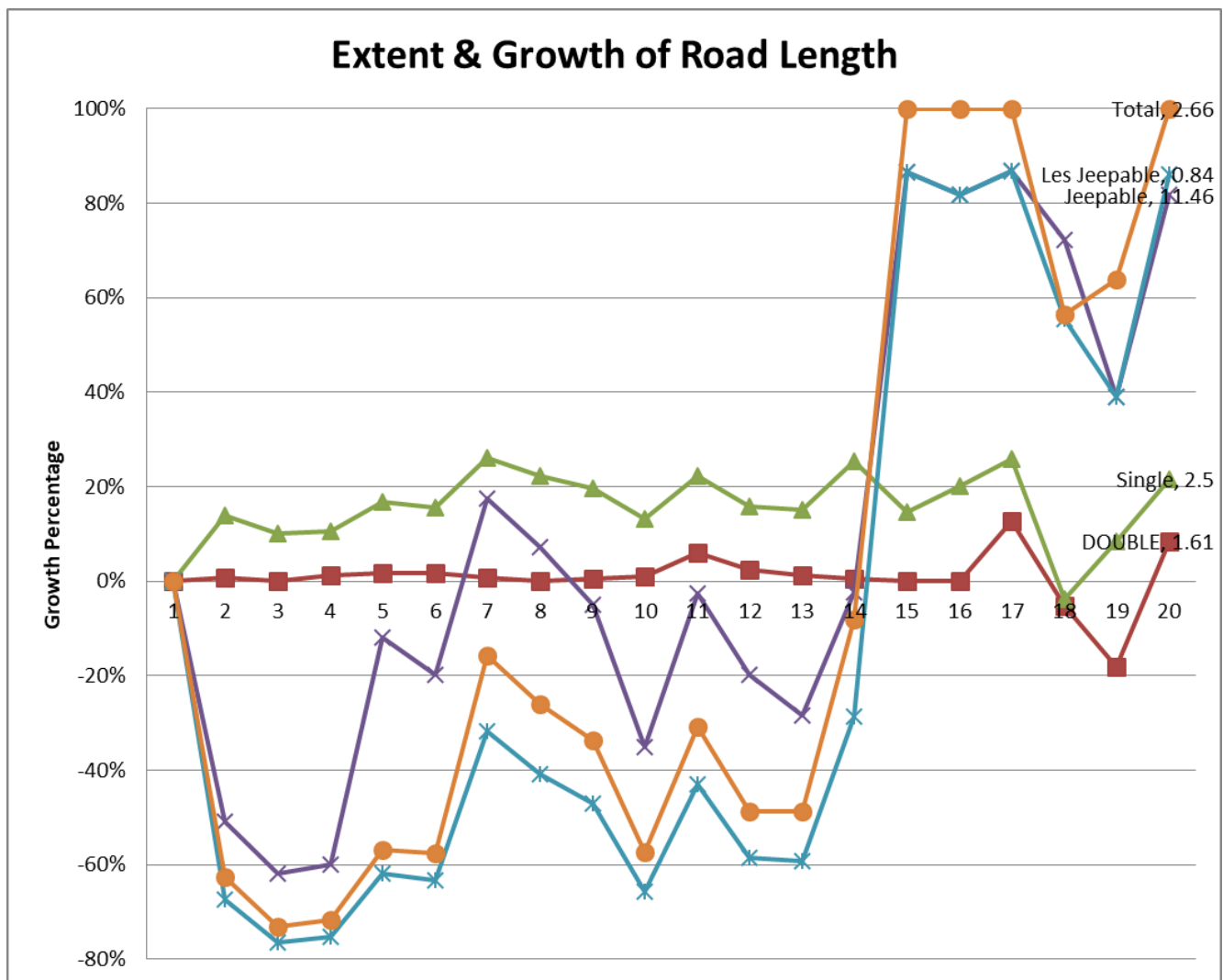
### Analysis and discussion

The results drawn from the data taken from the secondary sources have been analyzed and discussed as under.

**Table 1:** Extent of Road Length and Growth of Different Motorable Roads in Himachal Pradesh (in kms.)

Year	Motor able Roads Double Lane	Growth (%)	Motor able Roads Single Lane	Growth (%)	Jeep able Roads	Growth (%)	Less than Jeep able Roads	Growth (%)	Total Roads	Growth (%)
2001	2332		19874		906		4105		27217	
2002	2336	0.17	20427	2.78	781	-13.80	3959	-3.56	27503	1.05
2003	2336	0	21100	3.29	598	-23.43	3771	-4.75	27805	1.10
2004	2344	0.34	21648	2.60	481	-19.57	3611	-4.24	28084	1.00
2005	2355	0.47	22567	4.25	442	-8.10	3103	-14.07	28467	1.36
2006	2369	0.59	23599	4.57	390	-11.76	2653	-14.50	29011	1.91
2007	2374	0.21	25210	6.83	381	-2.30	2299	-13.34	30264	4.32
2008	2374	0	26783	6.24	365	-4.20	1990	-13.44	31512	4.12
2009	2377	0.13	27925	4.26	345	-5.48	1803	-9.40	32450	2.98
2010	2384	0.29	28832	3.25	300	-13.04	1655	-8.21	33171	2.22
2011	2403	0.80	29464	2.19	290	-3.33	1565	-5.44	33722	1.66
2012	2411	0.33	29999	1.82	276	-4.83	1483	-5.24	34169	1.33
2013	2415	0.17	30550	1.84	260	-5.80	1422	-4.11	34647	1.40
2014	2416	0.04	31075	1.72	255	-1.92	1396	-1.83	35142	1.43
2015	2416	0	31499	1.36	272	6.67	1396	0	35583	1.25
2016	2416	0	31953	1.44	284	4.41	1396	0	36049	1.31
2017	2453	1.53	32469	1.61	305	7.39	1396	0	36623	1.59
2018	2081	-15.17	33742	3.92	984	222.62	717	-48.64	37586	2.63
2019	2046	-1.68	34577	2.47	1012	2.85	717	0	38454	2.31
2020	2079	1.61	35443	2.50	1128	11.46	723	0.84	39475	2.66
C.G.		-0.54		3.10		7.25		-7.89		1.98

Source: Statistical Outline of Himachal Pradesh (various issues), Statistical Year Book of Himachal Pradesh (various years), Statistical Abstract of Himachal Pradesh (various issues).



**Fig1:** Extent & Growth of Road Length

The above table shows the data of four categories of roads in Himachal Pradesh viz., motor able roads double lane, motor able roads single lane, jeep able roads and less than jeep able roads from the year 2001 to 2020. The length of motorable double lane roads in 2001 was 2332 and in the year 2020 it was 2079 kilometers. The motorable double lane roads have shown a growth of less than one percent over the period of twenty years with the exception of years 2017 and 2020 where the growth was 1.53 percent and 1.61 percent respectively. In the years 2003, 2008, 2015 and 2016, the growth was zero and it was negative in the years 2018 and 2019. Overall, in the given time period, the motorable double lane roads have recorded a negative compound annual growth of -0.54 percent. The negative growth is recorded due to the up-gradation of these double lane roads to four lane roads.

The second category of roads is the Motorable double lane roads which were 19874 kms in 2001 and were 35443 kms in 2020. The overall growth during the period is 1.78 times. This category of roads have shown a consistent growth throughout the period with maximum growth of 6.83 percent and 6.24 percent in the years 2007 and 2008 and minimum growth of 1.36 and 1.44 in the years 2015 and 2016. Throughout the period of twenty years the Motorable double lane roads have recorded a positive compound annual growth of 3.10 percent.

Third category of roads is the jeep able roads which have grown by 1.25 times from 906 kms in 2001 to 1128 kms in 2020. The growth of these roads has recorded a continuous negative growth from 2001 to 2014 and has recorded a continuous positive growth from 2015 to 2020. Maximum negative growth of -23.43 percent was seen in the year 2003 and maximum positive growth of 222.62 percent was seen in the year 2018. Throughout the period the jeep able roads have recorded a positive annual compound growth of 7.25 percent which is maximum amongst all the four categories of roads analyzed in the table.

Another category of roads is the less than jeep able roads which have reduced from 4105 kms in 2001 to 723 kms in 2020. This category of roads has shown negative growth throughout the twenty year period with the exception of the latest year 2020 when positive growth of 0.84 percent was recorded and apart from this the years 2015, 2016, 2017 and 2019 have shown zero growth. Maximum negative growth of -48.64 was recorded in the year 2018. Overall in the twenty year period, the less than jeep able roads category has shown a negative annual compound growth of -7.89 percent.

The total road length in all the categories has grown 1.45 times in the twenty year period from 27217 kms in 2001 to 39475 kms in 2020. The growth has been consistent throughout the period recording maximum growth of 4.32 percent in the year 2007 and minimum growth of 1 percent in the year 2004. Overall, in the twenty year period, the total length of all kinds of roads has shown a compound annual growth of 1.98 percent.

### Conclusion, findings and suggestions

It can be concluded from the available data that with respect to road infrastructure, maximum growth has been recorded in the length of jeep able roads and minimum (negative) in the less than jeep able roads. The Motorable double lane roads also have shown a negative growth of half percent. The main category of roads amongst the four categories is

the Motorable single lane roads which have shown a positive growth of 3.10 percent over the twenty year period from 2001 to 2020. The negative growth in the length of roads may be due to the up-gradation of the roads to higher category.

The study finds that there has been negative growth in the less than jeepable roads and motorable double lane roads. The study also finds that a cumulative growth rate of 3.10 percent was achieved in the motorable single lane category. The growth under different categories has been found to be uneven and unsatisfactory.

Based upon the study, following are few suggestions for betterment of road infrastructure in the state:

- The state government should allocate more funds to road infrastructure development.
- The pace of road infrastructure development should be increased from the current level.
- On high traffic routes, the single lane motorable roads can be upgraded to double lane motorable roads for better traffic flow.

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