

No. NHIII/P/13/79

*Dated the 8th August, 1979*

To

The Secretary to all State Govts. (Departments dealing with National Highways)

Sub : Damages to National Highways due to heavy rains, floods waterlogging—need for proper permanent remedial measures

In recent years, there have been reports of damages to National Highways in the monsoon periods due to heavy rains, floods and waterlogging conditions in different parts of the country. The State Governments are aware of the need for immediate repairs for restoration of the traffic which as per para 3 (3) of National Highway Rules 1957, should be carried out immediately with a report sent to the Ministry indicating the approximate amount of the likely liability. It is, however, very important that permanent remedial measures are devised, as early as possible after duly studying the causes for the damages and the drainage requirements of the area, so as to prevent recurrence of the damages in the future monsoons. These requirements have been brought to the notice of the concerned road authorities from time to time in various forums, such as, Chief Engineers meetings held at Chandigarh in March, 1975, at Bangalore in January, 1979 and in the meeting of Transport Development Council held at New Delhi in June, 1975 etc., as also in differnt circulars issued by the Ministry i.e. NHIII-33 (122)/72 dated 19.9.75, PL-67 (12)/76 dated 10.9.76 and PL-67 (29)/76-N.H. VI dt 28.6.79 etc. It is again to be emphasised that the concerned authorities may be impressed upon to take prompt and adequate action keeping in view the above mentioned circulars, guidelines etc., so as to mitigate the adverse effects of rains and floods on traffic operations and performance of highway.

2. It has been noticed in recent years that due to large-scale developmental activities undertaken during the Five-Year Plans, considerable changes in drainage patterns of different areas have taken place, for example, due to construction of large and medium power and irrigation projects, construction of canal systems, increase in the area under agriculture and multiple cropping etc. At places, apart from flooding, large areas are subjected to waterlogging resulting in rise of ground water table and consequent damaging effects on the road pavement due to migration of water by capillary action. The problem is aggravated in certain areas due to the presence of detrimental salts, such as, Sodium Sulphate, Calcium, Magnesium or Sodium Carbonate etc. In this connection, it may be pointed out that long lengths of National Highways consist of local roads which have been upgraded at different times since 1948 and these are having low heights and are vulnerable to damages due to heavy rains, floods etc. Further, the pavements are overstrained due to large-scale increases in traffic volume and the heavier axles plying on them since recent past. It is, therefore, imperative that immediate attention is paid to improvement needs of such stretches. While formulating these proposals, all concerned authorities, such as, Irrigation Department, Flood Control Authority, Irrigation/Power Project Authority, Agriculture Department etc. should be consulted as may be necessary and desirable and a co-ordinated plan of action for the area and road communications in it developed as far as possible. Co-ordination with individual authority for specific problems could also help. e.g., effect of waterlogging could be reduced if the concerned authority is prevailed upon to provide a net-work of tubewells for irrigation/water supply in the area.

3. In the areas subject to waterlogging and/or flooding with or without the presence of detrimental salts, progressive deterioration of the strength of the subgrade soil takes place and many a times the constantly wet con-

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ditions result in heaving (or boggy action as termed in U.P.) leaving the pavement in a floating condition totally unfit for traffic operations. In such cases, raising of the road formation with suitable capillary cut off would be a solution unless diversion of the road through a higher and nearby area be feasible without deterioration of alignment. The Indian Roads Congress recommendations for "Road Constuction in Waterlogged Areas" (I.R.C. : 34-1970) should be followed for the formulation of remedial measures in such cases. Such proposal should be formulated during or immediately after monsoon season and forwarded to this Ministry for consideration so that the measures could be implemented as far as possible before the next monsoon to prevent recurrence of damages to the road.

4. It is suggested that the concerned authorities may be directed to take action as laid down above and this Ministry kept informed of the same from time to time.