



GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

302.23

Parivahan Bhavan,
1, Sansad Marg,
New Delhi-110001

F. No. RW/NH-33044/28/2015/S&R (R)

Dated: the 29th June, 2015

To,

1. The Chief Secretaries of all the State Governments/ UTs
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department dealing with National Highways, other centrally sponsored schemes.
3. All Engineers-in-Chief and Chief Engineers of Public Works Department of States/ UTs dealing with National Highways, other centrally sponsored schemes.
4. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi- 110 010.
5. The Chairman, National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110 075.
6. The Managing Director, NHIDCL, PTI Building, New Delhi-110001

Subject: Capacity augmentation of National Highways from Two-lane to Four -lane

Capacity analysis is fundamental to the planning, design and operation of National Highways and provides among other things, the basis for determining the carriageway width to be provided at any point of time with respect to the volume and composition of traffic. Moreover, it is an important tool for evaluation of the investments needed for future construction and improvements and for working out priorities of road projects.

2. IRC:64 stipulates that under normal circumstances, use of Level of Service B is considered adequate for the design of rural highways. At this level, volume of traffic will be around 0.5 times the maximum capacity and this is taken as the "design service volume" for the purpose of adopting design values. The design service volume that is considered for capacity augmentation/improvement of a highway is the expected volume at the end of the design life. This is computed by projecting the present volume at an appropriate traffic growth rate, which is established after extrapolation from past trends and potential for future growth of traffic. IRC:SP:73 prescribes the design service volume for a 2-lane highway.

3. However, Ministry vide Circular no NH-14019/6/2012-P&M dated 5th October, 2012 had decided that, henceforth, whenever new projects of

widening/bypass/realignment are taken up, the width of the carriageway shall be atleast two lane with paved shoulders irrespective of the traffic thereon".

4. As per practice, once the maximum capacity of a road is reached, it is generally at that time, planning for capacity augmentation to Level of Service B is undertaken. By the time the road is upgraded to the next level, there are traffic restrictions and the speeds are reasonably low which is available as per Level of Service C, D or E. Besides, at this level, even a small increase in traffic volume would lead to forced flow situations and even breakdowns within the traffic stream.

5. Accordingly, it has been decided in the Ministry that the planning for upgradation of the existing 2-lane highways with paved shoulder shall be started before the end of design life, so that by the time the threshold capacity of the road is reached the 4-lane highway will be already constructed. As such, there will be no discomfort to the road users and the Level of Service B would also be achieved. The traffic at which upgradation from 2-lane with paved shoulder to 4-lane will trigger, is indicated in Table below

Table ¹

Nature of Terrain	Traffic at which upgradation to four lane will trigger (in PCUs per day)
Plain	[15,000] [10000]
Rolling	[11,000] [8500]
Mountainous/Steep	[8,000] [6000]

[*For Roads in hill section preference would be three lane of existing two lane or construction of twin two lane National Highways rather than construction of four lane National highways]

6. The contents of this Circular may be brought to the notice of all concerned in your organization.

7. This issues with the approval of Competent Authority.

Amiyanshu
(Amiyanshu)

Asst. Executive Engineer (S, R&T) (Roads)
For Director General (Road Development) & SS

Copy to:

1. All Technical Officers in the Ministry of Road Transport & Highways
2. All ROs and ELOs of the Ministry
3. The Secretary General, Indian Roads Congress
4. The Director, IAHE
5. Technical circular file of S&R (R) Section
6. NIC-for uploading on Ministry's website under "What's new"

Copy for kind information to:

1. PS to Hon'ble Minister (RTH&S)
2. PS to Hon'ble MOS (RTH&S)
3. Sr. PPS to Secretary (RT&H)
4. PPS to DG (RD) & SS
5. PPS to SS&FA
6. PS to ADG-I/ ADG-II
7. PS to JS (T)/ JS (H)/ JS (LA&C)/ JS (EIC)