Disaster Management Plan

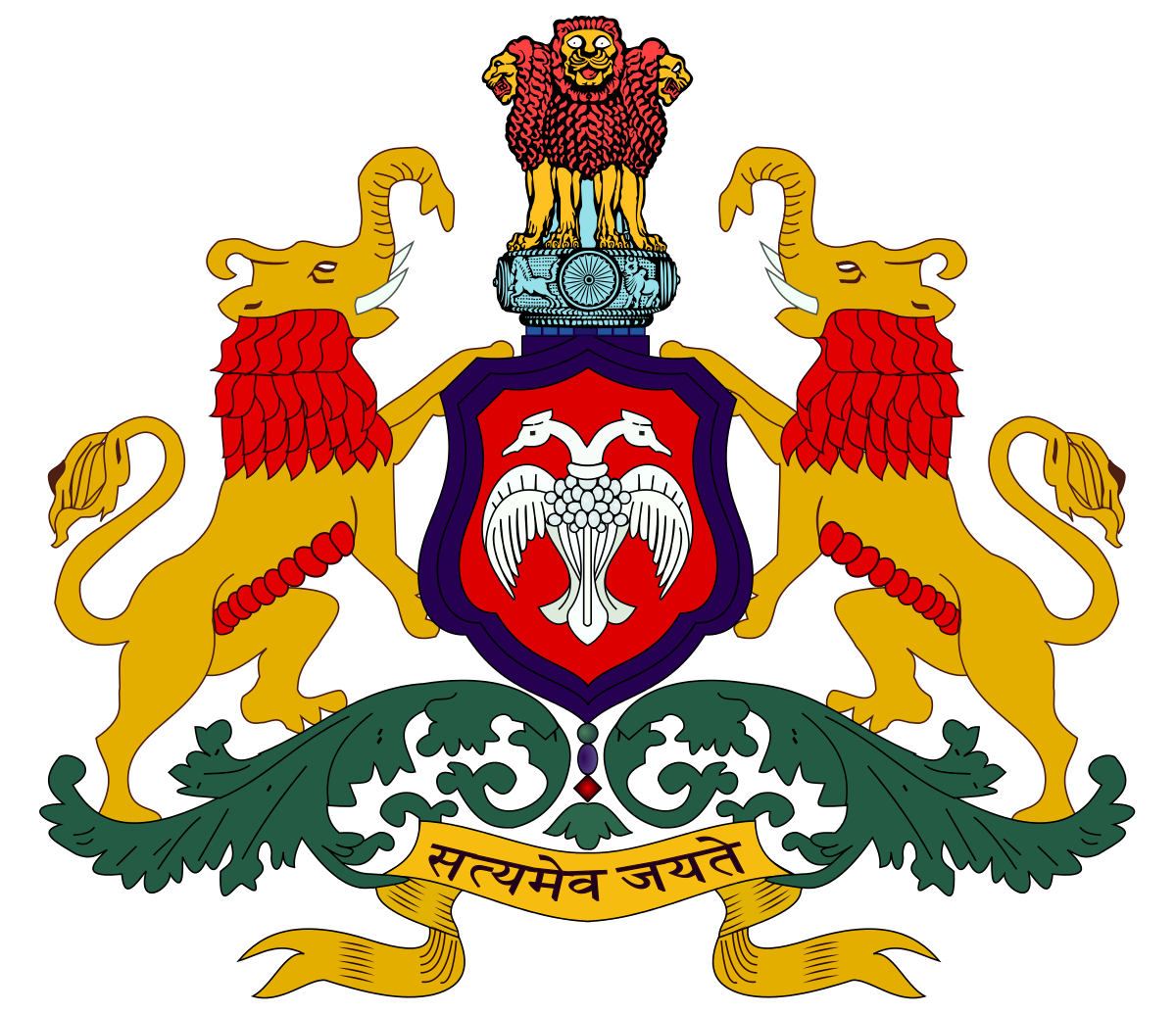
Public Works, Ports & Inland Water Transport Department

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**Government of Karnataka**

**Prepared By**



**PREFACE**

*The state of Karnataka is prone to many hazards, recurring droughts affecting the food production and related industries. Floods are one of the hazards causing devastations in many parts of the state, both hazards directly affecting agriculture and related fields. Millions of people and infrastructure is under high vulnerability of natural and human induced disasters. Karnataka geographic and topographical context makes it extremely vulnerable to droughts, hailstorms, floods, lightening and heatwave. Three coastal districts are prone to Cyclone and coastal erosion. Human induced disaster is increasing in Industries, at construction sites, road accidents etc. Severe water and air pollution are also one of the concerned sectors which is directly affecting the community.*

*Considering the importance of mitigation and preparedness activities at the department level to eliminate/reduce the impact due to such disasters,* *Food, Civil Supplies and Consumer Affairs Department in association with SDMA has developed the department Disaster Management Plan (DMP). This Disaster Management Plan provides a framework and direction for all phases of disaster management cycle. The DMP is a “dynamic document” in the sense that it will be periodically improved keeping up with the emerging requirements, best practices and knowledge base in disaster management.*

*India’s commitment to Sendai framework is manifested in National Disaster Management Plan (NDMP), furthermore, at the 2016 Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR), the Prime Minister of India proclaimed the PM’s 10-Point Agenda in DRR which aims to suggest suitable planning in DRR. The plan is in accordance with the provisions of the Disaster Management Act, 2005, the guidance given in the National Policy on Disaster Management, 2009 (NPDM), SFDRR and PM’s 10 Point Agenda on DRR.*

*The DMP has prepared as per the direction by National Disaster Management Authority (NDMA) and Karnataka State Disaster Management Authority (KSDMA) in accordance with Disaster Management Act 2005. The Disaster Management plan will help to enhance the resilience of the state and manage hazards and prevent/mitigate the impacts due to various disasters and there by Risk Informed development planning under the Food, Civil Supplies and Consumer Affairs Department, Govt. of Karnataka.*

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1. **Introduction**

Disasters leave a grave impact on the lives and livelihoods of people and the economic performance and environmental assets of the affected area. Consequences may be long term and at times irreversible, depending on the mitigation efforts. The consequences of disasters derive from a combination of human actionsand interaction with nature’s cycle or systems. Such incidents seem to be increasingin recent years. These can lead to widespread loss of life and property affectinglarge segments of the population. These can cause harm to the environment and economy of community.

Road is one of the basic modes of Transportation System and is an important sector of infrastructure. Systematic development of Road is one of the pre-requisites for development and acceleration of growth of the Economy. Among the different modes of domestic Transportation Systems, Road Transport carries more than 80% of the Goods and Passenger Traffic. The network of Roads, particularly from Rural to Urban facilitates speedy movement of goods and services and ensures higher growth trends, social integrity and well-being of the society. The productivity and efficiency of Road Transport is directly linked with the availability and quality of Road Network. In view of the high potential in Agricultural activity, there has been huge demand for increase in Road Network. The construction and maintenance of roads and bridges on State Highways, Major District Roads are taken up.

Public works, Ports & Inland water transport Department is responsible for construction and maintenance of the State Principal Road Network including National highways (Authority of Govt. of India), State Highways and Major District Roads and assigned buildings of various Departments under the control of State Government. The Department strives to provide efficient, affordable, customer-focused, environmentally sustainable integrated transportation solutions, connecting villages, towns, cities and centres of industry, commerce, tourism and pilgrimage across the State. The department constructs and maintains roads and bridges on all roads under its control.

The DMP has been developed based on the Section 23 (7) & Section 39 of the Disaster Management (DM) Act 2005. The plan is aligning with national priorities, international commitments in DRR and in line with NDMP (Post-2015 Global Frameworks; Sendai Framework for Disaster Risk Reduction (SFDRR), SDGs; Climate Change; PM's Ten-Point Agenda for Disaster Risk Reduction; Social Inclusion and Mainstreaming DRR.

* 1. **Profile of Department**

Public works, Ports & Inland water transport Department deals mainly with the construction and maintenance of roads, bridges, causeways, and National Highways. The Department also deals with the construction and maintenance of certain public buildings that belong to the Government of Karnataka. The Department is regulated by the Government of Karnataka in terms of policy formulation and its implementation.

The Department, now maintains a total of 68,997 kms of roads (excluding NH roads) comprising 19,445 kms of State Highways, 49,552 kms of Major District Roads

There are 44 National Highways in the state covering a length of 4,123.335 Kms, of which Four-lane with paved shoulder 41.535 Four-lane 196.8 kms, Two-lane with paved shoulder is 1116 Two-lane 1322 Kms and Intermediate lane is 1315 kms and Single lane is 132 Kms. A total amount of Rs.844711.49 lakh is provided in the budget 2019-20 towards implementation of various project works to the Public works, Ports & Island water transport department which, Rs.110195.00 lakh is provided under Externally Aided Projects Rs.54204.00 lakh as Central Assistance to State Development Plan and Rs.790507.49 lakh under State Government.

The Department meets its set objectives through the following wings:

* The Administration Wing, which handles all administrative matters
* The Buildings Wing, which is responsible for construction and maintenance of Government Buildings
* The National Highways Wing, which is in charge of construction and maintenance of National Highways
* The Externally Aided Projects Wing, which manages all Externally Aided Projects
* The National Bank for Agriculture and Rural Development (NABARD) Project, which handles all schemes sanctioned under the NABARD Schemes
* The Karnataka Road Development Corporation (KRDCL), which is mainly responsible for funds raising, management, and formulation of policies
  1. **Objective and Scope of Plan**
     1. **Objective of Plan**

1. To highlight the impact of natural and man-made disasters on roads and buildings and list down efforts taken up by department to mitigate these impact through preparedness and capacity building measures.
2. To map out the standard operating procedures of department at the time of disaster. The role and responsibility of officers can be detected at the time of disaster
3. To assess its own capacity in terms of available resources and get ready to mitigate any unexpected disaster effectively and to prevent the loss of human lives and property through preparedness, prevention & mitigation of disasters
4. To assist other line departments and block as well as district administration in understanding the role of department for disaster preparedness and management
5. To establish the information dissemination channel so that factual information in a timely, accurate and tactful manner reaches at all layers of administration.
6. To list down long-term support plans/schemes/activities of department to highlight the efforts of mainstreaming Disaster Risk Reduction in the departmental activities.
7. To develop robust response system to face any eventuality
   * 1. **Scope of Plan**

Under the Section 39 and 40 of Disaster Management Act 2005 passed by Government of India, it is mandatory on the part of Departments of the State Government, to adopt a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters.

The disaster management plan of Public works, Ports & Island water transport Department shall lay down the following details:

1. Types of disasters to which different parts of the State are hazard prone and vulnerable,
2. Assess the existing capacities and comprehensiveness of Public works, Ports & Island water transport Department, in terms of multi hazard risk management, operational efficiency and appropriateness in the aftermath of disaster,
3. Integration of strategies for prevention and mitigation of disasters, its interlinking with development plans and programmes by the department,
4. The Roles & responsibilities of Public works, Ports & Island water transport Department in the event of any disaster or threatening situation and the emergency support functions in response.
5. Capacity building and preparedness measures proposed to be put into effect for disaster risk reduction, its financial provisioning, implementation & periodic review.
   1. **Institutional Arrangement and Organizational Structure**

Public works, Ports & Inland water transport Department deals with construction and maintenance of roads, bridges, causeways. The department is also responsible for construction and maintenance of National Highways with the fund support from Government of India. The department have been also entrusted with the responsibility of construction and maintenance of certain public buildings that belongs to the Government of Karnataka.

The operations of the Department are in the name and authority of the Governor of Karnataka.At the Government level, the functions of the Department are looked after by Secretary to Government of Karnataka. The Public Works Department is responsible for road works including maintenance on National Highways, State Highways and Major District Roads and construction & maintenance of Government Buildings. It also undertakes construction on behalf of other department under the Deposit Contribution Works. At the Secretariat the Department is headed by a Principal Secretary and a Secretary, PWD.

At field level the Department has three Zones, namely, Communication and Buildings (C&B) South Zone, (C&B) North Zone and National Highways. Each Zone is headed by a Chief Engineer. The Zonal offices consist of “Circles’ and ‘Divisions’. The Divisions are under the control of Circles and Circles are under the control of Zones. Each Circle is headed by a Superintending Engineer. The Divisions are headed by Executive Engineers. The Communication & Buildings South Zones divided into 6 Circles and 20 Divisions. The Communication & Buildings North Zone is divided into 4 Circles and 15 Divisions.

The Chief Engineer, National Highway is primarily entrusted with the responsibility of carrying out works of the National Highway Authority of India (NHSI) and Ministry of Road Transport & Highways (MoRT&H). The major portion of funds operated is from the Government of India. The National Highways Zone is divided into two Circles and seven Divisions.

Karnataka Road Development Corporation Limited (KRDCL) was established on 21st July 1999, as a wholly owned Government of Karnataka enterprise for development of road infrastructure in the State. Managing Director is the head of this enterprise.

Karnataka State Highway Improvement Project (KSHIP) is an initiative of the Public Works Department of the Government of Karnataka for the improvement of 2381 Kms of road network in the State under World Bank assistance. The project costs Rs. 2030 crores. Chief Project Officer heads this organization.

The Department meets its set objectives through the following wings:

* The Administration Wing, which handles all administrative matters
* The Buildings Wing, which is responsible for construction and maintenance of Government Buildings
* The National Highways Wing, which is in charge of construction and maintenance of National Highways
* The Externally Aided Projects Wing, which manages all Externally Aided Projects
* The National Bank for Agriculture and Rural Development (NABARD) Project, which handles all schemes sanctioned under the NABARD Schemes
* The Karnataka Road Development Corporation (KRDCL), which is mainly responsible for funds raising, management, and formulation of policies

**OrganizationStructure:**

**STATE& ZONE LEVEL**

**Minister**

Public Works, Ports and Inland Water Transport Department

**Additional Chief Secretary,**

Public Works, Ports and Inland Water Transport Department

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**Secretary,**

Public Works, Ports and Inland Water Transport Department

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chief Engineer,  Communication & Building, South | Chief Engineer,  Communication & Building,  North | Chief Engineer,  Communication & Building, North-East | ChiefEngineer,  National Highways | Chief  Project Officer, KSHIP | Chief  Project Officer, SHDP | Managing Director KRDCL | Chief Engineer PRAMC | Director Ports& Inland Water Transport | Principal Chief Architect | Chief Engineer, Quality Assurance E-Zone |

**CIRCLE LEVEL**

**Superintendent Engineers**

**DIVISION LEVEL**

**Field Engineers/Junior Engineers**

**FIELD LEVEL**

**Assistant Executive Engineers**

**SUB DIVISIONAL LEVEL**

**Executive Engineers**

1. **Hazard Risk and Vulnerability Assessment**
   1. **Multi Hazard and Vulnerability Profile of State**

**Drought** Among the 10Agro-climaticzones in the state Northern dryzone(81%),North-easterndryzone(65%)andCentraldryzone(49%)haveextensiveareasof veryhighdroughtvulnerability,North-easterntransitionzone(62%),North-easterndryzone(35%) haveareaunderhighdroughtvulnerability.

**Flood** has also been a natural disaster affecting the state causing huge loss of life and property. The data suggest that Karnataka has been witnessing flood events with devastating effects. Even the urban areas have been subjected to floods during heavy or high intensity rainfall events.

**Hailstorms** Occurrence of devastating Hail-storm events during pre-monsoon season is common in many districts of North Interior Karnataka. A first hand estimation by the state govt. agencies suggested that the 2014 Hail-storm event caused a loss of Rs > 1000 Crores.

**Cyclones, Winds and Coastal Erosion** Any severe cyclone along the eastern coastline causes heavy rainfall in the interior Karnataka region resulting in damages to crops, buildings, infrastructure services such as roads and often the impact would be severe disruption in the socio-economic life in these regions. The State has been placed under Category (II) A - Low Vulnerability along with other states of Maharashtra, Kerala and Tamil Nadu.

**Coastal Erosion** The storm waves and cyclones in monsoon increase the susceptibility to coastal erosion. The narrow beaches and the shoreline cannot afford to combat the ferocity of the waves and tides occurring unceasingly.

**Earthquakes** As per the Revised Earthquake Hazard Mapping, 22.1 per cent of the total geographical area of State is under Moderate earthquakedamage risk zone & remaining area is under low damage risk zone.

**Urban Flood** Bengaluru city, also known as Silicon City of India, has been facing severe floods every year. As against its annual average rainfall of 830.5 mm, Bangalore Urban district, is known to receive excess rains in short time.

**Landslide** VeryheavyslopesarecoveredbyhillyregionsofwesternghatsspreadinthedistrictsofKodagu, Chikmagalur,Hassan,Shivamogga,DakshinaKannadaandUttaraKannadawhichrecordaveryhighnormalrainfallof2000mmto4000mm.Duringtherainy periodsthesehillyregionsregularlyexperiencedisplacementofrocksandsoilscausingwidespread damagetoproperty,infrastructuresuchasrails,roadsandlossofhumanlife.

**RoadAccidents** Thestatehasawholereportedanaverageof45000casesofroadaccidentskillingover9-10thousandand injuringabout50-60thousandpersonseveryyearfrom2009to2014.Bengalurucityaccountsforover 3000accidents.Thestatisticsreveala2.2percentriseinroadfatalitiesinthecountryin2011.

**ChemicalandIndustrialHazards**Thereareabout735hazardousprocessfactoriesin thestate. 59MajorAccidentHazardunits(MAH)unitsareidentifiedinthestate,whicharelocatedin17districts.

**FireAccidents** Thefireincidentsof Mangaluruaircrash,Carltontowerandmanysmalltoseverefireincidentshaveexposedthevulnerability ofthestatetomoresucheventsinfuture.TheKSFESmustensureavailabilityofadequatestateofart equipmentsandtechnologyincludingskilledhumanresourcetocounterthefireaccidentstakingplace bothinruralandurbanareas.

**Man-AnimalConflicts** Intherecentyears,theconflictsbetweenmanandwildanimalsareincreasingwithnotableexamplesof humanandanimaldeathsreportedeveryyearasshowninthetablebelow. ElephantcampshadbeensetupintheAlur rangetoscaretherogueelephants back to forest thathavecreatedhavocinthearea.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Disaster/Month** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sept** | **Oct** | **Nov** | **Dec** |
| **Drought** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Flood** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Landslide** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cyclone** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Earthquake** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Road Accidents** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Industrial Accidents** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Heat wave** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Fire accidents** |  |  |  |  |  |  |  |  |  |  |  |  |

* 1. **Hazard and Vulnerability Profile Matrix Related to Department**

As extreme weather events become more common, transport infrastructure is increasingly being tested by these events. The department engineers are responding to the challenge by to correcting vulnerabilities in the existing road network and factoring changing weather patterns in the design of new roads especially in the flood prone regions of the state. With respect to buildings and their maintenance, the department strictly abides to the National Building Code 2016, to build disaster resilient buildings.

Major roads and the transportation facilities break down, and get disrupted in significant ways during extreme weather events – thus requiring transportation engineers plan and design systems such that the infrastructure is both resilient and redundant. Resilience calls for the transportation system to recover rapidly from a disruption, while redundancy calls for the inclusion of back-up systems that can continue to provide service when some facilities break down. In particular, the transportation system should continue to serve the needs of people by facilitating evacuation, emergency services, relief supplies, and flow of goods even in the event of extreme conditions.Many measures can be taken to lessen the impacts or reduce the risk of damage from severe storms occurring as a consequence of climate change. These include updating building codes to account for stronger events and larger floods; moving roads in vulnerable areas near coastlines, around lakes and along rivers; insuring that bridges and culverts have adequate capacity to accommodate major storm flows as well as debris; having redundant transportation routes and a good inventory of available roads; and designing structures and pavements to accommodate warmer weather and more extreme temperatures.The following table indicates the hazard wise vulnerability to which the TR&B is prone:

|  |  |  |
| --- | --- | --- |
| **Type of hazard** | **Magnitude of vulnerability** | **Areas/Institutions** |
| **Cyclone** | Medium to High | In the pockets of 3 coastaldistricts |
| **Flood/Flash flood** | Medium to High | In Coastal areas,Malnad region and some pockets of Urban areas of the state |
| **Earthquake** | Medium to High | The regions which are under Zone III and Zone II on the Seismic Index |
| **Landslide** | Low to Medium | In Coastal areas, Malnad region and South Karnataka |
| **Fire** | Low to Medium |  |
| **Man-made Disaster** | | |
| **Accidents** | Low to Medium |  |
| **Explosion** | Low to Medium |  |

* 1. **Existing Capacity of Department**

The Public works, Ports & Inland water transport Department administration has reasonably good infrastructure, knowledge and resources for disaster management. The department have the robust human resource in the state. The department has presence down till Taluka and Block level in the state. The department during the time of disaster is an integral part of District as well as State Disaster Management Groups/Committee.

The departmental officers at field level have exhaustive list of works contractors who can be immediately pressed into the service on the directions of Incident Commander or superior officers. The field officers of the departments are trained well to manage all kind of scenarios for various phases of disaster management.

In the present scenario, it is essential to enhance the knowledge about climate change impacts on disaster, and their adverse impacts on the areas to mainstream disaster management into developmental planning.To enhance the capability of department, the department will enhance the coordination with the Karnataka State Disaster Management Authority and Karnataka State Remote Sensing Application Center to map out the most vulnerable roads and infrastructure. The planned cooperation will strengthen the disaster management activities of the department.

The department also feels that at the community level, awareness on building codes, land use restrictions, hazard zones etc. are required. There should be sensitization programs and preventive measures for minimizing damages particularly during disaster situations. NGOs and community organizations need to be encouraged to be part of community capacity building activities initiated by KSDMA.

* 1. **Comprehensive Risk Assessment**

The hazard specific risk pertaining to the department is majorly limited to the cyclone, flood, landslide and earthquake prone regions in the state. The existing capabilities of the department states that the department has robust preparedness measures in place. Hence the overall risk for the department falls under the Moderate category.

Considering the rise of extreme weather events due to climate change, the department in coordination of KSDMA and KSRSAC will be conducting a comprehensive risk assessment, including the hazards, vulnerabilities and capacities of the Public works, Ports &Inland water transport Department. The Comprehensive Risk Assessment will enable the department to map existing hazard specific risk on the various infrastructures along with the existing capacities and capabilities of the department.

1. **Prevention and Mitigation**
   1. **Key Prevention and Mitigation Measures**
   2. Direct District and Taluk authorities to inspect and identify roads, bridges, culverts and buildings which are vulnerable for floods, earthquake, cyclone, landslide and repair/strengthen them.
   3. The retrofitting and demolition of identified weak bridges and culverts for the construction of new ones. Demolishing of the buildings that are in collapsible stage. Repair work on newly constructed roads wherever deemed necessary.
   4. Ensuring that the roads/buildings are be made hazard resistant.
   5. Ensure that building codes are strictly followed by public in disaster prone areas. They should be made mandatory.
   6. Mapping and yearly repair/review of vulnerable points that are prone to breach during disaster
   7. Ensure that the new construction does not block natural drainage lines and enough culverts etc. are provided
   8. Construction of dense and strong network of motor able roadsin all vulnerable coastal areas. This not only facilitates quick evacuation at the time of need, but also the supply of relief to the needy, in the aftermath of any disaster
   9. Identification of private buildings suitable for use as shelters by the departments at Districts and Taluk. Prepare list of such buildings and provide them to necessary authorities.
   10. **Major Schemes, Budget Provisions and DRR Integration**

Public works, Ports & Inland water transport department Karnataka actively contributes in the disaster related preparedness, mitigation and relief measures at the State level. The Department has its own budgetary provisions for its schemes which one or the other way contributes towards disaster mitigation and preparedness. The department through integration with the ongoing or proposed development/ support programs associated with Roads & Buildings sector ensure the strengthening of infrastructural resilience across the state.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Schemes** | **Key components** | **Key aspects for mainstreaming DRR & CC** |
| 1. | **RESTORATION OF MAJOR DISTRICT ROADS** | * To restore connectivity lost due to the disaster through the reconstruction of damaged major district roads * Involve repair, reconstruction strengthening of roads. * An amount of Rs.3800 lakh is provided in the budget 2018-19 | Develop all weather road connectivity to all habitations for access to goods and services, and for evacuation in emergency |
| 2. | **CONSTRUCTION OF DEPARTMENTAL**  **BUILDINGS** | * To construct the robust state institutions according to the new Building Codes * An amount of Rs.10000.00 lakh is provided in the budget 218-19 | Develop hazard resistant buildings for reducing loss to the critical state institutions for smooth management of situation in emergency |
| 3. | **CONSTRUCTION OF ROADS (UNDER NH)** | * To build a dense network of National Highways across the state * An amount of Rs.49370.00 lakh is provided in the budget 2018-19 | Develop all weather road connectivity to all habitations for access to goods and services, and for evacuation in emergency  \*Increasing emergency efficiency in street lighting system |
| 4. | **CONSTUCTION OF JUDICIAL BUILDINGS** | * To build the hazard resistant Judicial Buildings * An amount of Rs.25000.00 lakh is provided in the budget 2018-19 | Develop hazard resistant buildings for reducing loss to the critical state institutions for state affairs |
| 5. | **CONSTRUCTION OF RESIDENCIAL BUILDINGS** | * To construct hazard resistant residential buildings as per new building codes * An amount of Rs.2280.00 lakh is provided in the budget 2018-19 | Develop hazard resistant buildings for reducing loss of lives during disasters |
| 6. | **CONSTRUCTION OF HOUSING COMPLEX FOR JUDICIAL OFFICERS** | * An amount of Rs.4043.00 lakh is provided in the budget 2018-19 |  |
| 7. | **CONSTRUCTION OF STATE HIGHWAY DEVELOPMENT PROJECT** | * An amount of Rs.35000.00 lakh is provided in the budget 2018-19 | Develop all weather road connectivity to all habitations for access to goods and services, and for evacuation in emergency |
| 8. | **KARNATAKA STATE HIGHWAY IMPROVEMENT PROJECTS** | * An amount of Rs.1,95,403.00 lakh is provided in the budget 2018-19 | \* Develop all-weather  road connectivity to  ensure habitations’ rural  access goods and services  (water tank, hospitals,...),  to ensure livelihood of the  people, and for  evacuation in emergency  \* Connect with existing  roads system to build a  comprehensive transport  system |
| 9. | **CONSTUCTION OF ELIVATED ROADS CORRIDOR IN BANGALORE(UNDER THE KRDCL)** | * An amount of Rs.1,20,284.00 lakh is provided in the budget 2018-19 | |  | | --- | | \* All-weather road connectivity  toallhabitations for access to  goods and services, and  forevacuationinemergency  \* Increasing energyefficiency  in streetlighting system  \* Provision of safefootpaths,  Cycletracks etc to promote  non-motorized transport | |
| 10. | **MAJOR DISTICT ROAD BRIDGES-EXPENDITURES** | * An amount of Rs.3,510.00 lakh is provided in the budget 2018-19 | All-weather roadconnectivity to allhabitations for access to  goods and services, and  for evacuation inemergency  \* Remodel orstrengthen the currentroads to become  resilience duringdisasters and useenergy-efficient lighting  system  \* Utilize energy-savingsystem |
| 11. | **IMPROVEMENTS OF STATE**  **HIGHWAY BRIDGES** | * An amount of Rs.2,100.00 lakh is provided in the budget 2018-19 |  |
| 12. | **CONSTUCTION OF STATE HIGHWAY ROADS AND MAINTANACE (5054)** | * An amount of Rs.25,850.00 lakh is provided in the budget 2018-19 | All-weather roadconnectivity to allhabitations for access to  goods and services, and  for evacuation inemergency  \* Remodel orstrengthen the currentroads to become  resilience duringdisasters and useenergy-efficient lighting  system  \* Utilize energy-savingsystem |
| 13. | **CONSTRUCTION OF DISTRICT ROADS(SDP-SCP-TSP)-5054** | * An amount of Rs.15,267.00 lakh is provided in the budget 2018-19 | All-weather roadconnectivity to allhabitations for access to  goods and services, and  for evacuation in emergency |
| 14. | **IMPROVEMENTS AND MAINTANCE OF DISTRICT ROADS** | * An amount of Rs.42,568.00 lakh is provided in the budget 2018-19 |  |
| 15. | **SUB-PROJECTS FOR SCHEDULED CASTE** | * An amount of Rs.64,955.00 lakh is provided in the budget 2018-19 |  |
| 16. | **SUB-PROJECTS FOR TRIBAL** | * An amount of Rs.32,210.00 lakh is provided in the budget 2018-19 |  |
| 17. | **CONSTRUCTION AND MAINTANANCEOF ASSEMBLY BUILDINGS-2059** | * An amount of Rs.630.00 lakh is provided in the budget 2018-19 | Develop hazard resistant buildings for reducing loss to the critical state institutions for state affairs |
| 18. | **CONSTRUCTION OF OTHER DEPARTMENTAL BUILDINGS** | * An amount of Rs.35,244.00 lakh is provided in the budget 2018-19 | Develop hazard resistant buildings for reducing loss to the critical state institutions for state affairs |
| 19. | **CONSTRUCTION OF VIDHANASOUDHA, VIKASASOUDH, SUVARNASOUDHA, V.V.TOWER ETC** | * An amount of Rs.3,200.00 lakh is provided in the budget 2018-19 | Develop hazard resistant buildings for reducing loss to the critical state institutions for state affairs |
| 20. | **MAINTANACE OF STATE HIGHWAY BRIDGES-3054** | * An amount of Rs.5030.00 lakh is provided in the budget 2018-19 |  |
| 21. | **MAINTANANCE OF DISTRICT AND OTHER BRIDGE ROADS** | * An amount of Rs.46,417.00 lakh is provided in the budget 2018-19 | \* All-weather roadconnectivity to allhabitations for access to  goods and services, and  for evacuation inemergency  \* Remodel orstrengthen the currentroads to become  resilience duringdisasters and useenergy-efficient lighting  system  \* Utilize energy-savingsystem |
| 22. | **MAINTANANCE OF STATE HIGHWAYS** | * An amount of Rs.33,710.00 lakh is provided in the budget 2018-19 |  |
| 23. | **ROAD SAFETY WORKS FOR STATE HIGHWAY** | * An amount of Rs.3,746.00 lakh is provided in the budget 2018-19 | \* Provision of safe footpaths, cycle tracks etc to promote  non-motorizedtransport  \* Enhance theawareness of citizens insharing the public  transport  \* Enhance the share ofpublic transportin the totaltransportation mix andlow emission/fuel-efficient vehicles and vehicles that run on |
| 24. | **ROAD SAFETY MAINTANACE WORKS FOR DISTRICT AND OTHER ROADS** | * An amount of Rs.4,735.00 lakh is provided in the budget 2018-19 | • Encourage non- motorized transportlike walking and cycling  \* Provision of safefootpaths, cycletracks etc to promote  non-motorizedtransport |
| 25. | **MAINTANACE OF DISTRICT AND OTHER ROADS UNDER THE PROJECT OF ‘RURAL ROAD DEVELOPMENT’** | * An amount of Rs.32,342.00 lakh is provided in the budget 2018-19 | \* Develop all-weatherroad connectivity toensure habitations’ ruralaccess goods and services(water tank, hospitals),and for evacuation in  emergency  \* Connect with existingroads system to build a strong transportsystem |
| 26. | **CONSTRUCTION OF MAJOR DISTRICT ROADS UNDER THE NABARD.** | * An amount of Rs.9,870.00 lakh is provided in the budget 2018-19 | All-weather roadconnectivity to allhabitations for access to  goods and services, and  for evacuation in emergency |

* 1. **Minimizing Losses and DRR**

The prevention, preparedness and mitigation measures of Public works, Ports & Inland water transport Department will certainly help to reduce the direct and indirect losses. In addition to it, through capacity building of stakeholders, the potential risks and losses can surely be minimized.

It is also the overall objective of Sendai Framework and Prime Minister’s 10 Point Agenda is to build resilience of communities to disasters, by achieving substantive reduction of disaster risks and losses in lives, and in physical, social, economic, businesses & environmental assets of communities and countries.

The suggested Action Plan for mainstreaming DRR and CCA the department is as follow

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sl. No. |  |  | Activities to be undertaken for mainstreaming DRR & CCA |  |  | Responsible Authorities/Agencies |  |
|  |  |  |  |  |  |
|  | 1. |  |  | Remodel or strengthen existingcyclone shelters/damaged roads toreduce vulnerability to climatechange |  |  | Roads and Building Section |  |
|  |  |  |  |  |  |  |  |
| 2. | |  |  | Interlink private and public transportmodes so as to minimize the use ofprivate transport | |  | Transport Section |
|  | 3. |  |  | Increasing energy efficiency in streetlighting system |  |  | Road and Building Section |  |
| 4. | |  |  | Mandatory rainwater harvesting inthe constructed buildings | |  | Road and Building Section |
|  | 5. |  |  | Incentives for rooftop solar powergeneration and provision of gridconnectivity |  |  | Road and Building Section |  |
| 6. | |  |  | Encourage non-motorized transportlike walking and cycling | |  | Transport Section |
|  | 7. |  |  | Enhance the share of public transport in the total transportation vehicles and vehicles that run on alternate fuel |  |  | Transport Section |  |

1. **Preparedness Measures**

Disaster preparedness planning measures will primarily focus on the preparedness of Public works, Ports & Inland water transport Department of Govt. Of Karnataka, by protecting assets and efficient utilization of resources by taking appropriate actions to face any disaster.

* 1. **Co-ordination with Department & Agencies**

It is very important for Public works, Ports & Inland water transport Department to get connected with Revenue, Transport, Home & Fire Services, Civil Supplies, RWS, Health & other Departments, for required support during/ post disaster. The Public works, Ports & Inland water transport Department may offer emergency support in the form of vehicles during disaster time, as well as may also assist in the shifting of victims, persons from affected site to the identified safe locations, and also supply of the essential items at particular locations. In the department the field level officers such as Executive Engineers, Assistant Executive Engineers and Field Engineers maintains the close contact with Block and Taluk level officers of Revenue, Transport, Home & Fire Services, Civil Supplies, RWS, Health & other Departments.

The preparedness plan of the Department will further ensure that the all concerned departments and agencies are able to respond to potential damage zones in a prompt & coordinated manner. In most disaster situations the loss of life, injuries and infrastructure damage could be significantly reduced through appropriate preparedness measures taken by Department.

* 1. **Key Preparedness Step on Ground**

Following are the key preparedness steps being taken at the field level:

* **Identification of vulnerable points**
* **Preparation and submission of estimates for taking up and strengthening of vulnerable points.**
* **List out the machinery like power saws, JCBs etc., with their conditions and submit to the Executive Engineer.**
* **List out the contractors with their address and contacts numbers.**
* **Inspection of weak and narrow Bridges, Culverts and cause ways with details of repairs to be taken up.**
* **Identification of over flowing locations impending disaster.**
* **Identify and removal of weak and dried trees along the road side.**
* **Alternate routes to be identified and listed out.**
  1. **Inspection of Works:**

**Role of Chief Engineer**

* The Chief Engineer with the assistance of Superintending Engineer in his office shall order to conduct technical audit of works under execution selected at random or even surprise inspections to ensure that specifications prescribed, designs approved, instructions issued in technical circulars and Government directives wherever they exist, are followed at every stage.
* Whenever Chief Engineer goes on tour and inspects work, inspection notes shall invariably be issued in writing and communicated to all the officers concerned. If necessary, Chief Engineer shall insist on a detailed write up of the works going to be inspected, from the Divisional officers concerned well in advance. Unless ordered in writing to the contrary, instructions issued by the inspecting officers shall be as a rule, be followed only after approval of the competent authority for the financial implication is obtained in writing by the Divisional officer. Care must be exercised at all levels to ensure that no undue delay occurs in according financial sanction by the competent authority after the Instructions are issued in writing.
* The Chief Engineer will review major works and lingering works in his jurisdiction atleast once in a quarter with SEs and EEs by convening a meeting at Head Quarters or Circle Offices.
* The Chief Engineer will conduct monthly and bimonthly meeting of Superintending Engineers/ Executive Engineers and in his jurisdiction to review the progress of works and issues pertaining to works in different circles / divisions officers by rotation which facilities study of management and quality of works in each division.

**Role of Superintendent Engineer**

* He can also undertake technical audit of works of other Departments either on their request or when directed by Government. He shall check quality reports, field book and make entries in the field book covering remarks on shortcomings and suggestions for improvements.
* He should inspect each Divisional office twice in a year and send a report thereon to the Chief Engineer detailing therein the results of his examination of initial accounts including that of stock, tools and plant and other registers, records, agreements, contractor's ledger, Estimates etc.
* He shall be responsible for conducting failure analysis of civil structures if occurs, under construction or constructed already, anywhere in his jurisdiction. The practice of waiting for subdivision and division officers report is dispensed with, and it is hereby directed that he shall always take the earliest opportunity to inspect the site and direct the conduct of failure analysis. He shall also direct such steps as may be necessary for arresting further damage.
* The Superintending Engineer shall review all works in his jurisdiction monthly with EEs by meeting at Head Quarters or Divisions by rotation.

**Role of Executive Engineer**

* The Executive Engineer can initiate any proposal for carrying out improvements to an existing structure or to take up new constructions or additions or alterations, if it is in the public interest. In case of buildings belonging to other Departments, he should conduct joint inspection with the concerned officer of that Department, identify the repairs or improvement works to be carried out, prepare priority lists and take action to prepare Estimates either for inclusion in the budget or for taking under lump sum grants, if feasible.
* In case of roads and bridges, he shall take action to prepare Estimates for repairs, renewals, improvements, or even new alignments, acquisition of buildings for providing the sight distance as per standards or improving the alignment or widening of formation etc., He should have a shelf of estimates ready, so that even they can be recast adopting current schedule of rates and submitted to the concerned authorities. However the Executive Engineer shall ensure that in case of new building works unless the land is available, no estimate shall be prepared or technically sanctioned or tender floated.
* It is the duty of the Executive Engineer to inspect periodically all major road works, bridges, buildings etc., and to see that they are maintained in an efficient condition.
* Executive Engineer should examine at least once a year the books of his subordinates to see that the primary accounts fairly represent the progress of each work and that the accounts are personally attended to, by the sub Divisional officers.
* The Executive Engineer shall review all works in his jurisdiction at-least every month with AEEs by meeting at Head Quarters or Sub -Divisions by rotation.

**Role of Assistant Executive Engineer**

* It is the duty of the sub-Divisional officer to inspect periodically all works in his charge and see to their proper maintenance. He shall also inspect all other road works, bridges and building works in his charge and see that they are also well maintained.
* He shall along with his Executive Engineer shall inspect all buildings and roads and bridges in his jurisdiction and take steps to prepare Estimates for all repairs and improvements. He shall keep a shelf of Estimates ready, so that the works can be taken up with least delay when funds are made available.

**Role of Field Engineer**

* The field engineer shall be primarily responsible for the custody of Government land, buildings, machinery and other Government property vesting with the Department; for keeping Government road boundary lands and buildings free from encroachment and unauthorized occupations; for keeping in proper custody all Government machinaries , tools and plants, and materials-at-site account.
* In case of any theft of machinaries, a FIR shall be lodged with the police under intimation to Assistant Executive Engineer and Executive Engineer about the theft of Government property and materials and damage to Government properties.
* He shall carry out pre and post-monsoon inspection of buildings and submit reports periodically to the sub-Divisional officers for further action and for entry in the registers of buildings. He shall be answerable for the general conditions of buildings, roads, bridges, culverts and also construction materials at site, and shall immediately bring the structural weaknesses and deficiency if any, to the notice of the sub-division officers.
* He shall carry out pre and post monsoon inspections and timely inspections of all culverts/bridge works in his sections as prescribed from time to time.
* He shall conduct surveys including leveling and investigations for preparation of plans and estimates for the works entrusted, point out in writing to the sub Divisional officer any mistakes/ discrepancies in the sanctioned plans, variations in the conditions of the sites and plans; and any other anomaly that may be noticed.
* He shall prepare plans, Estimates, layout plans as well as elevations of buildings under his charge in accordance with the prescribed standards.
* He shall not only look after the requirement of machinery but also maintain all the required primary records such as log books, history sheets etc., in up-to-date condition.
* It is the duty of the Field Engineer / Assistant Engineer / special grade Junior Engineer/ Junior Engineer of the quality control sub division to collect the materials from site for testing.

1. **Capacity Building and Training**
   1. **Capacity Development Plan of Department**

The Department deems the capacity building as the one of the most important activity to strengthen the capacities of its staff. The training plan prepared by the department should be reviewed and revised every year. According to the training needs assessment the training calendar will be prepared and followed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Public works, Ports & Island water transport Department** | | | | | |
| **S.No.** | **Training Need** |  | **Departments** | **To Whom** | **Duration** |
| **1** | Disaster and Climate Resilient  Infrastructure |  |  | SE to AE | 2-days |
|  |  |  |  |  |
| **2** | Integrated Coastal Zone  Management for Sustainable  Development |  |  | SE to AE | 3 days |
|  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.No | Training Need | | Departments | To Whom | Duration |
| 1 | Implementation of Disaster Management Act 2005 –Department’s Role &Responsibilities | | All Departmentsconcerned | Senior Middle / Middle /Support/ grassroots levelfunctionaries | 3 days |
| 2 | Incident Response System(IRS); Basic and intermediate | | All Departmentsconcerned | Senior Middle / Middle /Support/ grassroots levelfunctionaries | 3 days |
| 3 | Community Based DisasterPreparedness | | All Departments concerned /NGOs/CBOs | Senior Middle / Middle /Support/ grassroots levelfunctionaries/ULBs/Elected Representatives ofULBs/PRIs | 3 days |
| 4 | Preparation and Implementationof State/ District DisasterManagement Plans | | All Departmentsconcerned | Senior / Middle / supportlevel functionaries | 2 days |
| 5 | Basics of integrating DRR into departmental activities/programs (DRRimplementation Strategies) | | All Departmentsconcerned | Senior / Middle / supportlevel functionaries | 2 days |
| 6 | Mainstreaming DRR & CCAinto development planningApproaches/Strategies | | All Departmentsconcerned | Senior/Middle/supportlevel functionaries | 3 days |
| 7 | Hazard Risk and Vulnerability Assessment |  | All Departmentsconcerned | Senior/Middle/supportlevel functionaries | 2 days |

* 1. **Status of Inventory of Trained Professionals and Resources**

The department of Public works, Ports & Island water transport Department has reasonably good infrastructure, knowledge and resources for disaster management. The department have the robust human resource in the state. The department has presence down till Taluka and Block level in the state. The department during the time of disaster is an integral part of District as well as State Disaster Management Groups/Committee.

The departmental officers at field level have exhaustive list of works contractors who can be immediately pressed into the service on the directions of Incident Commander or superior officers. The field officers of the departments are trained well to manage all kind of scenarios for various phases of disaster management.

The list of resources deployed/used by the department are mentioned below:

|  |  |
| --- | --- |
| S.No. | Resources/Equipment Used |
| 1. | JCB, Excavators |
| 2. | Cranes |
| 3. | Tractors |
| 4. | Power Saws |
| 5. | Sand Bags |
| 6. | Water Tankers |
| 7. | Other Construction Materials such as Cement, Sand, Rocks, etc. |

* 1. **Simulation/ Table Top and Mock Exercises**

To measure the training effectiveness, and to check the actual disaster preparedness, the mock exercises and simulation drills will be chalked out at regular intervals, by Public works, Ports & Inland water transport Department. The mock exercise shall be conducted in association of KSDMA and other line department for strengthening the coordination among all line departments, the observations from Mock Exercises will be discussed and documented for the future actions and record purpose.

#### **Mock Exercise**

Public awareness must be an important part in disaster preparedness. The aim of public awareness programs is to promote an informed, alert and self-reliant community, capable of playing its full part in support of and in co-operation with the agencies and teams responsible for disaster management activities. An essential part of a disaster preparedness plan is the education of those who may be threatened by a disaster. Although television, radio and printed media can never replace the impact of direct instruction, sensitively designed and disseminated messages do provide a useful supplement to the overall process. Mock drill is an integral part of the disaster management plan, as it is a preparedness drill to keep the community alert.

Teams at district and block level will carry out mock drills on various disasters situation annually. For floods/flash floods these will be carried before the monsoon period. For earthquakes, landslides etc., such drills will be done in the month of April/ May itself. Mock drills are to be organized in all villages to activate the village level committees and modification of the DM plan based on the gaps identified during such exercises. Basically, this is a simulation exercise, which if practiced several times, would help in improving the cohesiveness of the community during an emergency. The community preparedness could be enhanced through mock drill exercise organized once in six months as per the seasonality calendar of natural disaster events that is likely to occur.

**Mock Drills for Department**

The department is highly vulnerable to Flood situations, Fire Accidents and Cyclone. Mock Exercises will ensure the preparedness of the department and will also boost the understanding of the departmental officers towards the point of coordination with different departments. During flood and Cyclone situations infrastructures may get affected. Do’s and dont’s and preparedness measures for these hazards is highly essential. There for the department will ensure mock exercises on Flood and Cyclone in an early basis with the support of KSDMA, Fire, Police, NDRF and other concerned line departments.

#### **Before the Drill**

1. Conducting different drills for different emergencies based on the vulnerability
2. Making available "do's and don‘t" lists for various emergencies to stakeholders before planning a drill
3. Keeping the District Administration, local hospital, fire brigade and police station informed of any planned drill
4. Preparing a detailed event chart with time and activities (i.e. information of the event, warning dissemination, place of occurrence, effect/impact of disaster, de-warning and debriefing
5. Preparing a safety plan before the drill.

**During the Drill**

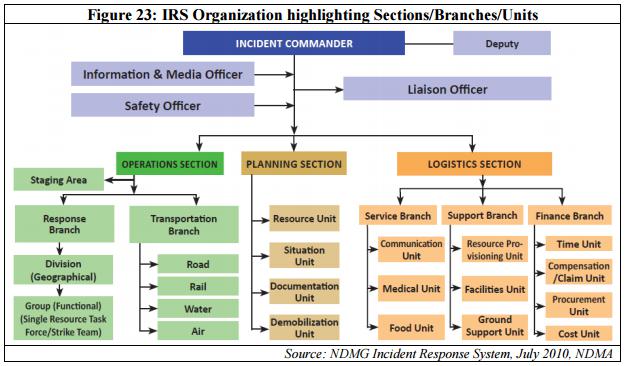
1. Monitoring response time, to enable the community to learn how to minimizeloss
2. Ensuring proper coordination among various stakeholders during thedrill
3. Having a skilled safety team on standby for any emergencysupport
4. Ensuring proper security arrangements are in place at the mock drilllocation
5. Careful planning and implementation of mock drills can ensure preparedness for Disaster.
6. **Disaster Response Plan**

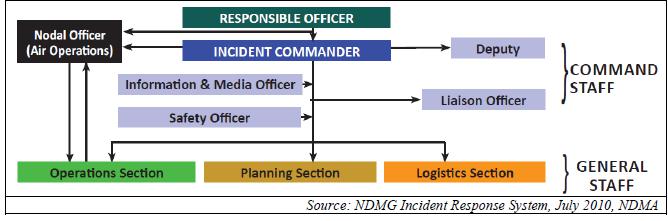
The need for an effective disaster management strategy is to lessen disaster impact which can be achieved through strengthening the existing organizational and administrative structure at the Department of Public works, Ports & Inland water transport. The Emergency Response Plan provides a framework includes specific disaster action plans along with modal scenarios in detail to conduct practice drills at department level. The Response plan establishes an organized setup to conduct Emergency Support Functions (ESF) operations for any of the Natural and Manmade Disasters. It outlines an implementing framework of sharing resources as per the requirement within National and State level department will be engaged to support during an emergency situation.

* 1. **Incident Response System (IRS)**

Incident Response System (IRS) constitutes an important part of the disaster response at the National, State, District and Local level (disaster affected site). The IRS is essentially a management system which is used for organizing the human and material resource which is pressed in to service while responding to disasters. IRS is guided by a thorough planning ensures that the critical resources which are used while responding to disasters are deployed in its rightful positions, are mobilized & demobilized in a timely manner to avoid wastage, and further emphasis on a detailed documentation of use of resources, actions and decisions.

As the functional expertise required for responding to disasters are various kinds, the IRS envisages to draw human resource with different expertise from different department or agencies (such as the Public works, Ports & Inland water transport, Health and Medical, Water and Sanitation, Veterinary, food and Roads & Buildings etc) and deploy them as a part of the responding team under the IRS framework.





IRS organization functions through Incident Response Teams (IRTs) in the field (depicted below). Responsible Officers (ROs) have been designated at the State (Chief Secretary) and District (District Magistrate) Level as overall in-charge of the incident response management. The RO may however delegate responsibilities to Incident Commander (IC), who in turn will manage the incident through IRTs.

IRTs are pre-designated at three levels - State, District, Sub-Division Tehsil and Block. The RO will activate on receipt of early warning. In case of no warning, IRT will respond and contact RO for further support. A Nodal Officer (NO) has to be designated for proper coordination between the District, State and National Level in activating air support for response.

**Command Staff**

The Command Staff consists of Incident Commander (IC), Information & Media Officer (IMO),Safety Officer (SO) and Liaison Officer (LO). They report directly to the IC and may have assistants. The Command Staff may or may not have supporting organizations under them.

* 1. **Formation of IRS at State, District, Sub-Division, Tehsil and Block Level**

The Incident Response Team (IRT) is a team comprising of all positions of IRS organisation headed by In-Charge (IC). The Operation Section (OS) helps to prepare different tactical operations as required. The Planning Section(PS) helps in obtaining different information and preparing plans as required. The Logistics/Financial Section (L/FS) assesses the availability and requirement of resources and takes action for obtaining them. IRTs will function at State, District, Sub-Division, Tehsil and Block levels. These teams will respond to all natural and manmade disasters. The lowest administrative unit (Sub-Division, Tehsil/Block) will be the first responder as the case may be. If the incident becomes complex and is beyond the control of IRT (Sub-Division, Tehsil/Block), the higher level IRT (District or State) will be informed and they will take over the response management. In such cases the lower level IRT will merge with higher level IRT.For formation of Incident Response Teams at State, District, Sub-division, Tehsil and Block levels, guidelines on Incident Response System published by NDMA may be followed.

* 1. **Department Role in IRS**

Ground Support Unit will be supplemented by the representation of Public works, Ports & Inland water transport Department. The Department representative will be the part of Logistics Section, depending upon disaster type. It will be his/her responsibility to facilitate in the planning of Roads and Safety of Buildings related functions and documenting allied information. The Secretary of the department will be the part of State Level IRT whereas Superintendent Engineer will support the activities at District level and the Executive Engineer of the department will be the part of local level IRT.

The Public works, Ports & Inland water transport Department will be responsible for repair, upkeep and also the maintenance of all the State roads & highways, National highways (Authority of Govt. of India) and Major District Roads and assigned buildings of various Departments under the control of State Government.

As soon as Emergency Operation Centre would get the information about any event, the staff on duty in EOC will pass the information the concerned authority and seek for his instruction for further actions. If the information pertains to the occurrence of a disaster in any part of the district, the staff on duty shall also try to inform District Disaster Management Committee members, Emergency Support Functions-team leaders, Major hospitals and District Disaster Management Authority etc. During such event, the Public works, Ports & Inland water transport Department will also pool in the resources from the available contractors to the pre identified safe points under the command of District Collector.

* 1. **Roles and Responsibility of Departmental Officers as per IRT**

**Role of Chief Engineer:**

* Chief Engineer is the administrative and professional Head of the Department in respect of the charge held by him, for the efficient working of which he is responsible to Government. He is the responsible professional advisor to the Government in all matters relating to existing works. He is responsible for initiating changes related to appropriate personnel management systems, construction and quality management systems, information management systems and accounting management systems.
* Ensuring satisfactory execution of all budgeted works and also other works in his jurisdiction. He shall report to Government instances related to the budget processing / execution and also indicate an action plan to take appropriate action.
* He will exercise a concurrent control with the Accountant General, over the duties of the officers of the Department, in maintaining accounts and give legitimate support to him in enforcing strict attention to the rules concerning the disbursement of money, and submission of accounts. If in exercising this control, any financial irregularity is discovered, he shall initiate appropriate action.
* The Accountant General and the Chief Engineer should assist each other in rendering the maintenance of accounts of the Department as perfect as possible. It will be the duty of the chief Engineer to examine the registers of works, so as to keep a vigilant watch over rates of items of work.
* He shall see that the budget appropriations of the year are fully expended in so far as is consistent with general economy and the prevention of large expenditure in closing months.
* He shall be responsible for ensuring that any fund which is not likely to be needed during the year is promptly surrendered, so as to allow its appropriation for other purposes by the proper authority.
* It is the duty of the Chief Engineer to recommend to Government appropriate postings for Superintending Engineers, Executive Engineers and Assistant Executive Engineers based on their specialization, experience, aptitude and work requirements.
* He shall take steps necessary to instill a sense of responsibility in the personnel of the Department that they shall always strive to use appropriate choice of words in communication with others particularly the elected representatives and the general public.
* The responsibility of important structural designs under execution rests on the Chief Engineer who shall exercise careful control over the designing and technical sanctions.
* Work slip to be prepared when the physical stage of work reaches 50% of programme and when there is likelihood of revision beyond 15% of approved cost, the Chief Engineer shall inspect the work, if it is a major work and satisfy himself thoroughly so that the Government can decide either limiting the scope of the project or providing additional funds to see that the work is not held up at any stage.
* In case of heavy damages sustained by the Department due to natural calamities during monsoon, flooding and such unforeseen contingency, the Chief Engineer shall at the earliest opportunity inspect the site of the damage, study the extent of damage, initiate appropriate remedial measures as well as take action to investigate the causes thereof, under intimation to Government. He has full powers to issue on the spot instructions to take up such works as may be dictated by the situation, in such manner as he deems fit and his decision shall be a commitment on the part of Government, in all emergencies.
* It shall be the duty of the Chief Engineer to watch the progress of expenditure on all heads of charges under him with a view to see that sanctioned grants are not exceeded and that, if an excess is, for unforeseen reasons, un-avoidable, prompt action is taken for applying for a supplementary grant.
* The Chief Engineer shall also consider it as a part of his duty to see that the allotments of the year are, as far as possible, fully expended and a special report explaining short outlay be submitted at the end of the year. This rule is not intended to encourage expenditure, which it might otherwise be desirable to postpone, simply for the sake of working up budget Estimates.
* The general supervision and control of the assessment of such revenues, as may be collected in the Department will constitute the duty of the Chief Engineer who should frame the necessary estimates during the year.
* As head of the Department, he is responsible for laying down job specifications and man power planning in his Department. He shall assess the technical and management skills of the Engineering personnel working under his control so that Engineers who are conversant or specialized in particular fields are posted to such works; shall organize periodic refresher courses conducted by organizations like KERS, CRRI, NITHE, RASTHA and also reputed Engineering Institutions within the country for updating their technical knowledge for works involving complicated designs and construction problems.
* He shall exercise overall control in adoption of design criteria, construction procedures including safety measures to be adopted for various works under his control so as to ensure uniformity and economy in construction. The quality control aspects of all works under progress shall be closely arranged to be monitored so as to ensure that not only quality control measures are applied at all stages of construction, but also authentic records are kept of the same.
* It shall be his duty to closely monitor the manner in which the powers delegated are exercised by his subordinate officers, with regard to sanction to estimates and in case any irregular practice is observed and are being continued, it shall be entirely within his powers to order withdrawal of such powers delegated to such officers by any executive order issued by Government . He, then shall report such cases in detail to Government to initiate such action as may be necessary, to order investigation as the situation demands and as directed by Government.
* Execution of all works shall be as per physical and financial program drawn up in advance. Sanction of estimates shall be monitored closely and it shall be the duty of the Chief Engineer to order cancellation of sanctions which exceeds the sanction amount irrespective of the fact whether the works have been started or not. He shall keep adequate watch to ensure that the officers who are transferred, do not sanction estimates and accord approvals or make payments, which are contrary to rules.
* In cases, where competent authority is Government and stopping the execution of work till sanctions are received from Government is not in the interest of the Government or likely to involve higher financial implications, the Chief Engineer has powers to order execution of such works, in such manner as he deems fit, but shall report all such orders to Government .
* Execution of works without adequate / appropriate financial sanction shall be avoided as a rule except in cases of emergency and except where so ordered by the Chief Engineer in the interest of Government, which will be reported to the Government forthwith within a week.
* It is one of the foremost responsibilities of the Chief Engineer to arrange to conduct performance appraisal, by a systematic evaluation of the present and potential capabilities of the personnel of the Department by their superiors, and to initiate appropriate measures for employee development.
* Whenever natural calamities occur, he shall immediately visit the site, decide in consultation with the officers at the field level, the mitigating measures to be adopted, and issue written instructions and communicate the same to the Government in the Public Works, Ports & IWT Department. All works done as part of disaster relief operations shall be paid on priority basis.

**Role of Superintending Engineers:**

* The administrative unit of the Department is the circle in charge of the Superintending Engineer, who is responsible to the Chief Engineer for the administration and general professional control the officers of the Department in his circle. He is also a direction officer for the divisions under his control.
* It shall be the duty of the Superintending Engineer to inspect the important works in his circle and to conduct technical audit of selected works, major or minor, by a team comprising of senior engineers and accounts staff to satisfy himself that the system of management is efficient and economical, that the regulations as regards works, stock and accounts are strictly observed and that the executive and administrative work of the circle is satisfactorily performed.
* The decision of the Superintending Engineer in all matters connecting to the rates payable for various items of work carried out in his jurisdiction is final. It will also be his duty to arrange to keep watch and control the rates paid for work.
* He should generally supervise and control the correct assessment and realization of all revenues due in his charge. He is authorized to correspond directly with any of the other Departmental officers and local authorities in all matters pertaining to his circle.
* The Superintending Engineer shall be responsible for the engineering features of all designs and calculations for the same, and the accuracy of the rates in the projects submitted from his office. When submitting any report, designs or Estimates to the Chief Engineer, he will invariably state his own recommendations and opinion.
* He shall see that the authorized system of accounts of works is maintained throughout his circle and that the Divisional officers submit their accounts to the Accountant General punctually.
* He shall arrange to examine at least once a year, the books of the Divisional offices and subordinates and see that matters relating to the primary accounts are attended to personally by the division and sub-Divisional officers and that the accounts fairly represent the progress of each work.
* He shall arrange to see that no delay is allowed to occur in submission of work slip or revised estimate wherever necessary including completion reports. The Superintending Engineer and Accountant General shall assist one another in rendering the management of the accounts of the Department as perfect as possible.
* The Superintending Engineer is the controlling officer for the grants of the circle and reconciliation of departmental figures with that of the Accountant General.
* It shall also be his responsibility to monitor execution of all budgeted works every month and shall bring to the notice of the Chief Engineer the instances where works approved in the annual budget are not processed or executed satisfactorily.
* It shall be the duty of the Superintending Engineer to immediately bring to the notice of the Chief Engineer at the earliest when any Divisional officer acts infringing prescribed financial procedures either in sanctioning works or incurring expenditure not covered by appropriate financial sanction.
* It shall also be his responsibility to bring to the notice of the Chief Engineer instances where grants allocated are not adequate and stopping of works for want of adequate financial allocation will not be in the interest of Government; and to recommend requests for additional financial allocations which shall be decided by the Chief Engineer and communicated to the Superintending Engineer and the Executive Engineer within two weeks positively.
* It shall be in order for the Superintending Engineer and the Executive Engineer to temporarily suspend works under execution or not to commence works, until appropriate financial sanctions are received.
* It shall be his duty to ensure that a well thought out disaster preparedness systems and arrangements are established at subdivision and Divisional levels, which remain functional at all times.
* He shall be responsible for conducting failure analysis of civil structures if occurs, under construction or constructed already, anywhere in his jurisdiction. The practice of waiting for subdivision and division officers report is dispensed with, and it is hereby directed that he shall always take the earliest opportunity to inspect the site and direct the conduct of failure analysis. He shall also direct such steps as may be necessary for arresting further damage.

**Role of Superintending Engineer, Quality Assurance:**

* The Superintending Engineer, quality assurance shall work directly under the Chief Engineer. He is in-charge of the quality of the works of the entire zone in which he works. He shall closely monitor the quality control aspects of all works under progress so as to ensure that not only quality control is applied at all stages of construction but also authentic records are kept of the same.
* The quality control division and sub divisions of the zone shall come under the control of the Superintending Engineer quality control.
* The Superintending Engineer, quality assurance is responsible for the inspection of works costing more than Rs.1.00 crore at different stages of construction and ensure quality of the work by conducting tests including non destructive tests as per respective standards of roads, bridges and buildings. He shall bring to the notice of the concerned Superintending Engineer and the Executive Engineer, any discrepancy observed in the quality of the works and ensure that the same is rectified.
* He shall inspect works during execution and guide the Field Engineers and contractors on quality aspects of works.

**Role of Executive Engineers:**

* The executive unit of the Department is the division in charge of the Executive Engineer, who is responsible to the Superintending Engineer for the execution and management of all works within his division.
* He can receive positive orders only from his own departmental superiors, the head of the administration or other civil officers duly authorized.
* He is responsible for the proper measures to be taken to preserve all buildings and other works in his division and to prevent encroachment on Government lands in his charge. He should keep accurate plans of all Government lands borne on Departmental registers and supply tracings/Auto Cads there from to his subordinates, when it is necessary to acquaint them with the boundaries.
* It is the duty of the Executive Engineer to report immediately to the Chief Engineer, through the Superintending Engineer under intimation to the deputy commissioner of the district, any serious damage to or loss of immovable property of Government caused by any accident or unusual occurrences.
* As soon as the works are included in the budget, the Executive Engineer shall verify the works and any discrepancies shall be reported to the Government within a week’s time.
* He is responsible for the upkeep of surveying and mathematical instruments in his division and will report on their condition to the Superintending Engineer at the end of each working season. Any damage done to the instruments due to neglect or carelessness should be made good at the expense of the persons responsible for the same.
* It is the duty of the Executive Engineer to furnish treasury and sub-treasury officers, after the inspections, with the certificate regarding the security of strong rooms used or proposed to be used for storage of Currency/ cash or other valuable property as required under article 34(a) of the Karnataka Treasury code. The Executive Engineer may depute for this purpose any selected sub-Divisional officers.
* He is held responsible for the correct assessment of such items of revenue as are collected through the Department and should maintain the necessary records and accounts for the purpose in the register of revenues etc.
* The Executive Engineer, in addition to his other duties is the ex-officio professional adviser of all departments in his jurisdiction and it is his duty to perform this function in a useful manner without allowing undue formalities to interfere with it.
* It is incumbent on the Executive Engineer to ensure that sufficient precautions are taken by the officers concerned to prevent accidents at the work sites and to take precautionary measures to prevent chances of accidents to labour, officials and passersby in the vicinity of blasting operations.
* The Executive Engineer shall not commence the construction of any work or spend public funds without the sanction of competent authority. (See paragraph 314 of KPWA Code.)
* Executive Engineer shall close the accounts within two months after the work is finished and submit the completion report in the prescribed form to the Accountant General and ensure that the work gets deleted from the subsequent year’s budget book.
* Executive Engineer shall take necessary steps to obtain funds for the works under his control and keep his accounts and submit them punctually to the audit office as per rules in force.
* Executive Engineer shall exercise a thorough and efficient control and check over his Divisional accountant and carefully examine the books, returns and papers from which the monthly accounts are compiled.
* Executive Engineer is responsible for the correctness in all respects of the original records of cash and stores receipts and expenditure and for seeing that complete vouchers are obtained. (See paragraph 44 of KPWA Code).
* He shall watch the progress of expenditure under each sub-head of work in contrast to the sanctioned Estimate. He shall see that a revised estimate is prepared when necessary and submitted to the sanctioning authority.
* It is the responsibility of the Executive Engineer to hand over the buildings of other Departments immediately after their completion. If the user Department does not take over the same, it shall be deemed to have been handed over and a letter be addressed to the user Department accordingly.
* The Divisional officer is primarily responsible for affording information in cases of probability of excess of actual over estimated cost of work and is expected not to allow any delay to occur in reporting to the Superintending Engineer, any such probability. In such cases, as well as those relating to irregularities in the rates or cost of a sub-head which are beyond the powers of the Divisional officer to sanction, work slips should be submitted for orders. All the important liabilities not brought to account should also be noted in the work slip.
* It is mandatory on the part of the Executive Engineer to review all budgeted works, minor works, works taken up under deposit contribution or for that matter any work taken up with or without sanction, once a month along with his Assistant Executive Engineers to ensure that the works are progressing according to agreed program; and in case any bottle-necks / problems are met with, to initiate such measures as are necessary to solve those problems. Cases requiring intervention of higher officers should be brought to their notice at the earliest. Wherever necessary, timely action should be taken to find solutions within the framework of the contract agreement, for claims raised by the contractors, after conducting proceedings in the presence of both the parties.
* It shall be his duty that in case grants allocated are not adequate, to draw up a priority list of works wherever necessary in consultation with other Departmental officers who have countersigned the Estimates. He shall endeavor to utilize the budgetary allocations only for such priority works and to order stoppage of other works, if there are absolutely no other alternatives, till such time financial allocations are received. Before taking this extreme step which may adversely affect contractual obligations, the matter shall be brought to the personal knowledge of his Chief Engineer / Superintending Engineer. Where such stoppages are likely to result in higher cost due to escalation or other reasons, then such facts shall be reported well in advance not only to his immediate superior but also to the concerned officer of the user Department. In exceptional cases, if carrying out civil works is likely to result in utilization of machinery / equipment already procured by other Departments, then he shall take action to appraise not only to the immediate superior but also to the head of the Department, the imperative need to carry out such works to avoid loss to Government or to prevent costly equipment remaining idle and take up the work after obtaining the orders in writing from his official superior. On the whole, the Executive Engineer shall make all efforts to inform the concerned authorities about the need for adequate financial allocations; the likely consequences if allocations are not received in time; shall not proceed on oral assurances but proceed only when grants are conveyed in proper form.
* He can authorize outsourcing of survey work, soil investigation; structural designs in case these facilities are not available in the Department.

**Role of Executive Engineer, Quality Assurance:**

* The Executive Engineer, Quality Assurance shall ensure that all the necessary tests are conducted on the materials used in the construction and are in accordance with the necessary MORT&H Specifications and BIS or IRC standards. He shall inspect all the works in progress costing more than Rs.25.00 lakh & less than Rs.1.00 crore, from time to time. He shall ensure that necessary quality control tests are conducted at the prescribed frequency and reports are kept at site and offices.
* He shall inspect works during execution and guide Field Engineers and contractors on quality aspects of works, collecting of samples and testing in the field laboratory.

**Role of Sub-Divisional Officer or Assistant Executive Engineer:**

* A Division is divided into sub-divisions placed in charge of Assistant Executive Engineers or sub-Divisional officers, who are responsible to the Executive Engineer incharge of the division for the efficient management and satisfactory execution of all original works and repairs and the collection of materials and for the correct maintenance of the accounts pertaining to them. Sub-divisions can be constituted only with the sanction of Government.
* The sub-Divisional officer is held personally responsible for the correctness of all initial cash and stock accounts require to be maintained in the sub-Divisional office. He shall examine the transactions relating to all such accounts and other important records and see that they are correct and conform to the rules in force, in all respects. It is his responsibility to see that all cash and stock accounts including all the important records are maintained up-to-date and their extracts wherever necessary are submitted to the Divisional office, on due dates.
* It is incumbent on the sub-Divisional officer to ensure that all subordinates working under him are well posted in the work of correctly maintaining their primary accounts of works, i.e., measurement books, materials-at-site accounts, Tools and Plant accounts and the progress report of all works in their charge.
* It is incumbent on sub-Divisional officer to see that all revenue due in his charge is assessed and collected, auction sales of all old and surplus materials and other revenue yielding property is conducted under orders of competent authority, well in time.
* The sub-Divisional officer is also the professional adviser to the municipalities and other local bodies in his jurisdiction. When he is consulted by such local bodies, it is incumbent on him to comply, in so far as it does not interfere with his legitimate duties.
* The sub-Divisional officer is primarily responsible for execution of work in accordance with prescribed specifications, approved designs and for adopting quality control measures and maintenance of records in a systematic manner. He along with the Field Engineer is responsible for the quality of works under execution. It is his responsibility to report in writing details of progress achieved in execution of works, shortfalls / malpractices noticed or apprehended.
* The sub-Divisional officer shall always maintain up-to-date records of all works under execution, plan, non-plan and other schemes.
* Sub-Divisional officer shall take effective action to prevent commencement of works without sanction / competent approval.
* He shall take effective action to prevent encroachment of Government lands adjoining buildings, roads and bridges.
* He shall take prompt action on every subordinate, particularly where issues like preparation of Estimates I revised Estimates / designs and drawings sought are delayed.
* He shall maintain an accurate and reliable map of all the roads in his charge.. He shall also maintain Road History register, Property register and ROW register in respect of all category of roads in his jurisdiction.

**Role of Assistant Executive Engineer (Electrical):**

* It is the duty of the assistant Executive Engineer to get the electrical installation drawings and Estimates of all the buildings and get approval of the competent authority through the Executive Engineer, electrical division and see that the electrical installation goes hand in hand with the progress of the civil works and ensure that at any time the building progress is not affected by the delay in electrical installation.
* He shall also monitor the power connection to the building from the concerned electricity Department / company.

**Role of Field Engineer:**

* The duties and responsibilities Field Engineer / Assistant Engineer I a selection grade Junior Engineer/ Junior Engineer / section officer or engineering subordinate in the Department are one and the same. The head of the office is at liberty to assign such duties and responsibilities as he may deem fit in the proper discharge of Government work. The Assistant Executive Engineer in-charge of the subdivision shall allocate the work to the field engineers keeping in view, their educational qualifications and basic training prescribed for the job; technical knowledge, experience, initiative, attention to detail, enthusiasm and willingness to work with a sense of involvement and responsibility; mental skill and efforts necessary for performing the functions and duties of the job; responsibility whether supervisory or non-supervisory attached to the job and working conditions including risks and hazards. Any differences about the allocation of duties and jurisdictions, appeal shall lie with the Executive Engineer whose decision in all cases keeping the above guidelines in view, shall be generally final and binding on all concerned.
* He shall submit occupational reports of buildings under his charge and reports of unauthorized occupations of Government buildings, and shall initiate prompt action to prevent unauthorized occupations or misuse of Government buildings.
* He shall also maintain the registers of buildings, bridges, and CDs with details of departmental inspections conducted; and similarly register of all lands including right of way of roads vested with Government under the charge of Department.
* He shall ensure that the works are carried out according to the specifications, approved plans and estimates with required quality at all levels of construction and also timely efficient execution of works entrusted to him.
* He shall maintain measurement books, permanent measurement books and other relevant documents, in proper condition and shall not handover them to others concerned without an acknowledgement.
* He shall be responsible for keeping in official custody of cash received from the subdivision office and render accounts as per rules and within due dates.
* He shall preserve and take care of tools and plants, stock and other articles kept under his charge.
* He shall submit financial budget and performance budget accounts in the prescribed proforma in time to the sub-Divisional officers.
* He shall keep detailed accounts of works, consumption of material and item wise works expenditure of all plan and non-plan works.
* He shall assist in preparation and checking of Estimates including analysis of rates, preparation of drawings, and project reports by the Assistant Executive Engineer.
* He shall submit periodical progress reports describing in detail, the extent of work done, and bottlenecks if any.
* He shall frequently check the registers of circuit house, inspection bungalow, travellers bungalows in his jurisdiction and arrange to deposit collections of rent in treasury or sub-Divisional office as per rules.
* He shall assess the revenue due to Government correctly and ensure proper collections.
* He shall build up records such as land statements, land schedules, for acquisition of lands and take effective action to prevent encroachment of Government lands in his charge.
* He shall report immediately any unusual, extraordinary or peculiar occurrences including heavy rains, flooding and resultant damages relating to his sections, to his respective sub-Divisional officer.
* He shall collect authenticated data with corroborative records and other necessary documents for preparations of projects.
* He shall take measurements himself and assist the sub-Divisional officers and Divisional officers in checking of measurements. He shall also maintain standard measurement of works.
* He shall keep vigilant control over the expenditure and ensure that the works are carried out within the sanctioned cost and provisions, and to submit advance reports whenever alterations in the costs are likely.
* He shall prepare timely running bills every month and final bill of all works within a month of completion, and submit the same to the Assistant Executive Engineer.
* He shall, if necessary, work out abstract quantities in the measurement books so that the bill in proper form can be prepared in the office of the sub-Divisional officer.
* He shall be responsible for timely submission of variations (E.I.R..L), work slips supplementary estimates, revised estimates, completion reports etc., to the higher authorities.
* He shall maintain site order books which shall be presented to the inspecting officers invariably for recording their orders at site. It shall also be the duty of the field engineer to submit draft inspection notes for confirmation by the concerned inspecting officers.
* He shall maintain daily diary giving details of journey performed, results of supervision and inspections conducted, and submit extracts to the sub-Divisional officers periodically as prescribed.
* He shall keep field book / site book at every site/field and enter daily or during inspection and make the same available to inspecting officers for their remarks.
* He shall report to superiors and local Police all cases of accidents, damages to Government. property, roads/culverts occurring either to workmen or to the public in the case of works under execution.
* He shall remain at the site of work throughout the day if necessary and attend office of the Assistant Executive Engineer in the afternoon or attend to any specific work in office or whenever called for.
* He shall not leave the headquarters without prior approval of the immediate superior.
* He shall ensure that all the materials used in the work are tested for their quality in the quality control lab before use. He shall append the test results while submitting the work bills.

**Role of Assistant Engineer Electrical**:

* He is responsible for the electrical installation of the buildings under his charge.
* He shall prepare the electrical estimates as per the layout plan prepared by the Architect; submit the same to the Assistant Executive Engineer (Electrical) to get approval of the competent authority.
* He shall supervise all the electrical installation works and ensure safety and quality work. He shall immediately attend to any faulty electrical installation and ensure that no short-circuiting occurs.

1. **Recovery, Reconstruction and Rehabilitation**
   1. **Damage and Need Assessment**

The Public works, Ports & Inland water transport Department will play an important role in the disaster loss & damage at the required locations. According to the current situation and the loss occurred, the Secretary – Public works, Ports & Inland water transport, will take a final call on the kind of support of support required from the other Departments, such as Revenue, Transport & allied agencies. At the field level, the Field Engineers under the Assistant Executive Engineer conducts the damage assessment.

* 1. **Restoration/Relief Measures to Normalcy**

Control rooms will be made operational at the district level in all disaster affected areas and coordination mechanism to be set up to keep in direct touch with the all concerned departments.

* Supervisory teams consisting of revenue and **Public works, Ports & Inland water transport** Department officials have to be constituted to supervise the enumeration work
* Teams have to be constituted at district level also with senior officials to extend support on the ground, in & around the affected areas.
* Consolidate the information of damaged roads & buildings, bridges and the allied work.
* Liaison with other line departments and concerned agencies for proper coordination.

1. **Knowledge Management**

The Public works, Ports & Inland water transport Department, in collaboration with competent technical institutions (region wise) as well as with State Human Resource Institutions and KSDMA in the State will institutionalize the mechanism of knowledge sharing. Then a network of knowledge institutions will be created. All related institutions will get connected. Under the knowledge management initiative, the key lessons learnt of past disasters so far and also the best disaster management practices pertaining to Public works, Ports & Island water transport sector will be documented.

1. **Financial Arrangements**
   1. **Annual Budget for Department DM Plan and DRR Implementation**

As per the National DM Act 2005, Section 40, sub-section (2) concerned State Department shall make (annual) provisions for financing the activities specified in the disaster management plan of Department and its smooth implementation. The Public works, Ports & Inland water transport Department through its various departmental schemes and trainings takes care of the budget related to the disaster management activities. The department has sufficient availability of funds for implementation of department concerned DRR strategies in the state.

* 1. **Provisioning of funds for Disaster Response**

As per DM Act Section 48, State Disaster Response Fund & District Disaster Response Fund will be established by State Govt. Further, there is a provision for release of National Disaster Response Fund amount as per the specified items and norms of assistance of MHA. According to the type, the assistance will be provided as per norms, through State Disaster Response Fund (SDRF) with regard to losses.

Apart from it, there is a continuous focus by Government on the cashless economy and digitalization for easy, safe and prompt transaction, which will surely help in timely delivery of payment to the concerned entity associated with the Public works, Ports & Inland water transport Department, internally as well as externally during the time of generating disaster response.

1. **Dissemination, Review and Updating of DM Plan**

Disaster Management Plan of Public works, Ports & Inland water transport Department will be communicated and disseminated to all concerned stakeholders for clarity of roles, pertaining to Public works, Ports & Inland water transport aspects, in case of disasters and specific responsibilities point of view.

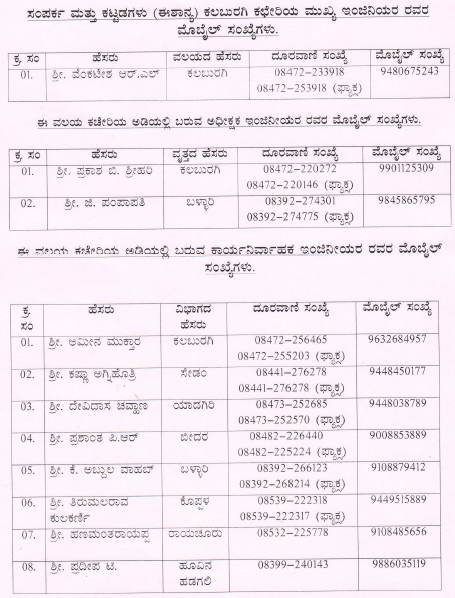
As per the DM Act 2005, Section 40(2) the Departmental DM plan will be reviewed and updated annually in association with KSDMA. Especially the contact list of nodal persons and resources will be checked, verified and updated.

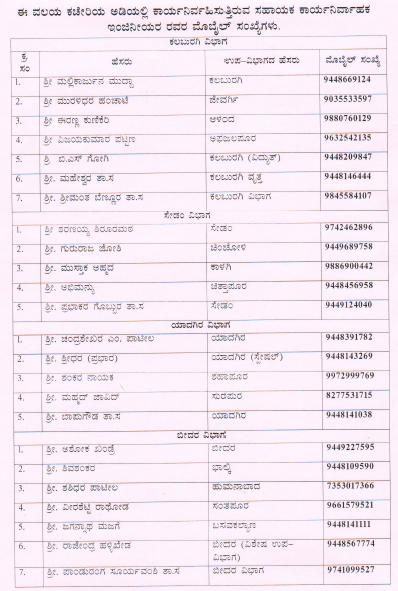
1. **Standard Operating Procedure**
   1. **Pre Disaster**
2. Conduct disaster preparedness meeting twice in a year and advice the field functionaries to gear up for the situation, such meetings shall be organized well advance before the onset of monsoon.
3. Keep the available machinery such as Power saws under the control of one competent Work Inspector/ Gang mazdoor who frequent trails so that the available machinery will be in working condition for upkeep and maintenance of roads and buildings, at all times.
4. The Dy. EE shall verify the working condition of the machinery once in three months.
5. Shelters and private buildings identified for use as relief camps should be checked and strengthened where ever necessary. Special attention should be given for securing weak doors, windows and compound walls.

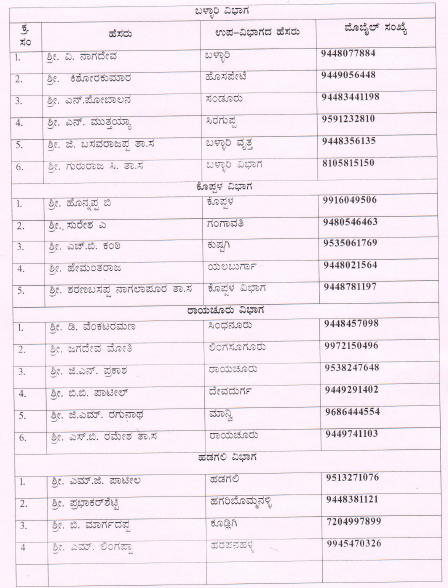
5. Districts and Taluks to make a final check of roads, bridges, culverts and buildings and carry out urgent repairs where ever necessary

6.State & District authorities to make a final check of roads, bridges, culverts and buildings and carry out urgent repairs where ever necessary.

1. Move machinery and equipment meant for repair of roads and buildings. And for removing obstructions nearest to the vulnerable areas for use during emergency.
   1. **During Disaster**
2. Observation of the situation with the help of District EOCs
3. Alerting of field teams to be ready for roads & buildings related work.
4. Enquiring the availability of machinery and requesting them to keep them ready for deployment were ever necessary.
5. Deputing of field staff from non-affected areas to assist staff in likely affected areas.
6. Staff on leave should return to their Head Quarters.
7. No leave shall be sanctioned at the time of disaster.
8. Preparation for post disaster activities.
   1. **Post Disaster**
9. Ensure restoration of the traffic movement where ever possible by quick repair of breaches. Inspection of roads and removal of traffic obstruction. And inspection of roads for assessment of damages and reporting in higher authorities and preparation of its estimations.
10. Coordinate with State and plan for providing adequate number of drains by the side of roads, particularly considering the past experience.
11. Sanction and entrustment of temporary restoration works and updating of maps
12. Steps will be taken for raising the stretches of roads passing through low areas and increase drainage facilities with prior approval of the State.
13. The Public works, Ports & Island water transport /PRE will create a reliable road network that connects vulnerable areas and selected nodal centers, from where transport, relief and rehabilitation operations can be undertaken during future disasters.
14. **Annexure 1 - Departmental Contact Details**







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**Disaster Management Plan**

**Public works, Ports & Island Water Transport Department**

**Government of Karnataka**