



UTTARAKHAND DISASTER PREPAREDNESS & RESILIENCE PROJECT (U-PREPARE)

THE WORLD BANK



CONSTRUCTION WASTE MANAGEMENT PLAN

Construction of 54M Span Intermediate Lane Motor Bridge & its over Meeng Gadera in District Chamoli.
Construction of 36M Span Motor Bridge in Km-2 of Gairsain to village Devalkot Road in District Chamoli
Construction of 30m Span motor Bridge of Ujjawalpur to Gwad Dungri Jaspur in District Chamoli

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- Project Name:**
- 1. Construction of 54M Span Intermediate Lane Motor Bridge & its over Meeng Gadera in District Chamoli.**
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 - 3. Construction of 30m Span motor Bridge of Ujjawalpur to Gwad Dungri Jaspur in District Chamoli**

Project Location: District Chamoli

1. Introduction:

Construction Waste Management (CWMP) is an important tool to improve environmental performance and reduce rising costs of disposing waste. This document sets out a basic structure on how CWM can be best used to improve and manage operations during all stages of construction activities at project site. This document was prepared to provide an overview of onsite implementation strategies for Construction Waste Management. Waste Management from Bridge construction Project interventions include work such as foundation excavation, RCC works, fabrication, formwork, Machine maintenance, etc. These activities will generate waste in terms of packaging material, empty containers, use and disposal of oil & grease, iron scrap, etc. There will be a mix of hazardous and non-hazardous wastes. It is important to have a plan ready for disposal of such wastes before start of the activity. CSWMP will document all potential waste generation with likely quantity and characteristics. It will also define location for storage of construction waste and its disposal methodologies. It will also define caution for its transportation and safe disposal.

2. Construction Waste Management Goals

- Identification of all the waste generation with likely quantity and source.
- Define transportation, storage and disposal measures for all category of waste with provision of re-use where feasible.
- Limit the amount of construction waste generated on this project by limiting the quantities of materials and packaging to only those necessary for the project.
- Divert construction waste generated on project site from landfills at no cost premium to the project.

3. Expected Project Waste, Disposal and Handling

a) Excavated Soil:

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b) Concrete waste:

c) Steel and Metal Waste:

d) Plastic Waste

e) Wood Waste

f) Hazardous Waste

g) Solid Waste

a) Excavated Soil:

This soil shall be used for backfilling of protection wall, landscaping or other construction activities. If any extra soil is left, then that should be disposed at the approved debris disposal site.

- Dumping in vacant areas on the job-site
- Using concrete waste as backfilling material or road leveling works.

b) Concrete waste:

Concrete waste management involves recycling, reusing, and disposing of concrete waste in a way that reduces environmental impact.

- Concrete Waste resulting from concrete mixers/trucks is anticipated to be minimal and insignificant. However for the concrete waste resulting from the onsite batching plant (If Applicable) will be handled by the concrete supplier.
- dust control)
- Recycled aggregates shall be reused in non-structural concrete and sub base aggregates for approach road works.
- Transfer to stockpile area and being crushed with rocks and used as a sub base material for approach road works.
- Dumping in vacant areas on the job-site
- Using concrete waste as backfilling material or road leveling works.

c) Plastic Waste:

"Plastic waste from a construction site" refers to the various types of plastic packaging, protective sheeting, and other plastic components used during construction that are

discarded as waste, often ending up in landfills or contributing to environmental pollution if not properly managed; this includes items like plastic wrapping from building materials, plastic piping, protective plastic sheeting used to cover areas during construction, and even plastic containers from food and beverages consumed on site,

Benefits of managing plastic waste

- Reduces air, water, and land pollution
- Reduces the amount of “new” plastic in circulation
- Decreases potential health risks from plastic pollution

d) Metal Scrap:

“Metal scrap waste from a construction site” refers to any discarded pieces of metal, like steel, aluminum, or rebar, that are leftover from a construction project, including things like excess structural beams, old pipes, scrap from cutting metal, and leftover pieces of metal sheeting, which can be recycled and reused instead of being sent to a landfill. At the construction site greatest number of types of material (glass, iron scraps, milk sachets, and so on) separate to sell to the recyclers.

e) Hazardous Waste Handling

When improperly handled, hazardous waste can cause substantial harm to human health and safety or to the environment. Proper handling includes identification, accumulation, and disposal. Common hazardous wastes form a construction site may include waste oils, asphalt products, paints, pesticides and septic wastes.

Challenges of managing hazardous waste includes but not limited to:

- All site personnel must be trained to identify hazardous waste.
- Potentially hazardous materials/waste must be stored under watertight conditions
- Each type of Hazardous waste must be handled in a manner that is appropriate for that type.

f) Wood Waste:

Wood waste from construction sites includes off-cuts, shavings, sawdust, slabs, and bars. It can also include fastenings like hinges, and framing anchors.

- Wood waste can also be used as a fuel.
- Wood waste can be processed into new materials like particle board, engineered wood, or wood pellets.

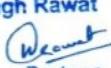
g) Solid Waste (Municipal and other Waste):

Municipal waste will be generated from labour camp. Dustbins for recyclable and non-recyclable waste shall be provided in labour camp area. Recyclable waste shall be sold. Biodegradable waste shall preferably be composted in portable mechanical waste composters. Concept of reduce; re-use and recycle shall be followed at site. The non-recyclable, non salable and non-biodegradable wastes shall preferably be disposed at a marked site at project area itself where this waste should be buried underground. Provision of liner shall also be made at this burial site.

1.	Cardboard/Paper	 
2.	Concrete Waste	

3.	Metal Waste	 <small>alamy</small> <small>Image ID: 7991160 www.alamy.com</small>
4.	Plastic Waste	
5.	Wood Waste	 <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Soft wood off-cuts</p> </div> <div style="text-align: center;">  <p>Mixed waste</p> </div> <div style="text-align: center;">  <p>Hardwood waste</p> </div> <div style="text-align: center;">  <p>Wood shavings</p> </div> <div style="text-align: center;">  <p>Off cuts</p> </div> <div style="text-align: center;">  <p>Saw Dust</p> </div> </div>
6.	Hazardous Waste	

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7.	General Waste	
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Fig : Types of waste

4. Debris Management

Bridge construction activities may generate various type of waste depending on nature of Rehabilitation work involved such as debris and construction waste, empty paints containers, Waste lubricants, electrical waste, and municipal waste from labor camps. Some of these wastes are bio-degradable, some are reusable /saleable and some are non-biodegradable and non reusable. Many of these wastes attract provision of law for its disposal and require controlled handling and disposal. Construction Debris and Solid Waste Management Plan (CSWMP) is aimed to fulfill the requirement of safe handling and controlled disposal of these wastes.

The following caution can be followed for safe disposal of waste at disposal site-

During the site clearance and disposal of debris, the Contractor will take full care to ensure that public or private properties are not affected, there is no dwellings around the dumpsite and that the traffic is not interrupted.

- The Contractor will dispose debris only at approved site.
- In the event of any spoil or debris from the sites being deposited on any adjacent land, the Contractor will immediately remove all such spoil debris and restore the affected area to its original state.
- Contractor will adopt dust suppression methods while transporting the waste.
- Any diversion required for traffic during disposal of debris shall be provided with barriers after the discussion with local people.

- During the debris disposal, Contractor will take care of surrounding features and avoid any damage to it. The debris should not be disposed along the bridges & culverts and near the water bodies.
- Material should be disposed through covered vehicles only
- No contaminated/hazardous/e-waste shall be disposed at the debris disposal site
- The dump sites once filled shall have to be suitably rehabilitated by planting local Species of shrubs and other plants. Local species of trees has also to be planted so that the landscape is coherent and is in harmony with its various components.

5. Labor Details

Parameter	Details
Total Number of Laborers	15
Skilled Laborers	08
Unskilled Laborers	07
Labor Camp Location	

6. Types & Estimated Quantity of Waste Generated

Waste Type	Examples	Estimated Quantity (per month)	Source of Generation
Excavated Soil & Rock	Earth, boulders, debris	600 Cum	Foundation, excavation
Concrete Waste	Broken concrete, cement slurry	0.00 tons	RCC works, piling
Steel & Metal Waste	Reinforcement bars, wires	0.00 kg	Fabrication, cutting
Wood Waste	Timber, plywood, pallets	0.00 kg	Formwork, scaffolding
Hazardous Waste/liquid waste	Paints, lubricants, fuels, batteries/concrete wash	0.00 litters/kg	Machinery maintenance
Plastic Waste	Packaging materials, pipes	kg	Material storage, construction

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Page 7

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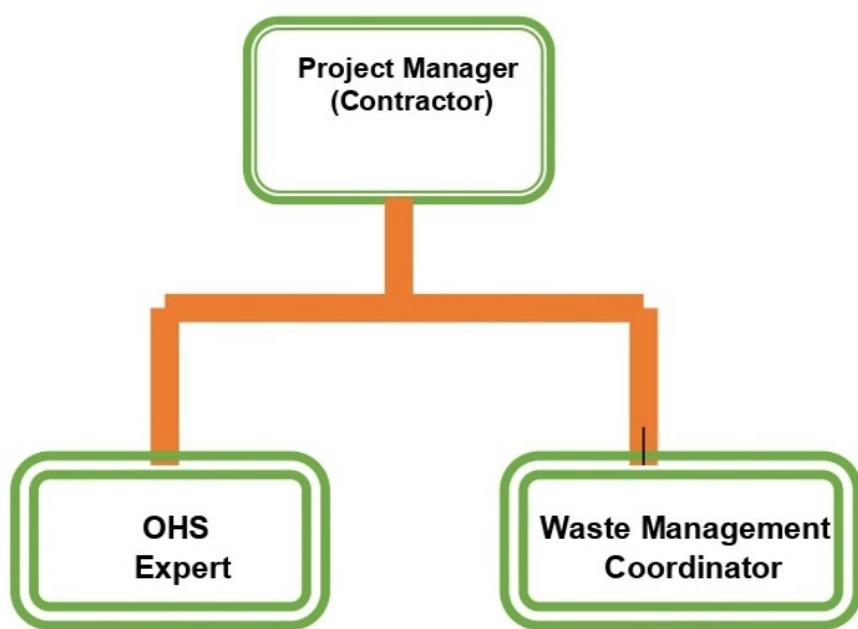


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7. Types & Estimated Quantity of Waste Generated

Waste Type	Disposal Location	Disposal Method
Excavated Soil	Backfilling areas	Used for leveling or disposed at approved sites
Concrete Waste	Recycling plant, construction backfill	Crushed & reused for pavement base
Metal Scrap	Local scrap dealers, recycling units	Sold for recycling
Wood Waste	Reused at site, donated	Reused in scaffolding, sold if excess
Hazardous Waste	Authorized disposal facility	Collected & treated as per regulations
Domestic Waste	Municipal collection sites/compost pith area	Regular municipal disposal or by preparing composting pit
Plastic Waste	Municipal collection	Regular municipal disposal

8. CWM organization chart



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Page 8

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