

Uttarakhand State Disaster Management Authority (USDMA) Government of Uttarakhand

Uttarakhand Disaster Preparedness and Resilience Project (U-PREPARE)

EMERGENCY PREPAREDNESS



MAKE A PLAN



BUILD A KIT



BE INFORMED

EMERGENCY RESPONSE & PREPAREDNESS PLAN

(E.R.P.P.)

For

Construction of 240 M Span PSC Girder Motorable Bridge at Bullawala to Sattiwala over Suswa River at Doiwala in the District of Dehradun.

May-2025

Location:- Doiwala, Dehradun, Uttarakhand

Prepared by:- RCC Developers Limited Meerut

Date:- 26/07/2025

EMERGENCY RESPONSE & PREPAREDNESS PLAN

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1. Introduction

This Emergency Response & Preparedness Plan (ERPP) is designed to outline the necessary procedures and resources to manage emergencies at the bridge construction site in Uttarakhand. The region is prone to natural disasters, including earthquakes, landslides, fire, flood, flash flood, cloud burst, storms, pandemic etc. This plan ensures a proactive approach to managing these risks to protect workers, minimize damage, and ensure rapid recovery.

This EPP is developed in accordance with:

- **The Disaster Management Act, 2005.**
 - **Indian Standard Codes (IS 875, IS 456, IS 13920, IS 1893).**
 - **National Building Code (NBC) guidelines.**
 - **Ministry of Road Transport & Highways (MoRTH) safety protocols.**
 - **Uttarakhand State Disaster Management Authority (USDMA) regulations.**
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2. Scope

This plan applies to all construction activities and workers on-site. It includes guidelines for the response to:

- Earthquakes.
 - Landslides.
 - Fires.
 - Storms (including heavy rainfall, floods flash floods, Cloud burst and high winds).
 - Bridge-specific structural emergencies.
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3. Objectives

- **Ensure Worker Safety:** Provide measures to safeguard the health and safety of all workers during emergencies.
 - **Minimize Property and Environmental Damage:** Outline procedures to minimize damage to the construction site, machinery, and the surrounding environment.
 - **Rapid Response:** Establish an effective emergency response strategy with clear roles and responsibilities.
 - **Compliance with Local Regulations:** Adhere to Uttarakhand state and national disaster management guidelines and regulations.
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4. Risk Identification and Assessment

4.1 Earthquake Risk: The region is seismically active, with a risk of strong earthquakes. Workers are advised to follow seismic safety protocols.

4.2 Landslide Risk: The construction site is situated in a hilly area prone to landslides, particularly during monsoon seasons or after seismic events.

4.3 Fire Risk: Risks include fires from flammable materials used in construction, electrical short circuits, or other operational hazards.

4.4 Storms: The region experiences heavy rains, floods, and strong winds, particularly during monsoon seasons, which can cause site flooding and infrastructure damage.

- Identify flood-prone zones near rivers or valleys.
- Monitor weather forecasts for warnings of cloudbursts or heavy rainfall.
- Assess the construction site's vulnerability to flash floods and sudden weather changes.

4.5 Bridge Construction Emergencies

These are technical emergencies that occur during erection or concreting phases:

- **Scaffold Collapse:** Improper bracing or overloading of staging and scaffold.
- **False work Failure:** Faulty shuttering, inadequate load transfer during deck casting.
- **Cable Snap or Equipment Failure:** Sudden release of pre/post-tensioned elements.
- **Deck Displacement or Sag:** Incorrect launching operations.
- **Girder Placement Errors:** Crashing due to lifting misalignment or wind load.
- **Vibration Damage:** Induced by nearby heavy machinery or tremors.

4.6 Major Hazards During Construction activity: Major hazards on a construction site include physical risks like falls from height, being struck by objects, electrocution, and caught-in/between incidents, as well as environmental hazards such as noise, hazardous materials (dust, asbestos), and extreme weather.

4.7 Electrocution: An electrocution injury is physical harm caused by contact with an electric current, leading to symptoms such as burns, muscle spasms, and cardiac or respiratory problems.

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5. Preparedness and Prevention

➤ Earthquake



- **Site Assessment:** Identify earthquake-resistant construction techniques and materials for the site and structures.
- **Training:** Conduct regular earthquake drills for all workers, covering evacuation routes and safety measures.
- **Securing Equipment:** Secure heavy machinery, tools, and materials to prevent them from becoming hazards during tremors.
- **Emergency Kits:** Keep first-aid kits and emergency supplies (flashlights, whistles, water, and blankets) on-site.

➤ Landslide

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LANDSLIDE SAFETY

If your home or property was damaged by a landslide from Hurricane Helene, be aware of the warning signs of future landslide activity.

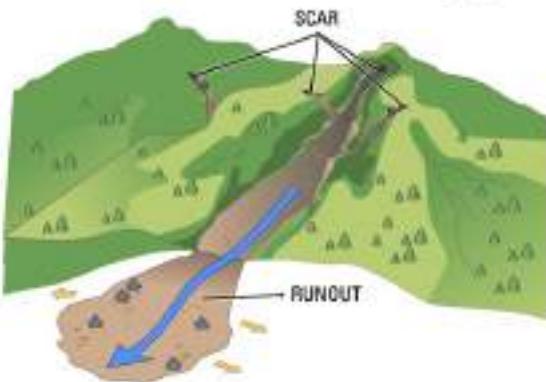


WATCH FOR WARNING SIGNS

Signs a landslide may be moving include:

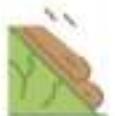
- ✓ Cracks forming at the top of the scar
- ✓ New springs of water on the landslide scar
- ✓ Increased dirt, sand, and rocks tumbling down the slope

If you see one or more of these warning signs, talk to a local geotechnical consultant.



PAY ATTENTION TO THE WEATHER

Future storms or sometimes even spring snowmelt may cause dirt, sand, and rocks to wash off landslide scars to areas already damaged downhill.



HOW TO KNOW A LANDSLIDE IS COMING

FEEL

Landslides are noisy and can cause the ground to shake and feel like a freight train is passing.

HEAR

- CRACKING WOOD
- FALLING TREES
- SHAKING BRUSH
- KNOCKING ROCKS
- SOUNDS LIKE A LOW-FLYING JET

SEE

✓ MUDDY WATERS

If a creek suddenly becomes muddier it could mean a large amount of dirt and new material has entered upstream.

✓ NO STREAMFLOW

If a stream stops flowing it could mean the channel was blocked by debris, creating a natural dam. If the dam fails, all the stored material could rush downstream.



LANDSLIDE THREAT - TAKE ACTION



AT HOME

If you are in a single-story house, climb onto a kitchen counter, desk, or sturdy table and hold on.

If there is a second story to your home, go upstairs. Move toward the downhill side of the house. The landslide could push through windows on the uphill side.



OUTSIDE

If outdoors, run away from the sound to the right or left, avoid going uphill or downhill. Landslides quickly travel downhill and are much faster than you.

- **Slope Stabilization:** Ensure proper slope stabilization methods are in place, including retaining walls and drainage systems.
- **Monitoring:** Install early-warning systems for landslide detection, and monitor weather forecasts regularly.
- **Evacuation Routes:** Establish clear, safe evacuation routes away from potential landslide zones.

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➤ Fire

FIRE SAFETY TIPS

IN CASE OF FIRE

- Stay calm and evacuate immediately.
- On opening doors, Check door handle first. If Hot, DO NOT OPEN as the room may already be on fire.
- Use the stairs and do not use the elevator in case you are in a building.
- If there is smoke, get down low, cover your nose and mouth with damp cloth.
- If your clothes catch fire, STOP, DROP and ROLL to put out the flames.
- Sound alarm and call for help.
- Do not return inside your house or building unless authorities deemed it safe.
- If trapped, stay in the room, signal for help using a bright colored cloth at the window or make noise.
- Have yourself checked for injuries.
- Call the Fire Department or 911.

Fire Precautions

- Fire Risk Assessment: Identify sources of fire hazards, methods of igniting fire, fighting fire and escape.
- Fire Fighting Precautions: Fire service providers must ensure that all fire-fighting operations are carried out in accordance with relevant codes and standards.
- Maintenance of site: Fire safety systems and equipment must be maintained in accordance with relevant codes and standards.
- Training of the Fire Fighting Equipment: This includes fire hose, nozzles and dry powder extinguishers.
- Welding Site Safety: Welding must be carried out by qualified welders and must be supervised by a competent person.
- Household Fire Protection: Householders must take appropriate measures to prevent fires in their homes, such as installing smoke detectors and keeping flammable materials away from heat sources.
- Monitoring: Regular monitoring of fire safety systems and equipment to ensure they are functioning correctly and providing effective protection.

- Fire Safety Equipment:** Equip the site with fire extinguishers, fire blankets, and fire alarms, especially in areas with high fire risk (e.g., welding, electrical work).
- Fire Drills:** Conduct fire safety training, including evacuation procedures and the use of fire-fighting equipment.
- Flammable Materials:** Store flammable materials in fireproof containers, and enforce proper disposal of hazardous waste.

➤ Storms (Heavy Rain, Floods, and Winds)

STORM SAFETY TIPS

BEFORE DURING AFTER

- SECURE OUTDOOR AND LOOSE OBJECTS
- STAY INSIDE AND AVOID WINDOWS
- BROADCAST WEATHER REPORTS AND EMERGENCY ALERTS
- PREPARE AN EMERGENCY KIT
- UNPLUG ELECTRONICS IN CASE OF FLOODING
- CONSULT YOUR DOCTOR AFTER THE STORM IF YOU EXPERIENCE HEALTH ISSUES

STORM SAFETY GUIDE

BEFORE

- Check local weather forecasts and alerts.
- Establish an emergency kit.
- Secure outdoor and loose objects.
- Identify safe shelter locations.

DURING

- Stay indoors and avoid windows.
- Turn off power if flooding occurs.
- Monitor weather reports and alerts.
- Use generators safely.

AFTER

- Check for damage and assess safety.
- Reassess emergency kit needs.
- Check for structural damage.
- Restore power and utilities.

- Weather Monitoring:** Regularly monitor weather updates through reliable sources. Take precautions in anticipation of storms or floods.
- Flood Protection:** Elevate equipment and materials above flood levels where possible

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and ensure proper drainage systems.

- **Shelters:** Provide designated storm shelters for workers to take refuge during high winds or heavy rainfall.
- **Site Monitoring:** Continuously monitor the site for flood risks, including river levels and drainage conditions.
- **Safe Zones:** Designate high ground or elevated areas as safe zones for workers to evacuate during an emergency.
- **Site Elevation:** Store materials and equipment above the predicted flood level.
- **Drainage System:** Ensure proper drainage on-site to reduce water accumulation during rain.

➤ Bridge Construction Emergency Protocols



- Pre-task Risk Assessment (PTRA): Mandatory before lifting or pouring operations.
- Staging Load Checks: Follow IS 2750 and design for dynamic wind and seismic loads.
- Backup False work Plans: Secondary support under active deck sections.
- Erection Monitoring: Total station, plumb bobs, and inclinometers during girder placement.
- Emergency Stopping Zones: Cranes and lifters equipped with drop-lock brakes.

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- Toolbox Talks: Mandatory before all high-risk operations.

➤ Major Hazards During Construction activity

- **Falls:** Falls from heights on ladders, scaffolding, and rooftops are the leading cause of fatalities in construction.
- **Struck-By/Caught-In/Between:** Workers can be hit by moving vehicles, equipment, falling tools, or crushed by collapsing structures, machinery, or trenches.
- **Electrical Hazards:** Contact with live wires or faulty equipment can lead to electrocution.
- **Slips, Trips, and Falls:** Uneven terrain, debris, and spills create ground-level fall hazards.
- **Working at Height:** Involves the risk of falling from elevated platforms, scaffolding, or other structures.
- **Material and Manual Handling:** Heavy lifting and poor lifting techniques can cause musculoskeletal injuries.

➤ Electrocution:

The infographic is divided into two main sections: 'ELECTRICAL SAFETY' on the left and 'Steps to Take After an Electric Shock' on the right.

ELECTRICAL SAFETY (Left Side):

- (1) Wear Proper Protective Equipment while performing the electrical contact task.
- (2) Unplug the device before replacing any electronic devices.
- (3) Check the contact points of electrical circuits are enclosed.
- (4) Use one hand while working where the other hand may be placed or your sole is in the pocket to avoid the chance of current passing through your chest.
- (5) Use insulated materials to live from the hazards.
- (6) Don't touch the electrical equipment in a very cold place, and try to keep it in a warm place.

Steps to Take After an Electric Shock (Right Side):

1. Look at the affected person but do not touch them as electricity can be passed on to you.
2. Call 911.
3. Turn off source of electricity if it's safe, use a non-conducting material like wood or plastic.
4. Once it's confirmed you're safe from electricity, check the victim's pulse and begin CPR if needed (low or stopped heart rate).
5. Lay the victim down with legs elevated and head slightly below the trunk of the body.
6. Don't treat any wounds, wait until professional help arrives.

- **The initial management of electric shock involves:** quickly and safely disconnecting the power source, assessing the victim's condition, and providing appropriate first aid, including CPR if necessary.
- **Disconnect the Power:** The first and most crucial step is to immediately turn off the power source (e.g., at the circuit breaker, unplugging the device).
- **Avoid Touching the Victim:** Do not touch the victim while they are still in contact with the electrical current.

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6. Emergency Response Procedures

- **Evacuation Plan:** Clearly mark evacuation routes, exits, and assembly points. Ensure all workers are trained on these routes and procedures.
 - **Communication System:** Establish a reliable communication system with workers, local authorities, and emergency services. Ensure a backup communication system is in place.
 - **First-Aid and Medical Support:** Ensure first-aid kits are available at multiple locations on-site. Identify the nearest hospital or medical facility. Have trained first responder's on-site. Form a trained rescue team equipped with life vests, ropes, and first aid kits.
 - **Rescue Teams:** Designate personnel trained in rescue and first-aid techniques. Ensure they are familiar with the risks and can provide emergency care if necessary.
 - **Early Warning System:** Establish a weather monitoring system and communication channels with local authorities (Disaster Management, Meteorological Department).
 - **Evacuation Plan:** Clearly mark evacuation routes and ensure all personnel are familiar with the process. Evacuate workers to safe zones at the earliest sign of danger.
 - **Communication:** Maintain reliable communication (radios, mobile phones) to stay in touch with workers, rescue teams, and local authorities.
 - **Rescue Team:** Form a trained rescue team equipped with life vests, ropes, and first aid kits.
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7. Roles and Responsibilities

- **Site Manager/Project Manager:** Overall responsibility for implementing and monitoring the EPP, coordinating emergency response, and ensuring worker safety.
 - **Safety Officer:** Responsible for conducting risk assessments, overseeing safety measures, and ensuring compliance with safety protocols.
 - **Site Engineers:** Ensure structural safety and the proper installation of preventive measures. Assist with evacuation and emergency response.
 - **Workers:** Follow safety instructions, participate in drills, report hazards, and assist in evacuations when necessary.
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8. Training and Drills

- Conduct regular training sessions on emergency preparedness for all workers.
 - Schedule quarterly drills for earthquake, fire, and storm situations, ensuring that every worker is familiar with the emergency response procedures.
 - Certification for crane operators, welders, and false work erectors.
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9. Emergency Contact Information

Local Emergency Lead:	Name- Mr. Devenderdutt Sharma
	Contact Number- +91 9540203198
Hospital/Medical Facility	Name- Himalayan Hospital
	Contact Number- 0135 2471200
Fire Department	Name- Fire Brigade Dehradun
	Contact Number- 101
Police Department	Name- Police Control Room Dehradun
	Contact Number- 100
SDRF Office Dehradun	Name- Duty Officer
	Contact Number- 1077

Signed by Contractor



For RCC Developers Limited Meerut

Date:- 26/07/2025

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