

No. RW/NH-33044/10/2002-S&R(R)

Dated the 31st January, 2003

To

Secretaries of all States/Union Territories (Incharge of PWD) dealing with roads, All Chief Engineer of States/Union Territories PWDs dealing with National Highways and Centrally Sponsored Schemes, Director General (Border Roads), Chairman, National Highways Authority of India.

Subject: Emergency Support Function concerning Disaster Management Programme

The Government of India has decided to accord highest priority to Disaster Management Programme in order to reduce the impact of disasters on the common man. The primary objective of the Disaster Management Programme is restoration of traffic in case of damages caused due to disaster in minimum possible time. In case of disruption of traffic due to a natural disaster it will be necessary to clear the debris on roads, plug the breaches on roads and replace the collapsed bridges with temporary bridging equipment. For this purpose the Nodal Officer nominated by your office for carrying out Emergency Support Functions shall keep proper liaison with the Ministry in reporting the damages and taking timely remedial action by the State PWD. The Ministry has been emphasizing the emergent measures to be taken for mitigation of adverse effect of natural disasters e.g. floods, earthquakes, landslides and cyclones. Certain amount of advance preparedness is essential before floods/cyclones to face any emergent situation. Adverse effects, however, could be mitigated to a great extent by taking timely action based upon monitoring of vulnerable road stretches and bridges, which would be well known to the field officers. In this connection, the following advance actions are considered necessary.

- (i) Identification of vulnerable bridges and stretches of roads likely to be washed away/breached/blocked due to Natural Disaster.
- (ii) Special inspection of the vulnerable locations to be carried out before floods/cyclones.
- (iii) Identification of relief equipment and material required for immediate restoration of traffic in case of damages due to Natural Disaster.
- (iv) Identification of available equipment and material in the area by the concerned field officers and intimating the same to the Nodal Officer.
- (v) Occurrence of Natural Disaster should be intimated to the Administration and to the Nodal Officer who will inform the Ministry.
- (vi) Nodal Officer should have up-to-date an idea about the works in progress and where equipment/machinery can be obtained in least possible time.
- (vii) Nodal Officer should have direct liaison with Meteorological Department of Government of India for immediate advance warning of natural calamities.

2. A list of emergent actions in respect of National Highways to be taken by the field officers in close co-operation with the Nodal Officer of the State is attached at Annex. The list is not exhaustive and depending upon special situations obtaining in each region, the State Authorities may add more essential items of action in the list as needed. For taking emergent action, the field staff may be given extraordinary powers so that they are able to mobilize the machinery and material and execute the works.

3. Similar instructions may be issued for Disaster Management of State Roads, which are primarily the responsibility of respective State Governments.

4. The contents of this letter may be brought to the notice of all field officers for strict compliance.

(Enclosure of Ministry's letter No. RW/NH-33044/10/2002-S&R(R) dated the 31st January, 2003)

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**A list of emergent actions to be taken by the Officer-in-charge of a road section when the same is seriously affected by Natural Disaster leading to partial or total disruption of traffic**

**1. Intimation about damage:**

- 1.1 In the event of disruption of traffic due to extensive damages or a breach in a NH or washing away of a bridge or its approaches, the first immediate step is to send a message to all higher officers including the district authorities and the 'Nodal Officer' through telegram/telex and also to the Director General (Roads Development), Ministry of Road Transport & Highways, New Delhi informing about the same.
- 1.2 In addition, in the case of traffic dislocation anticipated for a period of 24 hours or more, the EE/AE in-charge of the section shall ensure that the concerned officer in the Ministry of Road Transport & Highways is also informed of the situation on telephone. If the telephone services are dislocated the field officers may obtain the help of district authorities to use wireless facility for establishing contact with the State CE's, who in turn shall immediately inform the Ministry over telephone.
- 1.3 In some cases, particularly of major dislocations on important NHs, when all other possible communication channel have failed, the services of a special messenger may be utilized to somehow reach the State HQs who in turn may inform the Ministry about the position.
- 1.4 This shall be followed by a summary report indicating the particulars of the damage and causes of the same, the period over which the affected reaches are likely to be closed to traffic, the restoration measures already undertaken and further proposed to be taken the alternative arrangement made for diversion of traffic as also the approximate amount of likely liability. A copy of this report shall also be sent to the concerned Audit Officers.
- 1.5 Thereafter, the Ministry shall be given message at regular intervals indicating the latest situation on the progress of restoration till normal traffic is restored.

**2. Measures to be adopted in case of a breach in road section.**

- 2.1 Sections of National Highways which are vulnerable to flood attacks with possibility of breaches shall be identified before hand and the road section shall be kept under special watch during the monsoon to prevent such breaches.
- 2.2 For this purpose, advance collection of sand bags, boulders, empty bitumen drums, hume pipes, salballah piles, etc. shall be made at a suitable sites so that these could be easily transported to the point of breach and used quickly.
- 2.3 The general preparedness for floods shall also cover a critical inspection of all longitudinal and cross drainage works prior to the onset of monsoon to see the general condition of maintenance and repair of protection works and to prevent choking and clogging of drains during floods. Roadside ditches and borrowpits shall be continuously connected for quick drainage of water to suitable outfalls. High embankment-pitching, towels etc. shall also be inspected for requirement of repairs.
- 2.4 The officer-in-charge of a flood-prone section of NH shall also keep close liaison with State Flood Control Authorities and inform them about the vulnerable section in canal or tank bundhs so that they can take advance preventive action to avoid breaches in the same which may otherwise lead to flooding of the NH.

- 2.5 Diversion roads required in the event of breaches shall be identified in advance so that traffic may be diverted at short notice, if necessary. Suitable direction boards shall be kept ready for this purpose. When such diversion route is in a State road, appropriate coordination shall be kept with the State authorities so that this road remains in a condition fit for carrying NH traffic temporarily in time of emergency.
- 2.6 In addition to signboards put on roads, whenever a road is closed to traffic, wide publicity shall be given to the news through the common news media and also through TV and radio depending upon the importance of road section and the gravity and duration of the flood.
- 2.7 During the actual onslaught of floods a constant vigil shall be maintained all along the vulnerable sections of the road to keep a close watch on the trend or rise in water level, on signs or weakness in embankment and mark out locations where flood water rises fast to danger level. Section showing inadequacy of clearance in height of structure and embankment and CD structures showing inadequacy of discharge capacity may be noted for preparation of permanent remedial measures proposal afterwards.
- 2.8 Restoration work for the breaches shall commence immediately after the floods subside. This shall be carried out with the highest priority and the procedure for award of such emergency works should be streamlined in advance.

**3. Special measures to be adopted in the event of disruption of traffic due to damage to bridges or bridge approaches:**

- 3.1 In order to avoid washing away of bridges/approach attention to the following actions are necessary:
    - i) To take soundings before, during and after each flood at all foundation locations for all bridges built across major rivers with alluvial beds particularly where the rivers show a tendency to meander and give rise to concentrated flows and to maintain a permanent record of the same.
    - ii) To observe high flood level, discharge, velocity of flow, obliquity of flow, erosion of banks, functioning of the bridge waterway and changes in flow pattern.
    - iii) In case where such records reveal that scour as observed has a tendency to exceed the earlier anticipated design scour depth, appropriate steps like dumping of boulders around the foundation locations or extending to full fledged garlanding of foundations laid at suitable levels which will not cause adverse or deteriorating flow condition of the river around piers may be restored to after obtaining the approval of competent authority.
    - iv) In some cases it may be found necessary to train the river and guide the flow more uniformly through the various opening by means of proper training works such as guide bund spurs etc.
    - v) Suitable concrete blocks/wooden packing may be provided under the beams near the bearing to ensure that in the event the superstructure being dislodged from bearings it would ultimately rest on such concrete/wooden blocks avoiding the risk of total collapse.
  - 3.2 Advance collection of sand bags, boulders and G.I. wire (for making of crates) at suitable sites may be made so that the same could be easily used for protective works in case of emergency.
  - 3.3 As permanent restoration measure may take some time, temporary restoration measures may be carried out immediately to keep the communications through by provision of Bailey bridges, SPT Bridge or diversion roads etc.
  - 3.4 In case of necessity of a Bailey bridge, effort should be made to arrange the same from the State itself, if available, otherwise local Army Authorities may be contacted.
  - 3.5 Permanent restoration measure, may be taken up immediately after the completion of temporary restoration work, procedure for execution of such work should be streamlined.
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