

Standard Operating Procedure

**Public Works Department
Uttarakhand**



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1. Context

Public Works Department (PWD) is responsible for the planning, construction, maintenance of roads, bridges and government buildings in the state. Because of being adjacent to the border of China and Nepal, the state is having National importance from the national security point of view and given to this the responsibility of the PWD in maintaining state and district roads in these areas increases more during the disaster. Moreover, it has a special responsibility to give safe passage to all people at the time of disaster. PWD works according to guidelines, laws, and regulations issued by the Uttarakhand government time to time and many works constituted in the state based on the contractual basis. The standard operating procedures of the department are being formulated on the basis of these guidelines so that the department can accomplish these works efficiently during the major disaster and make their active participation in reducing the effects.

2. Objectives

The specific objectives for preparing the department's standard operating procedure are following:

- To keep the traffic system congestion free during disasters, while ensuring proper maintenance of National Highways, State Highway, and District Roads
- To identify departmental human and physical resources and utilizing them in a better way during disasters
- To coordinate among different units such as ADB, ADB Disaster, World Bank, PMGSY and National Highway within the Department

3. Activities before disaster

The following activities will be undertaken under the preparedness action by the department:

3.1 Determination of organizational role and responsibilities

- By the order of the State Disaster Management Department¹ and under the direction of District Disaster Management Authority, divisional Executive Engineer will constitute a Disaster Management Team at the division level within the department by including Field Staff of the Division by the month of May and deploying one nodal officer in each of the division so that coordination with other departments can be established. This disaster management team will include the Executive Engineer, Assistant Engineer, and two junior engineers.
- Executive Engineers-Nodal officer at division level and Superintending Engineer-Nodal officer at district level will prepare a list including names, addresses and contact numbers

¹ Govt. Order no. 1501/XVIII-(2)/16-13(5)/2007 dated 21 June, 2016

of all the departmental officials/staff comes under their jurisdiction by April month and send it to the district administration after updating it. In addition, the Executive Engineer at the divisional level will prepare the detailed list of route (including the contact number) comes under AE, JE, MET, and Beldar. The final list will be handed over to Superintendent Engineer and DM Office.

- As per the instructions of the State headquarters, the Superintendent Engineer will divide the districts into sectors on the basis of the number of division and fix the responsibilities of the respective Assistant and Junior Engineers by the month of March for effective work during disaster.
- in the month of April departmental nodal officers and Superintendent Engineers and all Executive Engineers at the district level will be connected to the WhatsApp Group at state level, created by the District Disaster Management Authority, and will remain in regular touch so that timely information can be received.

3.2 Risk Assessment

- On the instructions of the district level departmental nodal officer, Assistant / Junior Engineer will mark the sensitive areas of roads built before one or two monsoons till May and submit this information to the Executive Engineer of the division.
- On the instructions of State and District Disaster Management Authority, Assistant Engineers and Junior Engineers will identify sensitive sites of state roads, major district roads, other district roads, and rural roads that were constructed one or two monsoons before, till the month of May, and prepare the roadmap of the same. In addition to this, they will also identify the alternate ways to reach disaster-affected areas and prepare a roadmap for the same and, present the report to State Headquarters and District Disaster Management Authority.

3.3 Resource Mapping

- On the instructions issued by the Chief Engineer, PWD will prepare a action plan at division level every year in the month of April, and the compiled action plan of the divisions will be presented by Superintendent Engineer to District Magistrate at district level. At the same time, one copy of the same will be submitted to the district and state officials.
- In order to complete the departmental damage immediately after the disaster, the Executive Engineer at the district level along with their technical staff will identify ND prepare the list of meet with the technical staff to identify the equipment available to the contractors and laborers. Along with this, the list of big resources such as JCB machines, cutters, trucks etc. will be prepared to deal with the situation of a large-scale disaster. The prepared list will further be handed over to the District Administration / District Disaster Management Authority.
- Executive Engineer will release tender with the marked contractors in the month of May. Executive Engineer and his technical staff will hire the equipment and human resources

from the registered contractors based on the tender and make it available to the department.

- In the direction of the Executive Engineer, Junior Engineers (Electrical and Mechanical) will inspect the available machines and vehicles ensure availability of diesel for the same etc. at the departmental level. They will conduct this work in every trimester (in April, June, October, and January).

3.4 Protective Measures

- On the instructions of the Executive Engineer at the district level, Assistant Engineers and Junior Engineers will repair the major district roads, other district roads, and rural roads come under the department before June and make sure the cleaning of drains and scupper/culvert.
- The Junior Engineers will estimate the maintenance of the identified routes of landslide-affected zones falling in their jurisdiction and present them to the Executive Engineer for approval. The Executive Engineer will forward it to the Head of the Department through Superintendent Engineer from where the allocation will be made for the items. As per the allocated amount, the Junior Engineers will repair the affected sites as much as possible so that the losses are minimal during disaster. At the same time, it will be the responsibility of the Assistant / Junior Engineer to place the warning board at different places. All the above work will be conducted before the month of June.
- Departmental competent authority will ensure the inspection of all the departmental bridges in the month of May. The identified defects will be resolved before the monsoon, copy of the same will be sent to the Chief Engineer and if there is still any defect, then the immediate inspection will be made. For this, an appraisal will also be sent to Chief Engineer within one week of sending inspection report.

3.5 Organizing Capacity building and Mock drill

- The State and District Disaster Management Authority will nominate its officers and ensure active participation in the disaster related Mockdril to be held at the state and district level time to time.
- Executive Engineer will start the process of training on disaster management to officer/staff within the department in coordination with Disaster Nodal Officer at State Headquarter.

For this, official can take help from the District Disaster Management Office.

- It will be the responsibility of the district administration to develop the understanding of the disasters among the officials of the respective departments while promoting mutual coordination among them.

4. Information dissemination and operational guidelines for action

The Information within the department can be obtained through two sources in case of any disaster :

- Through WhatsApp group of District Disaster Management Authority, in which all Assistant Engineer and Junior Engineer will be associated. The District Disaster Management Authority will alert this group about the disaster and the concerned Assistant Engineer / Junior Engineer will start doing their work immediately after reaching the disaster site.
- Assistant Engineer / Junior Engineer will immediately send this information to WhatsApp group, inform all about the condition of disaster as soon as after visiting the site and continue doing their work. Assistant Engineer / Junior Engineer can also get the status of the situation from the local Beldar.

5. Direction and Coordination

Officers /Staff will work at the district level under the direction of the Head of the department / Chief Engineer at the State level, and there will be clear guidelines for them in respect of the disaster. All the vehicles and their drivers will be aware of their work area and they will stay around the same so that they can get immediate work done on the spot. However, depending level of response of the department will be based on two different scenarios-

5.1. Response in case of Early Warning

On the possibility of any disaster, a warning will be issued by Meteorological Department to the State Emergency Operation Centre before 48 to 72 hours of disaster. A warning will be issued to the State Headquarter by the State Emergency Operations Center to take immediate protective steps by the department at local level. Instructions will be issued to take immediate action to deal with the disaster at the division and district level from the State headquarter. Further, this warning will reach to the Assistant and Junior Engineers, through the Executive Engineer, and they will start working as per their assigned responsibilities.

5.2 Response in case of no early warning

In this situation, warning of disaster will be known only a few hours before. The district disaster management authority will issue warnings to the department through District Magistrate. All Junior and Assistant Engineers, including Disaster Nodal Officer of the department, will remain connected through the WhatsApp Group. The immediate concerned Junior and Assistant engineers will reach to the site and ensure required actions as soon as such warning will be issued to the group. Alert/information exchange will continue to be maintained from the control room at each division level. Being the in-charge of the control room, Assistant Engineer will accomplish work by themselves and continue to inform to the concerned Executive Engineer on the status of the situation through telephone and will keep taking instructions.

Determination of levels of response based on the disaster intensity

The L1, L2 and L3 levels of responses will be determined on the basis of the intensity of disaster. The planning should also be done based on the above three levels for rendering the activities. Based on the levels, the planning will be as follows –

L-1 Operation

This is the minimum level of response. Only a few people are required at this level. The main task at this level is to develop plans and broadcast the information. For example, broadcasting warnings or planning related to some low-level events etc. are included at this level.

L-2 Operation

At this level of operation, more disaster rescue workers are required and the District Nodal Officer can conduct and coordinate all the operations.

L-3 Operation

Active involvement of all the people associated with the department is necessary at the L-3 level disaster. This level is generally applied in that condition when disaster is expected and the intensity is high. At the L3 level operation, the Department will render on the instructions of the Head of the Department / Chief Engineer in coordination with State Emergency Operations Center.

6. Activities to be undertaken during the disaster

6.1 First Stage

- The members of the team formed at each level will get active under the IRS on receiving notification of the occurrence of the disaster and will approach the staging area by contacting the emergency operation center at the state and district level.
- The control room will be established under the direction of the Executive Engineer at each division during the disaster and all staff of the concerned area will be present on duty on rotation basis. This control room will be in regular contact with the District Disaster Control Room. Executive Engineers will continue to share the information by themselves or through other officers/staff designated by them.
- The concerned Junior Engineer will increase the regular patrolling of Mate and Beldar on other possible disaster prone routes, and immediately inform gang men and local technical-non-technical staff.
- In L3 level situation, Executive Engineers will provide the machines out of their jurisdiction also on demand of district administration.

6.2 Second stage

- Junior Engineer will get the road blocking information through Mate and Beldar in case of disaster. Junior Engineer will circulate information to their Executive Engineer and make efforts to reorganize the traffic system by clearing blocked routes.
- Junior Engineers/Assistant Engineers will contact the concerned department (forest department) through their Executive Engineer in to remove falling of trees on the roads or start removing debris/trees by their own departmental resources and for this nearby drivers will be informed and asked to arrive immediately.

7. Activities to be undertaken after the disaster

Work related to Accounts and administration and their process after the disaster will be as follows:

- Within 10-15 days of the occurrence of the disaster, Junior Engineers will accompany the Assistant Engineer to assess departmental damage, make an estimate, which will be submitted by Executive Engineer to the District Magistrate. The Executive Engineer will also send the above information to the Chief Engineer through Superintending Engineer.
- Under the instructions of the District Magistrate, SDM will do physical verification of the damage caused by the disaster after receiving the estimate. District Magistrate will further release the funds by issuing work approval based on this assessment. After the fund released from the District Collector Office, Junior Engineers, Assistant Engineer and Executive Engineer will prepare the work order/ contract according to the rules for the maintenance of damage and complete the work in given period.
- Executive Engineer will jointly work with Assistant and Junior Engineer at the district level to document the activities to be conducted during the disaster to improve quality work in future based on the learning.

8. Suggestions

- Responsibility for the construction and maintenance of helipads
- Responsibility for maintenance and management of generators for alternate energy

9. Checklist

Disaster preparedness

The departmental nodal officer will hand over this form after filling it to the District Disaster Management / District Magistrate at the district level and Departmental Chief Engineer at State level -

Actions undertaken	YES/NO	COMMENT
Determination of institutional role and responsibilities		
Communication arrangements have been established with the following agencies - <ul style="list-style-type: none"> • State Emergency Operations Center • State disaster management authority • District emergency operation center • District disaster management authority • Departmental office (within the division) • District administration 		
The nodal officer has been appointed at the Division level within the department.		
A Disaster Management Team has been constituted at the division level within the department.		
List of names, address and contact numbers of all departmental officers and staff has been prepared at the division level.		
The Executive Engineer is associated with the WhatsApp group developed by the District Disaster Management Authority at the district level.		
Risk assessment		
The roadmap has been prepared by identifying the sensitive area/ roads		
Alternate routes have been arranged to reach the emergency site.		
Priority for opening the roads has been fixed for traffic		
Resource mapping		
The work plan has been prepared at the departmental level.		
Emergency equipment kits have been ensured for all the roads.		
A sufficient road sign has been set up for guidance and assistance for the driver.		
The list of necessary equipments like - Towing Vehicle, Earthmoving Equipment, Crane, JCB etc. has been prepared with their drivers.		

Arrangements of diesel have been made for vehicles and machines		
Arrangement has been made for maintenance and repairing of all the equipment		
All working teams have been informed at the identified routes for clearance		
Repairing of damaged and sensitive roads/sites have been completed.		
Temporary road has been developed at the following places - <ul style="list-style-type: none"> • Temporary relief camp • Relief camp • Medical center 		
Capacity Enhancement and Mock drill		
The officers/staff are sent to the disaster related Mock drill through District Disaster Management Authority		
The procedure has been made to train the departmental officers/staff on disaster management aspect		
The proper arrangement has been made for the exchange of information in case of disaster		

During the disaster

The Departmental Nodal Officer will hand over this form after filling it to the District Disaster Management Authority/ District Magistrate –

Action undertaken	Yes/No	Comment
Authorities have been activated to reach the staging area upon the occurrence of the disaster.		
The control room has been established during the disaster.		
The debris has been cleared from the roads		
Community engagement has been ensured in the clearing of debris from the roads.		
Trees have been sorted along the roads at the affected areas in collaboration with the Forest Department.		
Clearing of debris, sorting of grass and grading have been done		

After the disaster

The Departmental Nodal Officer will hand over this form after filling it to the District Disaster Management Authority / District Magistrate –

Actions undertaken	Yes/No	Comment
The departmental damage Assessment has been presented to District Magistrate at district level and Executive Engineer at division level		
Physical verification of disasters has been done in collaboration with the district administration		
Report of work done during and after disaster has been prepared		

The following constituted departmental committee has approved the above standard operating procedures.

N. S. Khaliya
(Member / Secretary)

R. S. Sayana,
(Member)

A. Aggarwal
(Member)

Rajesh Sharma
(Member)

(RC Purohit)
(President)