**STANDARD OPERATING PROCEDURE**

**FOR**

**ROAD CONNECTIVITY & INFRASTRUCTURE MAINTENANCE**

**PURPOSE**

The main purpose of this SOP is to ensure that the road connectivity remains serviceable, open/passable at all times for traffic and other infrastructures maintained for COVID-19 outbreak.

**ROAD INFORMATION WITHIN DZONGKHAG**

1. Total Length of GC Roads : 287.25 KM
2. Total Length of Farm Roads : 1873.70 KM

Lobzang Tshering

17656515

Dechen Dorji

17340155

Tshewang Peldon

Amber Bdr.Pradhan

17879139

Thinley Wangchuk

17896575

Tshering Dorji

17371429

Thinley Wangchuk

17896575

Dawa Seldon

17886577

Tshering Phuntsho

17114511

Thinley

17552732

Dhendup Tshering

17509360

Tsheten Dema

17368795

Jigme Dorji

17278303

Tashi Chozang

17693192

Pema Leki

17435836

Pema Choden

17454567

Amber Bdr.Pradhan

17879139

Tshering Gyeltshen

17130229

**Tenzin Tobgyel, 17839131**

**CHIEF COORDINATOR**

Phuntsho Dorji, 17576424

**QUARANTINE CENTRES AT GEWOG**

**LEVEL**

Concerned Gewog Engineers

**MONGAR DEMKHKONG**

Tshering Dukpa, 77248114

**KENGKHAR-WERINGLA**

**DEMKHKONG**

Phuntsho Dorji, 17576424

SHERAB RELDRI HSS

Tshering Dukpa, 77248114

**DREMTSE-NGATSHANG**

**DEMKHKONG**

Tshewang Tashi, 17647917

**INFRASTRUCTURE**

**QUARANTINE CENTRE**

MONGAR HSS

Tshering Phuntsho, 17114513

MONGAR HSS

Phuntsho Dorji, 17576424

**QUARANTINE CENTRE**

KIDEKHAR CS

KIDEKHAR CS

Jigme Dorji, 17278303

SHERAB RELDRI HSS

Tshering Gyeltshen, 17130229

**HIGHWAY**

**ELECTRICAL**

Lobzang Tshering, 17656515

**ISOLATION / ICU (RGH)**

Tashi Chozang, 17693193

**ISOLATION / ICU (RGH)**

Tshewang Tashi, 17647916

Tshering Dukpa, 77248114

SENGOR SUB-DIVISION

**CIVIL**

Sonam Wangchuk, 17161001

ROLONG SUB-DIVISION

Kinzang Dorji, 17634090

**TRASHIGANG RO, DOR**

Sonam Tenzin,17801055

Chief Engineer

**LINGMITHANG RO, DOR**

Karma Rinzin,77347499

Chief Engineer

**EAST KORILA**

**GEWOG ROADS**

Gaaley, 17645487

Chening Jamtsho

17422018

GYALPOSHING SUB-DIVISION

Phuntsho, 17721816

AUTSHO SUB-DIVISION

DREPONG

GONGDU

JURMEY

KENGKHAR

MONGAR

SALENG

SILAMBI

TSAKALING

NARANG

NGATSHANG

SHERMUNG

THANGRONG

WERINGLA

TSAMANG

CHALI

BALAM

CHASKKHAR

DREMETSE

**WEST KORILA**

**RESPONSE AND RECOVERY**

1. **ROAD- ROURTINE MAINTENANCE (RM) ACTIVITIES**
2. **GEWOG ROADS**

The Gewog administration in collaboration with the engineer should ensure that Gewog center roads (GC) and farm roads connecting to villages are clear at all times of the year. For minor clearing of GC roads, the muster roll workers would look after routine maintenances while at the time of major roadblocks Gewog has to mobilize machinery as required to maintain or clear blocks.

**1.1 ROLES & RESPONSIBILITIES**

**1.12 ROUTINE MAINTENANCES**

This refers to minor clearing works need to be attended at all times. Manual labourers using basic hand tools can do the work. Although it is simple, it does require proper organization and regular implementation according to a plan. Delayed Routine Maintenance quickly turns into serious emergency maintenance. The scope of works considered for routine maintenance is as per list attached in ANNEXURE-I.

**1) GUP** shall;

1. Put up the requisition for Daily Routine Maintenance
2. Study the daily maintenance works required to be carried out recorded as per Standard Inspection Report along with engineer (ANNEXURE-I)
3. Verify Standard Inspection Report prepared by Gewog Engineer and submit to District Engineer for Technical endorsement and approval.
4. Coordinate and mobilize workforce /labourer for Routine Maintenance.
5. Monitor the work and report the road status report to the site engineer weekly.

**2) SITE ENGINEER** shall;

1. Compile the requisition for Daily Routine Maintenance workers and obtain Muster roll
2. Study the daily maintenance works required to be carried out recorded as per Standard Inspection Report (ANNEXURE-I)
3. Submit the Standard Inspection Report duly signed by Gewog Administration to Dzongkhag Engineer for Technical endorsement and approval.
4. Weekly update on road status in consultation with Gewog/GOA/Tshokpas and submit report to District Engineer.

**1.12 MAJOR MAINTENANCES**

It covers Monsoon Restoration and Emergency Works such as landslides, earthquake and floods that have contributed to deterioration or serious damages to roads. Following works are considered as Major Maintenance works:

1. Removal of Debris from slides/slips covering the road surface (where volume of material>5cu.m/20m stretch).
2. Urgent repair of structures to keep them functioning, eg. Washed away culverts, bridges, walls and drains.
3. Cleaning of drains, waterways and opening of culverts and bridge from slides/slips debris covering them to allow unobstructed water flow off.

**1) GUP** shall;

1. Be vigilant at all times especially during onset of monsoon season;
2. Immediately inform the concern Gewog Engineer, Dzongkhag Engineer and Dzongkhag Administration for any major road blocks caused.
3. Submit damage assessment report along with Photographic evidences.
4. Carry out maintenances work even during off traffic period i.e. during nighttime for emergency response;
5. Clear affected site immediately by deploying required number of Machineries and Equipment
6. Restore traffic as soon as possible depending on the degree of damages, work nature and availability of resources at that point of time.

**2) SITE ENGINEER** shall;

1. Be vigilant at all times especially during onset of monsoon season;
2. Visit affected site and ensure prompt assessment of the road condition with cost estimate;
3. Instruct Gewog to restore the damaged road immediately or immediately deploy required number of Machineries and Equipment to the affected site and restore;
4. Carry out road clearing even during off traffic period i.e. during nighttime for emergency response;
5. Weekly update on road status in consultation with Gewog/GOA/Tshokpas and the report shall submit to Dzongkhag Engineer.
6. Communicate with Dzongkhag Engineer to liaise with other agencies (DoR Regional Office, CDCL,Forest, and KHPC) for the assistance (Manpower, Machines, Materials) required depending on the severity/degree of damages (ANNEXURE-III).
7. Instruct excavation and digging of trenches should be done liaising with engineer;
8. Monitor maintenances work and ensure excavated materials be stacked properly away from the road without any obstructions to the traffic or pedestrians;
9. Ensure any damages caused to the utility services during the road clearance/trench excavation reinstated / repaired to original condition and to the satisfaction of the utility providers.

**3) DZONGKAHG ENGINEER shall;**

1. Send the Gewog Engineer immediately to assess the site;
2. Liaise with other agencies (DoR Regional Office, CDCL,Forest, and KHPC) for the assistance (Manpower, Machines, Materials) required depending on the severity/degree of damages (ANNEXURE-III);
3. Provide administrative and technical backstopping in all situations.
4. **BRIDGE MAINTENANCES**

Equally, the Gewog Administration and Engineers are required to implement the following measures for maintenance of Bridges in order to increase the reliability and prevent failures of transportation network during disasters and emergencies.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Bailey or other Steel Bridge** | **RCC Bridge/ Culvert** | **Log Bridge** |
| **Minor Maintenance** | | | |
| 1 | Hammering nails which protrude above plank surface | Clearing of obstruction within culvert and inlet/outlet | Checking of patten nails |
| 2 | Clearing joints, planks | Cleaning of masonry-headwalls, wingwalls etc. including clearing of weep holes | Removing debris around timbers |
| 3 | Checking presence of all pins and bolts | Minor repairs to masonry | Minor replacement of decking/wheel guard/ wheel track timbers |
| 4 | Greasing and tightening of bolts | Whitewashing of parapets, cleaning of guardrail | Replacing packing stringers |
| **Major Maintenance** | | | |
| 5 | Replacing damaged deck panels/planks/chords | Repaired to damaged masonry and RCC walls or parapets etc | Replacement of Stringers |
| 6 | Painting of damaged steelworks as required | Mortar repairs to damaged pipes | Total/majority replacement of decking/wheel guard/wheel track timbers |
|  |  | Replacement of damaged handrail/guardrail | Total/majority replacement of packing above stringers, repair to abutment/wingwalls |

**2.1 RESPONSIBILITIES**

**1) GUP Shall;**

1. Immediately inform the Gewog Engineer, Dzongkhag Engineer and Dzongkhag Administration for any damages caused to bridges and other related infrastructures (Causeway, culvert, walls, abutments etc.)
2. Assess periodically and submit status report and information of Bridges and other related infrastructures to Dzongkhag Engineer.
3. Ensure maintenances of minor damages any time.

**2) DZONGKHAG ENGINEER** shall;

1. Depute the Gewog Engineer assisted by one Senior Engineer to the affected location for assessment and reporting.
2. Work out the resource requirement (Manpower, Machineries, and Expertise) in consultation with DoR / CDCL / CFO;
3. Deploy required number of Machineries, Equipment, Professionals and Skilled Force to the affected site and restore the bridge;
4. Communicate with Dasho Dzongda/Incident Commander and liaise with other agencies (DoR Regional Office, CDCL, NRDCL, Forest, and KHPC) for the assistance requiring resources (Materials, Equipment) and construction professionals and skilled workforce depending on the severity/degree of damages (ANNEXURE-III).
5. Ensure road is open to traffic as soon as possible depending on the degree of damages, nature of work, location and availability of resources at that point of time.

**3) SITE ENGINEER** shall;

1. Assess bridge conditions and other infrastructures periodically and submit status report to Dzongkhag Engineer;
2. Visit to affected location for assessment and report immediately at the time emergency;
3. Deploy required Machineries, Equipment, Professionals and Skilled Force to the affected site.
4. Monitor the maintenance work and ensure the road is open to traffic as soon as possible depending on the degree of damages, nature of work, location and availability of resources at that point of time.
5. **NATIONAL HIGHWAYS**

The national highways need to be open at all times to ferry serious patients to Mongar Referral Hospital and also to ferry essential times during the COVID-19 pandemic.

**3.1 RESPONSIBILTIES**

**1) DZONGKHAG ENGINEER** shall;

1. Liaise with Chief Engineer of Lingmithang Regional Office, Department of Roads (DoR) for any highways related activities.
2. Immediately join for assessment and take action with Regional Office of DoR.
3. Update the status of work/action taken for the Highway to the Incident Commander.

**2) CHIEF ENGINEER** (DoR) shall;

1. Ensure highways are open at all times;
2. Deploy required machineries to damage locations and restore the road connectivity promptly any time;
3. Report about the road connectivity status whenever required.
4. **GENERAL INFRASTRUCTURE MAINTENANCE AND SUPPORT**
5. Dzongkhag Engineering will carry out the engineering works and infrastructure maintenance as and when required.
6. Liaise with DHO /Medical & Shelter Team, Procurement Officer for any resources required during execution.
7. Assignment of roles and responsibilities of the Engineering Staff (ANNEXURE-II).
8. Review periodically and submit the status of work to District Engineer and Incident Commander.
9. **RESOURCES**

* Excavators
* Backhoes
* Bridge Parts (Bailey Suspension Bridges)
* Timber/Logs
* Sand/ Stone Boulders/ Aggregates
* Cement
* Sanitary Fittings & Accessories
* Hardware Items
* Electrical fittings & Accessories

**RESOURCE ARRANGEMENT:**

* + - 1. Forest Resources (Log, Stone boulder & Sand) will be made available from the same locality by nearest Forest Officer.
      2. Stone Aggregates will be made available from nearest NRDCL Depot (Gyalposhing, Lingmithang, Dongde, Nganglam) and from the Crusher Plants setup by Construction firms.
      3. Bridge Parts (50ft & 80ft) and Construction Professionals from the Lingmithang RO, DoR.

ANNEXURE-I



ANNEXURE-II



ANNEXURE-III

