A Manual for the Development of Municipal Disaster Management Plans for Floods, Cyclones, Earthquake and Fire hazards

for Urban Local Bodies of Andhra Pradesh, India

Prepared by
Urban Management Centre (UMC)

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in collaboration with ICMA

Prepared for
Centre for Good Governance, (CGG) Andhra Pradesh

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Glossary

Capacity- A combination of all the strengths and resources available within a community, society, or organization that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social, or economic means as well as skilled personnel or attributes such as leadership and management. (ISDR 2007)

Contingency planning-A management tool used to analyze the impact of potential crises and ensure that adequate and appropriate arrangements are made in advance to respond in a timely, effective and appropriate way to the needs an the affected population(s). Contingency planning is a tool to anticipate and solve problems that typically arise during a humanitarian response. (IASC 2007)

Disaster- A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk. (ISDR 2007)

Disaster risk management-The systematic process of using administrative decisions, organization, operational skills and capacities to Implement policies, strategies and coping capacities of the society and communities to lesson the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) the adverse effects of hazards within the broad context of sustainable development (ISDR 2007).

Disaster Risk Reduction-The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards, within the broad context of sustainable development (ISDR 2007)

Hazard- A potentially damaging physical event, phenomenon, or human activity that may cause the loss of life or injury, property damage, social and economic disruption, or environmental degradation. This can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro-meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability. (ISDR 2007)

Early Warning system-The provision of timely and effective information, through identified institutions, that allows individuals exposed to hazards to take action to avoid or reduce their risk and prepare for effective response. Early warning system entail a chain of concerns, namely: understanding and mapping the hazard, monitoring and forecasting impending events, processing and disseminating understandable warnings to policy authorities and the population and undertaking appropriate and timely action in response to the warnings. (ISDR 2007)

Mitigation-Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards. (Examples of structural measures are engineering works and hazard resistant construction, while non-structural measures include awareness-raising, knowledge development, policies on land use and resource management and facilities' operating procedures.) (ISDR 2007)

Preparedness-Pre-disaster activities that are undertaken within the context of disaster risk management and are based on sound risk analysis. This includes the development/enhancement of an overall preparedness strategy, policy, institutional structure, warning and forecasting capabilities, and plans that define measures geared to helping at-risk communities safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of an imminent threat or actual disaster (OCHA, quoted in ISDR 2007).

Prevention-Actions to provide outright avoidance of the adverse impacts of hazards and means to minimize related Environmental, technological and biological disasters. Depending on social and technical feasibility and cost-benefit considerations, investing in preventive measures is justified in areas frequently affected by disasters. In the context of public awareness and education related to disaster risk reduction, changing attitudes and behavior contribute to promoting a 'culture of prevention.' (ISDR 2007)

Relief/Response-The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration. (ISDR 2007)

Recovery-Decisions and actions taken with a view to restoring or improving the pre-disaster living conditions of the affected community while encouraging and facilitating necessary adjustments to reduce disaster risk.

Recovery-(Rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures. (ISDR 2007)

Rescue: An operation to retrieve persons in distress, provide for their initial medical or other needs and deliver them to a place of safety

Risk-The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions. (ISDR 2007) Risk is often also expressed as the equation:
Risk = Hazard x Vulnerability/ Response Capacity (IASC 2007)

Search: An operation using available personnel and facilities to locate persons in distress

Search and Rescue Services: The performance of distress monitoring, communication, coordination and SAR functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources including cooperating aircraft, vessels and other craft and installations

Scenario development-The process of making informed planning assumption about the likely humanitarian impact of a particular Hazard/threat. These assumptions can be drawn up at different levels, including general contextual assumptions such as broad humanitarian consequences and more specific assumptions such as likely humanitarian needs, particular vulnerabilities and capacities of the affected communities and capacity of institutions to respond. The level of assistance that the Government and humanitarian community will be expected to provide, as well as the identification of potential constraints and gaps in the provision of assistance can also be included. (IASC 2007)

Vulnerability-The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of a community to the impact of hazards. (ISDR 2007)

Introduction

About this Manual

The *Manual for* Preparation of Municipal Disaster Management Plans is a guidebook for urban local bodies of the state of Andhra Pradesh/India. This Manual will assist the cities to prepare customized management plans to handle flood, cyclone, earthquake and fire hazards, as per their vulnerability. The objective is to be able to build resilient cities by initiating capacity building of their staff and identifing physical resources and linkages in the cities. The disaster management Plan would include preparedness planning and implementation of response and recovery activities. The Manual is a "toolbox" of ideas and advice, and is not a sample Disaster Management Plan (DMP). Each community's DMP must reflect what that community will do to protect itself from its hazards with the resources it has or can obtain.

The Manual intends to achieve the following for urban local bodies:

- They will understand the basics of four hazards of flood, cyclone, earthquake and fire
- They will understand their city's vulnerability to cyclone, flooding, earthquake, fire hazards and will be able to identify the most vulnerable populations within their jurisdictions.
- They will be able to plan for being prepared to face cyclone, flooding, earthquake, fire hazards.
- They will engage in preparation of resource requirements-both in terms of human and material, identification of sources for mobilization
- They will be able to chart out roles and responsibilities of their staffs to be able to manage incidence of a hazard- cyclone, flooding, earthquake, fire.

Applicability and Scope

This manual is intended primarily for use by personnel responsible for development and maintenance of disaster management plans in urban local bodies of Andhra Pradesh. It is strictly a manual and it establishes no requirements, and its recommendations may be used, adapted, or disregarded. The information presented in this manual has been written as per information available till August 2008, and is for an Indian context.

The manual presents resource inventory templates and action plan templates for the response phase. It also contains assessment templates and explanatory notes for the recovery phase. However the mitigation phase which deals with pre planning to reduce hazards from becoming disasters and the long term disaster recovery activities involving rehabilitation are not probed and explained in the manual.

Using the Manual

Section A- gives an overview of the disaster management scenario in India and particularly in the state of Andhra Pradesh. It highlights the roles of various organizations towards disaster management in India including urban local bodies. It also gives a detailed understanding on the methodology for preparation of disaster management plans and their content.

Section B- provides a step by step methodology for developing a Disaster Management Plan by an urban local body. It will walk the reader through the details of preparing a DMP. It provides recommendations on each aspect of the DMP. This section has been cross

referenced to Section C which includes the actual templates where urban local bodies can directly enter their information.

Section C- contains the templates where urban local bodies can enter their specific data and information to prepare the DMP. The explanations for these templates have been provided in the Section B.

SECTION-A

INTRODUCTION TO DISASTER MANAGEMENT

Section A-
Gives an overview of the disaster management scenario in India and particularly in the state of Andhra Pradesh. It highlights the roles of various organizations towards disaster management in India including urban local bodies. It also gives a detailed understanding on the methodology for preparation of disaster management plans and their content.

Introduction

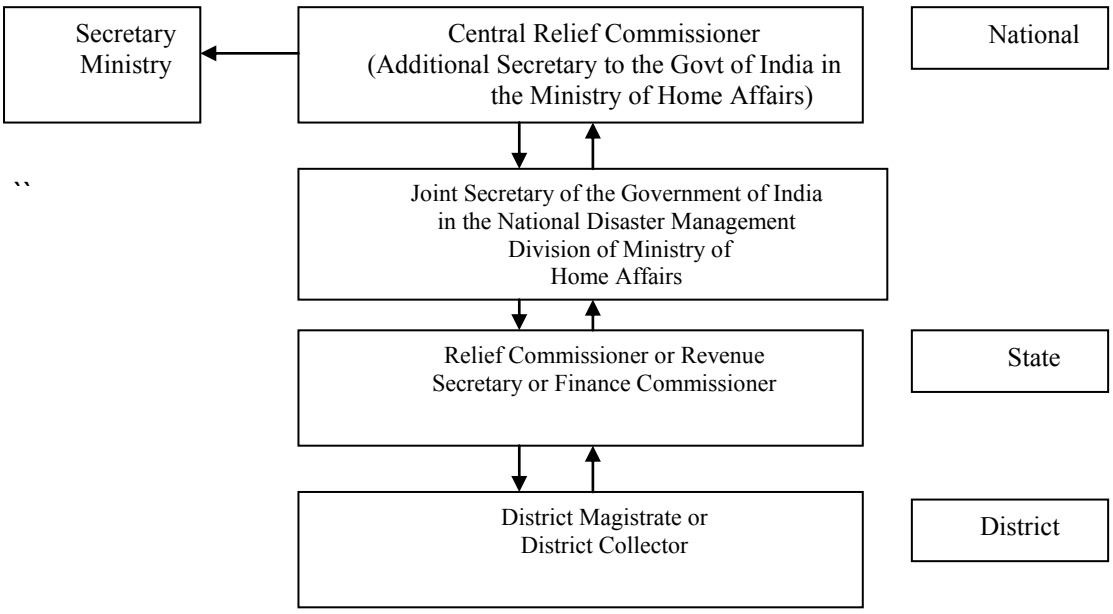
A.1 Disaster Management Events in India

India is vested with a unique climatic regime with two monsoon seasons, two cyclone seasons (pre monsoon and post monsoon cyclones), hot weather season with violent precipitation and a cold weather season. The human society and the natural environment are vulnerable to a number of natural hazards.. Around 57% of the land is vulnerable to earthquakes, 28% is vulnerable to droughts, 12% is vulnerable to floods and 8% of the land is vulnerable to cyclones. Natural disasters in India have lead to serious financial consequences which have mounted up year after year. Approximately around one million houses are damaged annually in the country compounded with loss of lives and economic losses. Figuratively loss of life to natural disasters is 4350 per year and 30 million affected on the whole to natural disasters per year.

Major Disasters of the country from 1991 to till date are

- Major Cyclones (Four) – Andhra Pradesh (May 90), Andhra Pradesh (Dec 96), Gujarat (June 98), Orissa *Super* Cyclone (Oct 99)
- Earthquakes (M 6 & above Uttarkashi region/ Uttaranchal (M6.6, OCT 91), Latur district/, Maharashtra (M6.3, Sept 93), Jabalpur City,/Madhya Pradesh (M6.0, May 97), town of Chamoli/ Uttaranchal (M6.8,March 99), town of Bhuj/ Gujarat (M6.9, Jan 2001), J&K (M7.4, October 2005).
- Tsunami – 26 Dec 2004- Andhra Pradesh, Kerala, Tamil Nadu, Andaman & Nicobar, Pondicherry.
- Avalanches - Jammu and Kashmir (Feb 2005)
- Recurrent floods of varying intensities have become an annual phenomenon.
- 2005-Gujarat, Maharashtra, Karnataka, Himachal Pradesh, Madhya Pradesh

A.2 General Disaster Management Structure of India



The following section gives a brief description of disaster management scenario in India.

At the national level, the Ministry of Home Affairs is the nodal Ministry for all matters concerning disaster management. The Central Relief Commissioner (CRC) in the Ministry of Home Affairs is the nodal officer to coordinate relief operations for natural disasters. The CRC receives information relating to forecasting/warning of a natural calamity from India Meteorological Department (IMD) or from Central Water Commission (CWC) of Ministry of Water Resources on a continuing basis.

The National Crisis Management Committee formed at the center gives directions to the Crisis Management Group (CMG). The CMG's functions are to review every year contingency plans formulated by various Ministries/Departments/Organizations in their respective sectors, measures required for dealing with natural disasters, coordinate the activities of the Central Ministries and the State Governments in relation to disaster preparedness and relief. An Emergency Operations Center (Control Room) exists in the nodal Ministry of Home Affairs, which functions round the clock, to assist the Central Relief Commissioner in the discharge of his duties. A Calamity Relief Fund (CRF) has been set up in the State as per the recommendations of the Eleventh Finance Commission.

At the State level, response, relief and rehabilitation are handled by Departments of Relief & Rehabilitation. The State Crisis Management Committee set up under the Chairmanship of Chief Secretary who is the highest executive functionary in the State. All the concerned Departments and organizations of the State and Central Government Departments located in the State are represented in this Committee. This Committee reviews the action taken for response and relief and gives guidelines/directions as necessary. A control room is established under the Relief Commissioner. The control room is in constant touch with the climate monitoring/forecasting agencies and monitors the action being taken by various agencies in performing their responsibilities.

The district level is the key level for disaster management and relief activities. The Collector/Dy. Commissioner is the chief administrator in the district. He is the focal point in the preparation of district plans and in directing, supervising and monitoring calamities for relief. A District Level Coordination and Relief Committee is constituted and is headed by the Collector as Chairman with participation of all other related government and non governmental agencies and departments in addition to the elected representatives. The Collector is required to maintain close liaison with the district and the State Governments as well as the nearest units of Armed Forces/Central police organizations and other relevant Central Government organizations like Ministries of Communications, Water Resources, Drinking Water, and Surface Transport, who could supplement the efforts of the district administration in the rescue and relief operations.

Similarly, sub-divisional and Block/Taluka level Disaster Management Committees are also being constituted. At the village level Disaster Management Committees and Disaster Management Teams are being constituted. Each village in a multi-hazard prone district will have a Disaster Management Plan.

A.2.1 Disaster Management Act, 2005

The disaster management act provides for activities such as prevention, mitigation, preparedness to rehabilitation, reconstruction and recovery.

It also provides for:

- The creation of a policy, legal and institutional framework, backed by effective statutory and financial support.
- The mainstreaming of multi-sectoral DM concerns into the developmental process and mitigation measures through projects.
- A continuous and integrated process of planning, organizing, coordinating and implementing policies and plans in a holistic, community based participatory, inclusive and sustainable manner.

A.2.2 Role of the National Disaster Management Authority (NDMA)

The Disaster Management Act mandates the NDMA to lay down policies and guidelines for the statutory authorities to draw their plans. In essence, the NDMA will concentrate on prevention, mitigation, preparedness, rehabilitation and reconstruction and also formulate appropriate policies and guidelines for effective and synergized national disaster response and relief. It will coordinate the enforcement and implementation of policies and plans.

State Disaster Management Authority (SDMA)

Section 23 of the DM Act 2005 provides that there shall be a DM plan for every state. It outlines the broad coverage of the plan as well as the requirements of consultation in the preparation of the state plans. It also provides for annual review and updating of the state plan, and enjoins upon the state governments to make provisions for financing the activities to be carried out under the state plans. It provides for the departments of the state governments to draw up their own plans in accordance with the state plan. The state plans shall be prepared by the State Executive Committee (SEC)[1] in conformity with the guidelines to be issued on related matters by the SDMA having regard to the guidelines laid down in this regard by the NDMA, and after such consultation with local and district authorities and the people's representatives as the SEC may deem fit. The state plan prepared by SEC shall be approved by the SDMA.

A.2.3 Disaster management and urban planning and management

Decentralization of disaster management plans is the need of the hour. Disaster Management Plans need to be prepared at zone or ward wise by the urban local bodies. Urban areas are the engines of economic growth .The losses due to disasters in urban areas greatly affect the economy. Hence disaster management plans are integral parts of urban management and governance. The need for disaster management exclusively for the urban set up is emphasized by the uniqueness and high magnitude of vulnerability to disasters.

More than a quarter of urban population in India lives in metropolises and mega cities. In 2025 the urban component would be more than 50%.This trends in increase in urban population also indicates the ramification of disasters on them. The vulnerability is further magnified by weak socio economic structures in most of the cities were 30 to 60% of the population lives in Slums and squatter settlements.

[1] http://disastermanagement.ap.gov.in/website/download/OTHER/DM_RULES.pdf.

Urban Risk Reduction 1997-98, Risk Assessment Tools for Diagnosis of Urban Areas against Seismic Disasters1996 and India Earthquake Safety Initiative 2001 are a few programs in India focusing on urban disaster management. The initiatives are incident specific and are not wholesome. However stronger initiatives towards making disaster management part and parcel of urban management and governance are required.

Urban local bodies need to play a major role in the disaster preparedness planning. Major roles of the urban local bodies before and after a disaster are

- Preparation and updation of preparedness plans
- Participation and coordination in response activities and
- Taking up activities such as damage assessment and relief distribution for recovery from the incident.

A.2.4 Overview of State disaster management act and policies in the context of local authorities

The following are the prescribed functions of local authorities in the context of disaster management according to the Gujarat State disaster management act 2003[2].

For the purpose of disaster management, local authority shall, subject to such directions as the Authority may give and under the supervision of the Collector-

- Assist the Authority, the Commissioner and the Collector;
- Ensure that the staff of the local authority is trained;
- Ensure that all resources related to disaster management are so maintained as to be ready for use;
- Ensure that all buildings and other structures in the local area comply with the specifications laid down in this behalf by the departments of Government and the Authority;
- Carry out relief operations in the affected area subject to directions of the Commissioner;
- Carry out reconstruction and rehabilitation activities in accordance with the guidelines framed by the Authority;
- Prepare a disaster management plan setting out the following, namely:-
  - The manner in which the concept and principles of disaster management are to be applied in local area;
  - Role and responsibilities of the local authority in the terms of the disaster management plan of the State;
  - Capacity of the local authority to fulfill its role and responsibilities;
  - Particulars of disaster management strategies; and
  - Contingency strategies and emergency procedures in the event of a disaster, including measures to finance the strategies.
- Coordinate the preparation and the implementation of plan with those of the organizations of the State and stake holders;
- Regularly review and update the plan.
- conduct disaster management drills periodically; and Provide such assistance to the Authority, the
- Commissioner and the Collector and take such other steps as may be necessary for disaster management.

[2] Need to update with the function from Andhra Pradesh Disaster management Act

The similar functions of local authorities stated above are also emphasized in the Gujarat State disaster management policy[3] for pre disaster phase, impact phase and post disaster phase of the disaster incident.

Pre disaster phase
Local authorities should work in close co-ordination with and provide all assistance to relevant Government departments, under the overall guidance of DC or GSDMA. They should ensure that staff is adequately trained and all necessary resources are in a ready-to-use state. They would also be responsible for ensuring compliance to all specifications, as may be stipulated by Government departments or GSDMA, for structures under their jurisdiction.

Impact phase
Local Authorities, including Municipal Corporations, Municipalities, District, Taluka, and Gram Panchayats etc. would follow appropriate guidelines and procedures in undertaking emergency relief measures and relief activities, under the overall supervision and direction of the SRC or the District Collector (DC).

Post disaster Phase
Government departments and local authorities will conduct detailed damage assessment and will carry out the reconstruction and rehabilitation activities, in accordance with the policies and guidelines specified by the Authority. They would also be responsible for reporting various parameters, as may be required by GSDMA, related to the progress and outcome of the various projects undertaken by them.

A.2.5 Roles and functions of Indian Meteorological Department and Central Water Commission

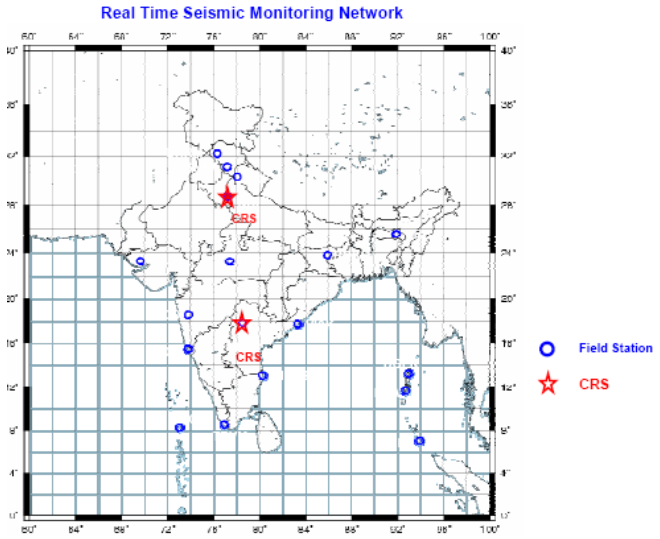
Major functions of Indian Meteorological Department and Central Water Commission is to forecast weather and disaster warnings in India. IMD functions for cyclones, floods, earthquakes & drought, whereas Central Water Commission of the Ministry of Water Resources functions for floods.

The information on the magnitude of various disasters obtained from the above organizations is crucial information in vulnerability assessment.

For earthquake monitoring the national seismology network of IMD consists of 51 stations. The stations carry on real time monitoring of earthquake and it's after shocks. The magnitude of the earthquakes is determined after 30 minutes of its occurrence.

[3] Need to update based on Andhra Pradesh disaster management policy

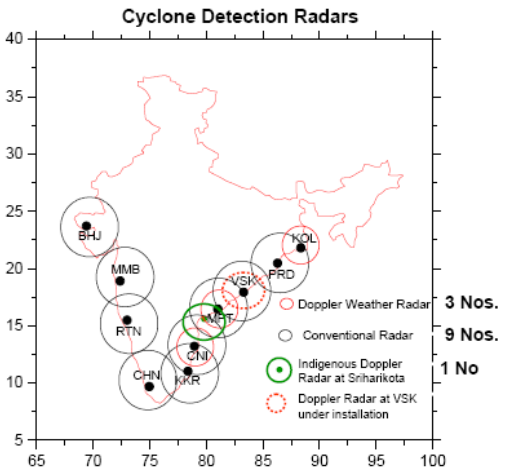
A-1: Map showing location of Seismic monitoring network stations



The Cyclone warning structure of IMD disseminates early warning related to cyclone incidents. The Types of warnings are

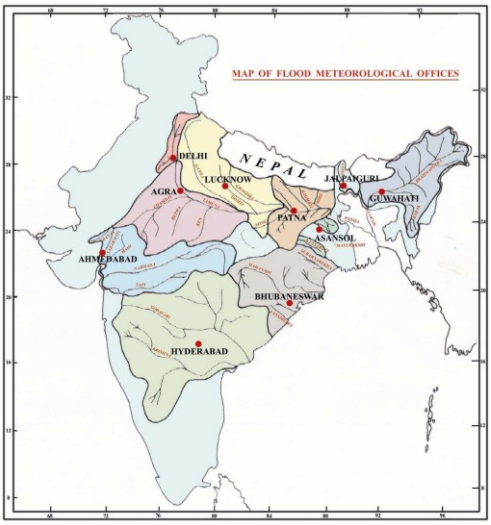
- Port warnings
- Four stage warning for disaster managers
  - Pre cyclone watch
  - Cyclone alert
  - Cyclone warning
  - Post landfall out look
- Warning for designated officials
- Warnings for aviation

A-2: Maps showing location of cyclone detection radars and location cyclone warning centers



For floods Forecasting and early warning system of floods are carried out by the Indian meteorological department through the coordination of ten floods meteorological offices. There are 166 flood forecasting centers of center water commission of which 134 are for level forecasting and 32 for inflow forecasting.

A-3: Map showing the location of Flood Meteorological offices



The roles of Indian meteorological center in flood forecasting are:

- Observation and Collection of Hydro meteorological Data
- Transmission of data to forecast centers
- Analysis of data and formulation of forecast (Quantitative Precipitation Forecasts) &
- Issue of heavy rainfall warnings Dissemination of forecasts/warnings to Flood Forecast Centers of Central water commission.

A.3 Disaster management scenario and disaster events in Andhra Pradesh4

Andhra Pradesh, extends over an area of 2, 75, 045 sq. km., and houses a population of 75.73 million. It is the largest and most populous state in Southern India. The state is flanked by the Bay of Bengal in the east and is crossed by two major rivers, the Godavari and the Krishna.

Andhra Pradesh is exposed to cyclones, storm surges, floods and droughts. A moderate to severe intensity cyclone can be expected to make landfall every two to three years. According to the official website of Disaster Management Department, Govt, of Andhra Pradesh, about 44% of the state is vulnerable to tropical storms and related hazards.[5]

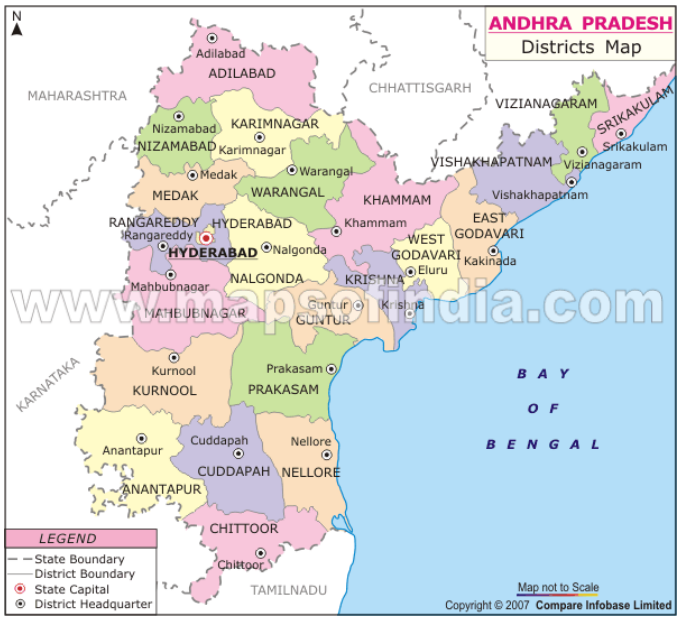
This section presents background research on the three hazards that the project is focusing on- cyclones, floods, and earthquake.

A.3.1 History of Disasters in Andhra Pradesh

The state of Andhra Pradesh has witnessed severe natural disasters- like cyclones, floods, earthquakes and drought. The coastal region of AP has experienced repeated cyclones and floods. The 1977 cyclone and tidal wave, which resulted in great loss of life, attracted the attention of the central and state Governments of India and the international donor communities, as did those of

[4] To be updated from information from the visit
[5] http://disastermanagement.ap.gov.in/website/history.htm

1979, 1990 and 1996. The floods in the Godavari and Krishna Rivers caused havoc in the East and West Godavari and Krishna districts. Earthquakes in the recent past have occurred along and off the Andhra Pradesh coast and in regions in the Godavari river valley. Mild tremors have also hit the capital city of Hyderabad, for example in September 2000.



According to the available disaster inventories, AP is the state that has suffered the most from the adverse effects of severe cyclones. Khamman district, in the Telengana region along with five coastal districts are affected by monsoon floods. Four districts in Rayalaseema and five in Telengana experience drought. Along the coastline, the section between Nizampatnam and Machilipatnam is the most prone to storm surges. The fertile Delta areas of the Godavari and the Krishna rivers, which contribute substantially to the state's economic prosperity, face flood and drainage problems, and more so in the aftermath of cyclones.

The Godavari and the Krishna rivers have well-defined stable courses, and their natural and man-made banks have usually been capable of carrying flood discharges, with the exception of their delta areas. Traditionally, the flood problem in AP had been confined on the spilling of smaller rivers and the submersion of marginal areas surrounding Kolleru Lake. However, the drainage problem in the delta zones of the coastal districts has worsened, thereby multiplying the destructive potential of cyclones and increasing flood hazards. Moreover, when a storm surge develops, as it was the case during the severe November 1977, May 1990 and November 1996 cyclones, threats to humans and property multiply as the sea water may inundate coastal areas which are already being subjected to torrential rains. Finally, a critical additional factor affecting the flood management and the irrigation systems is the lack of maintenance. On several occasions, such as the May 1979 cyclone, most of the deaths were occasioned by breaches to the chains of tanks and canals, and over-flooding due in part to the choking of drains by silting and growth of weeds.

A.3.2 Vulnerability Assessment for disasters in Andhra Pradesh

Cyclones and Storm Surges

Cyclones on the east coast originate in the Bay of Bengal, the Andaman Sea or the South China Sea, and usually reach the coastline of Tamil Nadu, Andhra Pradesh, Orissa and West Bengal, which are the most vulnerable to these types of hazards. Two of the deadliest cyclones of this century, with fatalities of about 10,000 people in each case, took place in Orissa and Andhra Pradesh during October 1971 and November 1977 respectively.

The state of Andhra Pradesh experienced 71 cyclones during 1892-1997, each time with colossal damage. Between 1892 and 1977, 56 cyclones affected the

seven coastal districts. The district wise figures are given in the following Table indicate that Nellore, Krishna and Srikakaulam districts had number of cyclones.

Table A-1: Number of cyclones in various districts as on May 2008

Cyclones in Andhra Pradesh			
No	**District**	**No. of cyclones crossing in AP**	**Number of Severe cyclones**
1	Srikakaulam	14	4
2	Vizianagaram	N.A.	N.A.
3	Visakhapatnam	10	3
4	East Godavari	15	4
5	West Godavari	N.A.	N.A.
6	Krishna	21	8
7	Guntur	3	1
8	Prakasam	6	2
9	Nellore	32	11

Source: *http://disastermanagement.ap.gov.in/website/cyclone.htm as on 19 May 2008*

Some of the factors responsible for vulnerability of the state to cyclone are:

1. Almost half of the storms in the Bay of Bengal become severe cyclones often accompanied by storm surges.
2. Low lying areas along the coast are vulnerable to extensive flooding and deep inland sea water incursion.
3. High concentration of population, infrastructure and economic activities along the coast.
4. Lack of proper maintenance of the flood protection and irrigation systems, drains, embankments etc.,
5. Lack of comprehensive coastal zone and delta management
6. In the past two decades, major cyclones caused immense loss of human lives and livestock and massive damage to property, both of people and the Government viz., November 1977, May 1979, November 1984

The major impact of cyclones can be broadly be categorized as below:

1. Loss of lives, injuries and other health consequences such as epidemics, and post traumatic stress disorders (PTSD).
2. Loss of habitat
3. Loss of cattle and damage to crops and agricultural fields
4. Damage to public utilities
5. Disturbance and damage to the ecosystem

Most lives are lost during a cyclone on account of floods and the devastating storm surge that often accompany cyclones. In case of severe cyclonic storms with storm surges, more than 90% of the fatalities occur due to drowning, either during the incoming water phase or during the out surges. In severe cyclonic storms without storm surges, the deaths are more or less evenly divided between drowning and the collapse of buildings. The most common health problems include water borne diseases such as diarrhea, dysentery, typhoid, viral hepatitis, respiratory diseases such as pneumonia and whooping cough, measles, gastroenteritis, cholera, conjunctivitis, and fever.

Flood

Inadequate capacity of the rivers to contain the heavy water flows after heavy rainfalls leads to flooding. The major river basins of AP are Godavari and Krishna, while the minor river basins are Nagavali and Vamsadhara on the north and Pennar in the south. The Passage of storms/ cyclones in quick succession over a river basin invariably leads to severe floods. The problem is exacerbated by factors such as silting of the riverbeds, reduction of the carrying capacity of river channels, beds and banks leading to changes in river courses, obstructions to flow due to landslides, synchronization of floods in the main and tributary rivers and retardation due to tidal effects.

Earthquake

The state of Andhra Pradesh has a history of earthquakes from the year 1800 to date but fortunately there have not been major losses due to the low intensity of the quakes. Ongole, Bhadrachalam, Srikulam, Secundrabad and Vizianagaram only have recorded magnitude of 5.0 – 5.7 on the Richter scale.

A.3.3 Initiatives of the state of Andhra Pradesh towards disaster mitigation and management

The Revenue [DM] Department has issued The Andhra Pradesh Disaster Management Rules 2007 under the provisions of Disaster Management Act 2005.

The state has also launched a unique scheme called the *Apathbandhu'* Support during emergency' Scheme to provide insurance to the population who are below poverty line. This scheme was launches in 1998 to implement accident insurance for below poverty line families in Andhra Pradesh to provide insurance coverage in case of deaths in the policy year.

A.4 Introduction to a Disaster Management Plan

A city's Disaster management Plan is a document that:

- Assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency, e.g., the engineering department.
- Sets forth lines of authority and organizational relationships, and shows how all actions will be coordinated.
- Describes how people and property will be protected in emergencies and disasters.
- Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.
- Identifies steps to address mitigation concerns during response and recovery activities.

As a public document, a disaster management plan also cites its legal basis, states its objectives, and acknowledges assumptions.

A.4.1 Why City Should Have a Disaster Management Plan

When disasters threaten or strike a jurisdiction, people expect elected leaders and city officials to take immediate action to deal with the problem. The urban local body is expected to marshal its resources, obtain and channelise the efforts of voluntary organisations and private sector organisations in the city, and solicit assistance from outside of the jurisdiction if necessary.

Andhra Pradesh has its a Disaster Management Act. This Manual will support urban local bodies to come up with their own disaster management plans.

A.4.2 What is a Disaster Management Plan?

The Disaster Management Plan is more than a mere paper plan. Training and exercises, in particular, depend on a DMP. Training helps emergency response personnel to become familiar with their responsibilities and to acquire the skills necessary to perform assigned tasks. Exercising provides a means to validate plans, checklists, and response procedures and to evaluate the skills of response personnel.

Second, the DMP facilitates response and short-term recovery (which set the stage for successful long-term recovery). Response actions are time-sensitive, with little allowance for delay or "mid-course corrections," and some post-disaster mitigation issues such as rebuilding and placement of temporary housing facilities also must be addressed quickly. Advance planning makes this easier.

Finally, a DMP that is flexible enough for use in all emergencies—including unforeseen events--provides a community with an emergency management "bottom line." From there, a community can proceed confidently with long-term mitigation efforts directed at specific hazards. Or, it can devote more resources to risk-based preparedness measures (e.g., specialized training, equipment, and

planning). Whatever the initiative, an all-hazard DMP helps the community start from a position of relative security.

However, the scope of this manual is to target at three hazards-Cyclone, Earthquake and Floods.

A.4.3 What a Disaster Management Plan is not?

Those who draft a DMP must understand what *it is not*. While this manual highlights the city's DMP's comprehensive emergency management effort that does not mean that the DMP details all aspects of that effort. The Disaster Management Plan needs to be supported by other types of plans of Plans.

Emergency management involves several kinds of plans, just as it involves several kinds of actions, as mentioned below

Mitigation Plans
A city may outline its strategy for mitigating the hazards it faces. Existing plans for mitigating hazards are relevant to a DMP, particularly in short-term recovery decision-making, which can affect prospects for effective implementation of a mitigation strategy aimed at reducing the long-term risk to human life and property in the jurisdiction.

Preparedness Plans
Preparedness planning covers three objectives: maintaining existing emergency management capability in readiness; preventing emergency management capabilities from themselves falling victim to emergencies; and, if possible, augmenting the jurisdiction's emergency management capability.

Such plans would include: the process and schedule for identifying and meeting training needs (based on expectations created by the DMP); the process and schedule for developing, conducting, and evaluating exercises, and correcting identified deficiencies; and plans to procure or build facilities and equipment that can withstand the effects of hazards facing the jurisdiction. Results of these efforts should be incorporated in the DMP as assumptions: that certain equipment and facilities are available, that people are trained and exercised, etc.

Recovery Plans
Typically, a DMP does not spell out recovery actions beyond rapid damage assessment and the actions necessary to satisfy the immediate life support needs of disaster victims; the DMP should provide for a transition to a recovery plan, if any exists, and for a stand-down of response forces.

For example, meeting citizens' needs would require maintaining logistical support to mass care actions initiated in the response phase; it would also involve restoration of infrastructure "lifelines, perhaps debris removal to facilitate response. Beyond that lies long-term recovery, which is not strictly time-sensitive.

These plans are not included in the DMP.

A.4.4 Details -how much? In preparation of DMP?

Although the distinction between plans and detail procedures is fluid, writers of a DMP should try and keep the DMP free of unnecessary detail. The basic

criterion is: What does the entire audience of this part of the DMP need to know, or have set out as a matter of public record? Information and "how-to" instructions that need be known only by an individual or group can be left to annexures to the DMP or referenced as deemed appropriate.

For many responsibilities in the DMP, it will be enough to assign the responsibility to an individual or department and specify the assignee's accountability: to whom does s/he report, or with whom does s/he "coordinate" with?

A.5 The Disaster Management Plan Preparation Process

This chapter offers the planning coordinator suggestions for the process of developing a DMP. This process may be more important and useful to the city's staff than the final product itself. The suggestions can be easily tailored to the specific needs of a jurisdiction.

It is suggested that the Assistant/Deputy/Special Municipal Commissioner serves as the "planning coordinator" responsible for leading the jurisdiction's effort to develop a DMP.

A.5.1 Principles for Developing your city's Disaster Management Plan

Don't Reinvent the Wheel- Emergency operations planning need not start from scratch. Planners should take advantage of others' experience.

Build on What Exists in the Jurisdiction- If the city has any preparedness plan or other contingency plans which they would have prepared earlier, they are the place to start. Existing plans can point the planning coordinator to applicable authorities, perceptions of risk in the community, members of the city's emergency, response organization, coordination with other jurisdictions, and more.

Keep it a team approach- If a coordinated emergency response depends on teamwork, planning for response should involve the city's disaster management "team." Documentary research should be supplemented by interviews with key officials of the city's response organization: They may have additional information and insights as well as ideas that can spark creative solutions to problems. Key officials also determine what staff will be made available for planning meetings and what priority emergency planning issues will have in day-to-day work, so it is important to secure their commitment to the planning process.

Benefits of a Team Approach:

- The DMP is more likely to be used and followed if the tasked organizations have a sense of ownership, i.e., their views were considered and incorporated.
- More knowledge and expertise are brought together on the planning effort.
- Closer professional relationships among response and recovery organizations in the planning process would translate into better coordination and teamwork in emergencies.

Potential Team Members

The planning team should be drawn from various groups that have a role or stake in emergency response. The list below is comprehensive but not all-inclusive. The planning coordinator may select the one's applicable from the list below.

It is important for the planning coordinator to ensure that the planning team represents a good cross section of the organizations involved in the city's emergency response effort.

- Municipal Commissioner/ Chief Officer or equivalent
- Rescue, and emergency medical services, public health and safety, etc.
- Existing planning agencies (e.g., urban community development, town planning department).
- Public works department
- Engineering Department, any private utility companies.
- Chief Financial Officer, auditor
- Non-Government Organisations and volunteer organizations
- Area hospitals, emergency medical service agencies,.
- Education Department
- Public Information Officer (PIO).
- Local media.
- Industrial and military installations in the area.
- State aviation authority and/or others connected with provision of air
- support.
- Port authorities
- Organizations in the animal care and control community, including veterinary services.
- Amateur radio groups,
- Representatives from neighbouring jurisdictions, to coordinate mutual aid needs.
- State and/or Govt. of India representatives, as appropriate.

A.5.2 Steps for Preparation of the Disaster Management Plan

Following are the basics for development and continual fine-tuning of the DMP.

They may be adapted to the needs of an urban local body.

i Research: This consists of reviewing the city's planning framework, analyzing the hazards faced by the city, determining the resource base, and noting characteristics of the city that could affect emergency operations.

a *Review Law, Plans*- Review local and/or State Act and laws, rules, regulations, executive orders, etc., that may be considered enabling legislation. Review regulatory requirements. Review any existing plans for the jurisdiction, and the plans of neighbouring cities. Become familiar with the plans of higher levels of government that may be called on to provide assistance.

ii Conduct Hazard/Risk Vulnerability Analysis: Hazard analysis is the basis for both mitigation efforts and DMPs. From a disaster planning perspective, hazard analysis helps a planning team decide what hazards merit special attention, what actions must be planned for, and what resources are likely to be needed. For purposes of Disaster Response planning, basic considerations of process, methods, and sources include the following:

a Identify hazards, to know what kinds of emergencies have occurred or could occur in the jurisdiction. - Begin with a list of hazards that concern emergency management in your jurisdiction. A list of "traditional" emergency management concerns might include: dam failure, drought, earthquake, epidemic, flood, cyclone, landslide, mudslide, power failure, terrorism, train derailment, and tsunami.

For each of these potential emergencies, determine whether it has happened or could happen in the city. For these hazards, research into the history (including statistical compilations), expert opinion, and maps--which summarize results of the first two.

However this manual focuses on developing a disaster management plan taking three hazards- earthquake, cyclone and floods into consideration.

Keep in mind that hazard lists pose two problems. The first is the possibility of exclusion or omission: there is always a potential for new and unexpected hazards .
The second is that such lists involve groupings, which can affect subsequent analysis. A list may give the impression that hazards are independent of one another, when in fact they are often related (e.g., an earthquake might give rise to dam failure and hence flooding or a "cyclone" might include not only high winds, storm surge but also inland flooding.

b *Profile hazards and their potential consequences:* The level of precision of data required depends on the decisions and analysis which is to be undertaken. For example, to decide that one hazard poses more of a threat than another may require only a qualitative estimate (e.g., "High" vs. "Medium")--but to plan for health and medical needs the planning team would want to have an estimate for likely fatalities and injuries. Another factor is the availability of information and time.

c *Develop information on each of the hazards identified for the community*. Of particular interest are the hazard's frequency of occurrence (both historical and predicted or probable, as available), magnitude and intensity, location (if the hazard is associated with a facility) and spatial extent (either around the known location of the hazard or as an estimate for non-localized hazards like cyclone), duration, seasonal pattern (based on month by month historical occurrence), speed of onset, and availability of warning.

d *Develop information on the potential consequences of the hazard.* This depends on identifying a vulnerable zone or relating the estimated spatial extent of the hazard to the jurisdiction (to get gross estimates of lives and property at risk, identifying most vulnerable populations in terms of slums, children below 6 years and old people, low lying areas, denser areas, or by "overlaying" the estimated spatial extent of the hazard on a portion of the jurisdiction and determining what would be affected).

Several kinds of consequences can be investigated; response planning would be concerned with effects on people (total affected, likely deaths and injuries), critical facilities and community functions, property, and sites of potential secondary hazards (e.g., dams, chemical processing plants). The planning team can use both historical information and modeling to arrive at estimates for planning.

e *Compare and prioritize risks*, to determine which hazards merit special attention in planning (and other disaster management efforts). The planning team must consider frequency of the hazard and the likely or

potential severity of its consequences, to develop a single indicator of the threat: This allows comparison and setting of priorities.

Create and apply scenarios, to brainstorm needed hazard specific planning provisions and estimate hazard-specific resource requirements. Planning is concerned with actions that take place in time. For the top-ranked hazards, the planning team should consider scenarios. Using information from the profile, the planning team should think about how the hazard occurrence would develop in the city. Starting with a given intensity of the hazard, the team can imagine the hazard's development from initial warning (if available) to its impact on a specific part of the jurisdiction (as identified through analysis) and its generation of specific consequences (e.g., collapsed buildings; loss of critical services and infrastructure; death, injury, or displacement).

Through this initial brainstorming--which can be refined in formal tabletop exercises--the team will decide what actions and resources will become necessary. It will also become conscious of the planning assumptions to be used in functional annexes to the DMP.

Possible Sources:
Sources of maps for hazards would include compilations of hazard history made by APSDMA, District Collectorate office. Also interview representatives from organizations on the planning team about their experience. Check police, and other responder records. Research area newspapers at the library.

Check with utilities and businesses/facilities that have operated in the area for some time. Involve the local universities (e.g., departments of history, sociology, geography, engineering, planning). Professional or business associations (e.g., of insurers, engineers and builders, etc.) may have useful information. Long-time community residents can even contribute. For expert opinion, the potential sources would be Govt. of India, State, and local agencies; academic, industrial, and public interest group researchers (or private consultants specializing in hazard analysis); and professional associations concerned with the hazards on your list should be able to help, either through interviews or publications.

iii Determine the Resource Base:

Agency heads and other potential members of the planning team should know what kinds of resources they can bring to disaster response and recovery. The problem is to quantify and list them, and compare the resources available to the resources needed for an effective emergency response. Shortfalls may require negotiating agreements with private suppliers. Determination of the resource base also should include a consideration of what facilities are vital to emergency operations and how they might be affected by hazards: Problems that cannot be mitigated should be taken into account in the DMP, not assumed away.

iv Note Special aspects of the Planning Environment:

The planning team should note geographic and topographic features that may affect operations--for example, dependence on a single main transportation artery/ bridge in and out of the city. Planners also should identify special needs

groups (diverse language speakers, the aged, the disabled) and where they are concentrated (especially institutions such as nursing homes). Finally, the planning team should be alert to demographic and other trends in the jurisdiction that affect assumptions.

v Development of a Disaster Management Plan:

Research leads to a written DMP through steps similar to these:

a. Develop a rough draft of the basic plan, hazard specific actions and functional annexes to serve as a point of departure for the planning team.
b. Plan and conduct a first round of meeting with planning team, key officials, elected members, NGOs.
c. Conduct a presentation meeting, establish committees for parts of the DMP, appoint committee chairs, and schedule a follow-up meeting.
d. Work with committees on successive drafts.
e. Prepare necessary graphics (e.g., maps, organizational charts).
f. Produce a final draft and circulate the draft to the planning team for review and comment.
g. Hold a meeting to incorporate final changes, discuss an implementation strategy and necessary distribution.
h. Obtain concurrence from organizations with identified responsibilities for implementing the DMP.
i. Present the DMP to local elected officials and obtain official promulgation of the DMP (advise the local media in advance).
j. Print and distribute the DMP, with a copy (or press release) to local media. Maintain a record of the organizations and persons that received a copy (or copies) of the plan.

vi Validation:

The written DMP should be checked for its conformity to applicable regulatory requirements and conformity to the AP state Act and for its usefulness in practice. Further, conduct of a "table top" exercise involving the key representatives of each tasked organization may serve as a practical and useful means to help validate the plan.

vii Plan Review

Consult whether the DMP is to be reviewed by the District Collectorate office or any agency at the state level. This will allow these agencies to suggest improvements/ coordination in the DMP based on their accumulated experience.

viii Plan Testing

To evaluate new or revised DMP, use functional and full scale emergency management exercises. Exercises offer the best way, short of emergencies, to determine if the DMP is understood and "works."

ix Maintenance

The DMP is a living document. The City's DMP must be updated on a routine basis to ensure it is adjusted to changes that occur over time within the city, such as the following:

- Changes in the risk profile of the jurisdiction.

- Modification/growth of City's governmental organization, administration and capabilities for emergency response and disaster recovery.
- Changes to the facilities and locations that have been designated as City emergency facilities.
- Changes in state or Govt. of India rules, regulations and standards applicable to municipal emergency preparedness.

The City's Disaster Preparedness Team, under the direction of the Municipal Commissioner will be responsible for ensuring that the plan is reviewed and updated at least annually, or after each major exercise or actual implementation of the plan, whichever is more frequent. All City departments will be responsible for participating in the plan review and updating.

x Remedial Action Process

A remedial action process can help a planning team identify, illuminate, and correct problems with the city's DMP. A remedial action process captures information from exercises, post-disaster critiques, self-assessments, administrative reviews, and the like, which may indicate that deficiencies exist. It then brings members of the planning team together to discuss the problem, and to consider and assign responsibility for remedies. Remedial actions may involve revising planning assumptions and operational concepts, changing organizational tasks, or modifying organizational implementing instructions. They also may involve refresher training on performance of tasks assigned by the DMP to an organization's personnel.

The city should fix up a timeframe for revision of the DMP in the event of no major emergency incidence.

xi Plan Distribution and Approval

At a minimum, the copies of the initial and subsequent updates of the City's DMP should be provided to the following:

- The Mayor/President
- The Municipal Commissioner
- All City Department Heads
- The City Clerk
- The City Control Room
- District Collector
- District Collector control Room

Each City department head is responsible for further distribution of copies of the DMP to specific departmental personnel, as decided.
Minor changes to the plan may be made via "change pages" and distributed to plan holders. Major changes that significantly alter operational concepts, assignment of responsibilities, or the location/type of designated emergency facilities will result in distribution of an entire copy, as modified.

A.6 Basic Disaster Management Plan Content

Elements of the Basic Plan

A.6.1 Introductory Material

The EOP should be prefaced by certain items that enhance accountability and ease of use. Among these are the promulgation documents, the signature page, the dated title page and the record of changes, the record of distribution, and the table of contents.

A.6.2 Promulgation Document

The promulgation document puts the DMP "in force"; it gives the DMP official status and provides both authority and responsibility for organizations to perform their tasks. The promulgation document is usually a letter signed by the city's municipal commissioner/ chief officer or Mayor/President. In it, s/he might declare simply that the DMP is in force, perhaps citing the legal basis for his or her authority to make that declaration. However, the promulgation document also should mention commitment for training to staff, exercises, and plan maintenance efforts needed to support the DMP. The promulgation document also allows the city's municipal commissioner/ chief officer or Mayor/President to affirm his or her support for disaster management.

A.6.3 Signature Page

Some jurisdictions may choose to include a signature page to show that, prior to seeking the city's municipal commissioner/ chief officer or Mayor/President**'s** signature, all response organizations tasked in the DMP have coordinated in the plan's development and are committed to effective implementation.

A.6.4 Dated Title Page and Record of Changes

The title page should bear the date of publication; a record of changes can be a chart containing a number assigned to any change, a description of the change and/or the affected part of the DMP, the date of the change, and the signature or initials of the person responsible. These items should be included so users of the DMP can be certain that everyone is using the most recent version of the DMP.

A.6.5 Record of Distribution

This is a list of individuals and organizations that receive a copy of the DMP. The record of distribution can be used to provide evidence that tasked individuals and agencies have had the opportunity to read and understand their responsibilities, which is a basic assumption of a DMP. To that end, copies may be numbered and the record may show both a date of transmittal and a date on which receipt is confirmed. The record of distribution also serves as a convenient checklist for distributing later revisions to the plan. Note that the list need not be limited to response organizations. Since the public has an interest in disaster preparedness measures, copies of the DMP (without calldown lists, and other sensitive information) can be made available to public libraries, as well as to media contacts. Neighbouring jurisdictions also should receive copies of the DMP. For the sake of convenience, a long record of distribution may be treated

as a stand-alone annex and placed at the end of the DMP, or kept separate as an "administrative" document.

A.6.6 Table of Contents

A table of contents makes finding information easier. It provides a quick topical overview of the DMP. The table of contents should list all sections of the DMP and be supported with clearly labeled tabs for each section.

A.6.7 Purpose

The rest of the DMP flows logically from its purpose. The Basic Plan should contain a general statement of what the DMP is meant to do. The statement should be supported by a brief synopsis of the Basic Plan and the hazard specific actions and functional annexes.

A.6.8 Situation and Assumptions

After the broad statement of purpose, the situation and assumptions section narrows the scope of the DMP by outlining what hazards the EOP addresses, what characteristics of the city may affect response activities (and how), and what information used in preparing the DMP must be treated as assumption rather than fact

A.6.9 Institutional Structure and Mobilisation

The audience for the basic plan needs to picture the sequence and scope of the planned emergency response. This section explains the jurisdiction's overall approach to an emergency situation, i.e., what should happen, when, and at whose direction. Topics should include: division of local, State, Govt. of India, activation of the city control room, general sequence of actions before, during, and after the emergency incidence. The concept of operations will touch on direction and control, alert and warning and assignment of responsibilities. It includes a listing by position and organization of what kinds of tasks are to be performed; such a listing permits a quick grasp of who does what, without some of the procedural details included in functional annexes. When two or more organizations perform the same kind of task, one should be given lead responsibility and the other(s) should be given a supporting role. For the sake of clarity, a matrix of organizations and areas of responsibility (including functions) should be included to show at a glance the lead and supporting roles (see Table 4-1 for an example).

The listing by organizations might also include organizations not under jurisdictional control- e.g.- Police department or Port Authorities, if they have defined responsibilities for responding to emergencies that might occur in the jurisdiction. The following is an example of the types of tasking that should be assigned to agencies, organization chiefs, and individuals in the Basic Plan.

City's municipal commissioner/ chief officer or Mayor/President

- Sets policy for the emergency response organization.
- Assumes responsibility for the overall response and recovery operations.
- Authorizes the mitigation strategy for recovery.
- Identifies by title or position the individuals responsible for serving as Chief of Operations, Liaison Officer, Public Relations Officer, Control Room Manager, Health and Medical Coordinator, Communications

Coordinator, Evacuation Coordinator, Mass Care Coordinator, and Resource Manager.

SECTION-B

METHODOLOGY FOR PREPARATION OF MUNICIPAL DISASTER MANAGEMENT PLANS

***Section B**- provides a step by step methodology for developing a Disaster Management Plan by an urban local body. It will walk the reader through the details of preparing a DMP. It provides recommendations on each aspect of the DMP. This section has been cross referenced to Section C which includes the actual templates where urban local bodies can directly enter their information.*

Chapter 1

City/Town's Preamble

This would be the preamble which the city would state to vouch that:

- The city has a "Disaster Preparedness Team" along with details of the main officials included in the team- viz.- municipal commissioner and dy. Municipal commissioner and the City's department heads.
    - The Disaster Preparedness Team meets on a routine basis and is responsible for the necessary intra-jurisdictional coordination of government actions to ensure that the Disaster Management Plan and all supporting documentation has been maintained as current, and other actions needed to ensure readiness of the City for DMP implementation are taken.
    - City personnel are trained in their roles for implementation of the DMP
    - The city undertakes an ongoing evaluation of the adequacy of its equipment, facility and supplies to implement the DMP and to assure a level of capabilities commensurate with the risk exposure of the jurisdiction.

- All aspects of the City's emergency preparedness program remain consistent with applicable local, state and Central government requirements.

- The city of has adequate resources including personnel, and equipments to address hazards of nature of floods, cyclones, and earthquake within its jurisdiction. When required, the city will seek assistance from District Collectorate and neighboring Cities and the State Government.
- The city has implemented a public information and preparedness awareness program viz.- through the City's website, community-based education efforts.
- The city will provide services to the marginalized and will provide undeterred communication during evacuation and equal distribution of aid materials among the needy.

Chapter 2

Profile of the city

This chapter contains brief information on the characteristics and surroundings of the city/town and serves as a quick reference on the city broadly related to disaster management. This information shall also serve as a first round of information collation for the city or town towards disaster management. The explanatory notes in this are substantiated by templates in Chapter 2 of Section C.

B.2.1 Brief History of the Town

This section should contain information in brief about the history of the town. Information regarding the existing old parts of the city is crucial. The age of the old city and the materials used in the construction of the residential structures and other infrastructure facilities are the information needed. This information shall serve as a base for further information building for vulnerability and damage assessment and reconstruction activities in the old city areas.

Possible Source: History documents of the city, District gazetteer

B.2.2 Location and Administrative features

This should include details of the taluka and district in which the ULB is located along with its latitudinal and longitudinal location. The names of the talukas and districts surrounding the city are also to be presented.

The map of the city location along with administrative boundaries and ward boundaries should be attached. Refer *Map 2-1, Section C.2.2 that provides a checklist for the map.*The map should contain administrative boundaries, ward boundaries, major roads, rivers and other natural features.

Possible Source: Development plan of the ULB

B.2.3 Demography

Demographic details of the town should indicate the population of the city for 1981, 1991 and 2001.The population data can be sourced from the census information. Refer Table 2-2 in section C.2.3 for the demographic data template. This is an excel based template and calculates the corresponding growth rates are calculated automatically once the population data is entered. The projected population for 2011 is also formulated. The projection is done based on the average growth rate for the last two decades which is computed at the bottom of the table.

The floating population in the city/town is also critical information needed for disaster management; particularly in places of tourist and religious attraction where the floating population remains in the city for a particular period. The floating population of the city has to be tabulated in table 2-3 in section C.2.3 in part C for all the months of the previous year. This information can be cross referenced with seasonality of disaster incidents information section C.3.2 (chapter 3, part C) for disaster preparedness planning.

Possible Source: Census 1981, 1991, 2001 and annual reports of the ULB.

B.2.4 Slum population

The population in slum is highly vulnerable to disasters in comparison to the rest of the urban population since most slums are located on steep hillsides, in poorly drained areas, or

in low-lying zones. They usually also have poor infrastructure provisions and hence any disaster simply exacerbates their situation.

Table 2-4 section C.2.4 tabulates the total slum population in the city along with the gender wise break up -male and female population. The information should be entered in the excel worksheet provided. The percentage of male and female population is calculated automatically based on the information entered. The slum population projection for 2011 is also automatically calculated based on a cumulative increase of 3% per year from 2008 slum population. The male and female population for 2011 is calculated based on the percentages of male and female population of 2008.

Source: Census 2001-slum population.

B.2.5 Literacy and sex ratio

Refer Table 2-5 in Section C.2.5 for information on literacy rate and sex ratio of the city for 2001.

Source: Census 2001

B.2.6 Occupational structure

Refer Table 2-6, Section C.2.6 which lists information on occupational structure of the city. The data includes total population, male and female population for different sectors of occupation. The sectors of occupation are cultivators, agricultural laborers, household industry workers and other secondary and tertiary sector workers. The information is to be tabulated in section.

The occupational structure of the city gives an early perception of potential sector of employment and enterprises likely to be affected by the disaster incidents. E.g.- loss of livelihood for cultivators/ agriculture laborers in case of flooding of the city.

A brief explanation on the composition of various sectors of employment should be provided in the space given below in the section C.2.6.

Source: Census 2001

B.2.7 Geographic and Physical features

A brief description of the landscape describing the presence and characteristics of any hilly terrains, river valleys and the plains, general slope, natural drain channels, coastal features should be described here.

Source: City Development Plan, Geological department in the district/ city

B.2.7.i Soil type

It would contain information on soil types its location and characteristics and the percentage of land cover under each soil type. This is important for understanding the impact of flooding on the city -whether the soil is permeable or of an impermeable nature. It is recommended that a soil type map should also be attached if available.

Source: Geological department in the district/ city

B.2.7.ii Climate

This would contain description on the climate of the city and the span of various seasons. It would also contain information on duration of the monsoon seasons. The information needed should be entered in the space provided in section C.2.7.ii.

B.2.7.iii Rainfall and temperature

General information regarding rainfall characteristics in the city shall be entered in the space provided in the section C.2.7.iii. Also Refer Table 2-8 of Section C that tabulates monthly maximum, minimum temperatures and monthly average rainfall for the last year. The information is necessary for quick reference on rainfall and temperature and is important for determining the seasonality of disasters information for C.3.2 (chapter 3, part C).

B.2.8 Topography and drainage system

A topographic map of the city showing the contours, the rivers and major drainages of the city should be presented. This information serves as a base for disaster modeling and management activities. It would help in determining which areas of the city would be highly prone to flooding in case of heavy monsoon showers.

Relevant Information should be filled in the blanks provided in C.2.8

Source: Survey of India toposheets; latest total station survey conducted by the city

B.2.9 Land Use

The land use break up along with percentages should be presented here. The land use information can be sourced form the development plans or from the documents of the local authorities.

The land use categories are residential, commercial, industrial, institutional, recreational, water bodies, roads, railways. The land utility information is crucial to understand the developmental pattern of the city. The areas under each land use category should be entered in excel worksheet provided in the Table 2-9 in section C.2.9

Source: Development plan/Master Plan of the city.

B.2.10 Crops details

A few of the smaller cities would have a reasonable amount of agriculture activity. Here, details of sowing and reaping seasons of various crops grown should be entered. The productivity of each crop per hectare also needs to be inserted to give some indication to calculate crop losses due to floods. Cities where this is not applicable need not fill this.

Source: Agriculture Department

B.2.11 Irrigation

This would be applicable for those cities which have a reasonable amount of agriculture activities and hence there is a need to understand the irrigation source for the crops to identify any contingency planning for them and to calculate probable losses in disaster incidence.

The area and percentage of land irrigated under different sources of irrigation such as electrified wells, non electrified wells, government canals, other sources and ponds should be presented here. Cities where this is not applicable need not fill this.

Source: Agriculture and Irrigation Department

B.2.12 Flora and Fauna

Information on the area under forest land within the city under different forest types such as Open scrub forest, dense scrub forests and other types should be presented here. A description shall be given on the presence of any key flora or fauna species within the city.

Source: Circle forest offices in the district

B.2.13 Industrial profile

An inventory of industries in the city based on the type, no of industrial units in each type and their location could be maintained. Refer Annexure XVI for the classification of industries. The industries are classified as high hazard occupancy, medium hazard occupancy and low hazard occupancy based on the fire proneness of the material handled in the industry.

A map of the various industrial areas within the city should be presented for vulnerability assessment related to fire hazard.

Source: Industrial development associations.

B.2.14 Basic service delivery to citizens

Refer Table 2-15 of -Section C.2.14 that contains information on service delivery by the city such as water supply, sewerage, roads, solid waste management and streetlights. This information is necessary for disaster preparedness viz.- to calculate the number of water tankers required to provide water supply to certain pockets of the city or to estimate daily wage labor required for managing solid waste collection in the city if city staff needs to be diverted for any other emergency operation.

Source: Various departments of the urban local body

Chapter 3

Preparation of disaster history profile and vulnerability assessment of the city

This chapter focuses the need to maintain an inventory of the past disasters and its impacts in the city/town. The process of preparation of information for assessing the vulnerability of various parts of the city is explained in detail and corresponding templates are provided in part C. The results of the vulnerability analysis are the crucial factors in disaster preparedness planning explained in the forth coming chapters.

B.3.1 Hazard Profile of the city/town for the last 50 years

The information on the disaster events in the city for the last 50 years and their impact could be tabulated. The year and month of occurrence of the disaster its magnitude and the number of wards affected are primary information. The impact of the disaster could be given in terms of number of people died, number of people injured, number of cattle died, partial or full damage to the buildings, number and type of large commercial establishments damaged, loss of employment in man days and the major crops damaged.

Possible Sources: District collectorate and the specific sector departments (viz.- Agriculture department, industrial associations, chambers of commerce etc.) which have suffered losses.

B.3.2 Seasonality of the disasters in the City/town

This section could represent a monthly calendar of the seasonality of occurrence of cyclones, floods and earthquake in the city. The seasonality in case of earthquake which is unpredictable can be based on the past occurrences in a decade.

Possible Sources: From regional centers of Indian meteorological center and disaster records from the district collectorate.

B.3.3 Hazard Profile and hazard profile maps of the City/town

This section provides the explanatory notes for preparation or sourcing of hazard profile maps to be used in the vulnerability analysis. This section also contains the information of wards affected by disasters in the past. The hazard profile map includes series of maps representing the spatial magnitude of various hazards. Regional and local hazard profile maps would be preferable for vulnerability analysis.

B.3.3.i Cyclone hazard profile

The cyclone hazard profile contains information on seasonality of cyclones in the region and the magnitude and losses due to the latest cyclone incident. Refer Table 3-1-Section C.3.4.i.

Cyclone hazard map
Source: <insert local source name in AP>. *(Can this be assigned to Engineering Department as they prepare contingency plan)*

Urban Local Bodies need to procure these maps from <insert local source name in AP>. Typically, a Cyclone hazard map is produced by the cyclone regional center of the IMD. Using the vulnerability in the past trends and the intensity of the tropical storms. The map gives the regional historical density of the storm intensity. The intensity of various storms is combined to form the density of density in the region.
Refer Annexures

B.3.3.ii Flood hazard profile

The flood hazard profile contains information on the past flood incident faced by the city. A paragraph write up with voids to fill up crucial information are provided in section C.3.4.ii in Section C. The information to be provided here is -the name and number of wards affected and losses to human life and property. The losses to crops and industries due to floods are also tabulated.

Flood hazard map

Source: The Indian Meteorological department, Central water works department or the Irrigation and waterways department <insert local source name in AP>. (*Can this be assigned to Engineering Department with support from IMD?)*

Urban Local Bodies need to procure these maps from <insert local source name in AP>. The flood hazard map is usually prepared by using the river basin map and the flood effected areas map of the region for the past ten to twenty years. The level forecasting and inflow forecasting data of the region is also used to prepare a flood hazard map. The flood hazard map if not available for the city can be prepared. Satellite images of the city during the flood incident are a great source of information. If satellite images are not available, information of flood affected wards in the flood incidents of the last ten years can be aggregated to prepare a flood hazard map.

Refer Annexures

B.3.3.iii Earthquake Hazard profile

The earthquake hazard profile contains information on the past earthquake incidents in the region. The distance of the city from the fault line and the seismic zone to which the city fall under are some basic information to be entered in the similar section in section C. A perception of the loss of human lives and property is the past earthquake incidents are to be tabulated.

Earth quake hazard map

Source: The Indian Meteorological department (local source to be checked out) <insert local source name in AP>. (*Can this be assigned to Engineering Department with support from IMD)*

The latest earthquake zoning map of India divides India into four zones, zone 2, 3, 4 & 5[IS 1893 (Part 1) 2002].Zone 5 represents the highest level of seism city whereas zone 2 is represented with the lowest level of seismicity. An earthquake intensity map for the region in which the city is located can be sourced from national seismology network of the IMD.A earthquake intensity map is usually prepared using the highest magnitude of the earthquake occurred in the region in which the city is located for the purpose of vulnerability analysis..

The point source or the fault line of the earthquake is mapped. Using the fault line rupture and the magnitude ground acceleration based on the distance from the fault line is calculated. The peak ground acceleration is calculated and modified using a soil condition map. However this intensity map can be replaced by the real time monitoring data of the earthquake during the occurrence of the disaster.

Refer Annexures

Chapter 4

Institutional Structure

B.4.1 Introduction

The section defines the institutional structure that will guide actions by the City/town _____prior to, during, and after disaster events. The institutional structure incorporates the following:

- Disaster Management Facilities
- Organization and staffing
- Roles and responsibilities
- Preparedness actions
- Operational actions
- Communications plans and protocols
- Coordination with other jurisdictions and levels of government
- Public information

B.4.2 Disaster Management Facilities

B.4.2.i Setting up of a control room

Identify a room which is operational throughout the year for setting up the City Control Room.

- Main responsibilities of the Control Room would be as follows:
    - Coordination of emergency operations within the jurisdiction,
    - Communications and communications support,
    - Resource dispatch and tracking
    - Information collection, analysis, and dissemination.
    - The main control room will be the point of contact and coordination with district collectorate and adjacent jurisdictions.
    - The staff members of the control room prepare and approve Disaster Action Plans (DAP) on an appropriate periodic basis, e.g., every 12 hours depending on emergency conditions, for the duration of the event. Each DAP will be approved for implementation by the City's coordinating official and will be utilized to guide City and associated emergency operations for the applicable time period.
    - Resource prioritization and allocation will be made by the City's control room in a manner consistent with the DAP whenever applicable.
    - The control room will process incoming information regarding disaster conditions and the impact of the event and the status of emergency operations. The control room will utilize such information to prepare and transmit "situation reports" to the district collectorate office, state government agencies in the format and timeframe requested.
- Receive reports on preparedness from the departments as per the directives every _____ months, Based on these, the control room will prepare a summary reports for the consideration of the Municipal Commissioner and District Collector.
- Set up study groups and task force for specific vulnerable studies and submit the reports to municipal commissioner and district collectorate.

- Identify and interact with central laboratories research institutions and NGOs for ongoing collaborations, to evolve and update mitigation strategies in the planning process.
- Serve as a databank to all line department and the planning department with respect to risks and vulnerabilities, and ensure that due consideration is given to mitigation strategies in the planning process.
- Receive appropriate proposals on preparedness, risk reduction and mitigation measures, from various state departments/agencies and place the same for consideration of the Municipal Commissioner and District Collector.
- Convey policy guidelines and changes, if any, in the legal and official procedures, eligibility criteria, with respect to relief and compensation.
- Update data bank
- Inform district control room about the changes, if any, in legal and official procedures, with respect to loss of life, injuries, livestock, crop houses, to be adopted (death certificates, identification procedures etc.)

B.4.2.ii Facilities at the Control Room

The facility has adequate space, furnishings, and restrooms to support the City's Emergency Organization throughout the year.

The facility also has a standby electric generator that fully supports facility operations and has been wired to accept a portable generator if the standby should fail. The facility has multiple landline telephones, and the City personnel will bring additional communications equipment to the facility to support operations. The control room is equipped with

- Necessary furniture and store wells for keeping
  - Files of messages
  - Stationery
  - Other office equipment
    - ✓ Action Plans
    - ✓ Maps
    - ✓ List of key contact persons during emergencies (accessible with clear labels, and not under lock and key)

Important phone numbers which are frequently required would be displayed on the wall so that they could be seen easily, while other phone numbers, names and addresses etc., are maintained on the computer to facilitate easy retrieval and cross-referencing.

In addition, the following facilities are available in the control room

- Telephones
- Intercom units for contact within urban local body
- VSAT connection to the Collector
- Networking of Computers
- Computers with printer
- Mobiles and Pagers (where necessary)
- Photocopying machine
- Television unit and major newspapers to be monitored for news.

(Separate tables are provided for each communication instruments such as VSAT, Telephone, Fax, Computer, Printer, and Typewriter)

The phones, i.e. intercom, STD phone, EPBX extension, hotline etc., would be of different colours and with district rings if possible, to enable them to be distinguished from each other.

An emergency light, for extinguishers, and a generator for the computer and fax machine would also be provided in the control room.

During disaster incidence, control room should to be connected through reliable communication.

- District Collector
- Zonal offices
- Branch control rooms
- Superintendent of Police

B.4.2.iii Branch Control Rooms

In addition to identification and setting up of a city control room, identify branch control rooms within the city in areas which are nearer to vulnerable locations of the city but yet are themselves safe. These locations for branch control rooms also need to have basic amenities like adequate space, furniture, rest rooms and communication lines. Branch Control Rooms can also be established at City Civic Centres of ULBs.

B.4.2.iv Transport

Provision could be made for a car with wireless communication to be assigned to main control room during normal times. Additional vehicles will be requisitioned, as per the requirements, during the disaster incidence).

B.4.2.v Staffing at Control Rooms

Identify the staff required for staffing these control rooms. E.g.- Communication operator (for 24 hours) at the city control room.

B.4.3 Information Flow

The flow of information between Main control room, Municipal Commissioner and District Collector may be described under two scenarios viz., During Disaster incidence and under Normal Conditions. The following figures show the channels for information between these set-ups under the above two scenarios.

Figure 4-1: Flow of Information between Main Control Room, Municipal Commissioner, District Collector during normal conditions

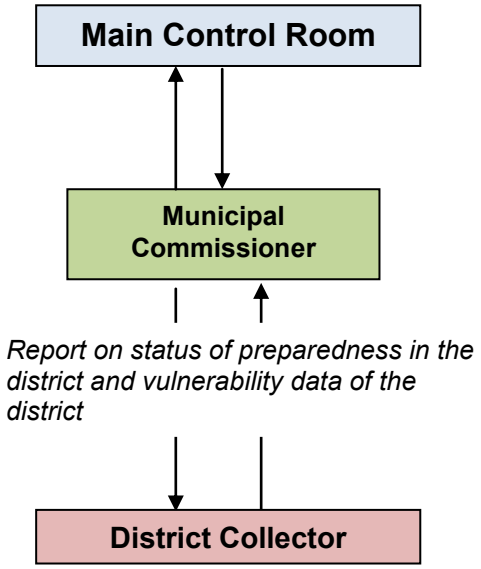
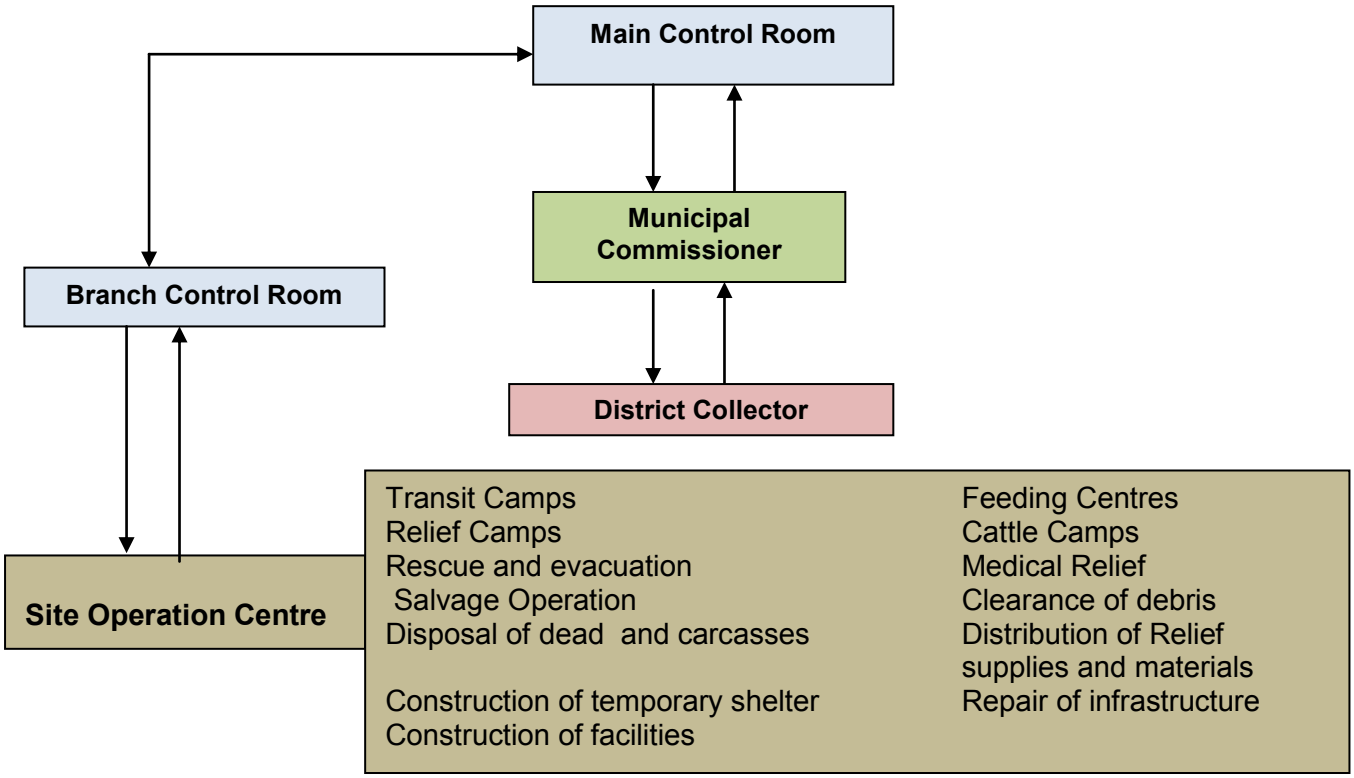


Figure 4-2: Main Control Room, Branch Control Rooms, Municipal Commissioner, District Collector during disaster incidence



B.4.4 Organization and Staffing

Determining the organization and staffing in a disaster incidence is critical to the effective handling of the disaster management function. During the applicable phases (pre-, trans-, and post-) of the disaster response effort, it allows the urban local body to:

- Analyze the emergency situation and decide how to respond quickly, appropriately, and effectively.
- Direct and coordinate the efforts of the jurisdiction's various response forces.
- Coordinate with the response efforts of other jurisdictions.
- Use available resources efficiently and effectively.

The manner in which the situation is managed will determine the effectiveness of the overall operation. Field teams (e.g., fire, engineering, public health, urban community development etc.) can and usually do perform admirably in disaster incidence situations.

Where problems often arise is in the overall management of the operation: the merging of varying disciplines, organizations, and agencies not accustomed to working together on a day-to-day basis.

B.4.4.i Normal Staffing

The ULB should prepare its organization structure which it has in the form of a flow chart viz.- from municipal commissioner/ dy. Commissioner to department heads to officer level. It should depict all the important departments and branches of the city.

B.4.4.ii Disaster Preparedness Team

The City's Disaster Preparedness Team has been established to ensure the jurisdiction maintains its preparedness to implement the disaster management plan and to work towards enhancing and improving the capabilities to respond to disaster situations. It is recommended that the Preparedness Team consists of the following City staff or designees:

- The Municipal Commissioner/ Chief Officer
- Special Muni. Commissioner/ Dy. Muni. Commissioner/ Asst. Muni Commissioner
- City Engineer
- Head of Public Works Department
- Head of Personnel and Establishment
- Chief Finance Officer
- Head of Urban Community Development Department
- Head of Parks & Recreation Department
- Head of Information and Technology
- Public Relations Official

The responsibilities of the Preparedness Team are as follows:

- Establish and coordinate emergency plans and protocols including public communications and awareness;
- Integrate and coordinate the activities of the jurisdictions and functions within their purview;
- Establish the standards, guidelines, and protocols necessary to promote interoperability among member jurisdictions and departments;
- Adopt standards, guidelines, and protocols for providing resources to requesting organizations.
- Set priorities for resources and other requirements; and
- Ensure the establishment and maintenance of multi-agency coordination mechanisms, including the Control Room, information systems, non-governmental organizations and private-sector outreach, public awareness and information systems, and mechanisms to deal with information and operations security.
- The City's Disaster Preparedness Team meets periodically _____ during times of normalcy to address these responsibilities.

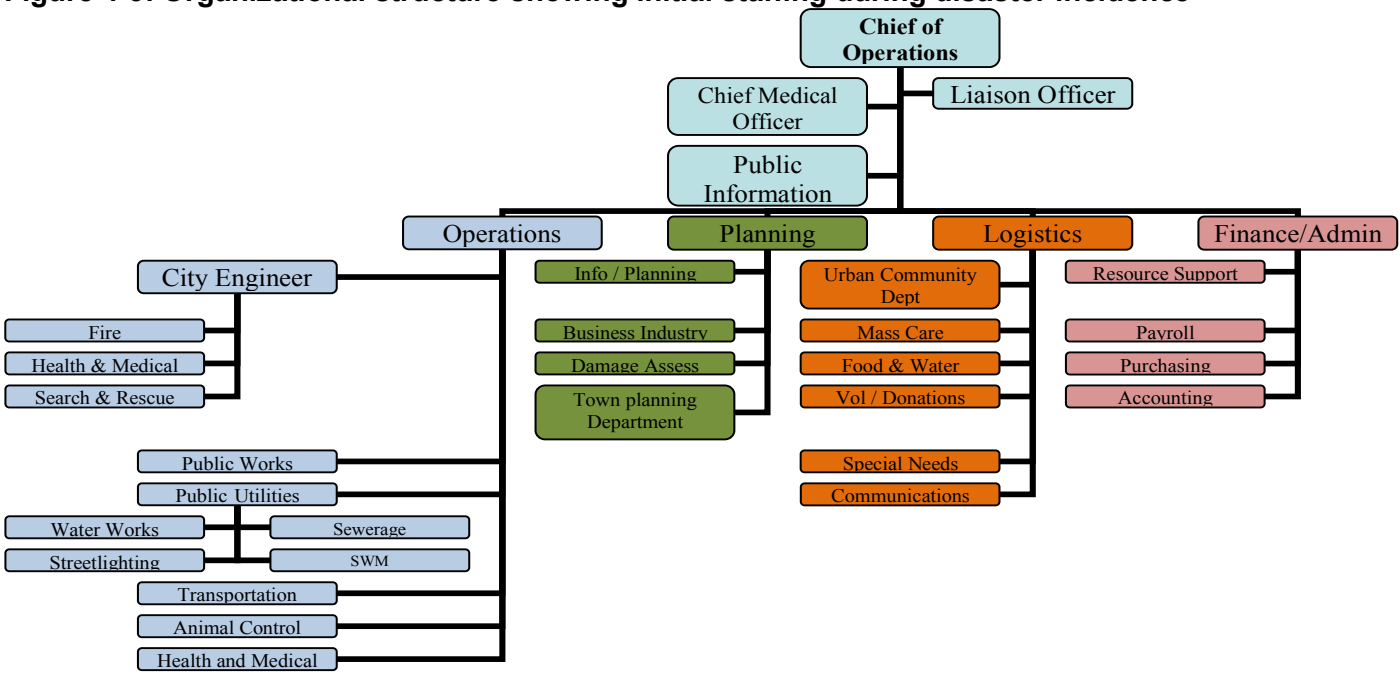
B.4.4.iii Staffing Organization in Disaster Incidence

The City's disaster incidence organization will be activated on the determination by the Municipal Commissioner, acting as the Chief of Operations.

At the time of a disaster, staffing of the organizational components will be at the direction of the Chief of Operations who may adjust the organizational structure and staffing of each organizational component to enhance the City's ability to more effectively address the unique requirements of a disaster situation. Composition of the staff assigned to the direction and control function may change significantly, as the situation progresses through the various stages of an emergency, into the recovery phase.

For major disasters pertaining to flood, earthquake, cyclone, this organizational structure will, nevertheless, be initially staffed in accord with the general guidelines for each position as discussed below. As the Fire department is not under the city, the coordinator assigned will need to work in close consultations with state level functionaries.

Figure 4-3: Organizational structure showing initial staffing during disaster incidence



In summary, the recommended roles and responsibilities for various department officials during a disaster incidence is summarized below as per the tasks to be undertaken.

Table 4-1: **Table showing summary of roles and responsibilities of various department officials during disaster incidence (L- staff in Lead Role; S-staff in Supporting Role)**

Department ➔ / Disaster management Function ➘	Commissioner	Fire deprt*(state)	Engineering	Public Works	Finance	Town planning department	Community Development Sccieties	Parks Horticulture	Medical Officers	Personnel	Information Systems	Public Relations Office
1 Transportation		S	L			s	s					
2 Communication		S	s							s	S	S
3 Public Works			s	L	s		s	s				
4 Fire Fighting		L	s	s								
5 Mass Care		S			s		L		s			
6 Resource Support					L		s	s		s		
7 Health / Medical							s		L			
8 Search / Rescue		L	S	s								
9 Hazardous Materials		L	S	s								
10 Food & Water					L		s	s		s		
11 Public Utilities			L	s			s					
12 Public Information												L

13 Volunteers & Donations	s				s		L			s		
14 Animal Control												
15 Business & Industry	L											
16 Damage Assessment					s		L				s	
17 Coordination with other government agencies	L			s	s							

L- Lead Role; S-Supporting Role

The recommended staffing assignments and general roles of key staff position are the following:

Chief of Operations - This position is staffed by the Municipal commissioner/Chief Officer and the position will be activated upon a decision to activate the City's main control rooms and branch control rooms. In the absence of the Municipal commissioner/ Chief officer, the Special/Deputy/Assistant Municipal Commissioner/ Chief Officer or designee would serve as the Chief of Operations. The Chief of Operations is responsible for the functioning of the city/town's disaster management organization. The position provides leadership, coordination, and management of all emergency operations being implemented by the City, in both the field and in the City's control room. The position also serves as the City's authorized policy maker and official spokesperson regarding the disaster situation and the City's disaster management actions. This position is also responsible for ensuring coordination of all City emergency operations with those of District Collectorate, adjacent jurisdictions and higher levels of government. The Chief of Operations provides direct oversight and coordination of all City operations conducted at the City Control Rooms, including final approval of each DAP and instructing the City's Disaster Management Organization on the DAP implementation. The position would also be responsible for allocating the contingency fund for emergency operations based on the contingency plan prepared by the Engineering department of the Municipal corporation/ Municipality. Fund requirement can be decided based on the magnitude of the disaster.

Public Information Officer – This position supports the Chief of Operations through management and coordination of all City activities related to public information, emergency instruction and media management. This position is staffed by the City Public Relation Officer. The position will be activated by the Chief of Operations when warranted by the need for emergency instruction and public information within the City. All public information and media management activities by the City will be managed and coordinated by the position. Other components of the City's Disaster Management Organization will conduct any public information activities through this position.

Chief Medical Officer – This position supports the Chief of Operations by monitoring response operations, and all other available information to ensure protection of the health and safety of the City's emergency personnel, City residents, and other individuals with emergency functions within the City. The position will be staffed by the City's Chief Medical Health officer or designee. The position will gather information from field operations by the City, from District Collectorate, or any other available source regarding known or potential health and safety threats, and will advise the Chief of Operations on the appropriate actions by the City.

The position will also monitor implementation of the emergency plans of the residential health care facilities located within the City and ensure their timely and effective implementation.

Liaison Officer – This position supports the Chief of Operations by ensuring effective communication and information exchange with facilities, organizations, and key individuals outside of the City's Disaster Management Organization and Control Rooms. Chief of

Operations selects and staffs this position as necessary. This position would ensure that the City deploys and supports one or more individuals as liaisons to the District Collectorate Control Room that these individual have adequate communications with the City Control Rooms, and that information exchange between the City Control Rooms and the liaisons is timely and accurate. If additional emergency facilities are activated by other levels of government, and close coordination between such facilities and the City Control Room is necessary, this position will ensure that the City also deploys and supports liaisons to these facilities.

One or more designated Community Liaisons will assist the Liaison Officer, and these positions would be staffed by the Mayor and City Council members. Community Liaisons would ensure exchange of current and accurate information with community members, the City's MPs, MLAs, and visiting dignitaries. To Liaison with other outside departments, viz. Revenue department, Fire, Police, Irrigation, a separate officer can also be appointed either from Engineering Department or Public Works Department, as these departments along with Health and Urban community department (Community Development Societies), are mainly deal with emergency field operations.

General Staff –

The General Staff of the City's Disaster Management Organization is made up of four sections: Operations, Planning, Logistics and Finance/Administration. Each of these will have branches established upon a determination by the Section Chief that the situation warrants additional staffing.

The following list of functional aspects of disaster management addresses core functions that warrant attention and may require that specific actions be taken during disaster response operations:

- Direction and Control
- Communications
- Warning
- Emergency Public Information
- Evacuation
- Mass Care
- Health and Medical Services
- Resource Management

The list above is not an exhaustive list and does not mean that the functions not included are regarded as less important than the ones that are included. Each city's planning team should assess its own need for functional annexes. Additional or different functional annexes should be prepared at the discretion of the planning team. Typical candidate annexes include: damage assessment, search and rescue, emergency services, among others. The primary concern is that all important activities be covered properly in the plan. The location or categorization of these activities is of secondary importance, though a State should strive for consistency among its jurisdictions to facilitate coordination.

The following attachments provide a brief description of each of the eight functional annexes listed above. They also outline the types of operational activity on which each annex should focus and, for consistency, follow the same general format as recommended for the Basic Plan. These functions are not prescribed, and the attachments are not sample annexes.

Transportation

Policies

All _____ city/town's city transportation resources will be utilized on a priority basis to save lives and property.

Engineering Department

Responsibilities and Tasks

Disaster Preparedness

- Develop, maintain an updated comprehensive inventory of transportation resources (refer: Table 5-13.)
- Undertake maintenance of large vehicles on priority basis
- Develop emergency action checklists

Disaster Incidence:

- When notified of a disaster incidence, report to the departmental head
- Coordinate transportation activities with the appropriate tasked organizations.
- Determine condition, status of the city's transportation routes.
- Determine condition, status of city's transportation resources.
- Determine present and future need for transportation resources.
- Obtain and coordinate transportation resources as requested by field staff.

Sources can include:

  - Other City departments.
  - Other government organisations
    - Private companies: bus, taxi, trucking, car/truck rentals.
  - Industries and private companies
  - Volunteer organizations.
  - Ambulance companies.
  - Air: airlines, private pilots.
- Provide for storage of equipment and vehicles in a safe place.
- Operate fleet repair facility
- Arrange for fueling facilities.

Fire:

- Provide medical transport. Also can assist Engineering department of the Municipal Corporation/Municipality, which would be responsible for emergency allocation of resources.

Urban Community Department/ Community Development Society (CDS) under SJSRY

- Coordinate evacuation from slum pockets

Town Planning Department

- Identify and notify evacuation routes to engineering department. *(refer: Table 5-4.)*

Communications

Policies

- Each department or division will ensure the ability to communicate between the Control Room and their department, zonal/ward operations centre, or with their operational units.
- Disaster *Management activities will be given priority use of all city's communication systems and resources.*

ASSUMPTIONS

This section describes the assumptions that are applicable to the communications system the jurisdiction will use during emergency operations. Typical assumptions may address:

- Recognition of the fact that large-scale emergency operations usually require a communications capability beyond the normal capacities of the equipment of a local government. Therefore, the type required and sources (from the public and private sector) for the additional equipment needed to support response operations should be identified as a fundamental activity associated with developing this part of the plan.
- Augmentation of local capability by higher levels of government.
- Designation of specific response organizations to maintain operational control of their own communications systems, while coordinating with the EOC during emergency operations.
- The spontaneous voluntary support of ham radio operators, radio clubs and private organisations with sophisticated communication equipment.

RESPONSIBILITIES/TASKS

Can this be assigned to District Information Officer/Public Information Officer/ RTI officer of Municipal Corporation/ Municipality

Disaster Preparedness

- Ensure that the emergency communications section in the control room is equipped with the appropriate communication gear.
- Clean, repair, perform maintenance on equipment.
- Maintain inventories of equipment. (refer: Table 5-11.)
- Ensure necessary backup power generation.
- Maintain list of radio frequencies.
- Develop frequency use procedures and protocols.
- Schedule tests, exercises.
- Develop emergency action checklists.

Disaster Incidence:

- When notified, report to the city's control room.
- Manage the emergency communications section in the EOC to include radio, telephone, mobile phones, repair crews, amateur radio, backup resources etc.
- Support media center communications operations, as needed. Coordinate with the public relations officer on media handling

Control Room:

- Determine condition, status of city's communication systems.
- Ensure internal communications are adequate.
- Establish communications with operational units and field staff.
- Obtain and coordinate communication resources as requested by field staff.
- Sources for resources can include:
  - All city Departments.
  - Collectorate Office
  - Amateur Radio.
  - Commercial vendors.
- Establish, maintain contact with district collectorate, state government
- Provide information on status of city's communication systems.
- Request additional communications resources, as needed.
- Prioritizes, coordinates restoration of communications.
- Ensure communication links to/from shelters.

Information Systems

- Provides computer support to disaster operations and recovery.

Public Utilities Works & Damage Assessment

Policies

- The first priority will be to assist Public Safety personnel in the saving of life.
- Damage Assessment will begin immediately upon notification or occurrence of an emergency/disaster.
- All *affected _____ city/town departments will provide preliminary damage assessment damage reports to the Control Room and recovery detailed damage assessment as required.*

RESPONSIBILITIES/TASKS

Engineering Department

Disaster Preparedness

- Maintain inventories of resources and equipment. (refer: Table 5-5, 5-6, 5-10, 5-13, 5-14,)
- Maintain pre-disaster maps, photos, videos, and other documents.
  - Participate in tests, exercises.
  - Develop emergency action checklists.

Disaster Incidence:

- When notified of an emergency situation, send response teams/personnel, equipment, and vehicles to the emergency scene, staging area, or other location, as appropriate.
- Notify the City's Control Room of the situation if the original notification did not come from the Control Room.
- Send a senior representative to the Control Room when the control room has been activated for emergency management.

- Manage public works resources and directs public works operations. Duties may include:
  - Performing debris removal operations.
  - Assisting in search and rescue efforts.
  - Conducting damage assessment activities (through the use of vehicles, remote video equipment, etc., as appropriate).
  - Providing emergency generators, fuel, and lighting, sanitation to support emergency responders at the emergency scene and at the control room.
  - Assisting in the evacuation of people at risk in and around the emergency scene.
  - Coordinating with utility companies to restore power to disaster victims.

Control Room

- Identify incident sites requiring engineering department services.
- Ensure operation of Public Utilities dispatch and reporting systems.
- Provide alternate telemetry links if necessary.
- Determine condition, status of city's Public Utilities resources.
- Certify structural integrity of government buildings prior to any re-entry.
- Determine present and future need for engineering department resources to support:
  - Search and rescue.
  - Heavy rescue.
  - Damage assessment.
  - Road, bridge repair.
  - Debris clearance.
  - Road clearance.
  - Flood control.
  - Traffic control.
  - Repair to utility systems (water supply, sewage treatment, streetlighting, solid waste management)

- Obtain, coordinate Public Utilities resources as requested.
- Damage Assessment (Preliminary and Detailed):
  - Activate, deploy damage assessment teams.
  - Collect and maintain damage reports.
  - Determine unsafe facilities.
- Coordinate with the traffic police for regulating traffic control.
- Signage repair and replacement.

Urban Community Development Department/ Community Development Societies (CDS) under SJSRY

- Deploy personnel for damage assessment.

Planning, zoning, building department

- Deploy personnel for damage assessment
- Compile and complete damage assessment forms for submission to Control Room.

Chapter 5

City Disaster Preparedness Planning

B.5.1 Introduction

Preparedness is the foundation of an effective Disaster Management Plan implementation. There is a need for urban local bodies to establish a preparedness cycle in advance of a disaster incidence and including other government organisations, private sector, non-governmental organizations, and individual citizens, as appropriate. The cycle of preparedness for prevention, protection, response, and recovery phases may be summarized as follows:

- Plan - Collection and analysis of data and information, and development of policies, plans, procedures to perform assigned missions and tasks.
- Organize and Staff - Individual teams, an overall organizational structure, and leadership at each level in the structure to perform assigned missions and tasks
- Equip – availability of major items of equipment, supplies, facilities, and systems necessary to perform assigned missions and tasks.
- Train –training and building capacity of all levels of staff within the urban local body required to effectively manage a disaster incidence.
- Exercise, Evaluate, and Improve the disaster management plan.

B.5.2 Forming a Disaster preparedness Team

It is important for a city to form a disaster preparedness team which will ensure that all departments have the capacity-human resources, financial resources and material to address disasters. It is recommended that the “Disaster Preparedness Team” should at least consist of the Municipal Commissioner/ Chief Officer, City’s department heads, zonal heads and Assistant/Dy./Special Municipal Commissioner.

This team should meet on a routine basis and is responsible for the necessary intra-ULB coordination of government actions to ensure that:

- The ULB’s supporting documentation is current, and other actions needed to ensure readiness of the City for disaster preparedness implementation are taken.
- ULB’s personnel are trained in their roles for implementation of the disaster management plan.
- Implementation of the Disaster Management Plan is exercised on the schedule and in the manner specified herein.
- Ongoing evaluation of the adequacy of the City’s personnel, equipment, facility and supplies to implement the Disaster Management Plan.
- Development and implementation of a “preparedness improvement plan” designed to address shortfalls in the City’s Disaster preparedness resources and capabilities.

B.5.2.i Coordination of Preparedness Activities

The Disaster Preparedness Team would coordinate disaster preparedness activities within the ULB. The group meets on a routine basis to discuss preparedness activities, to maintain the DMP planning process, to evaluate response and recovery capabilities, and to implement the city’s preparedness improvement plan. The City would also participate in District Collectorate preparedness activities through participation on the district’s planning, training and exercise activities.

B.5.2.ii Training

It is critical that the ULB staff members that have responsibilities for implementation of the DMP receive the following preparedness training:

- Training regarding implementation of the City's DMP. This training is to improve understanding and familiarity with its concepts, as well as with the checklists prepared by departments to support disaster operations.
- Training provided by individual City departments regarding the emergency services and public safety functions normally performed that would also be needed during implementation of the DMP.

B.5.2.iii Exercises and "After Action" Reports

It is also recommended that the ULB conduct an annual exercise of the DMP for the city's staff as a part of its preparedness program. After each exercise or actual implementation of the DMP, the City prepares a written after action report to document issues or problem areas. These then are incorporated into the City's Preparedness Improvement Plan.

The Assistant/ Dy./ Special Municipal Commissioner/Chief Officer could be in-charge of conducting this exercise, preparing the report and ensuring that the recommendations are made into the DMP.

B.5.2.iv Evaluation and Improvement Planning

On an ongoing basis, through the coordination of the City's Disaster Preparedness Team, the preparedness resources and requirements of the ULB are evaluated. This evaluation is specifically focused on the comparison of the risk exposure of the City to the three hazards-floods, cyclone, and earthquake and the capabilities & resources available to respond to & recovery from such events. The shortfalls or problem areas identified through such evaluations are defined through the preparedness improvement plan, with corrective actions assigned to the City's departments for resolution. The City's preparedness improvement plan is continuously updated as new assessments are made and previously assigned corrective actions are completed.

B.5.2.v Public Education and Community Outreach

It is of utmost importance that citizens must be better prepared, trained, and practiced on how best to take care of themselves and assist others in those first, crucial hours during and after a disaster incident. Citizens can reduce the demand for emergency assistance during disaster incidents through preparedness measures and actively contribute to the ULB's response capability by participating in response and recovery activities.

On an ongoing basis, the ULB should conduct or supports public information and educational programs to assist all sectors of the community to become better prepared for disasters. The ULB may use its website or other available mechanisms like through NGOs to help inform the community about actions needed to be prepared for disasters.

B.5.2.vi Resource Classification

These listing will include human resources and other resources like equipments, supplies etc. These need to be updated regularly and would be maintained as current as possible.

The ULB needs to classify the equipment utilized in emergency response operations and to certify its adequacy for the intended uses.

B.5.3 Temporary Shelters

When disasters occur, people are often provided safe refuge in temporary shelters. Some may be located in schools, trusts, office buildings, tents, or other areas. Great attention needs to be paid to ensure that these shelters are well stocked with basic necessities such as food, water, and blankets.

B.5.3.i Estimation of need of temporary shelters based on vulnerability

Refer table 5-1 of Section C that estimates the need for space in temporary shelters for highly vulnerable population. The nature of temporary shelters depends on the severity of the disaster incident. When the recovery period from the disaster is considerably long it is required to accommodate evacuated people by providing them with adequate space for sleeping and rest.

- Referring to identification of most vulnerable population from Section C, insert the population and ward numbers in columns A and B.
- The total space required for this population for short term evacuation (for a small time-space for people to stand); evacuation for a few hours (space needed for people to sit) and long term evacuation for a few days (space needed for people to sleep) is computed automatically in the ensuing columns.
- The final output is space needed for vulnerable population in sq. mts.

B.5.3.ii List of Available temporary shelters

The ULB should also prepare a inventory of available temporary shelters in the city. The list should consist of the information on the capacity of the shelter and contact addresses of the owners of the premises. These premises are to be selected in non disaster prone areas of the city.

Table 5-2 calculates the capacity of existing shelters to house vulnerable populations.

Enter the information in the columns – type of community shelter and available space in the community centre, address and location details. The capacity of the shelters in various situations-for people to stand, sit and sleep is computed automatically.

B.5.3.iii Need for Establishment of Temporary shelters –

The difference between the temporary shelter space available and the space needed (difference between B.5.4 and B.5.3) will spell out the requirement of establishing temporary shelters. It necessary to suitably locate such shelters in safe places in the city, in open grounds and at higher elevations.

Refer Table 5-3 of Section C which has details of establishing temporary shelters

B.5.4 Planning of Evacuation Routes

Once the locations of all the temporary shelters are established, it is necessary to pre plan the evacuation routes from the disaster site to the temporary shelters.

Evacuation maps and plans would recommend the best routes for people to use in evacuations. These routes should keep in mind where community members are likely to go during an emergency evacuation, and should guide people to the safest and fastest routes. If possible, evacuation routes should be wide streets that can accommodate many people. Avoid roads with traffic choke points, such as narrow areas or complex intersections.

Walking is Best Way to Evacuate

In most densely populated parts of the cities, it is best if people evacuate by walking and do not use cars or other motor vehicles. When people evacuate by car, it often results in major traffic problems. At best, every person in the community is leaving at the same time, leading to unusually heavy traffic that can cause driving times to be much longer than usual. Traffic can be blocked if one car breaks down, causing gridlock that traps people in their cars in areas that could be flooded.

There is a need to plan for adequate traffic personnel for traffic management during evacuation procedures. Buses, trucks and other passenger vehicles would be required to evacuate settlements (especially slum dwellers) from low lying areas to safer areas.

Tress can also collapse and roads can be blocked by landslides. Buildings can collapse, blocking roadways, injuring people or trapping them in high risk areas. Power lines can collapse, blocking routes and causing hazardous conditions.

Ideal evacuation routes should have the following characteristics:

- Wide streets;
- No bridges, or bridges determined by structural engineers to be structurally sound to survive earthquake shaking;
- Away from landslide and weak soils; and
- Limited overhead power lines or similar hazards.

Before recommending evacuation routes, walk along those routes yourself to identify hazards and conditions that are not obvious on maps or to drivers but that need to be planned for in an evacuation.

Evacuation maps should be local, not regional. They should cover a small enough area that the landmarks used to identify hazard zones are easy to understand. Maps can include windows to show particular locations at greater detail, if needed. This is often useful for densely populated areas.

Refer Table 5-4 of Section C that lists safe routes for evacuation.

B.5.5 Resources needed for Search & rescue

The inventory of resources contains the list of materials, quantity needed v/s quantity available and the contact details for the sources of such materials and human resources required for various response activities

B.5.5.i Materials required for search and rescue operations

Refer Table 5-5 of Section C that lists out various categories of materials that could be required for search and rescue operations. The list includes various categories of cutters, heavy engineering equipments, lighting arrangements etc.

The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers.

***Possible Sources*:** The ULB could look at neighboring ULBs, District Collectorate, industries, industrial associations for these information.

B.5.5.ii Specialized search and rescue materials for floods

Refer Table 5-6 of Section C that lists specialized search and rescue material for floods like various kinds of boats, life jackets etc. The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers.

***Possible Sources*:** The ULB could look at neighboring ULBs, District Collectorate, industries, industrial associations for these information.

B.5.5.iii Skilled human resources required for search & rescue operations

Refer Table 5-7 of Section C that lists the requirement of skilled human resources for search and rescue operations including divers and search and rescue teams.

***Possible Sources*:** The ULB could look at neighboring ULBs, District Collectorate, for these information. Details of swimmers could be procured from any swimming pool clubs available in the city.

B.5.6 Resources required for relief operations

B.5.6.i Materials required for first Aid

Refer Table 5-8 of Section C that lists materials for first aid requirements including various kinds of critical supplies, equipments, mobile units etc. The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers.

***Possible Sources*:** The ULB could collect this information from neighboring ULBs, District Collectorate, government and private medical hospitals and colleges, charitable trusts etc.

B.5.6.ii Skilled human resources required for first aid

Refer Table 5-9 of Section C that lists requirements of human resources for first aid ranging from anaesthetists to general physician to lab technicians.

***Possible Sources:** ULB could get this information from neighboring ULBs, District Collectorate, government and private medical hospitals and colleges, charitable trusts, pathology labs, etc.*

B.5.7 Resources Required for Shelter management

Refer table 5-10 of Section C that lists requirements for temporary shelter arrangements. Based on the number of temporary shelters that need to be constructed by ULBs as calculated in B.5.3.iii, the requirements of various material could be computed.

The list includes materials for constructing pre-fabricated materials, sheets, tents etc. The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers.

Possible Sources: *ULB could get this information from neighboring ULBs, District Collectorate, private suppliers, etc.*

B.5.8 Resources required for Telecommunication

B.5.8.i Equipments required for telecommunication

Refer Table 5-11 of Section C that lists telecommunication equipments required for all disaster phases. The list includes GPS equipments, Satellite phones, video systems etc, wireless systems etc.

The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers.

Possible Sources: *ULB could get this information from neighboring ULBs, District Collectorate,other government organizations, private suppliers, etc.*

B.5.8.ii Skilled human resources required for telecommunications

Refer Table 5-12 of Section C that lists human resources required for telecommunications viz. ham radio operators.

The table includes details of estimated required numbers, the numbers available and requirement to mobilize from outside.

Possible Sources: *ULB could get this information from neighboring ULBs, District Collectorate, ham radio clubs, department of telecommunications etc.*

B.5.9 Resources Required for Transportation

B.5.9.i Equipments for Transportation

Refer Table 5-13 of Section C that lists details of transportation resources for all disaster phases. The list includes heavy vehicles, light vehicles and special vehicles. The table includes details of estimated required quantity, the quantity available and details of organizations if there is a need to mobilize more numbers and whether the drivers are available along with the vehicles or not.

Possible Sources: ULB could get this information from neighboring ULBs, District Collectorate, industries, industrial associations, state road transport corporations, organizations (schools, factories, private operators) having their bus fleets, private water supply organizations (who would have water tankers)

B.5.10 Pre Monsoon Flood/Cyclone Contingency Planning for ULB

The following section highlights the roles and responsibilities of various departments for pre-monsoon flood/cyclone contingency planning for urban local bodies.

B.5.10.i All Departments, All Zones

- All zonal officers, executive engineer-roads department, water supply and drainage engineer should prepare a timeline for completion of all earthwork/ construction activities on roads of all zones. All zonal officers, executive engineer-roads

department, water supply and drainage engineer should give priority to be given to main roads, roads with heavy traffic for repair work or maintenance. Refer Table 5-16 that provides a template to list ongoing works on roads in the ULB.

- All zonal officers, executive engineer-roads department, water supply and drainage engineer make a list of earthwork by other agencies like telephone companies, electricity supply company etc and notify these agencies for timely completion of their earthwork at least two months prior to onset of monsoons.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer should prepare an updated list of completion of earthwork in the city atleast one month prior to onset of monsoon. Henceforth, any earthwork request should be sent to the municipal commissioner/ chief officer for approval.
- All zonal officers, executive engineer –workshop, chief fire officer, water supply and drainage engineers to ensure that fuel for de-watering pumps, generator sets and vehicles is stocked atleast one month prior to onset of monsoon. Fuel for zonal office, fire station vehicles to be stocked.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer to identify leakage points from drainage lines. They should arrange to provide water supply by tankers to such areas where drinking water may be contaminated by such leakage and they should coordinate with health officials for provision of health services to such areas and arrange dissemination of chlorine tablets. They should also complete procedures for new drainage and water supply connections atleast one month prior to onset of monsoons.
- All All zonal officers, water supply and drainage engineer should ensure that the generators deployed in water supply stations and drainage pumping station are in operational condition and ascertain that the logbooks are properly maintained. These generators should be deployed for xx hours every xx months. All generators and its fuel be placed above the last year's High flood level.
- It is recommended that all emergency lighting equipments must also be deployed for xx hours every xx months.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer should prepare an estimated of number of daily wage based labor and send the same to personnel and finance departments atleast one month prior to onset of monsoons.
- Head of Engineering should prepare a certificate that floodgates are serviced and are in operational condition at least one and half months prior to onset of monsoon. Refer Table 5-17 that lists all flood gates locations and contact details of the operator, location of key to the flood gates.
- All zones to have atleast 2000 bags of sand ready for use at least fifteen days prior to the onset of monsoon.
- All zonal offices to ensure that the identified temporary shelters have been repaired, toilet blocks, water supply, lighting facilities should be checked and repaired. Details to be sent to estate department atleast one month prior to onset of monsoon.
- All zonal officers should prepare list of open plots which get water logged and send notices to plot owners at least one and a half month prior to onset of monsoon for earth filling to be done.

B.5.10.ii All zones- drainage department should ensure

- Cleaning of all storm water drains atleast one month prior to onset of monsoon. All zonal officers and drainage engineer to prepare a report and submit to Assistant/Dy./Spl Municipal Commissioner every 15 days from one month prior to onset of monsoon.
- Cleaning of all gutters (pukka/ semi-pukka), manholes, and inlet chambers. Repair or replacement of manhole covers. All zonal officers and drainage engineers to prepare a report and submit to Assistant/Dy./Spl Municipal Commissioner every 15 days from

one month prior to onset of monsoon. Refer Table 5-20 of Section C for activities of flood preparedness.
- Coordinate with Executive Engineer/ Workshop Engineer to prepare list of requirements of dewatering pump sets and initiate process for procure/renting the same.
- Ensure that de-watering pumps are in operational condition and provide certificate that dewatering pumps are operational to the estate department. Refer Table 5-19 of Section C that provides a template for capturing details of zone wise/ ward wise dewatering pumps.

B.5.10.iii Roads department
- All zonal officers and road department engineer to ensure all material for road repairing (coal tar, hard muram, metal bricks, sand bags, diesel etc) during monsoon season is available for immediate use by the city.

B.5.10.iv Town Planning
- All zonal officers and town development officer should issue public notices regarding removal of construction material from roads by builders and submit a report to the chief town planner. Even after 10 days, if the same is not abided, then they should initiate process for imposing penalties and confiscating the material.
- All zonal officers and town development officer should prepare list of buildings which are in a dilapidated condition and which are unsafe and could collapse during heavy monsoons/floods. The same to be submitted to the chief town planner and initiate process to safeguard occupants of the buildings.

B.5.10.v Streetlighting

- All zonal officers and engineer-streetlight to initiate process of cleaning/repairing of all high mast towers, streetlight covers and fixtures at least two months prior to onset of monsoon.
- Engineers-streetlight should ensure that all programmable control panels for switching on/off the streetlights and the junction boxes on streetlight poles are above the high flood level.
- Department should update contact details of wireman and update information on agencies providing generators, fix rental rate for this year and send to office superintendent.
- Engineer-streetlight to undertake repainting of the marking of flood level on all bridges which would be easily visible at least one month prior to monsoons.

B.5.10.vi Fire Department under the state government (coordination should happen with the Engineering dept of the city)
- Chief fire officer and workshop engineer should ensure that all fire engines, related equipments are in working condition. They should also ensure supply of fuel, water storage is available for immediate use.
- All zonal officers, chief fire officer to update information on rescue boats in the event of a flooding emergency in the city.
- Chief Fire Officer to prepare detailed list of availability of cranes, details of private sector organizations if there is a requirement for hiring cranes.

B.5.10.vii Workshop

- Workshop engineer to ensure that all vehicles and fleet are repaired and in working condition atleast one month prior to onset of monsoons.
- Workshop engineer to ensure that earth movers, heavy vehicles are operational or easily available. They should update the contact details and all information for organizations for availing these equipments.

B.5.10.viii Horticulture and Garden Department

- Garden Superintendent should examine availability of equipments/ removal of large trees that might fall due to earthquake/flood/cyclone. If it is required to contract out these services, then contact details, rates for the same should be finalized and sent to office superintendent.

B.5.10.ix Public Relations Office

- Prepare information material to disseminate to citizens in order to prepare the community at large for the four disasters. Material to be disseminated through print media (newspaper), radio, and television should be prepared, tested and disseminated. The PRO office should undertake measures to develop such material either in-house or take approvals for outsourcing the same. Specific information regarding cyclone/flooding should be prepared and disseminated by atleast 2 months prior to monsoon season.

Many ULB leaders may not immediately acknowledge disaster preparedness as a good thing. Common arguments against preparing for disasters include:

- It will harm the economy because businesses and tourists will be scared away,
- People will panic if this topic is discussed publicly,
- The community is too poor to prepare for disasters, and
- There are too many other high priority problems in the community to focus on disaster preparedness.

Worldwide experience shows that none of these arguments are valid. Some of the world's strongest economies and favourite tourist destinations, such as Hawaii and Chile, have been publicly discussing and planning disaster preparedness for decades with no harm done to tourism. Hundreds of communities can point to experiences in which openly focusing on how to reduce disaster risk built confidence in their population and business community, rather than causing problems. Poor communities around the world have focused on disaster preparedness: many risk-reducing activities require people-power, not financial resources. And while every community has numerous short-term priorities, it is important to keep in mind that disasters like cyclone/floods or earthquake destroy all progress a community has been making in every area.

Making Basic Outreach Materials

The ULB should prepare some materials explaining the basics of disaster preparedness to use to explain citizens. The ULB could present this information in a variety of forms viz.- pamphlet or flier that contains basic information on disaster vulnerability of the ULB, evacuation map and location of shelters. This pamphlet could then be uploaded on the ULB's website and be distributed to citizens, students. After developing such materials, it is helpful to test them on a small portion of the audience, to see if people understand and respond to them in the way that you intend.

The Substance of the Message

The most important information to share with citizens is which areas have high hazard of being flooded. People are most likely to evacuate if they believe they live in a high hazard location. This factor seems to be more important than how much people know about disasters or how well they have prepared.

Another critical piece of information to share is a list of natural flood/cyclone warning signs that the ULB has established (e.g- sirens/ vehicles with speakers). Natural warning signs are often the *only* warning of a tsunami that communities receive. It is also important to include basic information about evacuations: who should evacuate, when they should evacuate, how they should evacuate, where they should evacuate to, and what they can expect next.

Your outreach materials must include local information, such as local maps of areas that could be inundated and identification of important community buildings and infrastructure in these areas. Recommendations about evacuations should mention as many local locations and concerns as possible.

Testing Your Materials

When you have draft outreach materials, show them to a few citizens to get their feedback. Some questions you might ask include:

- Do people understand the words you are using in the way that you intend them to?
- Do they understand the main points you are trying to make?
- Does anything in the materials confuse them?
- Do they react to the message positively?
- Do they find it credible?
- Do they find it interesting?
- Can they remember what the message was about later?
- Do they find the message relevant to them?

The flood preparedness activity chart as mentioned in Table 5-20, 5-22, 5-22 and 5-23 summarize preparedness activities for floods, cyclone, and earthquake hazards.

Chapter 6

Emergency Operations Procedures

This chapter defines the anticipated operations that will be conducted beginning with the recognition that an event has occurred until termination of operations and deactivation of the control rooms. In all cases, the operational actions identified are intended to be conducted with flexibility, and to be adjusted to be consistent with the circumstances surrounding the event.

Emergency operations activities mainly constitute coordination among various departments for the activities of response and recovery. The activities for response and recovery are procedurally similar for all the disasters. This chapter explains the various activities of disaster response and recovery along with the roles and responsibilities of various departments in each activity.

Refer Chapter 6 in Section C which presents operations templates for the various activities of response and recovery. It is also important to maintain the list of all departments and officials involved in disaster management along with their contact details. This information would be a ready reference for all coordination during a disaster incident. The templates for contact information of NGOs, hospitals, nursing homes, local government, district, and state government officials is provided in the Annexure I to XV.

B.6.1 Disaster response

The disaster response activities involve the operational activities to be undertaken at the onset of the disaster incident. Situation assessment, evacuation search & rescue, first aid, relief distribution and shelter management are the components of disaster response.

B.6.2 Early warning and communication

The City would be informed of an emergency event that may require activation of emergency operations in a variety of ways. The early communication and warning for cyclones and flooding from the disaster specific regional centers of the Indian meteorological department are typically first delivered to the district collectorate from were the information is passed on to the urban local bodies. Immediately after receiving the warning from district collectorate, all the control rooms shall be activated with immediate effect. Internal departments' viz. Engineering Department, Public Works Department and Community Development Societies will start reacting with their specific tasks assigned to them.

The urban local bodies (ULBs) without making any delay shall communicate forthwith over telephone to other liaison officers in other departments' viz. The department of food and agriculture, irrigation, social welfare, medical and health, finance, planning, forest, Animal Husbandry & fisheries, revenue department, fire department, police department, and irrigation department for necessary arrangements.

The procedures for early warning and communication for flood and cyclone needs to be probed specifically for the state of Andhra Pradesh.

The City, through the City Manager, Fire Chief could also receive notification of an emergency event through its staff. In all cases, when the Fire Chief, or any senior officer receives notification of an emergency situation of a larger scope or greater complexity than those normally occurring within the city, the municipal commissioner or designee will be notified. The municipal commissioner/chief officer will, upon such notification, determine if

the City control rooms should be activated, and if so, will notify department heads of the decision. **(Does it need to modify or delete?)**

In the absence or incapacity of the Municipal Commissioner, it is recommended that the Special/Assistant/Deputy Municipal Commissioner/Chief Officer will be the alternate, to direct activation of the City's control room.

It is also important for ULBs to maintain an inventory of contact details of the disaster information dissemination centers at national, state and regional level for effective coordination during response. The city would also maintain a number of warning centers viz.-sirens at various locations to disseminate warning on disaster to citizens at large.

Refer Table 6-2 -Section C.6.1.i for templates for maintaining contact information of cyclone information centers and cyclone warning centers.

Refer Table 6-3 -Section C.6.1.ii for templates to maintain information on flood information centers and flood warning centers.

Refer Table 6-4 - Section C.6.1.iii for templates to maintain information on earthquake information centers.

It is necessary for the ULB to contact these centers immediately after an earthquake incidence for getting the magnitude from the real time monitoring facility. The information on earthquake magnitude would be crucial for reporting to citizens and for organizing its disaster management operations.

B.6.3 Personnel Notification

Upon a decision to activate the City's control rooms, the Municipal Commissioner/Chief Officer would direct the notification and mobilization of the Control room staff. The Municipal Commissioner/Chief Officer, or designee, acting as the Chief of Operations, would notify assigned personnel and request mobilization to the Control Room. Once the Control Room is declared to be activated, the Control Room staff will then ensure that all departments are notified, and that all emergency operations will subsequently be coordinated and managed through the Control Room.

As indicated by the known or anticipated consequences of the event, each Departmental Head would make an initial assessment regarding the need to immediately activate staff for various emergency operation purposes and to staff the Control Room.

B.6.4 Initial Actions

Upon control room activation, the Chief of Operations will generally direct the following initial actions, consistent with known conditions:

- Complete activation of the City control rooms as well as notification and mobilization of the Emergency Organization.
- Notify about opening of city control rooms to District Collectorate.
- Ensure the adequacy of documentation available in the control room for subsequent use, e.g., personnel lists, procedures and checklists, equipment inventories, etc.
- Test the functionality of the control room's communications equipment; Take corrective action as indicated.
- Begin Rapid impact assessment and similar current information.

- Establish communications with field units, District Collectorate and adjacent jurisdictions, as required
- Make an estimation regarding the immediate potential health and safety impacts to emergency workers and the public from the event. Advise field personnel and initiate other actions accordingly.
- Complete an initial, rapid assessment of the impacts of the event. Utilize information for the preparation of the initial Disaster Action Plan (DAP).
- Notify field personnel of the initial DAP and allocate resources to field operations accordingly.
- Concerned departments would implement initial actions as defined in the initial DAP.
- Implement and/or develop procedures for tracking the availability and use of the City's resources for emergency response.
- Establish and implement, as indicated, plans for closure of City offices. Announce to the media.
- Receive information on personnel and equipment resource needs from field operations. Get information and act on contracts for mobilizing the required equipments or manpower.
- Prepare report on implementation of initial DAP and transmit to District Collectorate.
- Deploy City liaison staff to the District Collectorate Control Room.
- Initiate public information activities appropriate to the magnitude and characteristics of the event, e.g., a media release regarding ULB's initial response actions.

A few of these initial actions have been explained in detail below:

B.6.4.i Rapid situation assessment

After the disaster incidence is reported, the Municipal Commissioner/ Chief Officer initiate the Rapid Situation Assessment which is typically undertaken by officials of the Engineering Department. Rapid situation assessment helps municipal commissioner to quickly grasp the situation in terms of impact and to be able to plan his response. ***(Page 19, Table 4.1, roles and responsibility of Various departments)***

The assessors prepare a brief of the assessment and report to the municipal commissioner to initiate the response activities. The situation assessment shall be more effective if reported within half an hour of receiving the information on the occurrence of the disaster incident.

Refer template 6-5 in Section C.6.1.2 .The report shall contain the time, activity, number of people affected and the location of the incident with a rough map of the affected area.

B.6.4.ii Evacuation

Evacuation of affected people to a temporary shelter for the disaster incident site is the first component of disaster response when the magnitude of the incident is large. Temporary shelters are selected or erected in open ground during earthquakes, in high elevation areas during flood and in strong shelters during cyclones. It is recommended that evacuation of people from the affected area is done with fire department in the lead with support of urban community development department.

Vehicles for evacuation are contacted and mobilized. Refer Table 5-13 of Section C for list of vehicles.

The area to be evacuated is done based on the rapid initial assessment and accordingly temporary shelters are identified. Refer Table 5-3 of Section C for list of temporary shelters.

Owners of the temporary shelters are contacted and shelters are fixed. Additional shelters are erected if necessary. During evacuation smooth flow of traffic in the evacuation routes need to be enabled by traffic police.

A message is drafted to the public regarding evacuation. The message is then disseminated through uninterrupted communication systems of the city like mobile sms, radio, local TV channels, mobile public address system etc.

The most important thing to include in an evacuation warning message is to tell people exactly what they should do. Messages should explain what evacuation means, who should evacuate when and where people should go, and how they should get there or if ULB is arranging for evacuation then there should be details of the arrangements provided. Very specific and simple language should be used.

It is important to keep warning messages consistent. When warning messages are inconsistent, people listen to the information that they like best, rather than the information that is most accurate. There are likely to be some inconsistencies in every warning message because disasters are fast-moving events and people get information from a wide variety of sources. The following steps help to manage inconsistency in warning messages:

- Refer to and repeat what was last said,
- Acknowledge what has changed, and
- Explain why changes occurred.

B.6.4.iii Search and Rescue

Search and rescue operations are carried out by fire department officials, since it comes under the State Government and power has not yet devolved to the ULBs. Volunteers and swimmers (in case of floods and cyclones) who are contacted and mobilized by the same department.

Based on the rapid assessment report, search and rescue operations are initiated in the worst affected areas of the notified site. The search and rescue teams are allocated to various locations by the municipal commissioner/deputy municipal commissioner. Rescue teams are backed up with first aid teams which are from the health department. The people rescued are transported to nearest temporary shelters or health centers for further treatment. The engineering department also plays a major role in the search and rescue by initiating the debris removal activity alongside. Bull dozers and other equipments and personnel are deployed and they work along with rescue personnel substantiating each other efforts.

Engineering departments, Public Works, Health and Community development societies are the main internal departments that provide the back up assistance to Fire department in emergency relief operations.

B.6.4.iv First aid and distribution of relief materials

First aid and distribution of relief materials to the affected people at the temporary shelter is another major component. First aid team is mobilized to the rescue sites and to the temporary shelters. Refer Table 5-8 in Section C.5.13.1 for the material that could be required by the team. The organizations from whom the material needs to be mobilized are contacted and mobilized by the concerned department.

Fill in the blanks in the section C.6.1.5 for responsibilities for various activities.

B.6.4.v Shelter management

Shelter management involves the management of temporary housing for the disaster affected people in shelters until normalcy is restored. It is recommended that the shelter management be a function of the urban community development department/community development societies along with the support of health department, finance department and engineering department.

The affected people housed in the temporary shelters should be provided with necessary materials such as food, water, clothing and bedding. The daily activities in the shelter such as distribution of relief material, maintaining hygiene, maintaining peace and decorum, medical and first aid activities should be managed and monitored.

If cash doles need to be provided to the evacuated people, then appropriate amount (as per Govt. of AP norms) per household per day should be provided by the finance department to the department in-charge of cash dole distribution.

The roles and responsibilities of shelter management activities are to be filled in the blanks provided in the section C.6.1.6.

B.6.5 Disaster Recovery

Disaster recovery activities include the measures to be undertaken by the urban local body to restore the situation at the disaster site normal. The disaster recovery activities include initial damage assessment, compensation and relief packages and restoration of normalcy at the notified disaster site. The activities of detail damage assessment and long term recovery are beyond the scope of the manual.

B.6.5.i Initial damage assessment

Refer Table 6-6 for the template for damage assessment in section C 6.5.i. The damage assessment is done separately for private property, public property, private businesses and infrastructure facilities in terms of percentage affected and an estimate of monetary value of the percentage. This would be important for the city to identify types of assistance to offer to various categories of damages. An example is provided below.

Assistance for damage to public properties

- **Debris Clearance**

This category includes all cyclone/flood/earthquake induced debris on ULB's roads, including the right-of-way, other public property, and private property. It can also cover the cost of demolition of public structures if those structures were made unsafe by the disaster.

- **Emergency Protective Measures**

This category addresses the need to provide appropriate emergency measures designed to protect life, safety, property, and health (i.e., barricades, sand bags and safety personnel).

- **Road System**

This category addresses damages to roads, bridges, streets, culverts, and traffic control devices.

- **Water Control Facilities**

Eligible damages under this category could include costs to repair or replace water pipes, treatment system, drainage channels, irrigation works.

- **Building and Equipment**

Eligible damages under this category include costs to repair public buildings and equipment, supplies/inventories that were damaged and transportation systems such as public transit systems.

- **Public Utility Systems**

Under this category, assistance is available for damaged water systems, landfills, sanitary sewerage systems, storm drainage systems, and light/power facilities.

- **Other**

The "other" category includes park and recreational facilities, or any other public facility damages that do not reasonably fit in one of the other six categories.

Assistance for damage to individual property

The purpose of individual damage assessment is to determine the extent to which individuals and private businesses have been impacted by the disaster. The two basic categories of eligible individual damage include.

- **Damage to Residences**

A person whose residence has been damaged due to a disaster may qualify for various forms of disaster assistance (as per norms of the Govt. of Andhra Pradesh). When damage assessors go into the field, they will estimate the degree of damage to the home, evaluate the habitability and type of the victim's home.

- **Damage to Businesses**

Privately-owned businesses that were damaged or destroyed by the disaster could also qualify for certain assistance (as per the norms of Govt. of Andhra Pradesh). The same procedures used to assess damages to homes are used to quantify damages; as well as determine the impact those damages will have on the community. Loss of a business may result in lost jobs, income, etc., to the individual owner and employees.

Structural damage assessment for buildings

There are two levels of building damage evaluation during earthquake they are:

Rapid Evaluation — This is typically based on an exterior inspection of the building only. Used to quickly post obviously unsafe or apparently safe structures. Identifies buildings requiring an Engineering Evaluation. (Approximate time: 15 minutes)

Engineering Evaluation — Detailed engineering investigation of damaged structure; requiring construction drawings and new structural calculations. This could be facilitated by the ULB. (Approximate time: 1 week)

Refer Table 6-7 of section C.6.2.i for the template for initial structural damage assessment or rapid evaluation templates of the buildings. However the detailed engineering assessment of buildings is beyond the scope of the manual.

B.6.5.ii Compensation and relief packages

The compensation to be given to individuals and private businesses is estimated based on the damage caused and is as per the norms of the Govt. of Andhra Pradesh. Monetary relief packages are allocated through the finance department and distributed by the concerned department.

B.6.5.iii Restoration of normalcy at the notified disaster site

The activities for restoring normalcy are cleaning of debris, repair and reconstruction of public buildings and infrastructure, aid in repair and reconstruction of private buildings. The repair and reconstruction activities are undertaken based on the damage assessment.

B.6.6 Daily action taken report

The smooth and effective operations of the response and recovery activities depend on effective communication and coordination among the stakeholders involved. Refer Table 6-8 in Section C.6.3 for the template for daily reporting of the activities. This report includes the operational information of both the response and recovery activities. The assessor is typically an official of the engineering department and is assigned to one or more wards to assess the situation. The template contains reporting information for evacuation, search and rescue, first aid and relief distribution, shelter management and actions taken towards restoration of normalcy.

The evacuation report contains the number of people evacuated from each street of the assessing area and the respective temporary shelters in which they are housed. It is also necessary to maintain the number of people housed in each of the temporary shelters of the ward. The number and type of vehicles deployed and rescue personnel in the evacuation for the day is listed.

A remarks section provided facilitates noting on the deficits and requisites of the above components of evacuation. This information is crucial for effective functioning and planning in the forthcoming days.

In search and rescue activity the information is to be entered streetwise for all the streets within the area of assessment. Information on the number of people rescued; the number of people given first aid and the number of people shifted to shelters or health centers is to be mentioned. The number of rescue personnel deployed in the assessment area for the day has to be maintained. A remarks section provided facilitates noting on the deficits and requisites of the above said components of search and rescue. This information is crucial for effective functioning and planning in the forthcoming days.

The daily action report is most important for shelter management .The information on the location of the shelters in the assessment area along with current capacity and residual capacity has to be maintained. This information facilitates allocation of people to the shelters in the forthcoming days. The information on the quantity of all relief material supplied and consumed for the day is necessary. A remarks section provided facilitates inferring on the deficits and requisites of the above said components of shelter management. This information is crucial for effective functioning in the forthcoming days.

The information needed for action taken towards restoration in the daily action report are the numbers of personnel deployed for the day and percentage of work completed for the day for various activities undertaken in different locations of the affected areas.

B.6.7 Financial reporting template

Refer Table 6-9 of section C.6.4 for detail template for listing the financial inflow to various activities of disaster preparedness, response and recovery. The time interval for financial reporting by the finance department can be equally segregated over the period of the disaster response and recovery activities.

B.6.8 Deactivation of Emergency Facilities

As short-term recovery actions are completed, the Chief of Operations would direct the ULB's staff to initiate deactivation of the control rooms, as well as other City emergency facilities. The deactivation process would be adjusted to address the circumstances of the event. Prior to completion of the deactivation process, the Chief of Operations, with the cooperation of each Department head, will ensure the following actions occur:

- Defining the procedure and schedule for gathering, processing and archiving all documentation regarding the ULB's response and short-term recovery operations, including damage assessment information, operational logs, personnel time, and ULB expenditures.
- Identifying the need for replacement, return, or repair of equipment and supplies utilized during the activation period, with assignment of responsibility to ensure that such actions take place.
- Providing and encouraging access to critical incident stress debriefing services for all Emergency Organization staff members.
- Returning the emergency facilities to their original, pre-activation condition.
- The Municipal Commissioner, if indicated by the extent of the impacts within the City, will direct staff to implement long-term recovery and redevelopment actions.

Within two weeks of the date of deactivation of control rooms and emergency organization of the city, each Department head, the Liaison Officer and the Public Information Officer will complete and submit "after action" report, summarizing which emergency and recovery operations were successful and which were not, defining "lessons learned" from the event, and detailing recommendations for improvement. Within four weeks of receipt of these reports, the Coordinating Officer will prepare a consolidated after action report and submit a draft to the Chief of Operations and the Department heads. This will be followed by a meeting to review and finalize the after action report. After finalization, the Coordinating Officer with the assistance of the City's Emergency Preparedness Team, will incorporate, as appropriate, action items from the final after action report into the City's Emergency Preparedness Improvement Plan. This improvement plan along with the final action report is also sent to the district collectorate and other outside departments.

SECTION-C

TEMPLATES FOR PREPARATION OF DISASTER MANAGEMENT PLAN FOR ULBS

***Section C**- contains the templates where urban local bodies can enter their specific data and information to prepare the Disaster Management Plans. The explanations for these templates have been provided in the Section B.*

Cover Page Template

Logo of city

Name of the Urban Local Body
Name of District
Name of State

Prepared on: [insert date]
Revised on: [insert date]

Prepared by: [insert main officer's name]

Approved by: [insert name]

Address of Urban Local Body

TABLE OF CONTENTS

Chapter 1

City/town's Preamble

PREAMBLE

We the City/Town of <insert city/town name>, pledge to undertake the following disaster preparedness and disaster management activities.

We , the City/town of <insert city/town name> hereby clarify our capabilities to initiate and sustain the emergency operations that may be needed when a disaster affects the jurisdiction and vouch that:

- The City/Town of _____'s emergency services and incident management capabilities are available in the Urban Local Body to address its needs at the time of a disaster. When these capabilities would be exceeded, required assistance and support would be sought from the adjacent jurisdictions.
- The City/Town of _____ has adequate resources including personnel, and equipments to address _____, _____, _____ and _____ types of emergency situations encountered within its jurisdiction. When required, the city/ town will request assistance from District Collectorate at _____, neighboring Cities/Town of _____and State Government.
- The concerned department's of _____City/Town will perform its functions and utilize its equipments/resources during emergency operations/evacuations.
- The City/Town of _____ assure its citizens; services to the marginalized, undeterred communication during evacuation and equal distribution of aid materials among the needy.

Chapter 2

Profile of the City

C.2.1 Brief History of the City/Town

_____

_____

_____

_____

_____

_____

_____

_____

_____

C.2.2 Location & Administrative Features

Name of City/Town: _____

Name of District: _____

Name of the Taluka: _____

Longitude & Latitude: _____

Table 2-1: Locational Details of City

City surrounded by	North	South	East	West
District				
Taluka				
City/Town/Village				

Map 2-1: City location with administrative boundaries

Checklist (please make sure your map include the following)
Scale
Legend
North Up

Key
The city boundary
Ward level or Zonal boundaries
Infrastructure water supply, sanitation and sewerage
Residential buildings
Community buildings, special interest structures, markets, Church, mosque, temple, clinic and others
Natural elements vegetation, forest cover, rivers etc
Ports, stadiums, play fields, railway station, bus stand, airports etc.
Urbanized and vacant land and other land use designation.

Scale: 1:25,000

C.2.3 Demography

Table 2-2 Demography Details

Year	1981	1991	2001	2008	Projected(2011)
Population(in lakhs)	1000	1100	1150	1250	1291
differnce in population		100.000000	50	100	
Growth rate of population		0.10	0.05	0.09	
Average growth rate of population		0.12			

Source: _____

Table 2-3 Floating population

Floating population in lakhs	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Source: _____

C.2.4 Slum population

Table 2-4 Slum Population

	2001	2008	Projected 2011
Total slum population			0
Male			#DIV/0!
Female			#DIV/0!
% Male population	#DIV/0!	#DIV/0!	
% Female population	#DIV/0!	#DIV/0!	

Source: _____

C.2.5 Literacy and Sex ratio

Table 2-5 Literacy and Sex Ratio

Name of the City/Town	Literacy rate(2001)	Sex ratio(2001)

Source: _____

C.2.6 Occupational structure

Table 2-6 Occupational Structure

Occupational Structure (census 2001)	Total	Male	Female
Cultivators			
Agricultural laborers			
Engaged in household industries			
Other secondary & tertiary sector workers			
Total work force			

Source: _____

Map 2-2 *Population Density Map of the City/Town*

Checklist (please make sure your map include the following)
Scale
Legend
North Up

C.2.7 Geographic and Physical features

C.2.7.i Physical description of the landscape

C.2.7.ii Soil Types

Table 2-7 Soil Types

Soil Type	Location & Characteristics	Percentage of area under the soil type

Source: _____

Map 2-3 Soil Map within the city

Insert soil map if available

Checklist (please make sure your map include the following)
Scale
Legend
North Up

C.2.7.iii Climate

The climate of _____ city/town is hot/cool/moistures/pleasant/dry and rainfall is recorded for_____days during the year. The year is divided into four seasons. The winter from _____ to _____, The summer from _____ to _____, The monsoon from _____ to _____ (South-West) and post monsoon from during _____ & _____.

C.2.7.iv Rainfall and temperature

The average rainfall of_____city/town is m.m. The rainfall is uneven/medium/good/sufficient. The maximum rainfall of ___ % is received during the period of _____ to _____. Some amount of rainfall is received from western disturbances during _____.

Table 2-8: Details of temperatures and rainfall

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max temperature in Degree centigrade												
Min temperature in Degree centigrade												
Average rainfall (in mm)												

Source: _____

C.2.8 Topography and drainage system

The city has _____, _____ rivers flowing through it. The natural drainage of the city is towards _____ direction. Topography of _____ areas is in bowl/ saucer shaped and hence excess water during storms creates flooding.

_____
_____
_____
_____

Map 2-4 : Topographic Map Of The City/Town

TOPOGRAPHIC MAP OF THE CITY/TOWN SHOWING THE CONTOURS, THE RIVERS AND MAJOR DRAINAGES

Checklist (please make sure your map include the following)
Scale
Legend
North Up

C.2.9 Land Use

The total land of _____ city/town is _____ sq. kms. Out of this, the maximum area is under _____ land use. The city/town also has ____ % of land under agricultural use. Out of this, the irrigated area of total cultivable land is ____ _____%. The total area under forest is_____ hectare.

Table: 2-9 break up of Land Use in the city

Land Use	Area in Sq. Kms	Percentage
Residential		#DIV/0!
Commercial		#DIV/0!
Institutional		#DIV/0!
Industrial		#DIV/0!
Recreational/ Green Spaces/ Open/ Agricultural		#DIV/0!
Water Bodies		#DIV/0!
Roads		#DIV/0!
Railways		#DIV/0!
Total		

Source: _____

C.2.10 Crop Details

Table 2-10: Crop Details

Sr. No.	List of Crops	Sowing season (month)	Reaping season (month)	Productivity per hectare (kgs or nos)

Source: _____

C.2.11 Irrigation

Table 2-11 Irrigation Details

Sr. No.	Source of Irrigation	Area of Irrigated land (Sq. kms)	Percentage of Irrigated land to the total land
1	Ponds		
2	Wells(Electrified)		
3	Wells(Non - Electrified)		
4	Govt. Canals		
5	Other Sources		

Source: _____

C.2.12 Flora & Fauna

Table 2-12: Flora and Fauna

Sr. No.	Forest land under (sq. kms)	Percentage of Forest Area to total
1	Open scrub forest	
2	Dense scrub forest	
3		
4		
5		
6		
7		

Source: _____

Table 2-13: List of Key Species of Fauna found in the forest land

Sr. No	Species of Fauna
I	
ii	
iii	
iv	
v	
vi	

vii	
viii	
ix	
x	

C.2.13 Industrial Profile

Table 2-14 Details of Industries in the city

Sr. No.	Type of Industries (ref Annexure XVI for categories of industries)	Number of Industrial units	Locations (mention ward and zone)
1	Light Hazard Occupancy		
	Total		
2	Ordinary Hazard Occupancy		
	Total		
3	High Hazard Occupancy		
	Total		

Source: _____

Map 2-4: Location of Industries in the City

MAP SHOWING LOCATION AND TYPE OF INDUSTRIES WITH SPECIFIC MARKING FOR VARIOUS CATEGORY INDUSTRIES

Checklist (please make sure your map include the following)
Scale
Legend
North Up

C.2.14 Basic Service Delivery to citizens

Table 2-15 Basic Service Delivery to Citizens

Sr. No.	Service	Unit	Amount	Service Provided by (incl. asset creation, O&M)
1	Water Supply	MLD (million litres per day)		
2	Sewage	MLD (million litres per day)		
3	Road Length ▪ Pucca ▪ Kuchcha ▪ Concrete ▪ Tar	Kms		
4	Solid Waste Management	MT D(Metric tons generated per day)		
5	Streetlights (by type)	Number		

Source: _____

Chapter 3

Preparation of Disaster Profile and Vulnerability Assessment of City

C.3.1 Hazard Profile of the City/Town for the last 50 years

Table: 3-1 Details of past disasters in the city

Disaster	Magnitude Year/Month of occurrence	Magnitude	Number of wards affected	No. of people died	No. of people injured	No. of Cattle died	No. of Buildings damaged		No & type. of large Commercial establishment damaged	Loss of employment in person days	Major crops damaged (in Rs)
							Partial	Full			
Cyclone											
Earthquake											
Flood											
Fire											

C.3.2 Seasonality of disasters in the City/town (based on xx years of data)

Table: 3-2 Seasonal incidence of disasters in the city

Disaster	January	February	March	April	May	June	July	Aug	Sept	October	November
Earthquake											
Cyclone											
Floods											

C.3.3 Hazard Profile

C.3.3.i Cyclone Hazard Profile

There are possibilities of strong winds with the speed of _____ km/ph before onset of monsoon in the cyclone prone areas in _____city/town especially on the costal areas in _____city/town. As per the Disaster Calendar, the months of _____ to _____ are for preparedness against cyclone. The main reason behind the loss to the properties is the loss due to week construction (especially weak & connected roofs or ceilings.) This damage to the residential dwelling units results into loss of human lives also. Damage due to tidal waves is also caused in _____city/town along the coastal sides[1].

Due to cyclone in _____year, _____persons had died, _____person had been injured & _____cattle had also lost their lives. Moreover, _____buildings were totally damaged, and _____buildings were partially damaged.
_____Ports & go downs experienced great loss & damage in _____city/town in previous disasters. This resulted into loss of employment to the people who have financially depending on the parts.
More than _____people depend on the part activities in _____city/town, _____families depend on fishing activities and _____families depend on salt farming.

C.3.3.ii Flood Hazard Profile

As mentioned in the map below, the areas of the city/town on _____river sides/costal sides/creeks/low-lying are flood prone, _____no. of wards were affected due to flood in _year. Human lives & cattle had also been greatly damaged due to flood in the past. _____No. of people were drowned/died due to flood in _____year in past, _____cattle had also been lost, _____houses were totally lost & _____were partially damaged. The crops & industries also experienced the great loss due to flood in that particular area. The major crops of _____city/town are _____. The pre monsoon period (i.e. from _____ to _____) is preparation time for any disaster related to flood and heavy rains. Soil erosion occurs due to flood water/tidal water of the sea, which results in increasing the salinity in the soil / poor fertility and the soil becomes useless. The fertile land becomes useless/saline and ultimately crops are not possible.

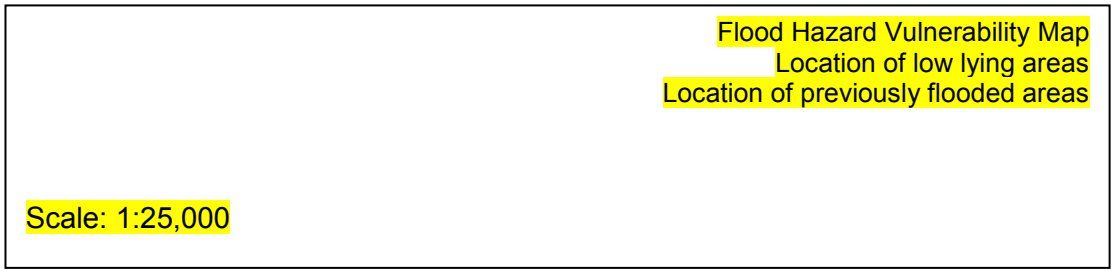
[1] Include details only if city is located on coasts.

The houses, their walls & their foundations in vulnerable areas are not so strong that, those can face the force of floodwater. There can be a great damage to the land due to flood.

Table 3-3 : Areas/Wards affected by Flooding in last occurrence

Sr. No.	Name of Ward and Specific Area	Population
1		
2		
3		
4		

Map 3-6 : Flood Hazard Vulnerability Map of City



C.3.3.iii Earthquake Hazard Profile

_____city/town is situated on the fault line/_____kms____far from the _____ fault line, which passes through _____to ____ _____ways. Major part/_____wards of this city/town fall under _____seismic zone number_____, which shows the possibility of an earthquake.

The city faced severe earthquakes in the years_____, _____ over the past decade which led to loss of human lives of _____ and property loss of _____.

Table3-4 : Areas/Wards affected by Earthquake in last occurrence

Sr. No.	Name of Ward and Specific Area	Loss of Human Life	Loss of Property
1			
2			
3			
4			

Chapter 4

Institutional Structure

C.4.1. Introduction

The section defines the institutional structure that will guide actions by the City/town _____prior to, during, and after disaster events. The institutional structure incorporates the following:

- Disaster Management Facilities
- Organization and staffing
- Roles and responsibilities
- Preparedness actions
- Operational actions
- Communications plans and protocols
- Coordination with other jurisdictions and levels of government
- Public information

C.4.2. Disaster Management Facilities

The _____City/town has identified that apart from a control room which is operational throughout the year, specific control rooms will be activated at the time of a disaster. Their locations are as follows:

Table: 4-1 Details of control rooms established

Sr. No.	Control Room	Location	Contact Details

C.4.2.i. City control Room

- The main control room of the city is located in _____.
- The City control room will be responsible for
  -
  -
  -
  -
  -
  -
  -
  -
- The main control room will be the point of contact and coordination with _____.

- The staff of the control room will prepare and approve Disaster Action Plans (DAP) on an appropriate periodic basis, e.g., every _____hours depending on emergency conditions, for the duration of the event.
- Each DAP will be approved for implementation by the _____ and will be utilized to guide City and associated emergency operations for the applicable time period.

.

C.4.2.ii. Facilities at the Control Room

Details of facilities to support the City's Emergency Organization throughout the year.

Table: 4-2 List of facilities and equipments at _____ Control Room

Sr. No.	Facility	Unit	Availability at the control room	Details
1	Available space	Area in sq. kms		
2	Furniture Table	Number		
	Chairs	Number		
	Storage	Number		
3	Restrooms	Number		
4	Standby electric generator	Number		
5	Telephone lines	Number		
	Intercom units	Number		
6	Computers	Number		
7	Printers	Number		
8	Photocopying machine	Number		
9	Emergency lights	Number		
10	Fire extinguishers	Number		

C.4.2.iii. Branch Control Rooms

The _____city has additional _____ no. of control rooms which would be activated on disaster incidence. All these branch control rooms have the following facilities

-
-
-
-
-
-
-

C.4.2.iv. Transport

Provision would be made for a car with wireless communication to be assigned to main control room during normal times. Additional vehicles will be requisitioned, as per the requirements, during the disaster incidence)

C.4.2.v. Staffing of control rooms

The following staff will man the city control room throughout the year:

-
-
-
-
-
-

On incidence of an emergency, additional staff including the following will be positioned in the city control room:

-
-
-
-
-
-

The following staff will be positioned in the branch control rooms:

-
-
-
-
-
-
-
-

C.4.3. Information Flow

The flow of information between Main control room, Municipal Commissioner and District Collector may be described under two scenarios viz., During Disaster incidence and under Normal Conditions as follows:

Figure 4-1: Flow of Information between Main Control Room, Municipal Commissioner, District Collector during normal conditions

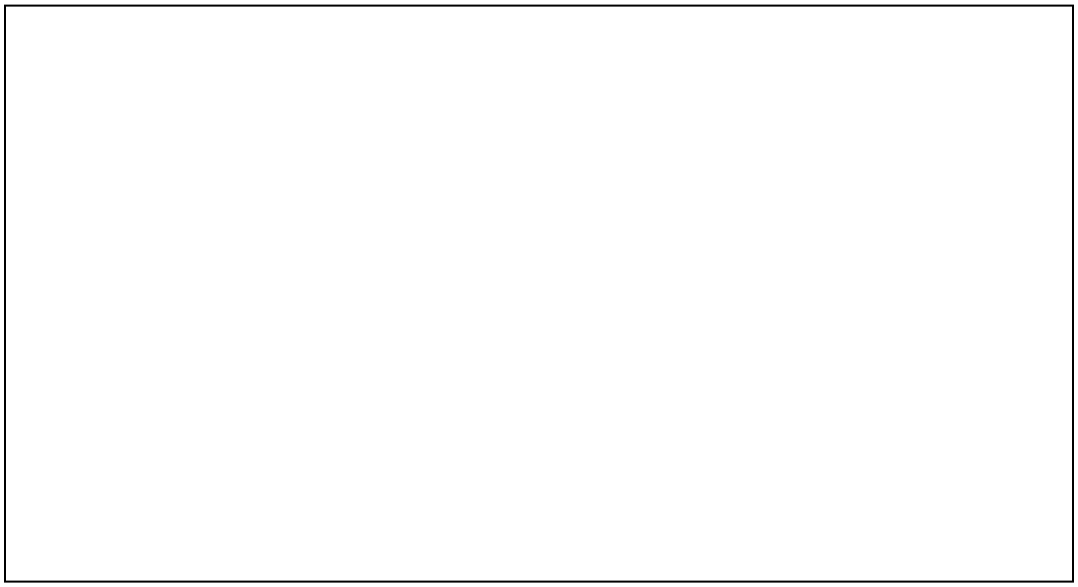
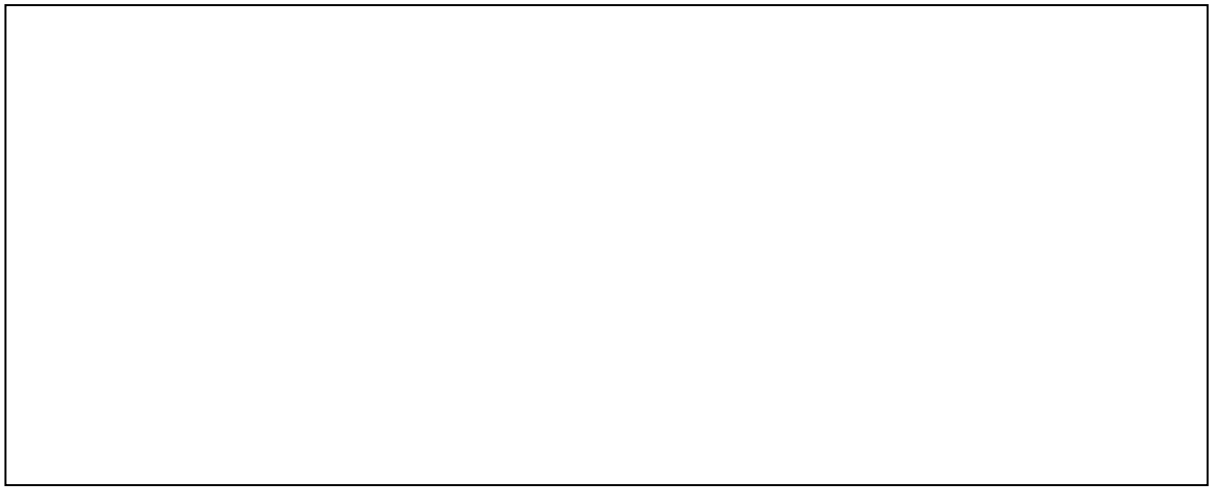


Figure 4-2: Main Control Room, Branch Control Rooms, Municipal Commissioner, District Collector during disaster incidence



C.4.4. Organization and Staffing

This section describes the approach to organizing _____City's personnel to effectively support the implementation of the disaster management plan.

C.4.4.i Normal Staffing

INSTITUTIONAL STRUCTURE OF THE URBAN LOCAL BODY

C.4.4.ii Disaster Preparedness Team

The _____ City's Disaster Preparedness Team has been established to ensure the jurisdiction maintains its preparedness to implement the disaster management plan and to work towards enhancing and improving the capabilities to respond to disaster situations.

The Preparedness Team consists of the following City staff or designees:

Table 4-3 : Preparedness Team of _____ City

Sr. No.	Official Designation	Name of official
1	The Municipal Commissioner/ Chief Officer	
2	Special Muni. Commissioner/ Dy. Muni. Commissioner/ Asst. Muni Commissioner	
3	Chief of Fire Department	
4	City Engineer	
5	Head of Public Works Department	
6	Head of Personnel and Establishment	
7	Chief Finance Officer	
8	Head of Urban Community	

	Development Department	
9	Head of Parks & Recreation Department	
10	Head of Information and Technology	
11	Public Relations Official	

The responsibilities of the Preparedness Team are as follows:

-
-
-
-
-
-
-
-
-
-

C.4.4.iii Staffing Organization in Disaster Incidence

The City's disaster incidence organization will be activated on the determination by the Municipal Commissioner, acting as the Chief of Operations.
The staffing structure in a disaster incidence situation will be as follows:

INSTITUTIONAL CHART ON DISASTER INCIDENCE

.

In summary, the roles and responsibilities for various department officials during a disaster incidence is summarized below as per the tasks to be undertaken.

Table 4-4: Roles and Responsibility Matrix of _____ City

Department ➔ / Disaster management Function ➔	Commissioner	Fire	Engineering	Public Works	Finance	Town planning department	Community Development Sccieties	Parks Horticulture	Medical Officers	Personnel	Information Systems	Public Relations Office
1 Transportation		S	L			s	s					
2 Communication		S	s							s	S	S
3 Public Works			s	L	s		s	s				
4 Fire Fighting		L	s	s								
5 Mass Care		S			s		L		s			
6 Resource Support					L		s	s		s		
7 Health / Medical							s		L			
8 Search / Rescue		L	S	s								
9 Hazardous Materials		L	S	s								
10 Food & Water					L		s	s		s		
11 Public Utilities			L	s			s					
12 Public Information												L
13 Volunteers & Donations	s				s		L			s		
14 Animal Control												
15 Business & Industry	L											
16 Damage Assessment					s		L				s	
17 Coordination with other government agencies	L			s	s							

L- Lead Role; S-Supporting Role

The staffing assignments and general roles of key staff position are the following:

Chief of Operations (Municipal Commissioner/ Chief officer) - This position is staffed by the Municipal commissioner/Chief Officer and the position will be activated upon a decision to activate the City's main control rooms and branch control rooms. In the absence of the Municipal commissioner/ Chief officer, the _____ or designee would serve as the Chief of Operations. The Chief of Operations is responsible for the functioning of _____city/town's disaster management organization. The position provides leadership, coordination, and management of all emergency operations being implemented by the City, in both the field and in the City's control room. The position also serves as the City's authorized policy maker and official spokesperson regarding the disaster situation and the City's disaster management actions. This position is also responsible for ensuring coordination of all City emergency operations with those of _____District Collectorate, adjacent jurisdictions (_____)and higher levels of government. The Chief of Operations provides direct oversight and coordination of all City operations conducted at the City Control Rooms, including

final approval of each DAP and instructing the City's Disaster Management Organization on the DAP implementation.

The position would also be responsible for allocating the contingency fund for emergency operations based on the contingency plan of the Municipal corporation/ Municipality. Fund requirement can also be decided based on the magnitude of the disaster.

Public Information Officer (_____) – This position supports the Chief of Operations through management and coordination of all City activities related to public information, emergency instruction and media management. This position is staffed by the _____. The position will be activated by the Chief of Operations when warranted by the need for emergency instruction and public information within the City. All public information and media management activities by the City will be managed and coordinated by the position. Other components of the City's Disaster Management Organization will conduct any public information activities through this position.

Chief Medical Officer (_____) – This position supports the Chief of Operations by monitoring response operations, and all other available information to ensure protection of the health and safety of the City's emergency personnel, City residents, and other individuals with emergency functions within the City. The position will be staffed by the City's _____ or designee. The position will gather information from field operations by the City, from _____District Collectorate, or any other available source regarding known or potential health and safety threats, and will advise the Chief of Operations on the appropriate actions by the City.
The position will also monitor implementation of the emergency plans of the residential health care facilities located within the City and ensure their timely and effective implementation.

Liaison Officer (_____) – This position supports the Chief of Operations by ensuring effective communication and information exchange with facilities, organizations, and key individuals outside of the City's Disaster Management Organization and Control Rooms. Chief of Operations selects and staffs this position as necessary. This position would ensure that the City deploys and supports one or more individuals as liaisons to the _____District Collectorate Control Room that these individual have adequate communications with the City Control Rooms, and that information exchange between the City Control Rooms and the liaisons is timely and accurate. If additional emergency facilities are activated by other levels of government, and close coordination between such facilities and the City Control Room is necessary,

this position will ensure that the City also deploys and supports liaisons to these facilities.

_____
_____
_____
_____

_____would be designated as the community Liaison will assist the Liaison Officer, and these positions would be staffed by the Mayor and City Council members. Community Liaisons would ensure exchange of current and accurate information with community members, the City's MPs, MLAs, and visiting dignitaries.

To Liaison with other outside departments, viz. Revenue department, Fire, Police, Irrigation, a separate officer can also be appointed either from Engineering Department or Public Works Department, as these departments along with Health and Urban community department (Community Development Societies), are mainly deal with emergency field operations.

General Staff –

The General Staff of _____ City's Disaster Management Organization is made up of four sections: Operations, Planning, Logistics and Finance/Administration. Each of these will have branches established upon a determination by the Section Chief that the situation warrants additional staffing.

The following section details out the activities, roles and responsibilities for each department involved in a Disaster Management Function.

Transportation

Policies

All _____ city/town's city transportation resources will be utilized on a priority basis to save lives and property.

Engineering Department

Responsibilities and Tasks

Disaster Preparedness

- _____
- _____
- _____
-

Disaster Incidence:

- When notified of a disaster incidence, report to the _____
- _____
- _____
- _____
- _____
- _____
- _____

Fire:

- _____
- _____
- _____

Urban Community Department (Community Development Societies under SJSRY)

- _____
- _____
- _____

Town Planning Department

- _____
- _____
- _____

Communications

Policies

- *Each department or division will ensure the ability to communicate between the Control Room and their department, zonal/ward operations center, or with their operational units.*
- *Disaster Management activities will be given priority use of all city's communication systems and resources.*

RESPONSIBILITIES/TASKS

_____ Department Can this be assigned to District Information Officer/Public Information Officer/ RTI officer of Municipal Corporation/ Municipality?

Disaster Preparedness

- _____
- _____
- _____
- _____
- _____
- _____

Disaster Incidence:

- _____
- _____
- _____

Control Room:

- _____
- _____
- _____
- _____
- _____

- _____

_____ Department

- _____
- _____
- _____

Public Utilities Works & Damage Assessment

Policies

- *The first priority will be to assist Public Safety personnel in the saving of life.*
- *Damage Assessment will begin immediately upon notification or occurrence of an emergency/disaster.*
- *All affected _____ city/town departments will provide preliminary damage assessment damage reports to the Control Room and recovery detailed damage assessment as required.*

RESPONSIBILITIES/TASKS

Engineering Department

Disaster Preparedness

- _____
- _____
- _____

Disaster Incidence:

- _____
- _____
- _____

Control Room

- _____
- _____
- _____

Urban Community Development Department/ Community Development Societies

- _____
- _____
- _____

Planning, zoning, building department

- _____
- _____
- _____
- _____
- _____
- _____

Chapter 5

City Disaster Preparedness Planning

C.5.1 Introduction

_____City/ town maintains an ongoing disaster preparedness plan

C.5.2 Formation of the Disaster Preparedness Team

The City's Disaster Preparedness plan consists of the following elements:

- A "Disaster Preparedness Team" consisting of the Municipal Commissioner/ Chief Officer, City's department heads, zonal heads and Assistant/Dy./Spl Municipal Commissioner. This organization meets on a routine basis and is responsible for the necessary intra-jurisdictional coordination of government actions to ensure the following:
  - The _____city/town ensures that all supporting documentation are maintained as current, and other actions needed to ensure readiness of the City for disaster preparedness implementation are taken.
  - City personnel are trained in their roles for implementation of the disaster management plan
  - Implementation of the Disaster Management Plan is exercised on the schedule and in the manner specified herein. All exercises are evaluated to identify improvements needed.
  - Ongoing evaluation of the adequacy of the City's personnel, equipment, facility and supplies to implement the Disaster Management Plan.
  - Development and implementation of a "preparedness improvement plan" designed to address shortfalls in the City's Disaster preparedness resources and capabilities.

C.5.2.i Coordination of Preparedness Activities

The City coordinates emergency preparedness activities within the jurisdiction through the activities of its Disaster Preparedness Team. The group meets on a routine basis to discuss preparedness activities, to maintain the CEMP planning process, to evaluate response and recovery capabilities, and to implement the city's preparedness improvement plan. The City also participates in District Collectorate preparedness activities through participation on the district's planning, training and exercise activities.

C.5.2.iiTraining

_____city/town employees that have responsibilities for implementation of the DMP receive the following preparedness training:

- Training regarding implementation of the City's DMP. This training is to improve understanding and familiarity with its operational concepts, as well as with the standard operating guides, checklists, and similar aides prepared by City departments to support operations.

- Training provided by individual City departments regarding the emergency services and public safety functions normally performed that would also be needed during implementation of the DMP.

C.5.2.iii Exercises and "After Action" Reports

The _____City/town conducts an annual exercise of the DMP for the city's personnel as a part of its preparedness program. After each exercise or actual implementation of the DMP, the City prepares a written after action report to document issues or problem areas. These then are incorporated into the City's Preparedness Improvement Plan.

The Assistant/ Dy./ Special Municipal Commissioner/Chief Officer will be in-charge of conducting this exercise, preparing the report and ensuring that the recommendations are made into the DMP.

C.5.2.iv Evaluation and Improvement Planning

On an ongoing basis, through the coordination of the City's Disaster Preparedness Team, the preparedness resources and requirements of the jurisdiction are evaluated. This evaluation is specifically focused on the comparison of the risk exposure of the City to the four hazards-floods, cyclone, earthquake and fire and the capabilities and resources available to respond to and recovery from such events. The shortfalls or problem areas identified through such evaluations are defined through the preparedness improvement plan, with corrective actions assigned to the City's departments for resolution. The City's preparedness improvement plan is continuously updated as new assessments are made and previously assigned corrective actions are completed.

C.5.2.v Public Education and Community Outreach

The _____City/town recognizes the disaster preparedness needs of the neighborhoods, businesses, and institutions of the jurisdiction. On an ongoing basis, the City conducts or supports public information and educational programs to assist all sectors of the community to become better prepared for disasters. The City uses its website www._____ and other available mechanisms to help inform the community about actions needed to be prepared for disasters.

List Specific Actions that city would undertake for educating its citizens:

i.
ii.
iii.
iv.
v.
vi.
vii.
viii.
ix.

C.5.2.vi Resource Classification

These listing will include human resources and other resources like equipments, supplies etc. These will be updated regularly every _____ and would be maintained as current as possible.
The City will classify the equipment utilized in emergency response operations and to certify its adequacy for the intended uses.

C.5.3 Temporary Shelters

C.5.3.i Estimation of needs based on vulnerability

The table below provides a format for estimating space required for temporarily sheltering the vulnerable population.

Double click on the following table to reveal the excel format
Enter the ward number and the total population of the ward
The total space required for the population to sit, stand and sleep is computed in the rest of the columns

Table 5-1: Estimation of need for space for temporary shelter for highly vulnerable population

Highly vulnerable wards		Space needed for people to sit			Space neede for people to stand			Space needed for people to sleep		
Ward No	Total population	Bare space needed(sq. m)	circulation space(50% of the bare need)(sq.m)	Total space needed(sq.m)	Bare space needed(sq. m)	circulation space(50% of the bare need-sq.m)	Total space needed (sq.m)	Bare space needed(sq. m)	circulation space(50% of the bare need)(sq.m)	Total space needed (sq.m)
1	1000	560	280	840	250	125	375	1350	675	2025
2		0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0
5		0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0
Total	**#VALUE!**			#####			######			######

The nature of temporary shelters depends on the severity of the disaster incident. When the recovery period from the disaster is considerably long it is required to accommodate evacuated people by providing them with adequate space for sleeping and rest.

C.5.3.ii List of Available temporary shelters

Prepare an inventory of available temporary shelters in the city. The list consists of the information on the capacity and contact addresses of the owners of the premises. These premises are to be selected in non disaster prone areas of the city. The following table calculates the total area available in the city for temporary shelters in terms of availability to sit or to sleep depending on the time for which residents are evacuated.

Double click on the following table to reveal the excel format
Enter the information on the columns – type of community shelter and available space in the community centre, address and location details.
The capacity of the shelter is computed in the grey colored columns

The results of the total space and capacity available can be cross checked with the results of the needs in the table.

Table: 5-2 List of Availability of Temporary Shelters

Sl.no	Type of Shelter	Total usable area in sq.m	Capacity - No.of people (sleep)	Name address & telephone no of the owner(Govt or Pvt)	Located in Ward No. and Adjacent ward nos.
1	Community hall	1000	440.7407407		
2			0		
3			0		
11			0		
12			0		
	Total	#VALUE!	#VALUE!		
Total Space required for the wards affected			**temporary shelters to be established as tents**	**#VALUE!**	
	To Sleep				
Total place required		0			

C.5.3.iii Needs for Establishment of Temporary shelters

The difference between the space available and the space needed. It is necessary to suitably locate such shelters in safe places in the city, in open grounds and at higher elevations. The table below facilitates such a planning activity.

Table 5-3 Details for establishing temporary shelters

Sr. No	Capacity of the temporary shelters- tents (no. of people)	Location (ward number, specific address)	Address and contact details of storage of the tents
1			
2			
3			
4			
5			

C.5.4 Planning of Evacuation Routes

Once the locations of all the temporary shelters are established, it is necessary to pre plan the evacuation routes from the disaster site to the temporary shelters.

Table 5-4: Listing of Safe routes towards evacuation

Sr. No	Name of the road	Connecting	
		From	To
1			
2			
3			
4			
5			
6			

Insert a map of the preplanned routes along with the location of temporary shelters

C.5.5 Resources needed for Search & rescue

The inventory of resources contains the list of materials, quantity needed v/s quantity available and the contact details for the sources of such materials and human resources required for various response activities

C.5.5.i Materials required for search and rescue operations

Table 5-5: Materials for search and rescue operations

Item name	Required quantity or nos	Source location (Taluka name)	Name of Govt. Dept./ or Private agency	Name of official incharge & Contact address	Office Ph No, Mobile No.	Available quantity (in nos.)
Cutters						
Bolt cutters						
Chain saw bullet						
Chain saw Diamond						
Chipping hammer						
Circular saw with diamond blade(Electric)						
Cold cutters						
Cutters-hydraulic						
Cutters-Battery						
Electric drill						
Gas cutters						
Pnuematic Chisel						
Heavy engineering equipment						
Bull dozers wheeles/chain						
Cranes-heavy duty, fork type						
Dumper						
Earth movers						
Recovery vans Beam type						
Snow beaters wheeled						
Tipper heavy duty						
Trucks- Arial shift						
Lifting equipments						
Air lifting bags/tools						
Iron shod levers,10ft long						
Jack with 5ton lift						
Light equipments						
Aspects Blankets						

Item name	Required quantity or nos	Source location (Taluka name)	Name of Govt. Dept./ or Private agency	Name of official incharge & Contact address	Office Ph No, Mobile No.	Available quantity (in nos.)
Blankets						
Chain-tackle						
Chain 6 feet(3ton lift)						
Crescent/adjustable wrenches						
Glass Remover						
Rubber gloves, tested upto 25000volts						
Heavy axe						
Jumping cushions						
Lifting tackle - 3ton						
Rescue rams						
Scaffold poles for sheer legs						
Set of rope tackle						
Single sheave snatch box						
Sledge hammer						
Slotted screw drivers						
Smoke Blower and Exhauster						
Soaking kit						
Stretcher harness						
Traps 4x4meters						
Two handles cross cut saw						
Lighting arrangements						
Electric generator (10kv)						
Inflatable light tower						
Light mast						
Search light						
Skilled Human resource						
Search and rescue teams for collapsed structures						
Search and rescue teams with canines						
Spreaders						
Spreaders - Hydraulic						
Spreaders - Battery						

Source: India disaster resource network

C.5.5.iiSpecialized search & rescue materials for floods

Table 5-6: Listing of specialized search and rescue material for floods

Item name	Required quantity or nos	Quantity available with city	Quantity to be mobilised	Source location (Taluka name)	Govt. Department or Private agency	Name of official incharge & Contact address	Office Ph No, Mobile No.	Available quantity
Rescue boats								
Country boats								
Fiber boats(12 persons)								
Inflatable boats(12 persons)								
Motor boats								
Motor launch								
Specialized flood rescue equipments								
Basket stretcher								
Diving Suits								
Life Jackets								
Life bouy								
Pneumatic rope launcher								
Rescue back boards								
Under water BA set								

Source: India disaster resource network

C.5.5.iii Skilled human resources required for search & rescue operations

Table 5-7: Listing of skilled human resources for search and rescue operations

Item Name	Required numbers	Present within the taluka	To be mobilized from outside the taluka
Divers teams			
Search & rescue teams			

Source: India disaster resource network

Refer Annexure III for detail contact addresses for skilled human resources

C.5.6 Resources required for relief operations

C.5.6.i Materials required for first Aid

Table 5-8: Listing of materials for first aid

Item name	Unit	Required quantity or nos	Quantity available with city	Quantity to be mobilised	Source location (Taluka name)	Govt. Department or Private agency	Name of official, address	Office ph no, mobile No.	Available quantity
Critical supplies									
Anti snake venom									
Bronchodilators									
Chlorine tablets									
Halogen tablets									
Vaccines									
Equipments									
CT scan									
First aid kit									
Incubators for adults									
Incubators for children									
MRI									
Spine boards									
Stretcher for medical evacuation									
Stretcher									
Hygiene									
Reservoirs treatment tanks									
Water filter									
Water tank									
Life saving equipments									
Defibrillator									
Mechanical ventilators									
Mobile units									
Mobile blood bank									
Mobile hospital									
Mobile lab service									
Mobile medical van									

Item name	Unit	Required quantity or nos	Quantity available with city	Quantity to be mobilised	Source location (Taluka name)	Govt. Department or Private agency	Name of official, address	Office ph no, mobile No.	Available quantity
Mobile OT units									
Portable equipments									
Portable ECG									
Portable oxygen cylinders									
Portable suction Unit									
Portable ultra sound									
Portable Ventilators									
Portable X rays									

Source: India disaster resource network

C.5.6.ii Skilled human resources required for first aid

Table 5-9: Listing of requirements of human resources for first aid

Item Name	Required numbers	Present within the taluka	To be mobilized from outside the taluka
Anaesthetist			
General physician			
Gynecologist			
Lab technicians			
Medical first responders			
OT assistants			
Paramedics			
Radiologist			
Surgeon			
Trauma Specialist			

Source: India disaster resource network

Refer Annexure III for detail templates of contact addresses for skilled human resources

C.5.7 Resources Required for Shelter management

Table 5-10: Listing of requirements for temporary shelter arrangements

Item name	Required quantity or nos	Quantity available with city	Quantity to be mobilised	Source location (Taluka name)	Govt. Dept or Private agency	Name of concerned official, address	Office Ph. Nos and Mobile Nos.	Available quantity
Pre fabricated shelters								
FRP Shutter								
Polypropylene corrugated Unfold shelter								
Sheets								
Corrugated galvanized iron sheet								
Plastic sheet								
Polythene sheet								
Tarpaulin								
Tents								
Tents extendable 2 meters								
Tent 40 Lbs								
Tent 80 Kgs								
Tent Arctic								
Tent extendable 4 meters								
Tent MK-III private								
Tent Store								

Source: India disaster resource network

C.5.8 Resources required for Telecommunication

C.5.8.i Equipments required for telecommunication

Table 5-11: Listing of telecommunication equipments required for all disaster phases

Item name	Required quantity or nos	Quantity available with city	Quantity to be mobilized	Source location (Taluka name)	Govt. Dept or private agency	Name of concerned official, address	Office Ph. Nos and Mobile Nos.	Available quantity
GPS								
GPS Handsets								
Mobile phones								
Mobile phones CDMA								
Mobile phones GSM								

Item name	Required quantity or nos	Quantity available with city	Quantity to be mobilized	Source location (Taluka name)	Govt. Dept or private agency	Name of concerned official, address	Office Ph. Nos and Mobile Nos.	Available quantity
Sat phones								
INMARSAT								
Mini-m3								
V-SAT								
Video system								
Camera digital								
Video camera Beta								
Video camera Digital								
Video camera DVD								
Video phone set								
Wireless system								
HF sets static								
UHF sets mobile								
UHF sets static								
VHF sets mobile								
VHF sets static								
Walkie talkie sets								

Source: India disaster resource network

C.5.8.iiSkilled human resources required for telecommunications

Table 5-12: Details of human resource requirement for telecommunications

Item Name	Required numbers	Present within the taluka	To be mobilized from outside the taluka
Ham radio operators			

Source: India disaster resource network

Refer Annexure III for details of contact addresses for skilled human resources

C.5.9 Resources Required for Transportation

C.5.9.i Equipments for Transportation

Table 5-13: Details of transportation resources for all disaster phases.

Item name	Required quantity or nos	Quantity available with city	Quantity to be mobilised	Source location (Taluka name)	Govt. Department/ Pvt. Organisation	Contact address &	Office ph no/ Mobile Nos.	Available quantity	Is driver with vehicle
Heavy vehicle									
Bus									
Heavy truck									
Tractor									
Trailer									
Light vehicles									
4 wheel drive vehicle									
Matador									
Medium vehicles									
Mini bus									
RTV									
Truck									
Special vehicles									
Equipment toeing tender									
Light ambulance van									
Mobilization truck									
Water tanker- large capacity									
Water tanker- Medium capacity									

Source: India disaster resource network

C.5.10 Pre Monsoon Flood/Cyclone Contingency Planning for _____ City

C.5.10.i All Departments, All Zones

- Prepare timeline for completion of all earthwork/ construction activities on roads of all zones. All zonal officers, executive engineer-roads department, water supply and drainage engineer to give priority to be given to main roads, roads with heavy traffic for repair work or maintenance.

Table 5-16: Listing of works on roads of _____city/town

Sr. No.	Details of work	Name of zone	
		Location	Length in mts.
1	Approved number of trenches –in numbers and running mts		
2	details where work has not been initiated		
3	Details where work has been initiated		

i.	Completed earthwork		
ii.	Earthwork remaining		
iii.	completed pipe or cable laying		
iv.	Incomplete pipe or cable laying		
v.	Completed backfilling and compaction work		
vi.	Incomplete backfilling and compaction work		
vii.	Completed trench leveling and metal grouting		
viii.	Incomplete trench leveling and metal grouting		
ix.	Completed trench leveling with hotmix carpeting		
x.	Incomplete trench leveling with hotmix carpeting		
4	Road repairing works		
5	Road divider works		
6	Footpath related works		
Prepared by: _____ (name and sign of official)		**Date of preparation _____** **Next report on_____**	

- Make list of earthwork by other agencies like telephone companies, electricity supply company etc and notify these agencies for timely completion of their earthwork by _____.
- All zonal officers, executive engineer –workshop, chief fire officer, water supply and drainage engineers to ensure that fuel for de-watering pumps, generator sets and vehicles is stocked. By _____ date, fuel for zonal office, fire station vehicles to be stocked.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer to identify leakage points from drainage lines. Make provision of water supply by tankers to such areas where drinking water may be contaminated by such leakage. Coordinate with health officials for provision of health services to such areas and arrange dissemination of chlorine tablets.
- Complete procedures for new drainage and water supply connections by _____ date.
- Ensure that the generators deployed by _____city/town in water supply stations and drainage pumping station are in operational condition and ascertain that the logbooks are properly maintained. These generators should be deployed for _____ hours every _____ months.
- All generators and its fuel be placed above the last year's High flood level.
- All emergency lighting equipments must also be deployed for ___ hours every _____ months.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer should prepare an estimate of number of daily wage based labor and send the same to personnel and finance departments by _____.
- All zonal officers, executive engineer-roads department, water supply and drainage engineer to prepare an updated list of completion of earthwork in the

city by _____ (one month prior to onset of monsoon) date. Henceforth, any earthwork request should be sent to the municipal commissioner/ chief officer for approval.

- Head of Engineering should prepare a certificate that floodgates are serviced and are in operational condition by _____(one and half months prior to onset of monsoon) date.

Table 5-17: Listing of flood gate location

Sr.	**Flood Gate location**	**Name, address, phone number details of operator**	**Location of key**	**Name, address and phone number of responsible officer**
1				
2				
3				
4				
Prepared by: _____ (name and sign of official)			**Date of preparation _____** **Next report on_____**	

- All zones to have atleast 2000 bags of sand ready for use.
- All zonal offices to ensure that the identified temporary shelters have been repaired, toilet blocks, water supply, lighting facilities should be checked and repaired. Details to be sent to estate department by _____date.
- Prepare list of open plots which get water logged and send notices to plot owners by _____date (one and a half month prior to monsoon) for earth filling to be done.

C.5.10.ii All zones- drainage department

- Cleaning of all stormwater drains within _____months of setting of monsoon. All zonal officers and drainage engineer to prepare a report and submit to Assistant/Dy./Spl Municipal Commissioner every _____days from _____date _(_____months prior to onset of monsoon).
- Cleaning of all gutters (pukka/ semi-pukka), manholes, inlet chambers. Repair or replacement of manhole covers. All zonal officers and drainage engineers to prepare a report and submit to Assistant/Dy./Spl Municipal Commissioner every _____ days from _____date (_____ months prior to onset of monsoon.)

Table 5-18: Report template of road works undertaken

Name of Zone/ Ward	**Details**	**Total length**	**Work done** (in last week-)	**Total work done**	**Remaining work**	**Remarks**
	Pukka gutter(in running mts)					
	Semi-pukka gutter					
	Manholes (number)					
	Inlet chamber (number)					
	Manhole covers					
	Hotmix road carpeting and patchwork					
	Scraping work					
	Road divider repairing					
Prepared by: _____ (name and sign of official)			**Date of preparation _____** **Next report on_____**			

- Executive Engineer/ Workshop Engineer to prepare list of requirements of dewatering pump sets and initiate process for procure/renting the same.
- Ensure that de-watering pumps are in operational condition. All zonal officers and drainage engineers to provide certificate that dewatering pumps are operational to the _____. Update information on dewatering pumps.

Table 5-19: Details of zonewise/wardwise dewatering pumps

Sr. No	**Zone/Ward Name and Number**	**Size**					**Total**
		2”	2.5”	3”	4”	6”	
1							
Prepared by: _____ **(name and sign of official)**				**Date of preparation _____** **Next report on_____**			

C.5.10.iii Roads department

- All zonal officers and road department engineer to ensure all material for road repairing during monsoon season is available for immediate use by _____ city/town. Material includes (coaltar, hard muram, metal bricks, sand bags, diesel etc)

C.5.10.iv Town Planning

- All zonal officers and town development officer to issue public notices regarding removal of construction material from roads by builders and submit a report to the chief town planner. Even after _____days, if the same is not abided, then initiate process for imposing penalties and confiscating the material.
- All zonal officers and town development officer to prepare list of buildings which are in a dilapidated condition and which are unsafe and could collapse during heavy monsoons/floods. The same to be submitted to the chief town planner and initiate process to safeguard occupants of the buildings.

C.5.10.v Streetlighting

- All zonal officers and engineer-streetlight to initiate process of cleaning/repairing of all highmast towers, streetlight covers and fixtures by _____date (two months prior to onset of monsoon)
- Engineers-streetlight should ensure that all programmable control panels for switching on/off the streetlights and the junction boxes on streetlight poles are above the high flood level.
- Department to update contact details of wireman.
- Update information on agencies providing generators, fix rental rate for this year and send to office superintendent.
- Engineer-streetlight to undertake repainting of the marking of flood level on all bridges which would be easily visible by _____date (___ months prior to monsoons).

C.5.10.vi Workshop

- Workshop engineer to ensure that all vehicles and fleet are repaired and in working condition.
- Workshop engineer to ensure that earth movers, heavy vehicles are operational or easily available. S/he should ensure that contact details and all information be readily available in the format below and submit the same to the office superintendent.
- Refer table 5-13 for details of transportation resources

C.5.10.vii Horticulture and Garden Department

Garden Superintendent to examine availability of equipments/ removal of large trees that might fall due to earthquake/flood/cyclone.

If it is required to contract out these services, then contact details, rates for the same should be finalized and sent to office superintendent.

C.5.10.viii Public Relations office

- Prepare information material to disseminate to citizens in order to prepare the community at large for the four disasters. Material to be disseminated through print media (newspaper), radio, television should be prepared, tested and disseminated. The PRO office should undertake measures to develop such material either in-house or take approvals for outsourcing the same. Specific

information regarding cyclone/flooding should be prepared and disseminated by _____date (from 2 months prior to monsoon season).

The above activities have been summarized in the table below:

C.5.11 Flood Preparedness Activity Chart

Table 5-20 Details of activities for flood preparedness

Sr. No	Activities	Month to carryout the activity	Number of days required for completion	Headed by	Departments involved	Other Institutions involved
1	**Water Logging**					
1.1	Cleaning of all the drainage, storm drainage, creek, etc.					
1.2	Cleaning of all man hole and inlet chambers					
1.3	Identification of open plots where water is logged and land filling to avoid it					
2	**Road Repairing & Maintenance**					
2.1	Disposal all the applications for water & drainage connection					
2.2	Preparation for repairing or trench filling of all the roads					
2.3	Permission of other service provider for digging of road only in case of emergency					
2.4	Stocking of necessary road material like Tar, Hard murrum, grit, metal, bricks, sand, etc.					
3	**Vehicles Machinery and Flood gates**					
3.1	Making all the flood gates functional by service/repairing					

3.2	Listing of information of flood gate operator, address, contact no., place of key and responsible officer's name, address and contact no					
3.3	Keeping ready required no. of Dewatering Pumps & Generator Sets					
3.4	Keeping ready required no. of Beldars, Vehicles and Materials at Zone Control					
4	**Precautionary & Safety Measures**					
4.1	Bringing all the work to the safe stage					
4.2	Issue of Public Notice for removing Building Materials from the road					
4.3	Cleaning & Repairing of covers, fittings of High Mast Towers and Street Lights					
4.4	Survey dangerous buildings. & give notice for repair/removal.					
4.5	Repainting of Level Marking Points of river and creek					
5	**Health**					
5.1	Stocking necessary life saving drugs and insecticides					
5.2	Servicing/repairing of Jeep mounted and Hand Fogging Machine Sets					
5.3	Update information of major hospitals					

5.4	Preparation of action plan pertaining to health related activities and prevention of water born disease					
6	**Organization**					
6.1	Public Address System and Sirens for Public Awareness					
6.2	Functioning of Central Control Room and Zonal Control Room					
6.3	Issue of standing orders for duty of officers/employees in case of emergency					
6.4	Issue of standing orders related to work responsibility in case of emergency					
6.5	Public Awareness Campaign for leptospirosis, dengue and other water and vector borne diseases					
7	**Training**					
7.1	Training for Boat Operation and Swimming to Drivers and Firemen					
7.2	Mass awareness program for Do's & Don'ts in case of Flood using various media like print, electronic media, hoardings, etc.					
7.3	Complete information in schools and wards for self protection in case of flood and for keeping a personal kit ready with essential items					

7.4	Education to the drivers for shifting the vehicles at safer place and what to do with submerged or vehicles affected by flood					

C.5.12 Earthquake Preparedness Activity Chart

Activities in 5, 6,7 for flood related preparedness will be applicable for earthquake preparedness as well.

Table 5-21 Details of activities for earthquake preparedness

Sr. No	Activities	Month to carryout the activity	Number of days required for completion	Headed by	Departments involved	Other Institutions involved
1	Sensitization of people regarding the losses during the earthquake					
2	Survey dangerous buildings. & give notice for repair/removal.					
3	Ensuring that new buildings follow Bureau of Indian Standards Building codes					

C.5.13 Activities for Cyclone preparedness

Table 5-22 Details of activities for cyclone preparedness

Sr. No	Activities	Month to carryout the activity	Number of days required for completion	Headed by	Departments involved	Other Institutions involved
1	Sensitization of people regarding the effects of a cyclone					
2	Maintenance & Allocation of alternative routes for evacuation					

3	**Water Logging**					
3.1	Cleaning of all the drainage, storm drainage, creek, etc.					
3.2	Cleaning of all man hole and inlet chambers					
3.3	Identification of open plots where water is logged and land filling to avoid it					
4	**Road Repairing & Maintenance**					
4.1	Disposal all the applications for water & drainage connection					
4.2	Preparation for repairing or trench filling of all the roads					
4.3	Permission of other service provider for digging of road only in case of emergency					
4.4	Stocking of necessary road material like Tar, Hard murrum, grit, metal, bricks, sand, etc.					
5	**Training**					

Chapter 6

Emergency Operation Templates

C.6.1 Disaster Response

The disaster response activities involve the operational activities to be undertaken at the onset of the disaster incident. Situation assessment, evacuation search & rescue, first aid, relief distribution and shelter management are the components of disaster response.

C.6.2 Early warning and communications

It is important to maintain details of centers disseminating information on disasters and centers issuing warnings before the onslaught of disasters

C.6.2.i Cyclone

Table 6-1: Details of cyclone information center

Sr.no	Name of the information center	Contact person	Address	Phone no
1	National:			
2	State:			
3	District or Regional:			

Source _____

Table 6-2 : Details of warning centers

Sr.no	Name of the warning center	Location(ward name)	Address	Phone no of concerned official
1	Center1:			
2	Center2:			
3	Center3:			
4	Center4:			

Source _____

C.6.2.ii Flood

Table 6-3: Details of flood information center

Sr.no	Name of the information center	Contact person	Address	Phone no
1	National:			
2	State:			

3	District or Regional:			

Source _____

C.6.2. iii Earthquake

Table 6-4: Details of earthquake information center

Sl.no	Name of the information center	Contact person	Address	Phone no
1	National:			
2	State:			
3	District or Regional:			

Source _____

C.6.3 Personnel Notification

Upon a decision to activate the City's control rooms, the Municipal Commissioner/Chief Officer would direct the notification and mobilization of the Control room staff including the following:

-
-
-
-
-
-
-
-
-
-

C.6.4 Initial Actions

Referring to B.6.4, identify initial actions to be taken by the ULB and list them:

-
-
-
-
-
-
-
-
-
-

C.6.4.i Rapid Situation Assessment

Situation assessment follows a similar procedure for all disaster incidents. The situation of a disaster incident needs to assessed and reported to Chief Operations Officer for initiating response activities in a timely manner.

Table 6-5: Template for situation assessment

Situation Assessment Form			
Date:	Time:	Name & Designation of the Official Reporting:	Name of the incident:
Size		Number of People involved:	
Activity		A brief description of what is happening on the site:	
Location		Location of the incident: Name of the zones: Name of the wards: Name of major streets:	
Time		When has the incident occurred:	
A rough map of the area along with notes			
A rough estimate of resources needed to various locations			
Name of the resources needed		**Details of specific Location for assignment of resources (street names)**	

C.6.4.ii Evacuation

An evacuation procedure needs to be authorized by _____ and the area for evacuation would to be notified. A message would be drafted to inform the public regarding evacuation. The communication would be distributed through uninterrupted communication systems in the city like _____, _____, _____. Once evacuation is initialized access to the site needs to be restricted by _____ department and _____officials of traffic department will be informed to facilitate smooth flow of traffic in the evacuation routes.

UCD will play a major role for evacuating settlements from low-lying areas along the river or drain channels.

Teams to facilitate evacuation would comprise of staff of departments_____and_____volunteers from _____, _____, _____organizations would be formed. Public vehicles for evacuation would be contacted and mobilized by _____official.
Number of temporary shelters required _____.
Owners of the temporary shelters would be contacted by _____ and shelters would be fixed by_____official of _____ Department. Additional temporary shelters would be erected by _____ department if necessary.

C.6.4.iii Search and Rescue

Search and rescue operations are carried out by the _____ department in the lead and supported by _____, _____ departments after the event of the disaster. The search and rescue teams are contacted and mobilized by _____department. They are allocated to various areas badly affected. First aid teams would be mobilized by _____department. Activity of cleaning of debris is also initiated alongside by_____department.

C.6.4.iv First aid and distribution of relief materials

First aid and distribution of relief materials to the affected people at the temporary shelter is another major component. First aid team is mobilized to the rescue sites and to the temporary shelters by _____department.

The first aid teams have to be equipped with required material as per Table No. 5-8 in Section C 5.13.i. The materials to be sourced are contacted and mobilized by the_____ department.

C.6.4.v Shelter management

Shelter management involves the nitigrities of temporarily housing disaster affected people in shelters until normalcy is restored. Shelter management is mainly the function of the urban community development department along with the support of fire

department, finance department and engineering department. The daily activities in the shelter such as distribution of relief material, maintaining hygiene, maintaining peace and decorum, medical and first aid activities are managed and monitored by _____department with the help of _____,_____and _____departments.

C.6.5 Disaster Recovery

Disaster recovery activities include the measures to be undertaken by the urban local body to restore the situation in the disaster site normal. The disaster recovery activities included here are initial damage assessment, compensation and relief packages and restoration of normalcy at the notified disaster site. The activities of detail damage assessment are beyond the scope of the manual.

C.6.5.i Initial damage assessment

Table 6-6: Template for initial damage assessment

Initial Damage Assessment Report

1. Reporting location _____

2. Area affected _____

3. Cause of damage _____
(Flood, cyclone, earthquake, fire etc.)

4. Persons (insert number in space provided)
   A. Killed _____ B. Injured _____ C. Sick _____
   D. Displaced _____ E. Missing _____ F. Hospitalized _____

5. Damage to essential facilities (indicate capability lost and estimated INR loss)
   A. Hospital % _____ Rs _____ C. Communications %_____ Rs _____
   B Power Plants % _____ Rs _____ D. Railroads _____ %_____ Rs _____

6. Damage to Public Property
   A. Roads % _____ Rs _____ E. Water Treatment %_____ Rs _____
   B. Bridges % _____ Rs _____ F. Sewage Plants % _____Rs_____
   C. Schools % _____ Rs _____ G. Distribution Lines % _____ Rs _____
   D. Irrigation Districts % _____ Rs _____ H. Airports % _____ Rs _____

7. Damage to Private Property
   A. Dwelling Units% _____ Rs _____ C. Farms & Ranches % _____ Rs _____
   B. Commercial Facilities% _____ Rs _____ D. Livestock % _____ Rs_____

8. Are there large accumulations of debris? ____ Yes ____ No (If yes, explain in remarks)
9. Name and Designation of the reporting Official:

Table 6-7: Structural damage assessment template

Type of event:	Date of event:		Date of assessment:		Assessment team members (Name & designation)								
					1								
	Time of event:		Time of assessment:		2								
					3								
City/town:													
Name of wards assessed:													
Street name & door no	Damage level				Type of the structure				Insurance			Remarks	
	Affected	Minor	Major	Destroyed	Sinlge residence	Apartments	Businesses	Public buildings	No	Yes	Name/type		

C.6.5.ii Compensation and relief packages

The compensation to be given to individuals would be based on _____Norms provided by _____ that state that

- Compensation package of _____ Rs for _____
- Compensation package of _____ Rs for _____
- Compensation package of _____ Rs for _____
- Compensation package of _____ Rs for _____

Monetary relief packages would be allocated through the finance department and distributed by the _____ department.

C.6.5.iii Restoration of normalcy at the notified disaster site

The activities for restoring normalcy are cleaning of debris, repair and reconstruction of public buildings and infrastructure, aid in repair and reconstruction of private buildings.

Mobilization of personnel and equipment for debris clearance would be initiated by_____department.
Repair and reconstruction of public buildings and infrastructure, aid in repair and reconstruction of private buildings are undertaken by the _____ department and the _____.

C.6.6 Daily Action taken report

The recovery activities mentioned above starts parallel to the disaster response activities. The template given below is devised for daily reporting of the activity status and financial status of the response and recovery activities to the Chief Operation Officer.

Table 6-8 Daily action taken report template

Date:	**Name & Designation Of reporting officer:**	**Name of the disaster event:**	**Location(Name of wards covered in the report):**	**Report No:**
Evacuation				
Ward & street name	Number of people evacuated	Name & location of the temporary shelter in which they are housed		
Number of people housed in temporary Shelters		Name & location of Temporary shelters within area of reporting		
Type of vehicles deployed		Number of vehicles deployed		

Remarks:

Search & Rescue

Name of the ward & street in which S&R was conducted	Number of people rescued	Number of people given first aid	Number of people taken to health centers

Remarks:

First aid and distribution of relief materials

Name of first aid materials	Quantity or numbers supplied	Quantity or numbers consumed	Quantity or number required
Name of relief material	Quantity or numbers supplied	Quantity or numbers consumed	Quantity or number required

Remarks:

Shelter Management

Name of the shelter	Location	Current capacity (no of people)	Residual capacity to accommodate people (no of people)
Name of relief material	Quantity or numbers supplied	Quantity or numbers consumed	Quantity or number required
Food			
Clothing			
Medical			

Remarks:

Actions taken towards restoration of normalcy			
Activity	Location(ward & street name)	No of personnel involved	Percentage of work completed
Eg. cleaning of debris			
Remarks:			

C.6.7 Financial reporting template

Financial reporting would be done by _____ official every _____ days to _____ to keep a track of expenditures over the period of the disaster response and recovery activities.

Table 6-9 Financial Reporting

Amount in Rupees involved in alleviating disaster hardships			
Sector	**Personnel**	**Materials**	**Equipment**
Emergency services			
Roads & bridges			
Fire & rescue			
Other services			
Contractual services			
Total(Rs)			
Activity wise expenditure for disaster response & recovery			
Public needs	**Rs**	**Water supply**	**Rs**
Restore power		Drinking	
Communications		Sanitation	
Transportation		Fire fighting	
Secure area		Other	
Debris clearance			
Flood fighting	**Rs**	**Victim needs**	**Rs**
Dike building		Search & rescue	
Sandbagging		Evacuation	
Pumps		food	
Other		Shelter	
		Clothing	
		Medical	

C.6.8 Deactivation of Emergency Facilities

As short-term recovery actions are completed, the Chief of Operations would direct the ULB's staff to initiate deactivation of the control rooms, as well as other City emergency facilities. The deactivation process would be adjusted to address the circumstances of the event. Prior to completion of the deactivation process, the Chief of Operations, with the cooperation of each Department head, will ensure the following actions occur:

- gathering, processing and archiving all documentation regarding the ULB's response and short-term recovery operations, including damage assessment information, operational logs, personnel time, and ULB expenditures by _____ days by _____ departments.
- Identifying the need for replacement, return, or repair of equipment and supplies utilized during the activation period within _____ days with assignment of responsibility to various departments.
- Providing and encouraging access to critical incident stress debriefing services for all Emergency Organization staff members.
- Returning the emergency facilities to their original, pre-activation condition.
- The Municipal Commissioner, if indicated by the extent of the impacts within the City, will direct staff to implement long-term recovery and redevelopment actions.

Within _____ weeks of the date of deactivation of control rooms and emergency organization of the city, each _____, the _____, the _____ will complete and submit "after action" report, summarizing which emergency and recovery operations were successful and which were not, defining "lessons learned" from the event, and detailing recommendations for improvement.

Within _____ weeks of receipt of these reports, the _____ will prepare a consolidated after action report and submit a draft to the _____ and the _____. This will be followed by a meeting to review and finalize the after action report. After finalization, the Coordinating Officer with the assistance of the City's Emergency Preparedness Team, will incorporate, as appropriate, action items from the final after action report into the City's Emergency Preparedness Improvement Plan.

Annexure I: Contact Details of the ULB

Table 1 Details of Officials at the city government

Sr.No	Name	Designation	Office address & Phone no	Extn	Residence Address & Phone no	Cell No.
1.		Municipal Commissioner				
2.		Dy.Commissioner- Municipal Corporation				
		Chief Officer- Fire Brigade				
3.		Chief Town Planning Officer- Muni. Corporation / Corporation				
4.		City Engineer				
5.		Executive Engineer				
6.		Chief Finance Officer				
7.		Dy. Executive Engineer- Irrigation				
8.		Dy. Executive Engineer -GEB				
9.		Dy.Executive Engineer – Water Supply				

Sr. No	Name	Designation	Office address & Phone no	Extn	Residence Address & Phone no	Contact No.
10.		Junior Engineer-Telecom				
11.		Medical Officer (CHC)				
12.		Medical Officer-Corporation Hospital				
13.		Manager-Transport Committee				
14.		Education Officer of the Municipality				
15.		Project Coordinator-UCD Project.				
16.		Other				
17.		Other				
18.						

Sr. No	Name	Designation	Office address & Phone no	Extn	Residence Address & Phone no	Contact No.
19.						

Table 2 Water Supply department of the ULB

Sr. No	Name	Designation	Office address & Phone no	Extn	Residence Address & Phone no	Contact No.
1		Executive Engineer				
2		Deputy Engineer				
3		Deputy Engineer				

Table 3 Sanitation department of the ULB

Sl.No	Name	Designation	Office address & Phone no	Extn	Residence Address & Phone no	Contact No.
1		Executive Engineer				
2		Deputy Engineer				
3		Deputy Engineer				

Table 4 Health Department of the ULB

Sl.no	Name	Designation	Office address & Ph no	Extn	Residence Address & phno	Contact No.
1		Executive Engineer				
2		Deputy Engineer				

1		Executive Engineer				
2		Deputy Engineer				
2		Deputy Engineer				

Table 5 Roads and Bridges Department of the ULB

Table 6 Housing and slum development department of the ULB

Sr.no	**Name**	**Designation**	**Office address & Ph no**	**Extn**	**Residence Address & ph no**	**Contact No.**
1		Executive Engineer				
2		Deputy Engineer				

Table 7 Elected members

Sr.No	Name	Designation	Address	Contact No.
1.		Mayor		
2.		Minister of Parliament		
3.		MLA		
4.		Chairman-Executive Committee		
5.		Chairman- Water Supply Committee		
6.		Chairman-Town Planning Committee		
7.		Chairman-Construction Committee		
8.		Chairman-Transport Committee		
9.		Elected Women Member- Municipality 1.		

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Sr.No	Name	Designation	Address	Contact No.
10.		SC/ST Member-Municipality		

Table 8 Non government Organisations

Sr.No.	Name of the contact person	Organization	Office Address	Contact No.
1		Local NGO - 1		
2		Local NGO – 2		
3		Local NGO – 3		
4		Other		
5		Other		

Table 10 Panchayat & Rural Development at the district level

	Collector and District Magistrate				
	Add. Collector				
	RDC				
	- Regional Officer				
	- Regional Officer				
	- Regional Officer				
	District Supply Officer				
	Mamlatdar (D.M.Cell)				
	District Control Room In charge				

Table 9 Revenue Department at the district level

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	District Development Officer				
	District Panchayat Pramukh				
	Director-DRDA				
	Dy.DDO (Revenue)				
	Dy.DDO (Development)				
	Chief District Health Officer				
	Add. District Health Officer				
	Superintendent (Civil Hospital)				
	Dy. Director-Animal Husbandry				

	Dy. Agricultural Director				
	District Primary Educational Officer				
	District Social Welfare Officer (Panchayat)				
	Assistant Register (Co-operative Mandal)				
	Executive Engineer (Irrigation)				
	District Statistical Officer				
	District Panchayat Fax Number				
	Programme Officer (I.C.D.S)				

Table 11 Police-Home Guard- SRP

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Superintendent of Police				
	Departmental Police Officer (Main Station)				
	Departmental Police Officer				
	Departmental Police Officer				
1. 2. 3.	Police Control Room				
	District Commandant Home Guard				
	Senapati (SRP Group)				

Table 12 Irrigation at the district level:-

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Executive Engineer				
	Dy.Executive Engineer				
	Dam In charge				
	Dam In charge				
	Rest House				

Table 13: Port & Fisheries:

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Port Officer				
	Port Engineer				
	Fisheries Officer				

Table 14: Health Department at the district level:

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	District Health Officer				
	Superintendent Civil Hospital				
	Add. District Health Officer				
	District Epidemic Officer				
	District TB Control Officer				
	Dy. Director-Animal Husbandry				

Table 15 Forest Department at the circle level:-

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Dy. Conservator of Forest (DCF)				
	Asst.Conservator of Forest (ACF)				
	R.H.O.				

Table 16 Telephone and Post:

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	District Manager – Telecom				
	S.D.P.O Phone				
	Commercial Officer				
	Head Post Master				
	Railway Post Master				

Table 17 Important Phone Numbers of Taluka: -

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Mamlatdar				
	Taluka Development Officer				
	Pramukh-Taluka Panchayat				
	Dy. Ex. Engineer (Water Supply)				
	Dy. Ex. Engineer (R&B) Panchayat				
	Dy. Ex. Engineer (GEB)				
	Dy. Engineer (Irrigation)				

	Police Inspector/Sub Inspector				
	Depot Manager (S.T)				
	Go down Manager (Civil Supply)				
	Range Forest Officer				
	Port Officer				
	Railway Station Master				
	Railway Station Master				
	Pramukh – Market Yard				
	Pramukh-Taluka Sang				
	Other				

Table 18 Fire Brigade: -

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address
	Chief Fire Officer				
	Fire Officer – 1				
	Fire Officer – 2				
	Fire Officer – 3				
	Fire Officer - 4				

Table 19 Prominent Persons: -

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 20 Fair Petrol Pump/Price Shop/Gas Distributor etc;

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 21 Industrial Association,

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 22 Army Campus / Air Force Station/ Navy/

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 23 Doordarshan

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 24 Aakashvani (Radio)

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 25 Information Department

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 26 Satellite Phones

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 27 Contact Nos. of Ham Radio Operators.

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Table 28 Other Departments

Name	Designation	Office Phone No	Office Fax No	Residence Phone No.	Address

Annexure II
Materials & Equipment Details

The information contained in the following thematic table suits material inventory for all disaster management activities

Sl.no	*Item Name	*Item Description	*Item Quantity and Unit	*Specify location if not present at the department	Availability month (Specify)	Operator Provided (Yes/No/NA)

Annexure III
Skilled Human Resources

Sl.no	*Item(Skill) Name	*No. of person Available	*Availability month (Specify)	*Prior experience in emergency response(y/n)	*Prior training in emergency response(y/n)	Description (team composition)

Annexure IV
Critical Supplies

Sl.no	*Item Name	*Quantity available and Unit	*Specify Item Location	*Availability month (Specify)	*Transportation Mode (Road, Train, Air, Water or NA)	*Item Description

Annexure V
Infrastructure facility Details

Sl.no	*Facility/ Infrastructure Name	*Location	*Contact Person	Designation	*Phone/Fax No.	Remarks

Annexure VI
Inventory for available temporary shelters

Sl.no	Name of shelter	Name of Owner and Organizer	Resident Address of Owner and Organizer	Tele.No. & Mobile No.	No. of Room	Capacity (Person)	Is facility available toilet and bathroom?

Annexure VII

Details of local cable T.V operators for communication dissemination purpose

Sl.no.	Name of Owner/ Cable Operator	Resident Address of Owner/Cable Operator	Tele.No. & Mobile No.	Name & Address of Cable Facility Center	Tele.No. of mentioned place in column-5	No. of Cable	Detail of Channel that provided by Cable.

Annexure VIII
Details of Swimmers and divers in the vicinity of the city

Sl.No.	Name of Swimmer	Name of Village/City/Town	Detailed Address	Tel. No. If available	Address of the Job Place	Remarks

Annexure IX
The details of power house, substation and wind farms

Sl.No.	Units (Power House, Substation and Wind farms)	Production Capacity	The place and Address of the Unit mentioned in column-2	Telephone No.	Contact Person and Designation	Address of the Contact Persons	Contact No. and Mobile of the contact Person

Annexure X
Details of Police man power

Sl.No.	Designation	Nos.	Main Responsible person	Responsible person	Telephone Number	Telephone Number (Residence)	Mobile Number

Annexure XI
Details of fair price shops

Sl.No.	Code No.	Location of FPS	Retailer's Name	Location	No. of Ration Cards		Contact Telephone No.	Remarks
					APL	BPL		
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

Annexure XII
Details of cold storage and private storages

Sl.No.	Units (Cold Storage, Private Storage etc;)	Storage Capacity	The place and Address of the Unit	Telephone No.	Contact Person and Designation	Address of the Contact Persons	Contact No. and Mobile of the contact Person

Annexure XIII
Detail of NSS / NCC Units

Name of School/ College	No. of NCC cadets	No. NSS Volunteers	Contact Person	Address	Telephone No.

Annexure XIV
Details of local NGOs in the city and its vicinity

Name of NGOs	Area of Operation	Contact Person	Office Address	Telephone No	Cell no of the contact person

Annexure XV
Details of Industries in the city

Name of Industrial Unit	Kind of Industries	Location	Product Name	Capacity	Contact Person	Contact No.

Annexure XVI: Categories of Industries based in fire hazard

Light Hazard Occupancies:	Ordinary Hazard Occupancies:	High Hazard Occupancies:
Abrasive Manufacturing Factories	Airport and other Transportation Terminal Building.	Aircraft Hangers
Aerated Water Factories	Arecanut slicing and/or Betelnut Factories.	Aluminium/ Magnesium Powder Plants
Agarbatti Manufacturing	Atta and Cereal Grinding.	Bituminized Paper and/or Hessian
Aluminium/Zinc and Copper Factories	Bakeries.	Cloth Manufacturing including Tar Felt
Analytical and/or Quality Control Laboratories	Beedi Factories.	Manufacturing.
Asbestos Steam Packing & Lagging Manufactures.	Biscuit Factories.	Cotton Waste Factories
Battery Charging/Service Station	Bobbin Factories.	Coal and/or Coke and/or Charcoal Ball Briquettes Manufacturing.
Battery Manufacturing	Book-binders, Envelopes, & Paperbag Manufactures.	Celluloid Goods Manufacturing
Breweries	Bulk Storage.	Cigarette Filter Manufacturing.
Brick Works	Cable Manufacturing.	Cinema Films & T.V. Production Studios
Canning Factories	Comphor Boiling.	Colleries.
Cardamom Factories	Candle Works.	Cotton Seed Cleaning or Delinting Factories.
Cement Factories and/or Asbestos Products	Carbon Paper/Typewriter Ribbon Manufacturers.	Distilleries.
Manufacturing.	Cardboard Box Manufactuing.	Duplicating and Stencil Paper Manufacturing.
Ceramic Factories and Crokry and Stoneware Pipe Manufacturing.	Carpenters, Woodwool & Furniture Manufacturers.	Fire-works Manufacturing.
Cinema Theatres (including Preview Theatres)	Carpet and Drugget Factories.	Foamed Palstics Manufacturing and/or
Clay Works	Cashew nut Factories.	Converting Palnts.
Clock and Watch Manufacturing	Chemical Manufacturing.	Grass, Hay, Fodder & Bhoosa (Chaff)
Club	Cigar and Cigarette Factories.	Pressing Factories
Coffee Curing & Roasting Premise	Coffee Grinding Premises	Jute mills & jute presses
Computer installations (Main Frame)	Coir Factories	*LPG Bottling Plants (Mini)

Condensed Milk Factories, Milk Pasteurising Plant and Dairies.	Coir Carpets, Rugs and Tobacco, Hides and	Match Factorise.
Confectionery Manufacturing	Skin Presses	Man Made Fibres (Acrylic fibres/yarn) making
Dwellings	Cold storage premises.	Mattress and pillow Making.
Educational and Research Instituts	Cork products manufacturing.	Metal or Tin Printers (where more than 50% of floor area is occupied as
Electric Generating Houses (Hydel)	Dry Cleaning, Dying, Laundries.	Engineering Workshop this may be taken as Ordinary Hazard Risk)
Elctric Lamps (Incandescent & Fluorescent) and TV Picture Tube Manufacturing.	Electric Generating Stations (othr than Hydel)	Oil Mills
Electric Sub-Station/Distribution Station.	Enamelware Factories.	Oil Extraction Plants (other than those forming part of ghee factories & oil refining factories.)
Electro Plating Works.	Filter & Wax-paper Manufacturing.	Oil Terminals/Depots handling flammable liquids having flash point of 32C and below.
Electrmic and/or Computer Equipment Assemble and Manufacturrs.	Flour Mills.	Paints & Varnish Factories.
Empty Containers Storage Yard	Garages.	Printing Ink Manufacturing.
Engineering Workshops.	Garment Makers.	Saw Mills.
Fruits and Vgetables Dehydrating/Drying Factories.	Ghee Factories (Other than vegetable)	Sponge Iron Plants.
Glass & Glass Fibre Manufacturing.	Godowns & Warehouses (others).	Surgical Cotton Manufactures
GOdowns and Warehouses Storing non-combustible Goods.	Grain and/or Seeds Disintegrating and/or Crushing Factories.	Tank farm storing flammable liquids haing flash point of 32C and below.
Green Houses	Grease Manufacturing.	Tarpentine & Canvas Proofing Factories.
Gold Thread Factories/Gilding Factories.	Hat and Topee Factories.	Turpentine & Rosin Distilleries.
Gum and/or Glue and Gelatine Manufacturing.	Hosiery, Lace, Embroidery & Thread Factories.	Tyre Retreading and Resoling Factories.
Hospitals including X-ray and other Diagnostic Clinics.	Incandescent Gas Mfg. including Halogenated Hydro Carbon gases	

Ice Candy and Ice-Cream Manufacturing.	Linoleum Factories.	Bottling plants having total inventory not exceeding 100 mt of LPG and also bottling a total quantity of not exceeding 20 mt of LPG per shift of 8 hrs.
Ice Factories.	Man-made Yarn/Fibre Manufacturing (excpt acrylic)	(B) Ammonia and Urea Synthesis Plants.
Ink (excluding printing Ink) Factories	Manure and Fertilizer Works.	CNG Compressing and Bottling Plants Explosive Factories.
Laundries.	(Blending, Mixing, and Granulating Only)	LPG Bottling Plants (other than mini)
Libraries.	Mercantile Occupancies (Dept. Stores,	Petrochemical Plants.
Mica Products Manufacturing.	Shopping Complexes/Malls)	Petroleum Refineries.
Office Premises.	Mineral Oil Blending and Procssing.	
Places of Worship	Museums.	
Pottery Works.	Oil & Leather Cloth Factories.	
Popultry Farms.	Oil Terminals/Depots other than those	
Residential Hotels, Cafes & Rstaurants.	Categorised under High Hazard ‘A’.	
Salt Crushing Factories and Refinries.	Oxygen Plants.	
Stables.	Plywood Manufacturing/Wood Veneering Factories.	
Stel Plants (Other than Gas based)	Paper & Cardboard Mills.	
Sugar Candy Manufaturing.	Piers, wharves, dockyards.	
Sugar Factories and Refineries.	Plastic Goods Manufacturing.	
Tea Blending and Tea Packing Factories	Printing Press Premises	
Umbrella Assembling Factories	Pulverising and Crushing Mill.	
Vermicelli Factories.	Rice Mills.	
Water Treatement/Water Filtration Plants and Water Pump House.	Rope Works.	
	Rubber Goods Manufactuiring.	
	Rubber Types and Tubes Manufacturing.	
	Shellac Factories.	
	Shopping Complexes (underground)	
	Silk Filatures and cocoon stores.	
	Spray painting	
	Soaps and Glycerine Factories.	
	Starch Factories	

	Steel Plants (Gas Based)	
	Tanneries/Lather Goods Manufactures.	
annexure XVI		
	Tank farms (other) than those)	
	Categorised under high hazard ‘A’.)	
	Textile Mills.	
	Tea Factories.	
	Telephone Exchanges.	
	Theaters and Auditorium	
	Tobacco (Chewing) and Pan-masala Making.	
	Tobacco Grinding and Crushing.	
	Tobacco Redrying Factories.	
	Woolen Mills.	