

INDEX FOR DDMP

S.NO.	CHAPTER	TOPIC	PAGE NO.
1	1	INTRODUCTION	2 to 13
2	2	HAZARD VULNERBILITY,CAPACITY AND RISK ASSESSMENT	14 to34
3	3	INSTITUTIONAL ARRANGEMENTS	35 to 63
4	4	PREVENTION AND MITIGATION MEASURES	64 to 73
5	5	PREPAREDNESS MEASURES	75 to 80
6	6	CAPACITY BUILDING AND TRAINING MEASURES	81 to 85
7	7	THE EMERGENCY RESPONSE PLAN	86 to 132
8	8	ECONSTRUCTION REHABILITATION AND RECOVERY MEASURES	133 to 138
9	9	BUDGET AND FINANCIAL ALLOCATIONS	139 to144
10	10	PROCEDURE AND METHODOLOGY FOR MONITORING,EVALUATION,UPDATION AND MAINTENANCE OF DDMP	145 to148
11	11	STANDARD OPERATING PROCEDURES	149 to 169

CHAPTER 1

1.1. INTRODUCTION

This chapter establishes the need of the study and the main methodology that shall guide the study as it progresses. It also talks about certain limitations that it will have to respect.

The increase in the frequency of disasters and their associated damages in the region is part of a worldwide trend, which results from growing vulnerability and may reflect changing climate patterns. These trends make it all the more necessary for the regions to break the cycle of destruction and reconstruction and address the root causes of vulnerability, rather than merely treating its symptoms when disasters happen.

The principal causes of vulnerability in the region include rapid and uncontrolled urbanization, the persistence of widespread urban and rural poverty, the degradation of the region's environment resulting from the mismanagement of natural resources, inefficient public policies, and lagging and misguided investments in infrastructure. Development and disaster-related policies have largely focused on emergency response, leaving a serious under-investment in natural hazard prevention and mitigation. The lack of preparedness and the lack of safety measure also increase the vulnerability and add to the human and property loss.

India is also one such country whose great vulnerability to natural disasters is not unknown. According to Vulnerability Atlas of India¹, Indian Subcontinent is among the world's most disaster prone areas.

- 59% of land vulnerable of Earthquakes, 8.5% of land vulnerable to Cyclones and 5% of land

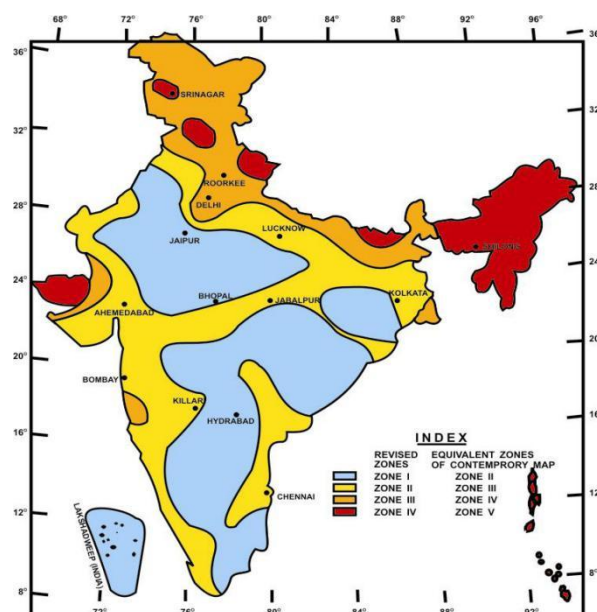


Figure: 1.1. Seismic index in India

Vulnerable to Floods, > 1 million houses damaged annually + human, social, other losses Earthquakes.

- 10.9% land is liable to severe earthquakes (intensity MSK 1X or more), 17.3% land is liable to MSK VIII (similar to Latur / Uttarkashi), 30.4% land is liable to MSK VII (similar to Jabalpur quake), and Biggest quakes are: Andamans, Kuchchh, Himachal, Kashmir, Bihar and the North-East.

Wind and Cyclones

- 1877-2005: 283 cyclones (106 severe) in a 50 km wide strip on the East Coast, Less severe cyclonic activity on West Coast (35 cyclones in the same period), In 19 severe cyclonic storms, death toll > 10,000 lives, In 21 cyclones in Bay of Bengal (India & Bangladesh) 1.25 million lives have been lost.

Floods

- Floods in the Indo-Gangetic-Brahmaputra plains are an annual feature on an average, a few hundred lives are lost, millions are rendered homeless, lakhs of hectares of crops are damaged every year.

(Figure:1.1). The super cyclone in Orissa killed 10,000 people and destroyed 18 lakh houses, Rohtak floods of Aug-Sept 1995 left 55% of land area submerged resulting in huge economic losses conservatively estimated as Rs. 2000/- Crores.

Gujarat Earthquake of 2002 measuring 6.9 on Richter scale shook the very edifice of our system. More than 3.5 lakh houses collapsed across 7633 villages and cities, causing unprecedented damage. Death and destruction it caused was never seen ever before. These and many more paint the picture of a cycle of destruction that affects our country and over and again leave us bereft of the small and yet so significant development strides we make with so lots of effort.

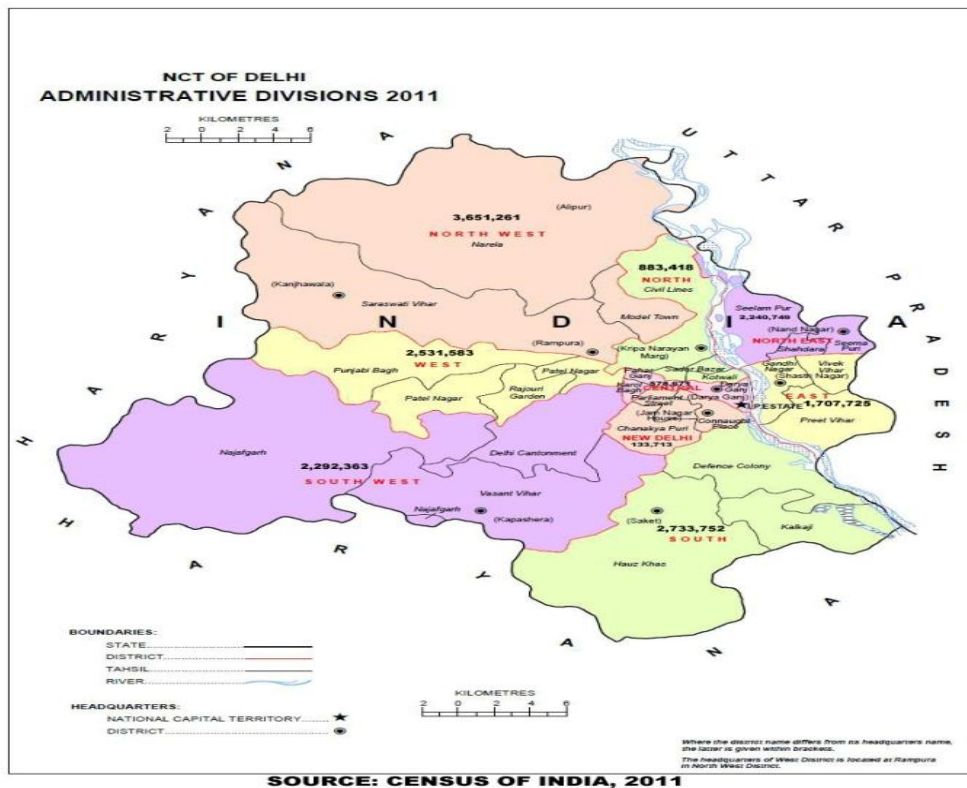
It is thus imperative that we must move in the direction of a proactive stance to reduce the toll of disasters in the region. It requires a more comprehensive approach that encompasses both pre-disaster risk reduction and post-disaster recovery.

District Disaster Management Plan is one component within the framework of a holistic approach to reduce the impact of disasters. Planning in a Pre-disaster phase helps us be prepared for a post-disaster situation wherein resources can be adequately deployed and thus losses can be minimized.

1.2. PROFILE OF DELHI

The National Capital Territory (NCT) of Delhi occupies an area of 1483 sq. km and lies between latitudes 28° 24' 15" N to 28° 53' 00" N and longitudes 76° 50' 24" to 77° 20' 30". It has been divided into eleven Revenue Districts named as North, North-West, West, South East, South-West, South, East, North-East, Shahdra, Central and New Delhi. Physiographically, Delhi is situated in Indo-Gangatic Plains, south of Himalayas and East of Aravallis and adjacent to Punhar (Punjab - Haryana) plain (**Figure: 1.2.**)

Now, NCT of Delhi, a Metropolis with over sixteen million of population is extremely vulnerable to multiple disasters. The entire region of Delhi is in Seismic Zone IV, at high risk to earthquakes. It is also vulnerable to the fires, epidemics, bomb blasts, riots, cyclones and terrorism. Any disaster can cause unprecedented and colossal damage to Delhi.



Map: 1.2. Administrative map of Delhi

1.3 Need of Planning in the North District of Delhi

District Disaster Management Authority (DDMA), headed by the District Magistrate is the Apex Body for Disaster Management in District North. The setting up of the DDMA and the creation of an enabling environment for institutional mechanisms at the State and District levels is mandated by the Disaster Management Act, 2005.

North District is an integral part of the state of Delhi and so the vulnerabilities and risks at stake are not very different. The latest seismic map of the county, Delhi falls under Zone IV, which means it is highly vulnerable to multi hazards, especially Earthquake.

Some of the common disasters in North District could be listed as regular and increased number of fire, Drowning, explosion of LPG cylinders causing multi injury, death, and loss of property, odd cases of riots and violence, large number of migration from other states creating multiple slums and contagious diseases in the slum and resettlement colonies. Some of the very old parts of the state with their delicate constructions, narrow lanes and old hanging wires form a part of the district. It also has important installations like Wazirabad water works that may be potential target areas in wake of a terrorist attack. We cannot rebuild our environment and our structures no matter how unsafe they are, we still have a long way to go to achieve these goals but what we can do right now is improve our skills to fight better any calamity that strikes us and stand tall in wake of a disaster.

District North is vulnerable to many hazards both natural and human induced. The need of an hour is better and flexible planning for reducing the maximum losses. The hazards for which the district is more vulnerable are fire, building collapse, Drowning and road accidents. The district is most prone to the fire disaster as the data of past one year shows that there were 291 fire incidents, we can also say that approx. 24 fire incidents occur in a month, which is too high. The other hazards such as building collapse, drowning and road accidents occur in the district the numbers of incidents for the year 2014 were as 24, 19, and 12 respectively. The tot

number of deaths in these incidents in the year 2014 was 34, which is also a high figure. Most of the deaths occurred due to drowning in the Bawana canal adjoining district North, which were 14.

The above data shows the need for the disaster management plan and its significance also. The disaster management plan need to be updated shortly for the effective management of the disasters and it means that the disaster management plan should be flexible.

The present study i.e. District Disaster Management Plan is an assessment of the existing situation with strategies to improve it over the years. It may serve as a guidebook for district administration to take measures to reduce the vulnerabilities of areas under its jurisdiction and improve the capacities of its people. It may also provide an inventory of resources that can be tapped in wake of a crises situation and thus help the administration cope in a better manner.

1.4 CHANGING CONTEXT OF DISASTER MANAGEMENT

Recently, the approach to Disaster Management has been changed from the reactive and relief centric to the proactive i.e. preparedness and mitigation. A paradigm shift has now taken place at the national level from the relief centric syndrome to holistic and integrated approach with emphasis on prevention, mitigation and preparedness. These efforts are aimed to conserve developmental gains as also minimize losses to lives, livelihood and property.

1.5 AIMS AND OBJECTIVES OF THE DISTRICT DISASTER MANAGEMENT PLAN

The main aims and objectives of the District Disaster Management Plan of North Delhi is to protect all its residents and every kinds of wealth from all sorts of untoward incidents. The objectives of Disaster Management Plan are follow-

1. Institutionalization of disaster management in district administration.
2. Encouraging a culture of disaster preparedness in the district.
3. Vulnerability reduction and disaster mitigation through better planning process.
4. Creation of the best Govt. mechanism to handle any unprecedented events.
5. Quick response and effective decision making in disasters.
6. Better coordination of relief and rehabilitation aftermath of a disaster.
7. Better coordination of all line departments in disaster management.
8. Encouraging and empowering the local community to own DM activities.
9. Regular update of resources available in and around the district.
10. SOP must be prepared for better coordination.

1.6 AUTHORITY FOR THE DDMP: DISASTER MANAGEMENT ACT 2005

As per Section 31 of the DM Act 2005, there shall be a plan for disaster management for every district of the State. The District Authority shall prepare the District Plan and the District Disaster Management Authority shall review and update the district plan annually after

consultation with the local authorities and having regard to the National Plan and the State Plan, to be approved by the State Authority.

The District Disaster Management Plan shall include-

1. To identify vulnerable areas to different forms of disasters in the District North.
2. The capacity-building and preparedness measures required to be taken by the Departments of the Government at the district level and the local authorities in the district to respond to any threatening disaster situation or disaster.
3. Measures to be taken, for prevention and mitigation of disaster, by the Departments of the Government at the district level and local authorities in the district.
4. The response plans and procedures, in the event of a disaster, providing for –
 - Allocation of responsibilities to the Departments of the Government at the district level and the local authorities in the district.
 - Prompt response to disaster and relief thereof.
 - Procurement of essential resources.
 - Establishment of communication links.
 - The dissemination of information to the public.

1.7 METHODOLOGY OF PLAN DEVELOPMENT

Preparation of a multifaceted plan document is neither possible with a single agency nor an individual. District North has been taken various measures to prepare this document and make it as perfect as possible. The major steps involved in preparing the plan document include the following steps (**Figure: 1.3**).

1. Data collection from all line departments,
2. Area survey,
3. Data analysis, (Hues ten approach)
4. Discussion with experts,
5. Referring national and international literature's,
6. Preparation of action plans for departments,
7. Preparing draft plan document,
8. Mock drill to check the viability and feasibility of implementation methodology

- 9. Wide circulation for public and departmental comments and
- 10. Preparation of the final plan document

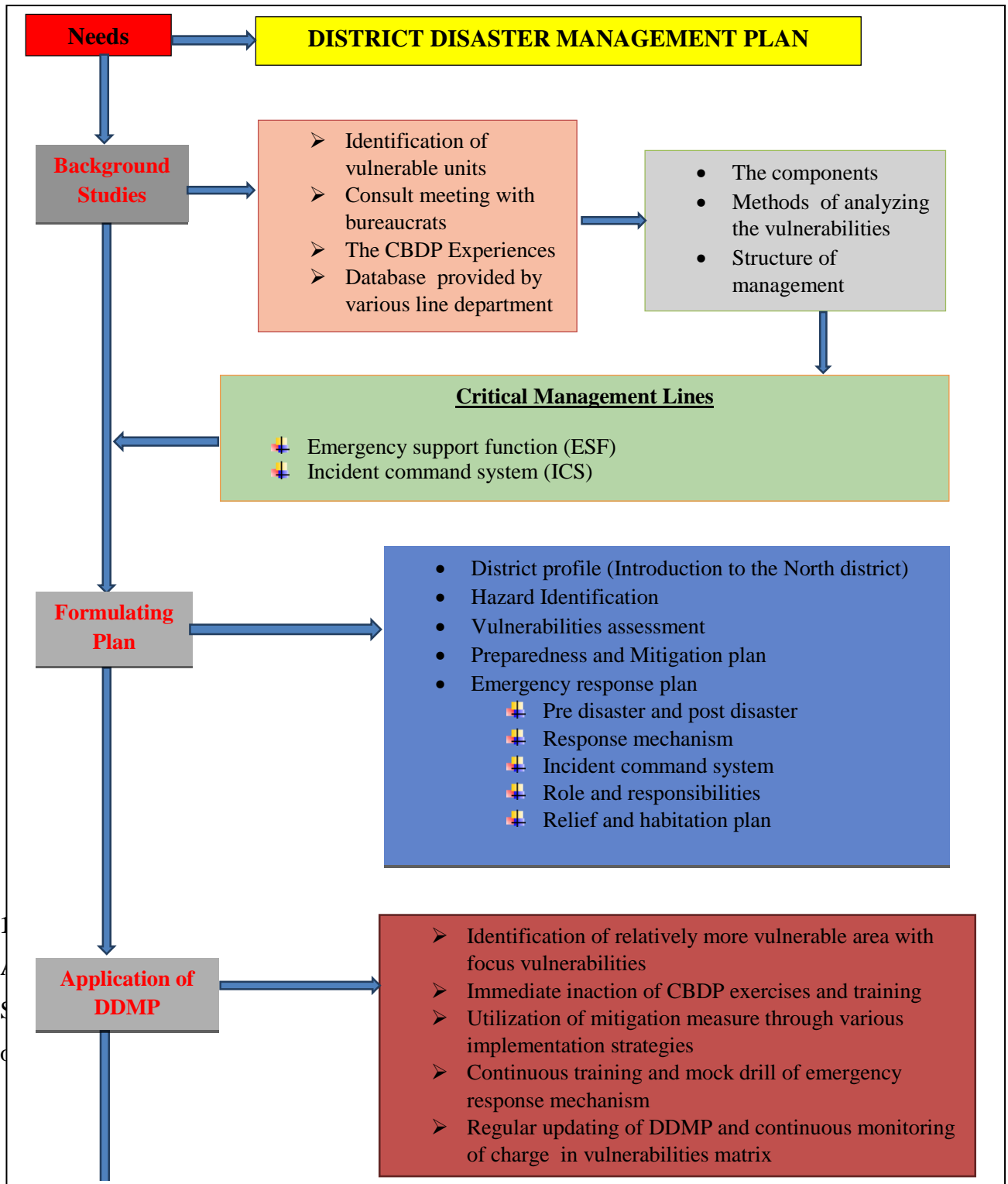


Figure 1.3 District Disaster Management Plan of the North District

- (ii) Provisions for taking measures relating to capacity-building and preparedness as laid down in the District Plan;
 - (iii) The response plans and procedures, in the event of, any threatening disaster situation or disaster.
 - (iv) Guidelines to follow the NBC-2004 for situation department.
2. Coordinate the preparation and the implementation of its plan with those of the other organizations at the district level including local authority, communities and other stakeholders.
 3. Regularly review and update the plan.
 4. Submit a copy of its disaster management plan, and of any amendment thereto, to the District Authority.

1.9 IMPORTANCE OF THIS PLAN

1. Plans will work only in the case when present organizational structure is responsible to its non-emergency duties i.e. if a job is done well every day it is best done by that organization during emergency.
2. Crisis should be met at the North and most immediate level of government. Plans call for local response supplemented if necessary, by the next higher jurisdiction.
3. Voluntary response and involvement of the private sector should be sought and emphasized. The emergency management partnership is important to all phases of natural and man-made disasters.

1.10 DISTRICT PLAN REVIEW & UPDATION

- ✚ As per Section 31(4) The District Plan shall be reviewed and updated annually.
- ✚ Also, As per Section 31(7) The District Authority shall, review from time to time, the implementation of the Plan and issue such instructions to different departments of the Government in the district as it may deem necessary for the implementation thereof.

1.11 DISTRICT NORTH PROFILE

Delhi was divided into 11-revenue district in 15 September 2013 and the District North is one of them. The district North is divided in to three sub divisions are Alipur, Model Town and Narela (**Figure: 1.4**). The North district having total areas 291.66 sq km, which is surrounded, by the districts like, central, North-West and its boundaries touches to Haryana and U.P state. The District Disaster Management Plan of district North is being updated time to time by the district North officials. District Disaster Management Plan of North district is made taken into consideration its flexibility, so that in future also we can easily update it. The district is having both rural and urban areas. There are 120 RWAs, 69 villages (Alipur 32, Narela 28, and Model Town 9), consisting of 291.66 sq km area (Alipur 118.19 sq km, Narela 148.08 sq km , and Model Town 25.39 sq km) 203 Unauthorized Colonies, 4 Govt. Hospitals, 1 private hospital, and 3 Colleges/universities, 14 police stations in the district. Total population of the district is 887,978, as per the 2011 census.

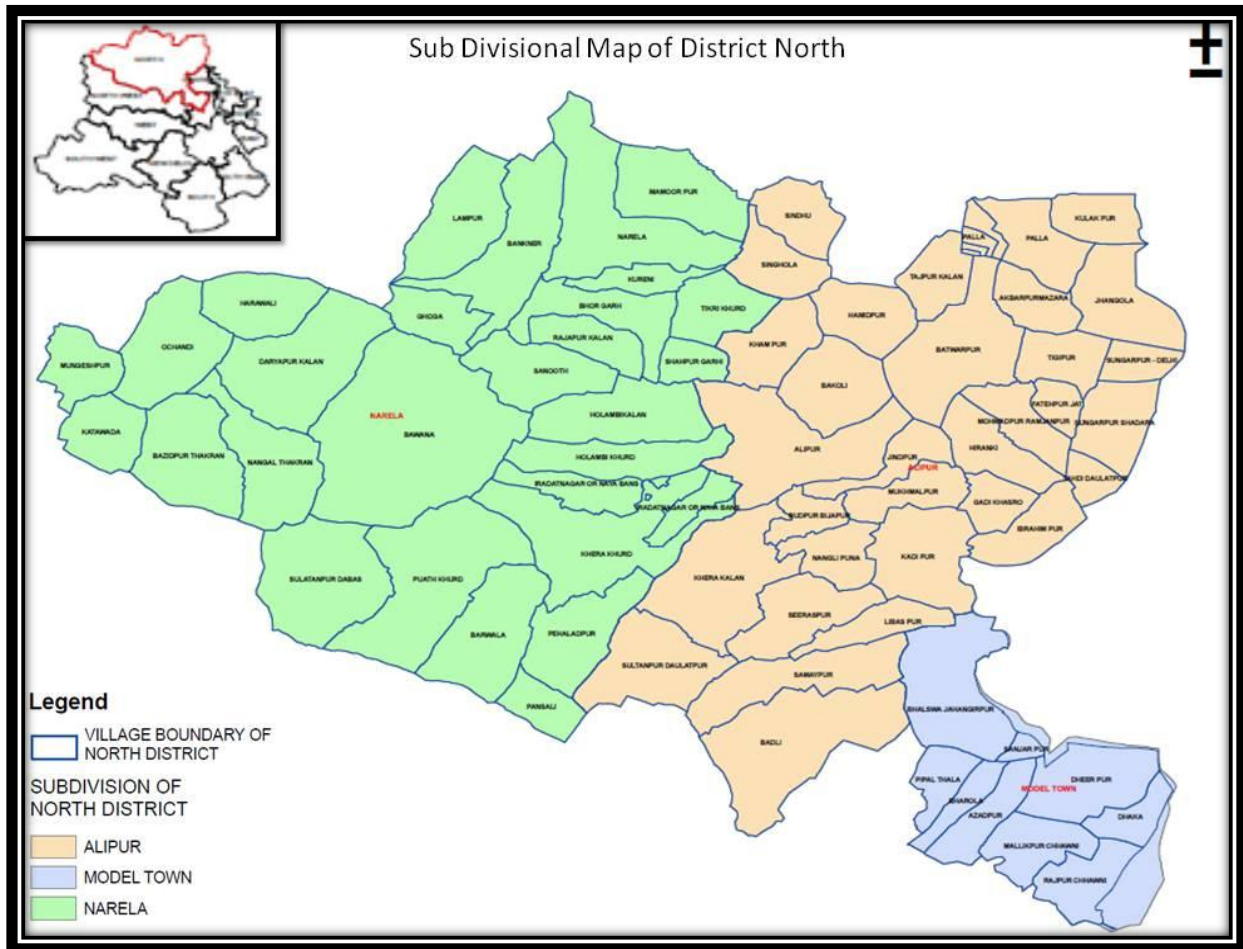


Figure: 1.4. Sub divisional Map of District North

1.11.1 GEOGRAPHY AND BOUNDARIES

North Delhi is an administrative district of the [National Capital Territory of Delhi](#) in [India](#). Total geographical area of the district is 291.66 sq km (Alipur 118.19 sq km, Narela 148.08 sq km , and Model Town 25.39 sq km), North Delhi is bounded by the [Yamuna River](#) on the east, and by the districts of [North West Delhi](#) to the North and west, [West Delhi](#) to the southwest, [Central Delhi](#) to the south, and [North East Delhi](#) to the east across the Yamuna. Delhi consists of flat and level plains interrupted by cluster of sand dunes and a long continuous chain of rocky ridges. The sand dunes are of varying dimensions and in general trend Northeast – southwest). Most of the geology of the State is comprises of Yamuna flood plains, alluvial plains and quartzite ridge.

1.11.2 POPULATION

In 2011, North Delhi had population of 887,978 of which male and female were 475,002 and 412,976 respectively. In 2001 census, North Delhi had a population of 781,525 of which males were 427,882 and remaining 353,643 were females. North Delhi District population constituted 5.29 percent of total Maharashtra population. In 2001 census, this figure for North Delhi District was at 5.27 percent of Maharashtra population. There was change of 13.62 percent in the population compared to population as per 2001. In the previous census of India 2001, North Delhi District recorded increase of 13.82 percent to its population compared to 1991. The initial provisional data released by census India 2011, shows that density of North Delhi district for 2011 is 14,557 people per sq. km. In 2001, North Delhi district density was at 13,246 people per sq. km. North Delhi district administers 61 square kilometers of areas¹.

Average literacy rate of North Delhi in 2011 were 86.85 compared to 80.10 of 2001. If things are looked out at gender wise, male and female literacy were 90.89 and 82.20 respectively. For 2001 census, same figures stood at 84.64 and 74.54 in North Delhi District. Total literate in North Delhi District were 681,517 of which male and female were 381,615 and 299,902 respectively. In 2001, North Delhi District had 540,192 in its district. With regards to Sex Ratio in North Delhi, it stood at 869 per 1000 male compared to 2001 census figure of 826. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate. In 2011 census, child sex ratio is 873 girls per 1000 boys compared to figure of 886 girls per 1000 boys of 2001 census data.

1.11.3 CLIMATE (TEMPERATURE AND RAINFALL)

The climate of North Delhi is characterized by extreme dryness, with intensely hot in summers and cold in winter which is almost similar with the other parts of the state. It is associated with a general prevalence of continental air, which moves in from the North East to North West, except during the season of monsoon (rain-bearing wind), when an easterly to southeasterly influx of oceanic air brings increased humidity. The summer season lasts from mid-March to the end of June, with average maximum and minimum temperatures of 36 °C and 25°C; it is characterized by frequent thunderstorms and squalls, which are most frequent in April

²Census of India 2011

and May. The monsoon season, following the hot summer, continues until the end of September, with an average rainfall of about 26 inches (660 mm). Due to poor infrastructures and large number of slums and resettlement colonies in North District, monsoon is seemed as a curse to the residents. The post-monsoon period of October and November constitutes a transition period from monsoon to winter conditions. The winter season extends from late November to mid-February³.

The air in the District is dry for most of the year with very low relative humidity from April to June and markedly higher humidity in July and August, when weather conditions are oppressive. The entire State's mean daily temperature is highest in May; and the monthly mean temperature is highest in June, which is also the month when the night temperature is at its maximum. The mean daily temperature may rise as high as 43 °C. The coldest month is January, when both the mean maximum temperature and the mean minimum temperature are at their low 21 °C and 7 °C respectively.

1.11.4 LAND USE PATTERN

The pattern of land use in North District was influenced considerably by the implementation of the Delhi Development Authority's 20-year (1962–82) master plan. A large number of small manufacturing establishments have entrenched themselves in almost every part of the District. A number of local shopping centre have also developed in other localities; whereas District Shopping Centre are still a dream. Agricultural land used practice of the district North is coved in Alipur subdivision and Narela with moderate land blocks. Cultural “islands” have formed in certain areas; for example, Bengali, South Indian, and Punjabi cultures, although cultural distinctiveness is being eroded as other city residents move in. Another facet of the profile is the slum and resettlement colonies, inhabited mostly by construction workers, sweepers, factory labourers, and other low-income groups like the one in Bawana. There are also urban village enclaves, where houses and streets retain rural characteristics though residents have urban occupations.

1.11.5 SETTLEMENT PATTERN

The settlement of the district North has been deteriorated after 1947 as result of the influx of refugees caused by the partition of India and Pakistan as well as the city's emergence as the National Capital of India. Since then, building activity has been insufficient to close the gap or to keep pace with the increasing population. Some part of the North district are very congested with high stories building in Azadpur, Rohini, Jahangir Puri, G.T.B Nagar, Model Town and most part of the district are low dense populated and agricultural land used and land cover were in Narela and Alipur subdivision. Causing great concern over vulnerability in case of earthquake or heavy monsoon, the traditional houses in the district are unplanned; consisting of old structures of two, three, or multi stories with a high proportion of single-room dwelling units. A program to build new houses and rehabilitate old housing has been pushed since the 1950s; it is administered by a number of agencies, such as Government of the National Capital Territory, East Delhi Municipal Corporation (EDMC), Delhi Development Authority, and various individuals and corporative.

1.11.6 THE ECONOMY

The economy of North District the service sector comes first in importance and is the moderate employer. The industrial sector is second and the commercial sector occupies only third place. Agriculture once contributed significantly to the economy of the district. A substantial proportion of working population has engaged in various services, including public administration, the professions, the liberal arts, and various personal, domestic, and unskilled-labour services.

1.11.7 ROADS AND TRANSPORTATION

The North district of the State has plain area that is well connected by bus, train, and metro to the capital. G.T. Karnal national highways converge on Delhi where as several railway lines also meet there, linking the city with all parts of the country. The traffic-circulation pattern within a city that was designed for a smaller population became heavily overburdened with Delhi's explosive growth.

Improvements to the road system—such as Azadpur flyover, adding overpasses, underpasses and widening major thoroughfares—have alleviated the worst traffic congestion, but the sheer volume of traffic—which includes such slow-moving vehicles as bullock carts, pedi cabs, Cycle Rickshaws and bicycles—makes road travel in North district. Six metro stations G.T.B Nagar, Model Town, Azadpur, Adarsh Nagar, Jahangir Puri, Majlis park, Rohini Sector-18 and Samaypur Badli, 6 Railway Stations Narela, Holambi Kalan, Khera Kalan, Badli, Adarsh Nagar and Azadpur Railway Station and service, Azadpur Inter State Bus Terminus, Rohini Sector 18, Bawana & Narela Inter State Bus Terminus etc facilitate long-distance commuting within the district and cities.

CHAPTER 2

HAZARD, VULNERABILITY, CAPACITY, AND RISK ASSESSMENT

2.1 INTRODUCTION

A hazard is a physical event that can trigger to a disaster. It has been argued by many researchers that hazard have potential to cause disaster. Generally a hazard converts into a disaster due to lack of preparedness and mitigation planning implementation in the modern society where enormous people are living in an unplanned manner. A disaster is an event triggered by natural or man-made causes that lead to sudden distribution of normalcy of life within society, causing widespread damage to life and property. Destruction can be caused due to occurrence of frequent disasters like earthquakes, fires, cyclones, terrorism, biological wars and chemical explosions. Under this chapter hazards analysis has been carried out to evaluate the level of disaster proneness in the North district of Delhi.

2.2 HAZARD

A hazard comprise a dangerous condition or events which is natural and manmade that result injury, loss of life and properties “A phenomena that pose a threat to peoples, structures or economic assets and which may cause a disaster they could be either manmade or naturally occurring in our environment”. A Natural disaster pertains to a natural phenomenon, which occurs in proximity and poses a threat to people, structure, and economic assets causes by biological, geological, seismic, hydrological, or metrological condition.

Type of Hazards

Natural Hazards**Manmade Hazards****Socio- Economic****2.2.1 NATURAL HAZARDS**

Those hazards are caused by forces of nature, there is no role of man to play, such type of hazards known as natural hazards. They are given below:-

- a) Earthquakes
- b) Volcanoes eruptions
- c) Landslides
- d) Tsunamis
- e) Floods
- f) Droughts
- g) Cyclone and storm surges
- h) Thunderstorms
- i) Living in catchment area which leads to a big disaster in flood/ deluge situation is also a hazard. E.g. Jhangola village near Yamuna bank.

2.2.2 HUMAN HAZARDS

These are caused by the undesirable activities of man. They are given below:-

- a) Water pollutions
- b) Air pollutions
- c) Soil pollutions
- d) Noise pollutions
- e) Explosive
- f) War
- g) Dam blasts
- h) Terrorism

2.2.3 SOCIO-ECONOMIC HAZARDS

These are caused by the combination effects of natural forces and misdeeds of man, for example the frequency and density of the floods and droughts may increase due to indiscriminate felling of trees, particularly catchment area of the river

2.3 VULNERABILITY

- ❖ **Vulnerability** is the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards “(UNISDR).
- ❖ ‘Vulnerability is the intrinsic and dynamic feature of an element at risk that determines the expected damage/harm resulting from a given hazardous event and is often even affected by the harmful event itself. Vulnerability changes continuously over time and is driven by physical, social, economic and environmental factors” (UNU-EHS, 2006).
- ❖ “The degree to which a system is susceptible to or unable to cope with adverse effects of climate change, including climate variability and extremes”. Vulnerability is a function of the character, magnitude, and rate of climate variation to which the system is exposed, its sensitivity, and its adaptive capacity” (IPCC, 2001:165).
- ❖ “Vulnerability is the potential to suffer harm or loss, related to the capacity to anticipate a hazard, cope with it, resist it and recover from its impact. Both vulnerability and its antithesis, resilience, are determined by physical, environmental, social, economic, political, cultural and institutional factors” (Prevention Consortium, 2007)

$$\text{Vulnerability} = \frac{(\text{Exposure}) + (\text{Resistance}) + \text{Resilience}}{\text{Capacity}}$$

With:

Exposure: at risk property and population.

Resistance: Measures taken to prevent, avoid or reduce loss.

Resilience: Ability to recover prior state or achieve desired post-disaster state.

Capacity: Resilience power of a society build by preparedness and awareness measure

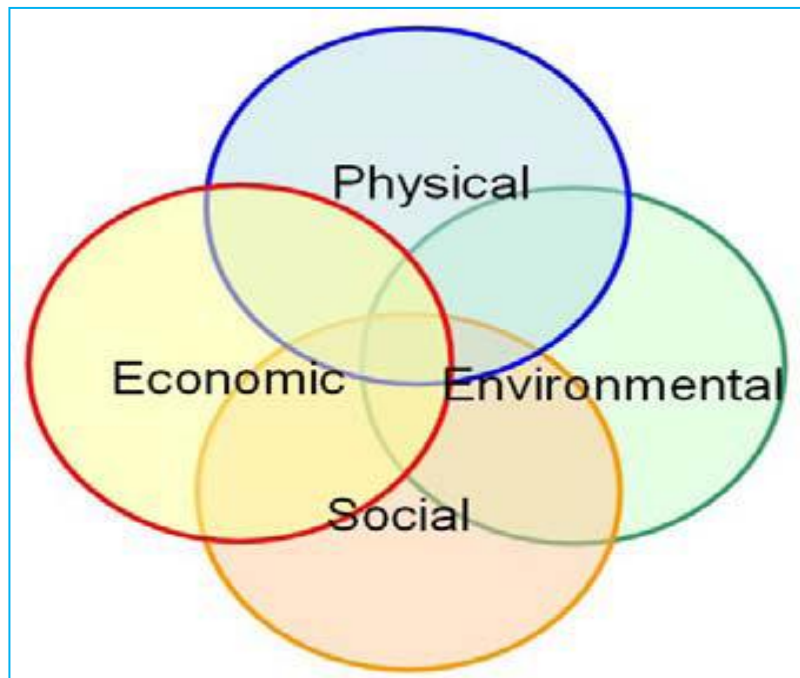


Figure: 2.1. Factors, influencing vulnerability (Source: UN-ISDR).

2.4 Hazard Indicators That Can Be Used In Flood Vulnerability Assessment

- ❖ Water depth
- ❖ Flow velocity
- ❖ Flow duration
- ❖ Wave height
- ❖ Time of onset
- ❖ Water-level ascend rate
- ❖ Impurity level or waste involved in water logged to stop epidemic.

2.5 VULNERABILITY ASSESSMENT

Vulnerability assessment is the conditions to determine by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. For positive factors, which increase the ability of people to cope with hazards, (UN/ISDR.2004).

2.6 HAZARDS IN THE DISTRICT North

The district North is generally vulnerable to the both natural disasters and manmade disasters because of its unique geo-climatic condition. The district North is highly prone to Earthquakes, Fire, Building Collapse, Road Accident, Drowning, Chemical Leakage, Stampede, Epidemic, Bomb Blasts, and Terrorist Attacks. Some parts of North District are also vulnerable to flooding hazard. The major accidental hazards areas are Bawana village, Bawana canal area, Rohini and Narela industrial area.

2.7 TYPES OF HAZARDS IN THE DISTRICT NORTH

2.7.1 EARTHQUAKE HAZARD

The district North falls under Seismic Zone IV in the national seismic map (**Figure: 2.3.**). This means the district is high vulnerable to earthquake. The plate tectonic activities are major cause of earthquake in the district North but probability of earthquakes is slightly increased due to number of illegal construction practices in the area has been one of the forces behind this. The National Capital Region of Delhi has been considered as the most vulnerable area in Delhi itself. The map of Delhi given below shows the Seismic zone. People living in District North are migrants from various parts of the other states. As per a recent study, about 30 per cent of district North population is illiterate and a 60 per cent of the total illiterate is from the North districts of the state.

Delhi lies in the Indo- Gangetic Geosynclines, a down wrap of Himalayan foreland of variable depth that is converted into flat plain by rigorous sedimentation. Gangetic Geosynclines has shown considerable amounts of flexure and dislocation at the Northern end, which is bounded by the Himalayan Frontal Thrust on the North. The floor of the Gangetic trough (without all the sediments) shows corrugated inequalities and buried ridges (shelf faults). During the period 1990 to 2006, more than 23,000 lives were lost due to 6 major earthquakes in India, which also caused enormous damage to property and public infrastructure. The occurrence of several devastating earthquakes in areas hitherto considered safe from earthquakes indicates that

the built environment in the country is extremely fragile and our ability to prepare ourselves and effectively respond to earthquakes is inadequate. During the International Decade for Natural Disaster Reduction (IDNDR) 1990-2000 observed by the United Nations (UN) in the 1990s, India witnessed several earthquakes like the Uttarkashi earthquake of 1991, the Latur earthquake of 1993, the Jabalpur earthquake of 1997, and the Chamoli

Earthquake of 1999. The bhuj earthquake of 26 January 2001 and the Jammu & Kashmir earthquake of 8 October 2005 followed these. All these major earthquakes established that the casualties were caused primarily due to the collapse of buildings. (Earthquake guidelines, NDMA). Impact of earthquake in Delhi may compound the expected colossal damage due to liquefaction physical location and hydrogeology (combination of geology and ground water) details. There is severe threat of liquefaction along the river *Yamuna* areas covering Northeast, east and some part of North district. A moderate to high threats across the belt running from central district, North district and South-North district is also expected. **(Figure: 2.2)**. The district North fall under the seismic zone IV occupies about 17.35% total areas of the country **(Table: 2.1)**.

Map 2.2: Liquefaction Zonation Map

TABLE:2.1.SEISMIC ZONE AREAS OF INDIA

S.No.	Seismic Zones	% of Geographical Area	
1	II	41.40%	58% of total area of Indian Sub-continent is vulnerable to earthquake
2	III	30.40%	
3	IV	17.35%	
4	V	10.90%	

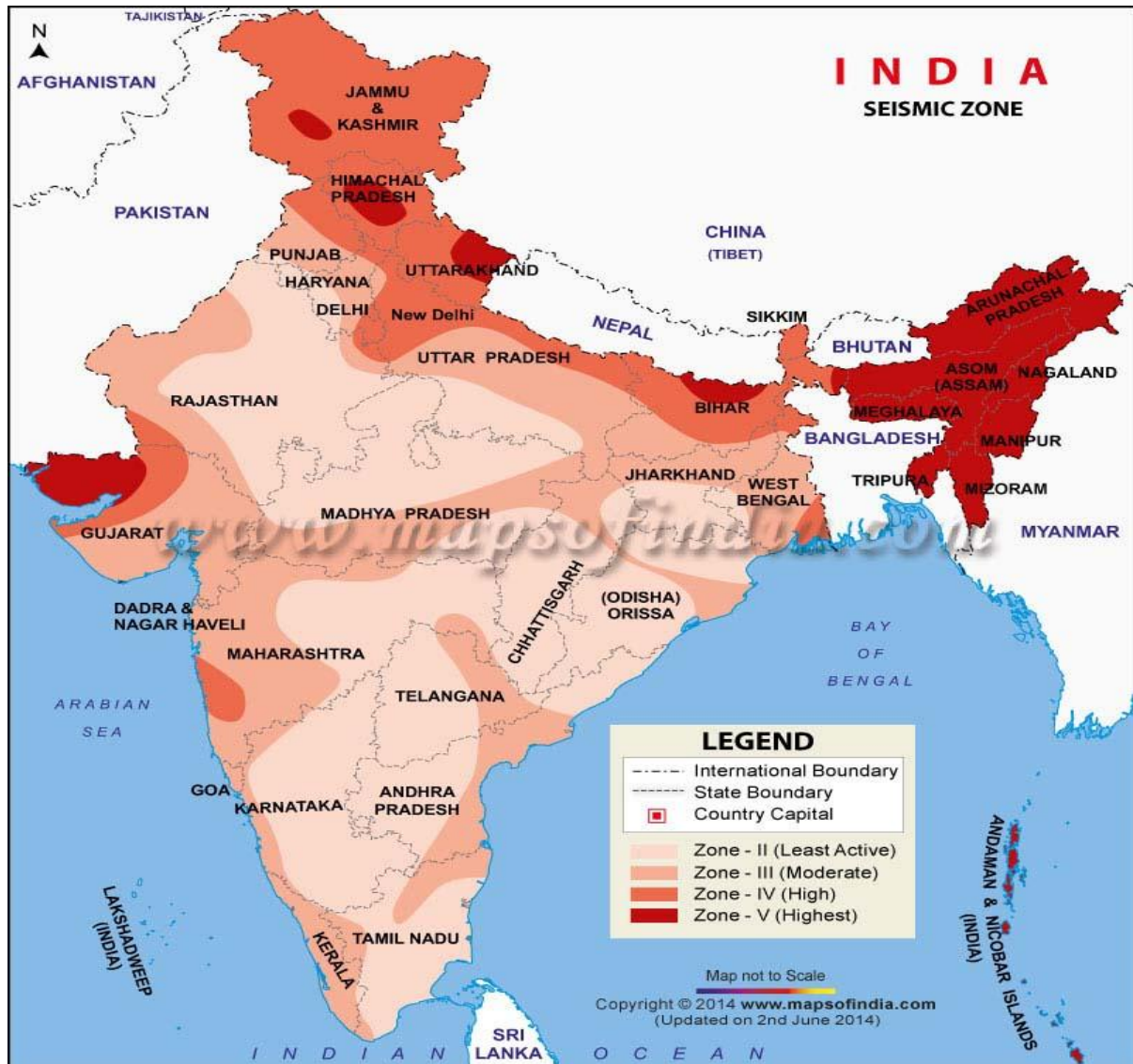


Figure: 2.3. Seismic Zonation Map of India

Five earthquakes of Richer Magnitude 5.5 to 6.7 are known to have occurred in the NCT of Delhi or close to it since 1720 AD. For instance, Srivastava and Somayajuluy (1966) mention of Khurja earthquake (M6.7) of 10 October 1956 in which 23 persons were killed in Bulandshahar and some injured in Delhi, M 6.0 earthquake of 27 August 1960 near Delhi where in about 50 persons were injured in Delhi and an earthquake near Moradabad on 15 August 1966 that 14 persons killed in Delhi. Iyengar (2000) also mentions about damage to one of the minarets of Delhi's Jama Masjid during the M4.0 earthquakes on 28 July 1994. And yet, several buildings in Delhi sustained non-structural damage possibility due to peculiar geological and geotechnical features of this area. In the Month of Sept to Nov 2007 minor tremors ranging from 1.6 to 3 on Richter scale have rocked the capital, reminding once again Delhi's susceptibility to earthquake, one was with epicentre at Bahadur Garh, Near North Delhi. Seismic hazard vulnerability strata of Delhi are represented in the map. Most parts of North Delhi are moderately vulnerable to earthquake.

2.7.2 The critical areas of concern for the management of earthquakes in North Delhi**include:**

- ✓ Lack of awareness among various stakeholders about the seismic risk;
- ✓ Inadequate attention to structural mitigation measures in the engineering education syllabus; Inadequate monitoring and enforcement of earthquake-resistant building codes and town planning, bye-laws;
- ✓ Absence of systems of licensing of engineers and masons;
- ✓ Absence of earthquake-resistant features in non-engineered construction in suburban and rural areas;
- ✓ Lack of formal training among professionals in earthquake-resistant construction practices;
- ✓ Lack of adequate preparedness and response capacity among various stakeholder groups.

Therefore, the necessary seismic factors should be taken into consideration for urban planning, industrialization, designing, and construction of civil engineering structures. Therefore, it is very important to estimate an accurate earthquake potential risk and vulnerability in North district area and proactive action measures to be taken to reduce the risk.

This shows how vulnerable the district is. Even a minor accident turns as a disaster due to the socio-cultural background of the district.

TABLE: 2.2. HAZARD & VULNERABILITY PROFILE OF DISTRICT NORTH

S. No.	Hazard	Reasons	Vulnerability
1.	Earthquake	<ul style="list-style-type: none"> • Seismic Zone IV • Non earthquake resilient buildings • High density of population • Unplanned & unsafe structures • Congested area 	High
2.	Fire	<ul style="list-style-type: none"> • LPG leakage • Short Circuit • Jhuggi Jhupri Clusters • Lack of fire safety installations 	High
3.	Road Accident	<ul style="list-style-type: none"> • Rough driving • Drink and drive • Road divergence 	Moderate
4.	Flood	<ul style="list-style-type: none"> • Yamuna river bed • Flood plan area • Habitation in low-lying area • Sudden discharge of water from neighboring states • Poor drainage causes water logging 	Moderate
5.	Building Collapse	<ul style="list-style-type: none"> • Old & unsafe buildings • Unauthorized & unplanned structures 	High
6.	Chemical Leakage	<ul style="list-style-type: none"> • Old pipe line • Poor maintenance • Lack of technology 	Moderate to Low
7.	Stampede	<ul style="list-style-type: none"> • High density of population • Congested areas • Spread of rumors 	Moderate
8.	Terrorist Attack/ Bomb Blast	<ul style="list-style-type: none"> • Attack by terrorists • Major installations 	Moderate
9.	Drowning	<ul style="list-style-type: none"> • Swimming in canal • Lack of awareness local peoples 	High
10.	Epidemic	<ul style="list-style-type: none"> • Poor hygiene & • Post flood effects 	Low to Moderate

2.8 STATISTIC OF DISASTERS SENARIOS IN North DISTRICT

2.8.1 FIRE INCIDENT

North District has experience number of major disaster for the last two year. Fire was the major incident in the North district; it has been recorded 251 during 2014 and 116 during the year 2013. The areas which are more vulnerable to the fire are Rohini Sct. 18, Narela and Bawana Industrial Areas, Jahangir Puri, Ochandi Border, Lalbagh, Alipur, Bawana JJ Colony, Adarsh Nagar, Sharup Nagar, Mahendra Park, Ochandi Border, Lalbagh, Alipur has high percentage fire intensity about 71 %, during 2014 and 77% during 2013. In the year 2014 there was estimated 14 deaths, 2 major injured and 12 minor injured Most and the year 2013 was 3 deaths, 8 minor injured and 22 major injured (**Table:2.3, Figure:2.4, Figure:2.5 and Figure:2.6**). The trend of the fire incidents is also increasing during 2014. Fire disaster is the most frequent and threatening disaster as per statistics of incidents of previous two year.

TABLE: 2.3. ANNUAL STATISTICT OF INCIDENTS OF North DISTRICT FOR YEAR 2013 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	number of Death
1	Fire	116	Bawana Industrial Area, Rohini Sct 18, Narela Industrial Area, Jahangir Puri, Mahindra Park, Ochandi Border, Lalbagh, Alipur, Bawana JJ Colony, Adarsh Nagar, Sharup Nagar, Shahabad dairy etc.	8	22	3
2	Drowning	11	Bawana Canal, Rohini Sct 15, Sct 16, Narela and Mukharjee Nagar.	Nil	1	11
3	Road Accident	4	Mukarba Chock, and Alipur Road,	6	14	1
4	Wall Collapse	15	Alipur, Libaspur, Ranapratap Bagh, JJ Colony Jahangir Puri, Bawana, Narela Shahabad Dairy, , Mukharjee Nagar, Badli Industry Area, Gopal Nagar etc.	1	9	5
5	PNG/CNG/Gas Pipe Line leakage	2	Narela and Mahendru Enclave	Nil	Nil	Nil
6	Construction of Metro	2	Rohini Sct 18 and Sct 25	1	1	1
Total		150		16	47	21

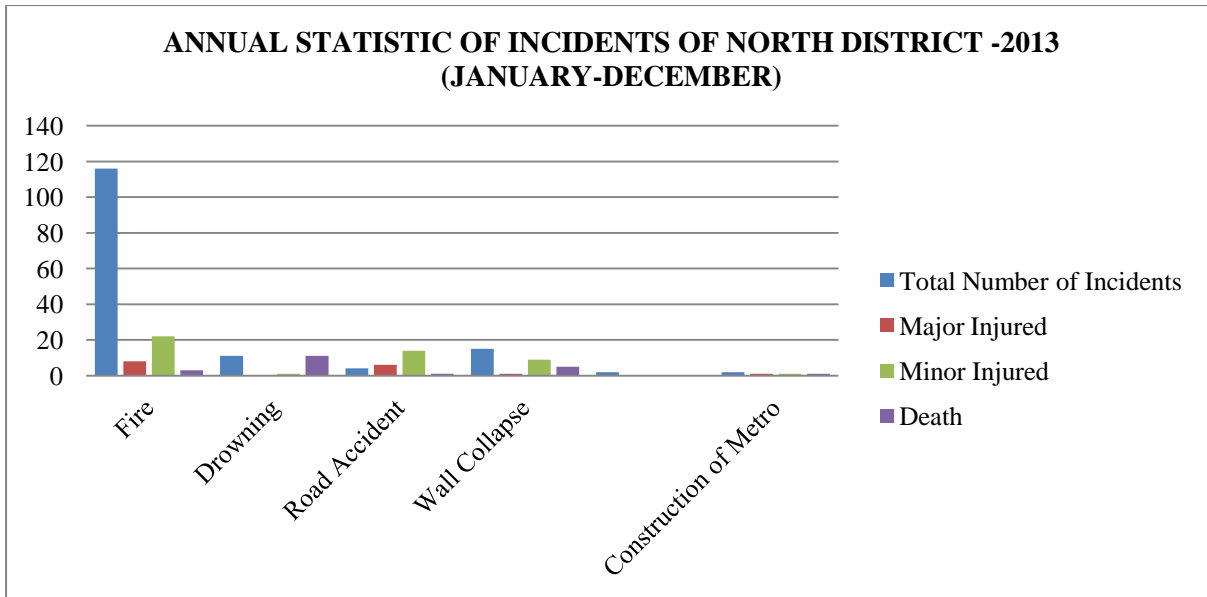


Figure: 2.3. Annual Statistic of Incidents of North Delhi-2013

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

TABLE: 2.4. ANNUAL STATISTICT OF INCIDENTS OF North DISTRICT FOR YEAR 2014 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Number of Death
1	Fire	251	Rohini Sct 18, Narela and Bawana Industrial Areas, Jahangir Puri, Ochandi Border, Lalbagh, Alipur, Bawana JJ Colony, Adarsh Nagar, Sharup Nagar etc.	2	12	14
2	Drowning	21	Bawana Canal, Bakner Village and Tiggipur (Jamuna Canal)	Nil	1	13
3	Road Accident	30	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Colony Bawana, Badli By Pass, Bhulashawa etc.	13	10	6
4	Wall Collapse	46	Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	1	19	5
5	PNG/CNG/Gas Pipe Line	2	Murkharji Nagar, Model Town and Jahangir Puri	Nil	Nil	Nil
6	Water Logging	1	Bawana	Nil	Nil	Nil
7	Chemical leakage	3	Pralad Pur Banger, Narela and Shahabad Dairy	1	1	1
8	Short Circuits	1	Shahabad Dairy	Nil	Nil	1
	Total	355		17	43	40

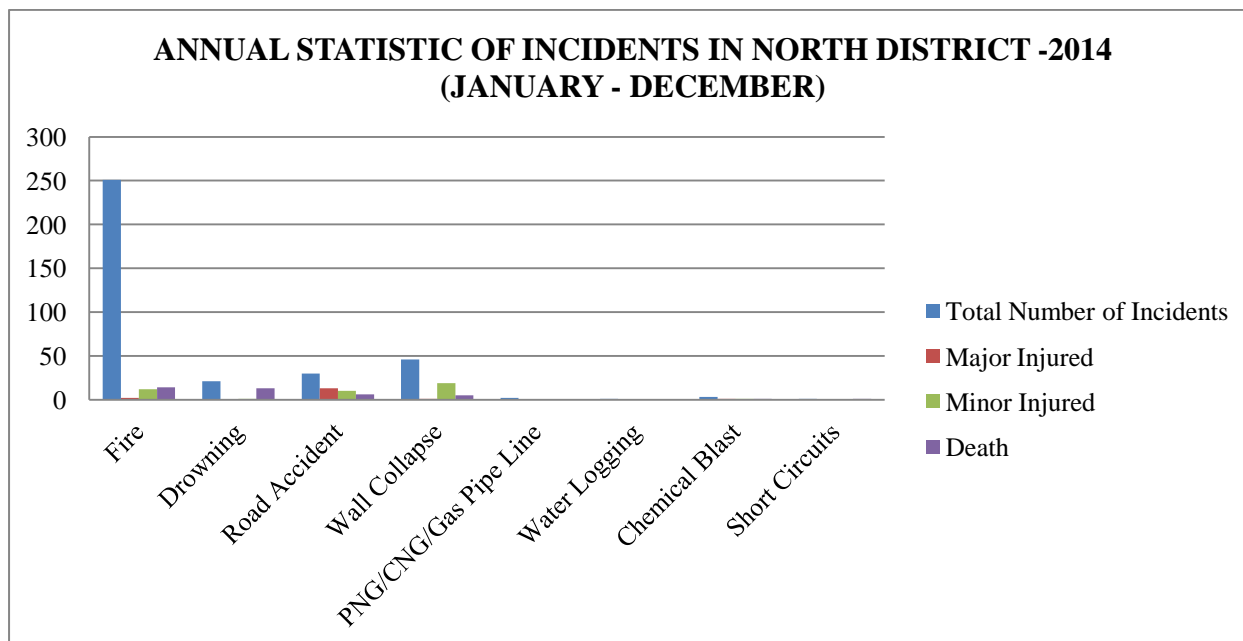


Figure: 2.4. Annual Statistic of Incidents of North Delhi-2014

Table: ANNUAL STATISTIC OF INCIDENTS OF North DISTRICT FOR YEAR 2015 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	291	Narela and Bawana Industrial Areas, Shahbad Dairy, Jahangir Puri, Holambi, Lalbagh, Alipur, Adarsh Nagar, Swarup Nagar, Azadpur, Mukherjee Nagar, Samaypur Badli, Libaspur etc.	15	31	7
2	Drowning	40	Rohini Sector 18, Bawana Sector 5, Kherakhud, Badli, JJ Colony Bawana, Jhangolagao, Harevelli, Palla Village, Swarup Nagar, Pehladpur, Model Town etc.	Nil	5	36
3	Road Accident	16	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Coloni Bawana, Badli By Pass, Bhalashawa etc.	1	29	3
4	Wall Collapse	19	Narela, Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	3	25	2
5	PNG/CNG/Gas Pipe Line	3	Libaspur, J.J. Colony Bawana	Nil	Nil	Nil
6	Short Circuits	2	Jahangir Puri, Libaspur	Nil	Nil	1
7	Water Logging	4	Siraspur, Bawana , Khera Khurd	Nil	Nil	Nil
8	Earthquake	1		Nil	Nil	Nil
9	Other	1		Nil	Nil	Nil
Total		377		19	90	49

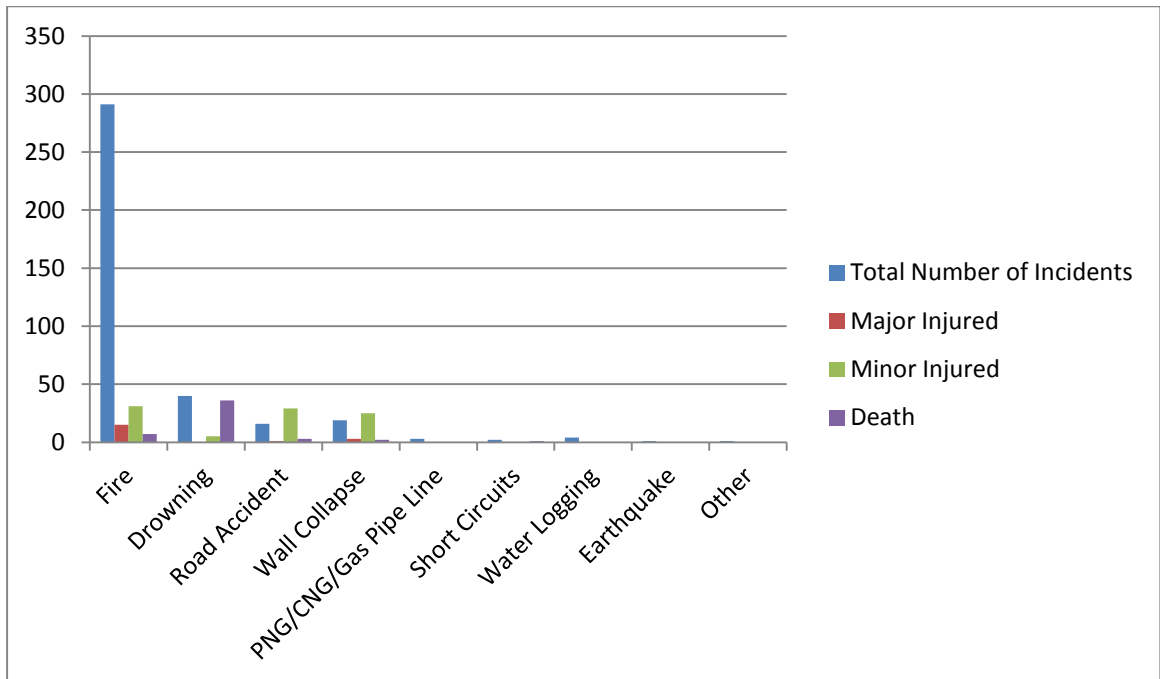
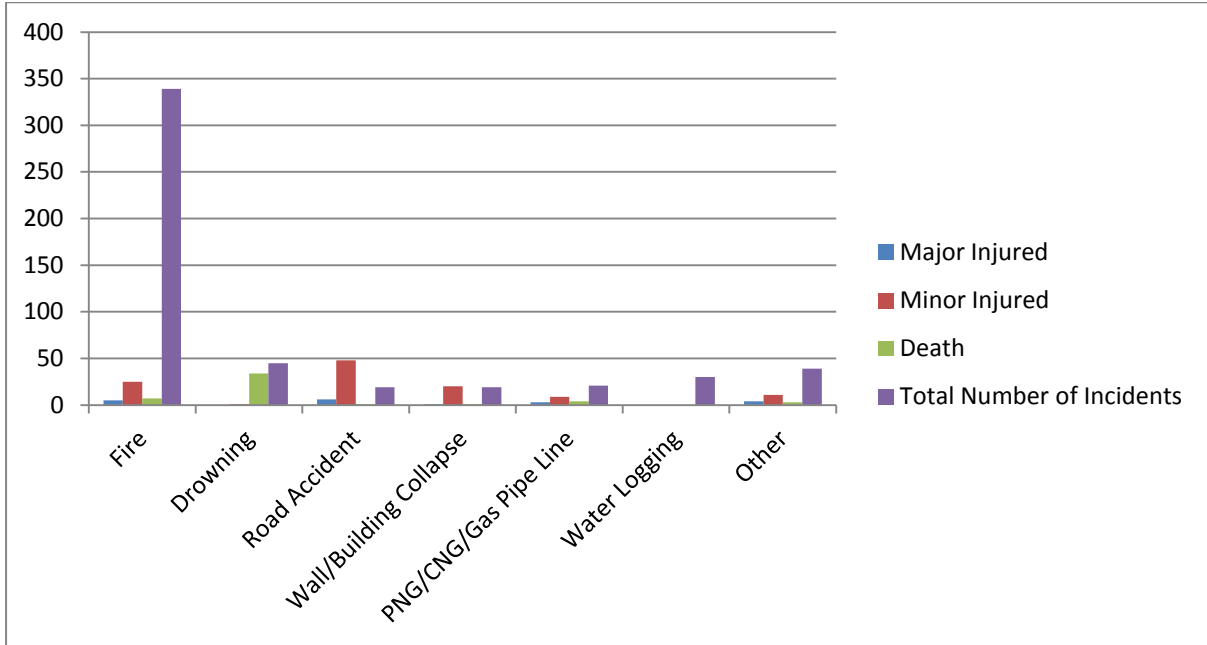


Figure: 2.5. Annual Statistic of Incidents of North Delhi-2015

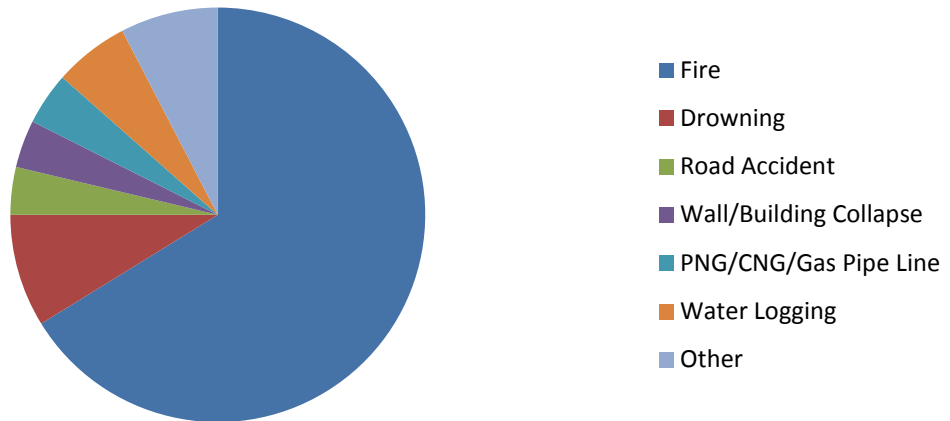
**ANNUAL STATISTICT OF INCIDENTS OF North DISTRICT FOR YEAR 2016
(JANUARY-DECEMBER)**

S. No.	Incidents Name	Total Number of Incident s	Where	Major Injured	Minor Injured	Death
1	Fire	339	Narela Indl. Area, Swaroop Nagar, Alipur, Bawana Indl area,Azadpur, Bhorgarh, Model town, Mukherjee nagar ,Samaypur Badli, Alipur, Holambi, Jahangirpuri, Rohini sector-16 ,Prahladpur, Adarsh Nagar, Lal Bagh, Khera Kalan, Singhola Village, G.T. Karnal Road etc.	5	25	7
2	Drowning	45	Harevali, Bankner, Palla Gaon, Bawana Nehar , Khera Kalan, Mukherjee nagar, Harevali Village Canal, Bawana Sec-5, Khera Kurd Bridge Canal, J.J. Colony Bawana, Bankner Village Lake etc.	0	1	34
3	Road Accident	19	Budhpur, Singhu Border, Burari, Mukherjee nagar, Metro Vihar Hollambi Kalan etc	6	48	1
4	Wall/Building Collapse	19	Model Town, Adarsh Nagar, Alipur	1	20	1
5	PNG/CNG/Gas Pipe Line	21	Badli Indl area, Bhalswa Dairy, Prahladpur Gaun, Dhaka Village Kingsway Camp, Mukundpur, Jahangirpuri, Dariyapur Village (near Nagal Mode), Narela, Lal Bagh Azadpur	3	9	4
6	Water Logging	30	Bawana Nehar, Jahangirpuri Metro Station, Rohini Sec-11, Azadpur Bus Terminal, Sanjay Gandhi TPT Nagar, Model Town-III Chhatarsal Stadium, Vijay Nagar Double Storey, Singhu Border etc.	0	0	0
7	Other	39	Model Town, Bawana, Rohini, Khera Khurd Gaun, G.T. Karnal Road, Rohini Sec-16, Mukherjee Nagar, Jahangirpuri Metro Station, Badli Pul Wazirabad Lane etc	4	11	0
1	Total	512		19	114	50



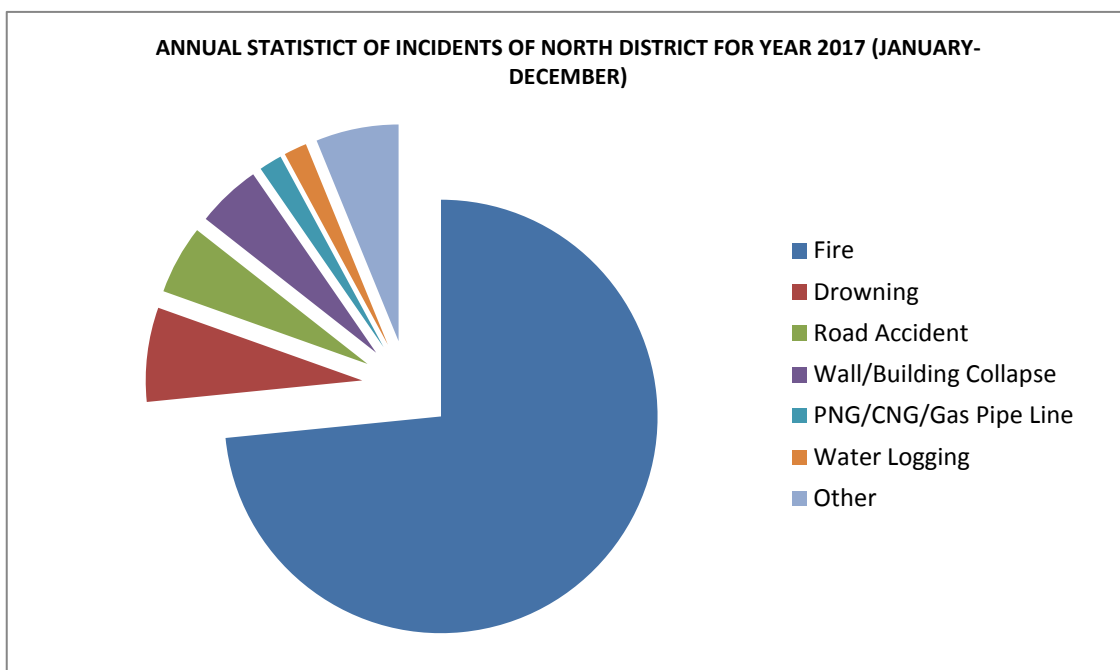
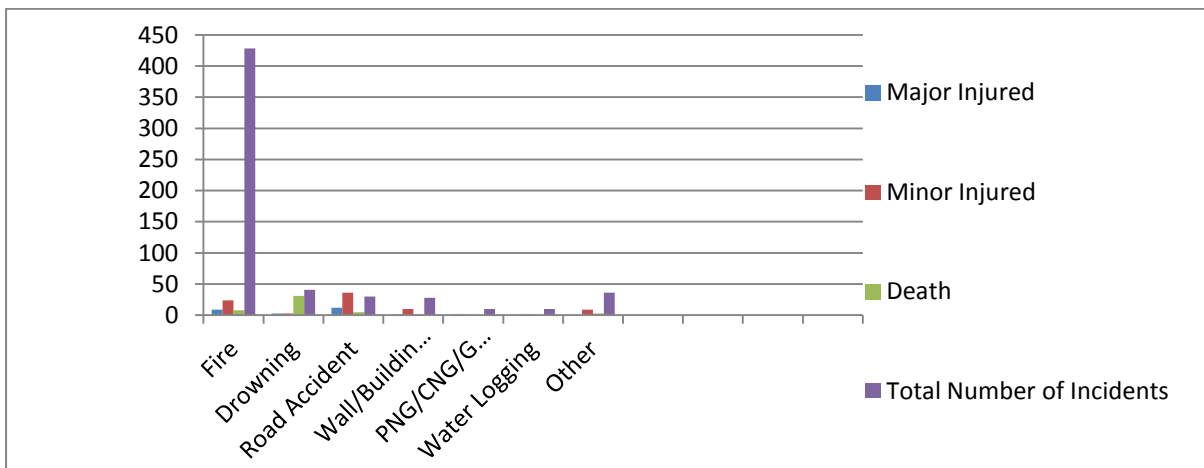
IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

ANNUAL STATISTICT OF INCIDENTS OF NORTH DISTRICT FOR YEAR 2016 (JANUARY- DECEMBER)



**ANNUAL STATISTICT OF INCIDENTS OF NORTH DISTRICT FOR YEAR 2017
(JANUARY-DECEMBER)**

S.No	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	428	Narela Near Singhu Border, Bawana Sector-5, A-Block Jahangirpuri, Kureni Gaon, Shahbad Daulatpur, DSIIDC Narela, Khera Kalan, Dariyapur Village, Bawana Sector-3, Bawana Industrial Area, Singhola, Mukherjee Nagar, Adarsh Nagar etc	9	24	8
2	Drowning	41	Bawana Nahar, Rohini Sector,-16, Khera Kalan Nahar, Nangal Thakran Bawana, Prahaladpur, J.J. Colony Bawana Nahar, Rohini Sector-27 etc.	3	3	31
3	Road Accident	30	Bawana Pooth Village, Swaroop Nagar Near Red Light, Nirankari Ground near under pass, Anaz Mandi Narela, Palla Mor, G.T. Karnal Road Sonipat, K.N. Katju Marg, Kanjhawala Road etc.	12	36	5
4	Wall/Building Collapse	28	Shahbad Dairy, MCD School Khera Kalan, Mahendra Park, Model Town-II, Narela, Rohini Sector-11, Mukherjee Nagar, Khera Kalan Gaon, Singhu Border etc.	1	10	1
5	PNG/CNG/Gas Pipe Line	10	Rohini Sector-9, Vijay Nagar, Rohini Sector-17, Narela, Shiv Mandir Badli Village etc.	1	0	0
6	Water Logging	10	Jahangirpuri, Bhalswa Dairy Flyover, Tagore Park Model Town, Firmi Road Barwala Gaon, Alipur etc.	0	1	0
7	Other	36	Rohini Sector-16, New Police Line Kingsway Camp, Bhalswa Dairy Flyover Road, Rohini Sector-15, Swaroop Nagar, DTC Booth Jahangirpuri, Khanpur Gaon, Bawana Nahar etc.	0	9	3
Total		583		26	83	48



2.8.2 STATISTIC OF OTHER DISASTER

Except the fire disaster the district is vulnerable to the other disaster also, as EOC of the district North has been receiving call Drowning, Building Collapse/Wall Collapse, Road Accidents, Chemical leakage etc. Drowning incidents of the district have been rapidly increased due to the opening new canal, which is concrete resistance wall and only made with the purpose of drinking water for the various part of Delhi. In Bawana canal and Tiggipur canal areas were recorded maximum drowning incidents during the year 2017-2018, which was estimated 11, 13 deaths and 2 major injured. Collapses of the old structure were also reported in which many people's loss their lives and 10 peoples death and some were major injured during the

year 2017-2018. Some of the building of North district has very old and contraction is very poor that the result intensity of wall collapse is rapidly increasing year by year in the district. (Table:2.4 and Figure:2.5). It was recorded 15 building incidents during 2013 and 46

building incidents during 2014 that was emerged 10% and 13% of the total incidents in the North district. Due to the building, collapse five deaths during the each year. Many other incidents like CNG/PNG gas leakage, water logging, and short circuit were reported which gives an intimation regarding the process to these incidents.

2.8.3 IMPACT ANALYSIS OF THE WORST CASES IN THE NORTH DISTRICT

The worst of the disaster cases in the North district are manmade disaster that already has a mention above. The Fire incident and the wall collapse intensity of the North district gradually increasing day by day due to lack of management and poor construction which is no according to the building code. Bawana and Rohini industrial, JJ colony of Jahangir Puri, Narela industrial areas were remarked as fire prone area in the district the huge incidents as analyses the past three years. Another case of the worst disaster in North district was the flood caused by overflow of River Yamuna in 1980s. During that flood, preparedness and management was not up to date and even pre-disaster management concept was not popular as it is now. Post disaster management phrase was more prominent early as of now, the concept of the disaster management has made a paradigm shift from post to pre disaster management. Modern machineries and advanced technologies were not available that time to fight against the calamity.

The most vulnerable groups of the hazard were people who lived in JJ clusters of Bawana and slums in JJ colony of Jahangir Puri. Even relief activities were not sufficient and satisfactory. People of Narela Sub Division were highly vulnerable to fire and drowning during 2015 to 2018 (Table: 2.3, 2.4, 2.5, 2.6). Even today, the condition is not different. Though an institutional mechanism of disaster management is in place, numbers of slums and resettlement colonies and JJ clusters have multiplied. In the present day, the major areas of the district rehabilitation and mitigation measure can possibly taken due to advantage of District Disaster Management Plan of North District. The reoccurrence of these incidents can be minimized by the providing proper training to the stockholders and by organizing awareness came regularly the specific hazards to which they vulnerable. The North district as of now is doing its best by the providing the training regarding the awareness camps and mock drill to reduced and minimized their reoccurrence.

Major fires incidents have been explained in the past Narela and Bawana including areas. Which shows the process of fire hazard furthermore and major fire was experience in the year 2014 in the Bawana colony in which many Juggies were burnt and huge loss was incurred.

2.9 HAZARD/ VULNERABILITY ANALYSIS

This is a major concern in the North district. A large number of fire accidents take place in the district due to lack of precaution. North District has a limited number of standard community centers. In addition, open grounds and parks are not sufficient to organize party or festivals in the district. Because of these constraints, people prepare makeshift tent houses for occasions like marriage, cultural events, political meetings, and religious festivals. There are a large number of fire accidents due electric short circuit in Narela, Bawana and Rohini industrial areas. Most of the industries established in this region base on petroleum product and because of negligence fire break out frequently since 2017-2018. In present day, the road accident intensity in the district continuously is increasing due to rough driving. In the last year it was estimated total 30 incidents last year among them 6 peoples were death, 13 major inquired and 10 minor injured in NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Colony Bawana, Badli By Pass, Bhulashawa in the district.

2.10 FOREWARNING AND SPEED OF DISASTER ONSET

In the present scenario, there is no scope of forewarning for any disaster in the district unless it is in the main land of the North district. Although warning has been issued for a case like fire accident, the fire fighting teams cannot reach the spot in time due to congested traffic and narrow road. The fruit and vegetable vendors and other small business units occupy most of the roads as well. The fire fighting teams located in the district are still far away from disaster prone sites the whole area. Besides the poor, infra structure facility and heavy traffic in the main roads of district prevent fire fighters entering to the district from Jahangir Puri, Bawana, Narela, Rohini Sct 16, Bhorgarh, DSIDC Bawana and Roopnagar fire station. In the present day proper mitigation measure/ management has been take place after update of District Disaster Management Plan of North District.

Table: ANNUAL STATISTIC OF INCIDENTS OF North DISTRICT FOR YEAR 2018 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	483	Narela and Bawana Industrial Areas, Shahbad Dairy, Jahangir Puri, Holambi, Lalbagh, Alipur, Adarsh Nagar, Swarup Nagar, Azadpur, Mukherjee Nagar, Samaypur Badli, Libaspur etc.	20	21	49
2	Drowning	40	Rohini Sector 18, Bawana Sector 5, Kherakhud, Badli, JJ Colony Bawana, Jhangola, Harevelli, Palla Village, Swarup Nagar, Pehlادpur, Model Town etc.	Nil	3	26
3	Road Accident	22	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Coloni Bawana, Badli By Pass, Bhalashawa etc.	3	21	2
4	Wall Collapse	05	Narela, Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	Nil	8	Nil
5	PNG/CNG/Gas Pipe Line	Nil	Libaspur, J.J. Colony Bawana	Nil	Nil	Nil
6	IGL	09	Rohini, Bawana, Model town, Sanjay Gandhi tarsport,	Nil	Nil	Nil
7	Short Circuits	01	Narela, DDA Flat, Rohini	Nil	Nil	01
8	Water Logging	04	Model town, Mukherjee Nagar, Rohini, Adarsh Nagar	Nil	Nil	Nil
9	Earthquake	10		Nil	Nil	Nil
10	Other	33	Model Town, Rohini-16, Bawana, Swarup nagar, G.T Karnal road, Haider Pur metro, Holambi kalan,	Nil	1	4
Total		598		23	54	85

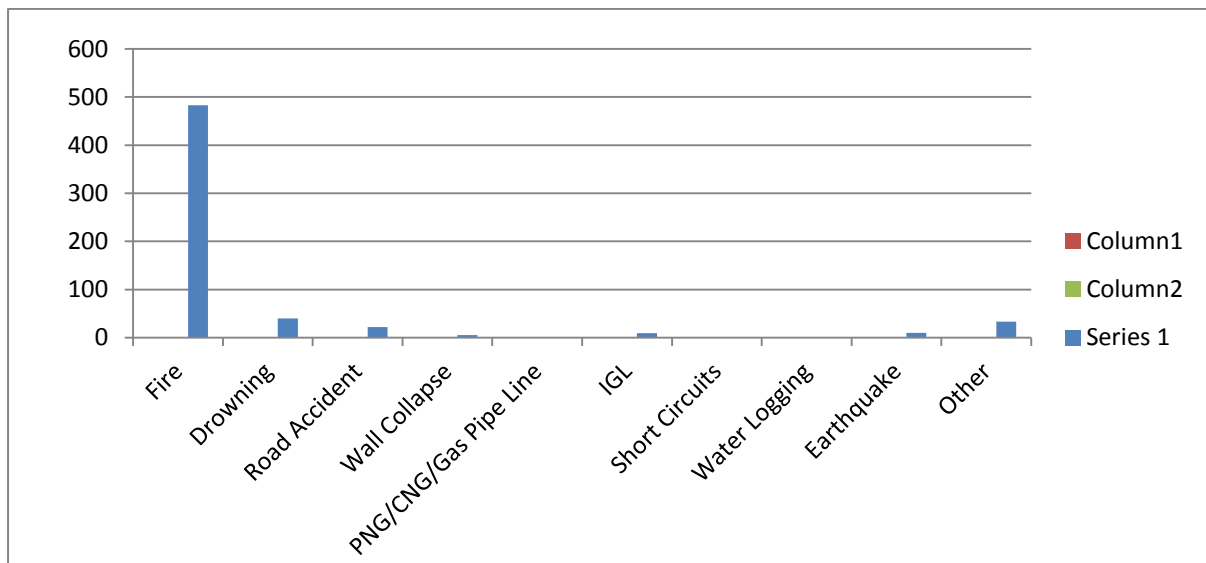


Table: ANNUAL STATISTIC OF INCIDENTS OF North DISTRICT FOR YEAR 2019 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	413	Narela and Bawana Industrial Areas, Shahbad Dairy, Jahangir Puri, Holambi, Lalbagh, Alipur, Adarsh Nagar, Swarup Nagar, Azadpur, Mukherjee Nagar, Samaypur Badli, Libaspur etc.	45	23	10
2	Drowning	44	Rohini Sector 18, Bawana Sector 5, Kherakhud, Badli, JJ Colony Bawana, Jhangola, Harevelli, Palla Village, Swarup Nagar, Pehladpur, Model Town etc.	Nil	3	40
3	Road Accident	28	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Coloni Bawana, Badli By Pass, Bhalashawa etc.	13	16	10
4	Wall Collapse	19	Narela, Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	Nil	04	02
5	PNG/CNG/Gas Pipe Line	06	Libaspur, J.J. Colony Bawana	Nil	01	Nil
6	IGL	2	Rohini, Bawana, Model town, Sanjay Gandhi tarSPORT,	Nil	Nil	Nil
7	Short Circuits	01	Narela, DDA Flat, Rohini	Nil	Nil	01
8	Water Logging	03	Model town, Mukherjee Nagar, Rohini, Adarsh Nagar	Nil	Nil	Nil
9	Earthquake	10		Nil	Nil	Nil
10	Other	36	Model Town, Rohini-16, Bawana, Swarup nagar, G.T Karnal road, Haider Pur metro, Holambi kalan,	01	Nil	01
Total		562		59	47	64

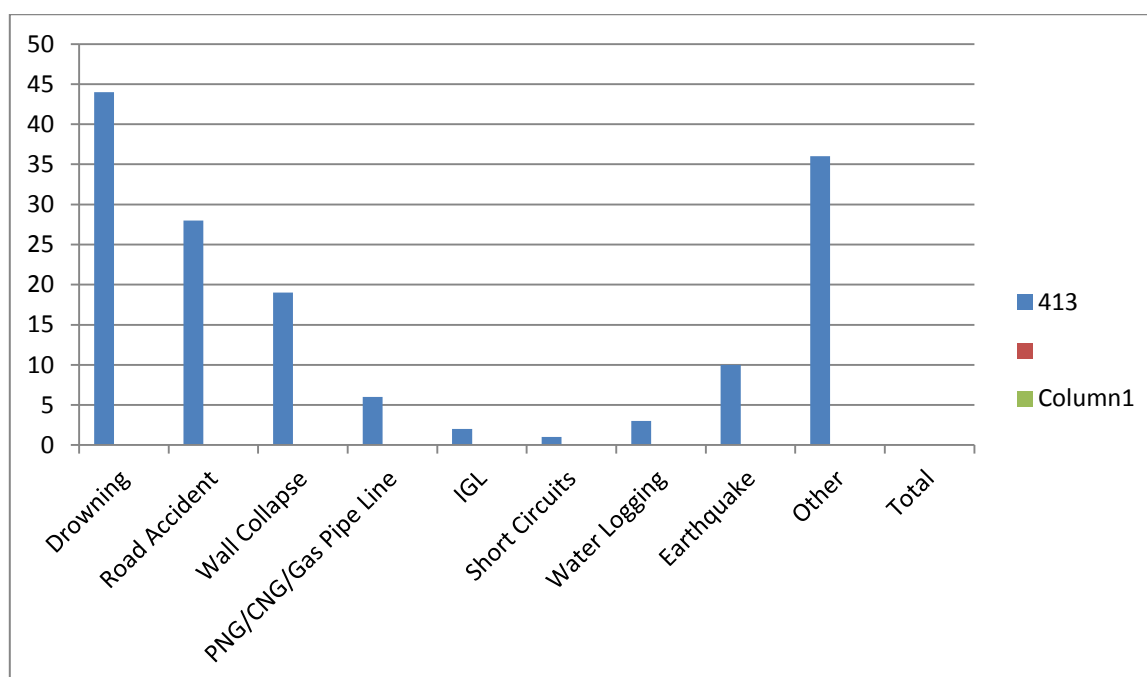


Table: ANNUAL STATISTICT OF INCIDENTS OF North DISTRICT FOR YEAR 2020 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	290	Narela and Bawana Industrial Areas, Shahbad Dairy, Jahangir Puri, Holambi, Lalbagh, Alipur, Adarsh Nagar, Swarup Nagar, Azadpur, Mukherjee Nagar, Samaypur Badli, Libaspur etc.	06	14	02
2	Drowning	30	Rohini Sector 18, Bawana Sector 5, Kherakhud, Badli, JJ Colony Bawana, Jhangola, Harevelli, Palla Village, Swarup Nagar, Pehladpur, Model Town etc.	Nil	09	26
3	Road Accident	11	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Coloni Bawana, Badli By Pass, Bhalashawa etc.	02	04	01
4	Wall Collapse	15	Narela, Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	01	03	02
5	PNG/CNG/Gas Pipe Line	04	Libaspur, J.J. Colony Bawana	Nil	Nil	Nil
6	IGL	Nil	Rohini, Bawana, Model town, Sanjay Gandhi tarsport,	Nil	Nil	Nil
7	Short Circuits	Nil	Narela. DDA Flat, Rohini	Nil	Nil	01
8	Water Logging	06	Model town, Mukherjee Nagar, Rohini, Adarsh Nagar	01	Nil	Nil
9	Earthquake	Nil		Nil	Nil	Nil
10	Other	34	Model Town, Rohini-16, Bawana, Swarup nagar, G.T Karnal road, Haider Pur metro, Holambi kalan,	02	04	05
Total		390		12	34	37

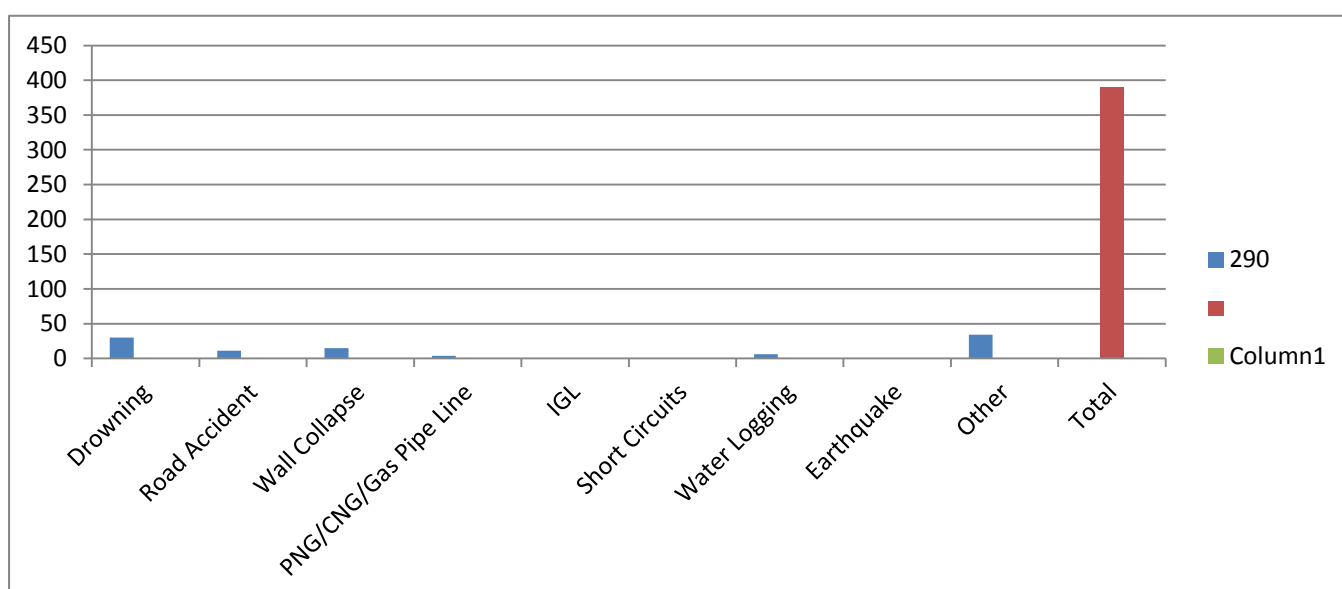
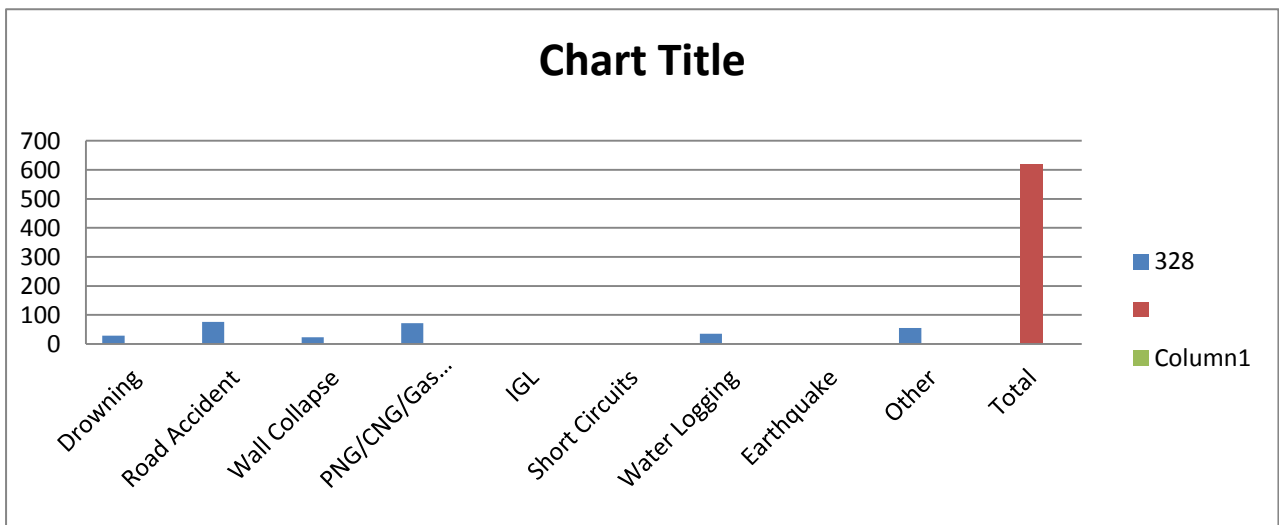


Table: ANNUAL STATISTIC OF INCIDENTS OF North DISTRICT FOR YEAR 2021 (JANUARY-DECEMBER)

S.No.	Incidents Name	Total Number of Incidents	Where	Major Injured	Minor Injured	Death
1	Fire	328	Narela and Bawana Industrial Areas, Shahbad Dairy, Jahangir Puri, Holambi, Lalbagh, Alipur, Adarsh Nagar, Swarup Nagar, Azadpur, Mukherjee Nagar, Samaypur Badli, Libaspur etc.	03	27	08
2	Drowning	29	Rohini Sector 18, Bawana Sector 5, Kherakhud, Badli, JJ Colony Bawana, Jhangola, Harevelli, Palla Village, Swarup Nagar, Pehladpur, Model Town etc.	01	Nil	34
3	Road Accident	76	NH1, GT K Road, Azadpur Fly Over, Mukarba Chock, Alipur, Narela, JJ Coloni Bawana, Badli By Pass, Bhalashawa etc.	04	02	Nil
4	Wall Collapse	23	Narela, Alipur, Model Town, JJ Colony Jahangir Puri, Bawana, Shahabad Dairy, Holmbi Kalan, Palad Pur, Khera Kala, Adarsh Nagar etc.	02	07	03
5	PNG/CNG/Gas Pipe Line	72	Libaspur, J.J. Colony Bawana	Nil	Nil	Nil
6	IGL	Nil	Rohini, Bawana, Model town, Sanjay Gandhi tarSPORT,	Nil	Nil	Nil
7	Short Circuits	Nil	Narela, DDA Flat, Rohini	Nil	Nil	01
8	Water Logging	35	Model town, Mukherjee Nagar, Rohini, Adarsh Nagar	Nil	Nil	Nil
9	Earthquake	Nil		Nil	Nil	Nil
10	Other	55	Model Town, Rohini-16, Bawana, Swarup Nagar, G.T Karnal road, Haider Pur metro, Holambi Kalan,	Nil	02	06
Total		618		10	38	52



CHAPTER 3

INSTITUTIONAL ARRANGEMENTS

3.1. INTRODUCTION

Most of the disaster situation is to be managed at State and District levels. The centre plays a supporting role and provides assistance when the consequences of disaster exceed district and State capacities. The centre mobilizes support in terms of providing emergency teams, support personnel, specialized equipments, and operating facilities depending on the scale of the disaster and the need of the State and District. Active assistance to an affected State/District would be provided only after the declaration of a national level disaster, the national response mechanism has to be prepared and any impending State or District disaster has to be impending State or District disaster has to be monitored in order to provide immediate assistance whenever required. For this purpose nation response approach has to be pre-defined in terms of process, related handbooks and checklists that will have to be used during a disaster.

The Disaster Management Act, 2005 (DM Act, 2005) lays down institutional and coordination mechanisms for effective disaster management (DM) at the national, state, and district levels. As mandated by this Act, the Government of India (GOI) created a multi-tiered institutional system consisting of the National Disaster Management Authority (NDMA), headed by the Prime Minister, the State Disaster Management Authorities (SDMAs) by the Chief Ministers and the District Disaster Management Authorities (DDMAs) by the District Collectors and co-chaired by elected representatives of the local authorities of the respective districts. These bodies have been set up to facilitate the paradigm shift from the hitherto relief-centric approach to a more proactive, holistic and integrated approach of strengthening disaster preparedness, mitigation and emergency response. (*Source NDMA guidelines*)

3.2. INSTITUTIONAL ARRANGEMENTS AT NATIONAL LEVEL

3.2.1 NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)

At the national level, the Ministry of Home Affairs is the nodal Ministry for all matters concerning disaster management. National Disaster Management Authority (NDMA) has been constituted for better coordination of disaster management at national level under the
Disaster

Management Act, 2005. The Prime Minister of India is the Chairperson of National Authority. This is a multi-disciplinary body with nodal officers from all concerned Ministries/ Departments/ Organizations. Apart from these developments, the Government of India has its National Contingency Action Plan prepared by the nodal ministry of Disaster Management. A National Emergency Operations Centre (NEOC) has been started functioning in the Ministry of Home Affairs with all sophisticated equipment's with most modern technology for disaster management.

3.2.2 CRISIS MANAGEMENT GROUP

The Central Relief Commissioner in the Ministry of Home Affairs is the Chairman of the CMG, consisting of senior officers (called nodal officers) from various concerned Ministries. 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 and to obtain information from the nodal officers on measures relating to above. The CMG, in the event of a natural disaster, meets frequently to review the relief operations and extend all possible assistance required by the affected States to overcome the situation effectively. The Resident Commissioner of the affected State is also associated with such meetings.

3.2.3 DISTRICT CRISIS GROUP

District Crisis Group has been constituted under The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules 1996, which has following function:

1. The District Crisis Group shall be the apex body in the district to deal with major chemical accidents and to provide expert guidance for handling chemical accidents;
2. The District Crisis Group shall-
 - Assist in the preparation of the district off-site emergency plan.
 - Review all the on-site emergency plans prepared by the occupier of Major Accident Hazards installation for the preparation of the district off-site emergency plan.

- Assist the district administration in the management of chemical; continuously monitor every chemical accident.
- Ensure continuous information flow from the district to the Central and State Crisis Group regarding accident situation and mitigation efforts;
- Forward a report of the chemical accident within fifteen days to the State Crisis Group;
- Conduct at least one full scale mock-drill of a chemical accident at a site each year
- And forward a report of the strength and the weakness of the plan to the State Crisis Group
- Incident response system required .

3.2.4 CONTINGENCY ACTION PLAN

The Government of India has formulated A National Contingency Action Plan (CAP) for dealing with contingencies arising in the wake of natural disasters and it had been periodically updated. It facilitates the launching of relief operations immediately during emergencies.

3.2.5 INSTITUTIONAL STRUCTURE AT STATE LEVEL

STANDARD OPERATING PROCES

Similar to the mechanism in national level, disaster management has been institutionalized at state level also. In Delhi, numbers of initiatives have taken up to make disaster management institutionalized. In the state of Delhi, the Lieutenant Governor is the Chairman of Disaster Management Authority, the Chief Minister is Co-chairperson, and the concerned ministries are members.

At state level, office of Divisional Commissioner is the nodal office for management of various disasters. Divisional Commissioner, Delhi, Dept. of Revenue is the nodal authority to monitor and implement disaster management activities in the state. Divisional Commissioner is responsible to identify and nominate various nodal departments in case of emergency

(Figure: 3.1).

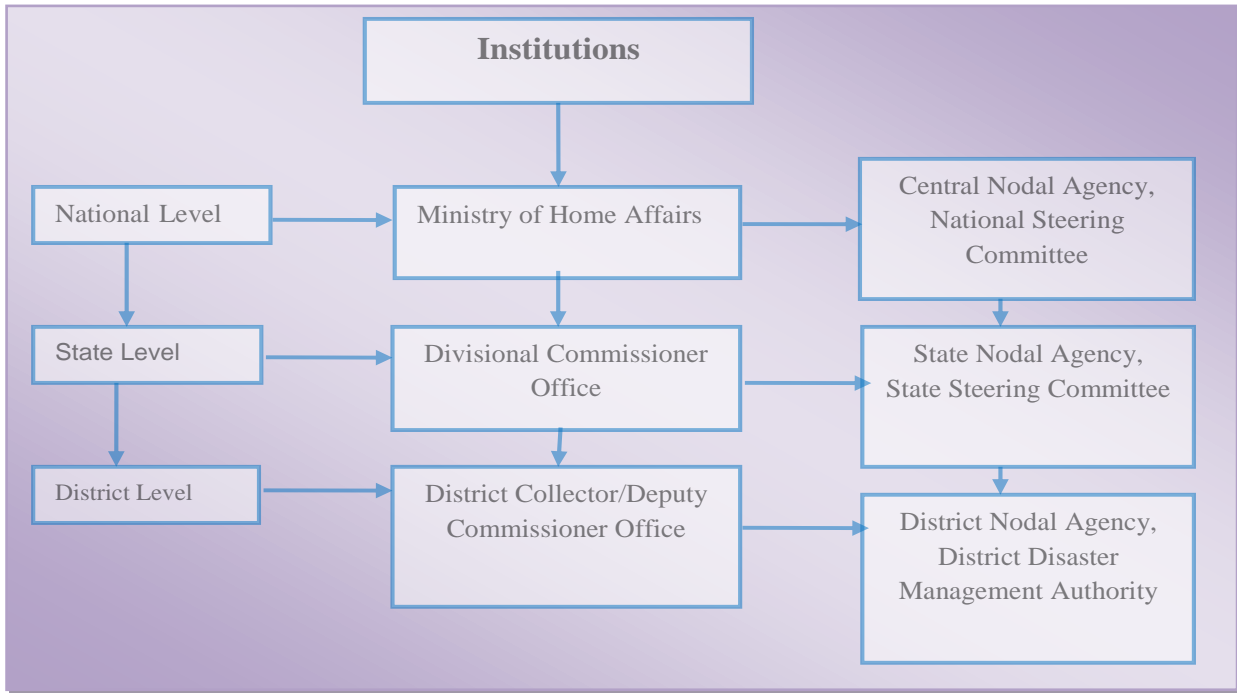


Figure: 3.1. Institutional Arrangements for Disaster Management

3.2.6 DELHI DISASTER MANAGEMENT AUTHORITY “STATE AUTHORITY”

It is an apex body headed by the Lt. Governor of Delhi and the Chief Minister and the concerned departments are members. The authority is governed under the chairmanship of Lieutenant Governor of Delhi and under coordination of Divisional Commissioner. The list of the members is given under (Table: 3.1).

TABLE: 3.1. DELHI DISASTER MANAGEMENT AUTHORITY

S.No.	Office- Bearers	Designation
1	Lt. Governor of National Capital Territory of Delhi	Chairperson, ex-officio
2	Chief Minister, Government of National Capital Territory of Delhi	Vice Chairperson, ex-officio
3	Minister –In-Charge (Revenue), Government of National Capital Territory of Delhi	Member, ex-officio
4	Chief Secretary, Government of National Capital Territory of Delhi/ Chairperson of The State Executive Committee	Member, ex-officio
5	Central Officer Commanding (HQ), Delhi Area	Member, ex-officio
6	Principal Secretary, Government of National Capital Territory of Delhi	Member, ex-officio
7	Commissioner of Police, Delhi	Member, ex-officio

8	Director of Local Bodies, Government of National Capital Territory of Delhi	Member, ex-officio
9	Joint Secretary, (Disaster Management) Ministry of Home Affairs, Government Of India	Member, ex-officio
10	Principal Secretary (Revenue) – Cum-Divisional Commissioner, Government of National Capital Territory of Delhi	Convener/member

3.3 THE VISION OF THE AUTHORITY ARE

- a) To create a dedicated body that will assess, plan and implement the vital aspects of disaster management (Prevention, mitigation, preparedness and response) for Delhi **(Figure:3.2)**.
- b) To ensure smooth coordination between Central and State Governments in the event of a disaster.
- c) To create a unified command, control and co-ordination structure for disaster management in Delhi, integrating the various wings and agencies of government that are necessary for emergency response, as well as for preparedness, mitigation and prevention activities.

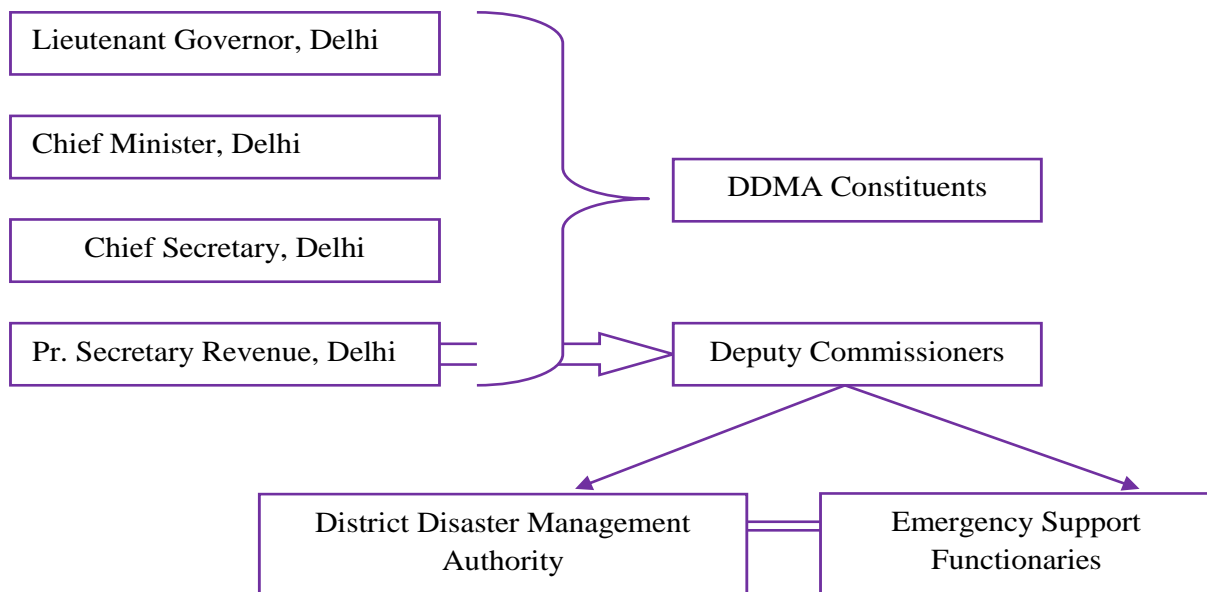


Figure: 3.2. Disaster Management Hierarchy in Delhi

3.3.1 STATE EMERGENCY OPERATION CENTRE

State EOC has started running 24x7 from 24th June 2008 at O/o Divisional Commissioner, Delhi. Emergency toll free number (1077) for Disaster has also been got activated by Chief Minister of Delhi.

3.4. DISTRICT LEVEL ORGANIZATION STRUCTURE

3.4.1 DISTRICT LEVEL MECHANISM IN North DISTRICT

At district level, District Disaster Management Authority has been constituted under the notification of The Disaster Management Act 2005. The power of sanction of relief is also vested with the officials of revenue department at different level depending upon the need. The District Magistrate ensures participation of district and state government in the response and recovery phase.

3.4.2 DISTRICT DISASTER MANAGEMENT AUTHORITY (DDMA) As per The Disaster Management Act 2005, each district has established a District Disaster Management Authority. The District Authority shall consist of the Chairperson and such number of other members, not exceeding seven, as may be prescribed by the State Government, and unless the rules otherwise provide, it shall consist of the following, namely (**Table:3.2,3**).

Table: 3.2. Government Body of District Disaster Management Authority (North District)

S.No	Setup of DDMA as per Disaster Management Act 2005	Designation
1	District Magistrate (Revenue) of The District	Chairperson, ex- officio
2	Elected Representative (MLA.As/Councilor) of The District Nominated By The Lieutenant Governor,	Co-Chairperson, ex- officio
3	Additional District Magistrate of The District/ Ex-Officio Chief Executive Officer of The District Disaster Management Authority	Member, ex-officio
4	Deputy Commissioner of The Police, Delhi District	Member, ex-officio
5	Zonal Deputy Commissioner, Municipal Corporation	Member, ex-officio
6	Chief District Medical Officer, Director of Health Services, Government of National Capital Territory of Delhi	Member, ex-officio
7	Superintending Engineer, Public Work Department, Government of National Capital Territory of Delhi	Member, ex-officio

TABLE: 3.3. GOVERNMENT BODY OF DDMA (NORTH)

S.No.	Name Of Chairperson	Designation	Contact Details
1	MS. R. MENEKA	District Magistrate(North)/ Chairperson, DDMA (North)	Email: dcnorth@nic.in Ph:011- 27203048, Mob .No:- 9811226267
2	SH. PAWAN KUMAR SHARMA (MLA)	Co-Chairperson, DDMA (North)/(4 Adarsh Nagar)	Ph:9811139625 Office no:- 8588833404
NAME OF MEMBER			
3	SH. PADMAKER RAM TRIPATHI	Addl. Distt. Magistrate (North) Ch. Executive Officer, DDMA (North)	Email: Northadm@nic.in Ph: 011-,27708716 Mob:- 9953916491
4	SH. RAHUL SAINI,	SDM(Model Town) DDMA(North) Nodal officer	Ph:-9818425426 Office no:-27681530 Email.sdmmodeltown3@gmail.com
4	Sh. PRANAV TAYAL	(DCP, Rohini District) Deputy Commissioner-Police- (Member)	Ph:011-27579001-2 Mob no:- 9818099051

5	SH. NITYANAND BHRAMAR	SE (C) (North) M Below ISBT Flyover, Kashmere Gate, Delhi-110006 (PWD)	Email.id- sepwddelhim32@gmail.com Ph: 23865966, 23865967/ Mob no:- 9968493143
6	SH. RANJEET SINGH	(D.C-Narela)	Ph: 27783285, 23220037, Mob:- 882669050
7	MS. NAMRITA NAYAR	CDMO (North)	Ph:011-23646687,9313292622

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

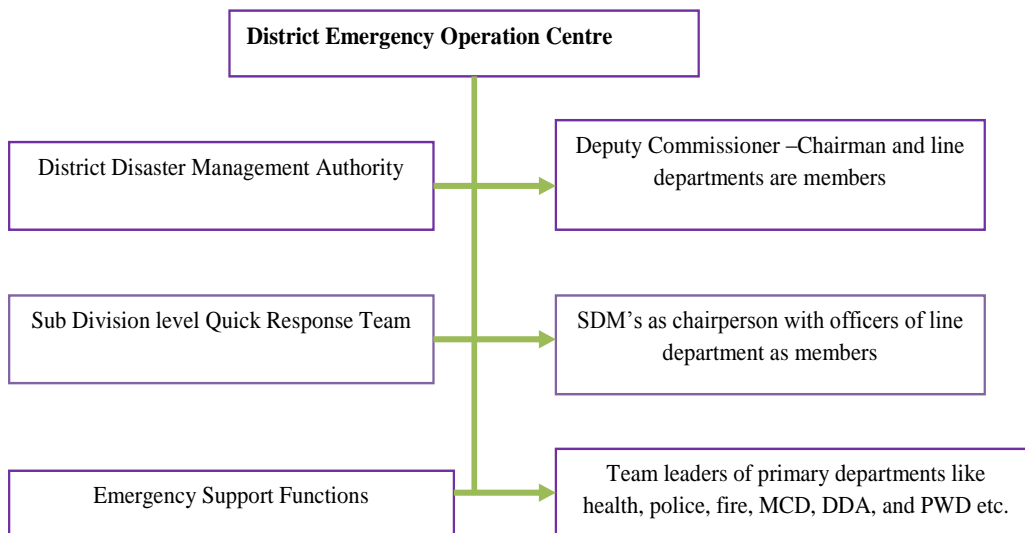


Figure: 3.3. Institutional Arrangements at District Level

The District Authority shall act as the district planning; coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the National Authority and the State Authority.

3.5 AS PER THE DM ACT, 2005, THE DISTRICT DISASTER MANAGEMENT AUTHORITY MAY

- ✚ Prepare a disaster management plan including district response plan for the district;
- ✚ Coordinate and monitor the implementation of the National Policy, State Policy, National Plan, State Plan and District Plan;
- ✚ Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities;
- ✚ Ensure that the guidelines for prevention of disasters, mitigation of its effects, preparedness and response measures as laid down by the National Authority and the State Authority are followed by all departments of the Government at the district level and the local authorities in the district;

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 46

-
- ✚ Give directions to different authorities at the district level and local authorities to take such other measures for the prevention or mitigation of disasters as may be necessary;
 - ✚ Lay down guidelines for prevention of disaster management plans by the department of the Government at the districts level and local authorities in the district;
 - ✚ Monitor the implementation of disaster management plans prepared by the departments of the Government at district level;
 - ✚ Lay down guidelines to be followed by the Departments of the Government at the district level for purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance therefore;
 - ✚ Monitor the implementation of measures referred to in clause 8;
 - ✚ Review the state of capabilities for responding to any disaster or threatening disaster situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation as may be necessary;
 - ✚ Review the preparedness measures and give directions to the concerned departments at the district level or other concerned authorities where necessary for bringing the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation;
 - ✚ Organize and coordinate specialized training programmes for different levels of officers, employees and voluntary rescue workers in the districts;
 - ✚ Facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, government and non-governmental organizations;
 - ✚ Set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public;
 - ✚ Prepare, review and update district level response plan and guidelines;
 - ✚ Coordinate response to any threatening disaster situation or disaster;
 - ✚ Ensure that the Departments of the Government at the district level and the local authorities prepare their response plans in accordance with the district response plan;

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 47

- ✚ Lay down guidelines for, or give direction to, the concerned Departments of the Government at the district level or any other authorities within the local limits of the district to take measures to respond effectively to any threatening disaster situation or disaster;
- ✚ Advise, assist and coordinate the activities of the Departments of the Government at the district level, statutory bodies and other governmental and non-governmental organizations in the district engaged in the disaster management;
- ✚ Coordinate with, and give guidelines to, local authorities in the district to ensure that measures for the prevention or mitigation of threatening disaster situation or disaster in the district are carried out promptly and effectively;
- ✚ Provide necessary technical assistance or give advice to the local authorities in the district for carrying out their functions;
- ✚ Review development plans prepared by the Departments of the Government at the district level, statutory authorities or local authorities with a view to make necessary provisions therein for prevention of disaster or mitigation;
- ✚ Examine the construction in any area in the district and, if it is of the opinion that the standards for the prevention of disaster or mitigation laid down for such construction is not being or has not been followed, may direct the concerned authority to take such action as may be necessary to secure compliance of such standards;

- ✚ Identify buildings and places which could, in the event of any threatening disaster situation or disaster be used as relief centers or camps and make arrangements of necessary items;
- ✚ Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;
- ✚ Provide information to the State Authority relating to different aspects of disaster management;
- ✚ Encourage the involvement of non-governmental organizations and voluntary social-welfare institutions working at the grassroots level in the district for disaster management.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 48

- ✚ Ensure communication systems are in order, and disaster management drills are carried out periodically;
- ✚ Perform such other functions as the State Government or State Authority may assign to it or as it deems necessary for disaster management in the district
- ✚ Provide early warning to everyone personally Via-SMS like Japan by coordination among govt. body and various telecom operator's

After constitution of District Disaster Management Authority, District Disaster Management Committee has been got dissolved as per Act but Emergency Support Agencies (ESF) are regularly meeting under the chairmanship of DC (North). These departments play a major role in preparedness and mitigation. Each nodal officer will be accountable to his own department in terms of the disaster management. District Project Officer and project coordinators have been appointed in the district to look after the day-to-day affairs of disaster management in the district.

The objective of ESF Department is to provide necessary guidance and inputs in preparedness, mitigation, and management planning through a participatory approach. It is responsible for all disaster management activities (prevention, mitigation, preparedness, relief, rehabilitation, reconstruction) at the district level, including formation and training of

Disaster Management Teams in specific areas such as warning dissemination, damage assessment, first aid & medical relief, search & rescue, trauma counseling, shelter management, water & sanitation, carcass disposal, relief & coordination etc. Capacity building and training activities at all levels, awareness generation; preparing District Disaster Management Plan; replication of activities at the sub-divisional and community levels, periodic organization of mock drills and disaster preparedness exercises at various levels involving co-ordination of the various agencies, are contributing significantly in attaining the ultimate goal of disaster management.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 49

3.6 DISTRICT EMERGENCY OPERATION CENTRE

Building structure of DM office is temporary and there is a proposal to transfer the office at new site. Therefore till that time office has identified a space for temporary EOC. The centre is well-equipped with various Information Technology (IT) based equipment's such as Computer with internet facilities. 24x7 Control Room is manned by trained Civil Defense volunteers and is equipped with Emergency Rescue Kits, TETRA wireless, Power Generator etc. Further, it may be strengthened with HAM equipment's, Early Warning Systems, etc. EOC (North) operates under the supervision of ADM (North).

The EOC is also well connected with other control rooms of the Government Departments. A resource data base inventory needs to be uploaded in IT network. The resource inventory would include all the information related to availability and location of the equipments, vehicles and manpower available with the various department such as Fire service, Police Service, Health Department, Municipal Corporation, Food and Civil Supply, Transport Department, Road and Building, Public Welfare Department etc. This inventory would be helpful in mobilizing the available resources within various districts and states at the time of emergency.

3.7 PARTNERSHIP WITH SOCIAL ORGANIZATIONS

North district has been able to achieve partnership with various social organizations. Civil Defence, NCC, NYKS, St. John Ambulance, Residential Welfare Associations, C.A.T.S , Dera Sacha Sauda etc are the important organizations who are working dedicatedly in front of providing their services for disaster management to the mankind. Civil Defence, and NYKS are playing instrumental role in generating awareness and facilitating community planning in the district. The District Magistrate (North) Office is taking special initiatives to encourage NGOs to participate in various awareness generation activities and community planning exercises.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 50

3.8 EMERGENCY OPERATION CENTRE

The District North has an exclusive Emergency Operation Centre (EOC) at District Head Quarter other than the revenue control room. The District EOC is functional on 24X7 basis and is managed by the following officials:

1. District Project Officer
2. Project Coordinator
3. Data Entry Operator
4. Civil Defence Volunteers on Control Room duty.

The structure of District EOC is earthquake resistant. The centre is well-equipped with various Information Technology (IT) based equipments such as Computer with internet facilities, wireless set etc.

Further it may be strengthened with HAM equipments, Power Generator sets, Early Warning Systems, Mobile Control Rooms, Emergency Rescue Kits, Emergency Vehicle, Mobile First-Aid Post, and Ambulance etc.

Considering the unique responsibility of the District Emergency Operation Centre, the equipments provided to it shall not be taken to any purpose other than disaster management. This centre is intended to coordinate all disaster related activities in the district starting from preparedness to rehabilitation and reconstruction.

In case of any emergency, there shall be permanent sitting place for each Emergency Support Functionaries (ESFs) in the EOC and they shall be provided with sufficient telephone connections. Only the Nodal ESFs are to sit in the EOC and coordinate the disaster management activities in the district with their support agencies. There shall be dedicated telephone lines and other communication facilities.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 51

3.9 ROLE OF EMERGENCY OPERATION CENTRE IN NORMAL TIME

As per section 29 D of DM ACT, 2005 the Delhi Disaster Management Authority has provided DDMA (N) a District Project Officer (Disaster Management) as officer in charge of EOC for carrying out the functions of district authority. The DPO will be responsible for the effective functioning of the EOC. Responsibilities of the EOC in charge in normal time include:

1. Ensure that all equipments in the EOC are in working condition;
2. Collection data on routine basis from line departments for disaster management
3. Develop status reports of preparedness and mitigation activities in the district;
4. Ensure appropriate implementation of District Disaster Management Plan
5. Maintenance of data bank with regular updating
6. Activate the trigger mechanism on receipt of disaster warning/occurrence of disaster.

3.10 ROLE OF EMERGENCY OPERATION CENTRE DURING DISASTER

Based on the message received from the forecasting agencies, warning has to be issued for the public and the departments, which play a vital role during emergencies. Issuing correct and timely warning would be one of the prime responsibilities of EOC. For effective dissemination of warning EOC should have a well-planned line of communication. The DM shall be the competent authority to disseminate a disaster warning. The warning on occurrence of a disaster will also be communicated to:

1. All Emergency Support Functions
2. Members of DDMA-N/ ESFs

3. Hospitals in the disaster area/CAT etc
4. Office of Divisional Commissioner
5. State Relief Commissioner
6. Emergency Operation Centre in the neighboring districts
7. National/State Emergency Operation Centre
8. People's representatives from the district

Apart from this the District Emergency Operation Centre must arrange desks for the Emergency Support Function in its complex for better coordination and help. Simultaneously the onsite EOCs are to be set up with the help of the district EOC. Constant communication between the State EOC, District EOC and Onsite EOC is mandatory for updates on the disaster, which happened.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

3.11 INCIDENT RESPONSE SYSTEM IN North DISTRICT, DELHI (IRS)

3.11.1 INCIDENT RESPONSE SYSTEM

The emphasis in Disaster Management has shifted from relief centric approach to proactive regime, and as such, a well-coordinated response with clockwork precision becomes one of the most important goals. Incident Response System has been developed in this regard

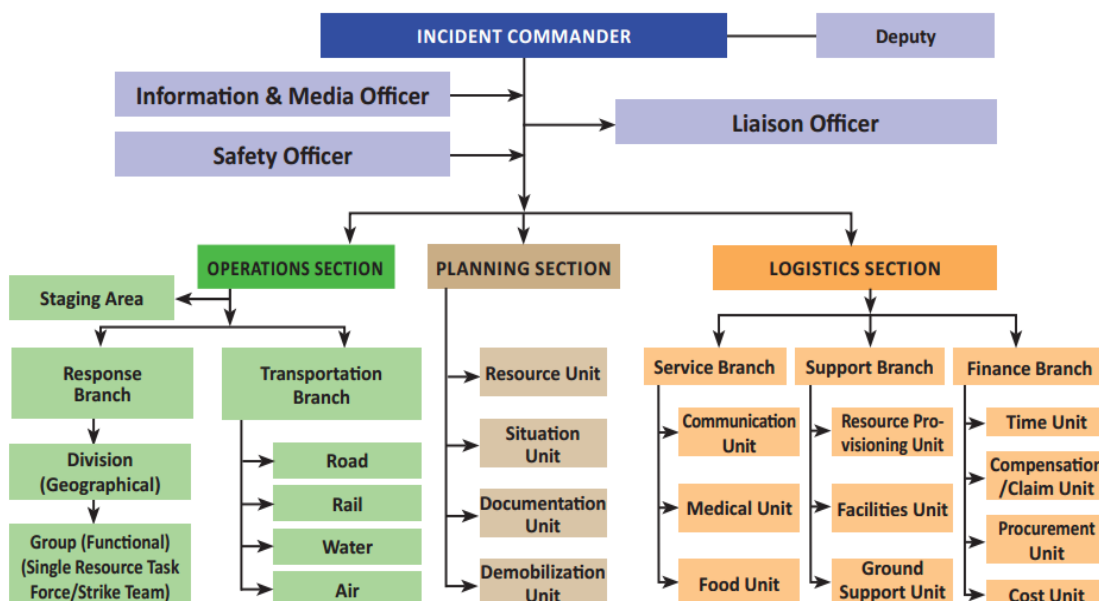


Figure: 3.4. Structure of Incident Response Team

All team leaders will be in the rank of ADM/Line Department Heads in the district who are senior level officer.

- If the disaster is in more than one district, the DC/DM of the district that has maximum loss will act as Incident commander.
- In case all the districts are more less equally affected, then the Divisional Commissioner of Delhi will act as Unified Incident Commander and the DC/DM as Incident Command in his/her own district.
- It is mandatory that all line departments/Organizations/individuals should obey the command of the Incident Commander as condition demands. He can divert all mechanisms and resources in the district to fight against a scenario leading to disaster/calamity in the district.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 53

NOTE

- The SDMs shall not be given any responsibility in the incident command chain since they are to look after the onsite EOC in their territory or as assigned to the affected areas as well as they are the Team Leaders of Incident Management Teams (IMTs) in each Onsite Emergency Operation Center.
- The Civic bodies like the MCD, District Health Department, District Senior/junior Accountant or any nodal officer capable of doing the same can be given this assignment. This is the sole discretion of the Incident Commander to appoint the Section chief. These section chiefs are vested with commanding authority and logistic assistance to deliver the concerned responsibility.

3.12 MAJOR FUNCTIONS OF INCIDENT COMMANDER

The general functions of the Incident Commander are as follows:

- To create and integrate communication flow during emergency period.
- To manage incident scene and report through integrated and coordinated command plan.
- To facilitate procedures and protocols according to ESF Departments within District as well as State and Central Government.

- To put the communication system in place to receive, record, acknowledge incoming and outgoing information of any form during the disaster.
- To manage resources as per their availability such as– distribution of relief material with ESF agencies required during emergency etc.
- Monitoring functional areas during and post disaster phase.

Besides these general functions, the Incident Commander has to perform certain specific functions. They are:

1. Size up the situation
2. Determine if human life is at immediate risk
3. Establish immediate objectives

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

4. Determine if there are enough and right kind of resources on site and/or ordered
5. Develop immediate action plan
6. Establish an initial organization
7. Review and modify objectives and adjust the action plan as necessary

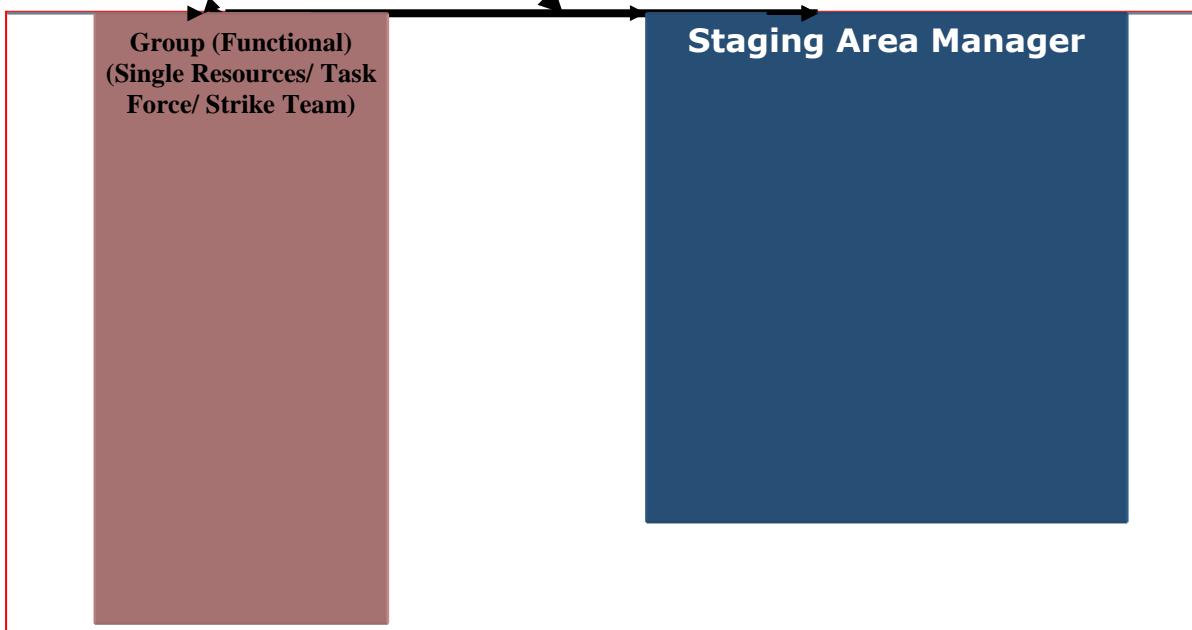


Figure: 3.5. Operation Section in IRS

3.13 MAJOR FUNCTIONS OF OPERATION SECTION CHIEF

1. Responsible for management of all operations directly applicable to primary mission
2. Activates and supervises organization elements in accordance with the Incident Action Plan and directs its execution
3. Determine need and request additional resources
4. Review suggested list of resources to be rebased and initiate recommendation for release of resources
5. Report Information about special activities, events or occurrences to Incident Commander
6. Maintain Unit / Activity details

Operation Chief shall be assisted by the following positions to perform above mentioned duties:

(a) STAGING AREA MANAGER

Responsible for maintaining all activities within a staging area.

(B) BRANCH DIRECTOR

Area under the direction of Operation Section Chief and are responsible for the implementation of the appropriate portion of the Incident Action Plan.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 55

(c) DIVISION SUPERVISOR

Implements Immediate Action Plan for the division and reviews division assignments and incident activities with subordinates and assign tasks.

(d) EMERGENCY SUPPORT FUNCTIONS

ESFs shall be activated under Operation Chief. On the receipt of information Team Leaders (TLs) would take up following actions:

On the receipt of information about the off-site emergency Team Leaders (TLs) will activate their own Emergency Support Functions (ESFs)

- a. TLs will join IC and Operation Chief (ADM-N) in EOC to ensure coordination and to provide assistance
- b. TLs would also move to the site for better operational control
- c. TLs will call the nodal officers of supporting agencies and immediately deploy the quick response teams (QRTs) from the location of nearest to the incident site
- d. They further reinforce their teams by deploying additional resources from surrounding areas so the effective first respond can be rendered at site
- e. A high alert would be notified to move additional resources and manpower to the incident site

- f. According to the feedback report additional TLs will take decision of movement of more team and manpower. In some of cases TLs may need to mobilize resources from nearby districts or states. In such cases chiefs will organize this through respective head quarters.

(e) TRANSPORT BRANCH DIRECTOR

This supports the efforts by arranging through different mode the transportation of resources, persons and relief material. It is headed by a Transport Branch Director and Group-in-charges for Road, Rail, Water and Air Operations (**Figure: 3.6**

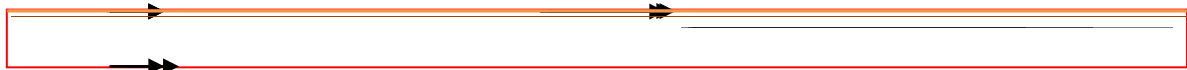


Figure: 3.6. Planning Section in IRS

3.14 MAJOR FUNCTIONS OF PLANNING SECTION CHIEF

- Collection, evaluation, dissemination, and use of information about the development of incident and status of resources. Information is needed to
 - Understand the current situation
 - Prepare alternative strategies and control of operations

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

- Supervise preparation of Immediate Action Plan (IAP)
- Provide input to IC and Operation Chief in preparation of IAP
- Reassign of service personnel already on site to other positions as appropriate
- Determine need for any specialized resources in support of the incident
- Establish information requirements and reporting schedules for Planning Section Unit (e.g. Resources, Situation Unit).
- Compile and display incident status information
- Oversee preparation and implementation of Incident Demobilization Plan.
- Incorporate Plans (e.g. Traffic, Medical, Site Safety, and Communication) into IAP. Maintain Unit / Activity details.
- Other Functions include, briefing on situation and resource status, setting objectives, establishing division boundaries, identifying group assignments, specifying tactics/safety for each division, specifying resources needed by division, specifying operations facilities and reporting locations – plot on map and placing resource and personnel order

(A) RESOURCE UNIT LEADER

Responsible for maintaining the status of assigned resources (Primary and support) at an incident. This is achieved by overseeing the check-in of all resources, maintaining a status

keeping system indicating current location and status of all resources and maintenance of a master list of all resources e.g. by key supervisory personnel, primary land support resources etc.

- Establish check-in function at incident locations.
- Prepare Organization Assignment List & Organization chart.
- Maintain & post the current status and location of all resources
- Maintain master list of all resources checked in at the incident.

B) CHECK-IN/STATUS RECORDER

Needed at each check-in location to ensure that all resources assigned to an incident are accounted for:

- Prepare check-in form, resource status boards and status display board.
- Establish communications with the communications Centre and Ground Support unit.
- Post signs so that arriving resources can easily find the check in locations
- Record check-in information on check-in lists
- Transmit check-in information to Resources Unit on regular pre-arranged schedule/ as per need.
- Receive, record and maintain status information for single resources, strike teams, task forces, overhead personnel
- Maintain file of check-in lists.

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 57

(C) SITUATION UNIT LEADER

- Begin collection and analysis of incident data as soon as possible.
- Prepare post or disseminate resource and situation status information as required, including special requests.
- Prepare incident status summary
- Provide photographic services and maps if required.

(D) DISPLAY PROCESSOR (*DRAFTSMAN-COMPUTER TRAINED*)

Responsible for display of incident status information obtained for field observers, resource status reports, aerial photographs etc.

- Determine:-
 1. Location of work assignment
 2. Numbers, types and locations of displays required
 3. Priorities
 4. Map requirements for incident
 5. Time limits for completion
 6. Field observer assignments & communication means
- Obtain necessary equipment and supplies

- Obtain copy of LIAP for each period
- Assist SITL in analyzing and evaluating field report
- Develop required displays in accordance with time limits for completion.

(E) FIELD OBSERVERS

Responsible to collect situation information from personal observations at the incident & give it to situation team leader.

- Determine:-
 - Location of assignment
 - Type of information required
 - Priorities
 - Time limit for completion
 - Method of communication
 - Method of transportation

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768(24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

- Obtain copy of IAP for the operation period
- Obtain necessary equipment & supplies for his use.
- Collect data like
 - Perimeter of location of hot spots etc.
 - Be prepared to identify all facilities location (e.g. division boundaries)
 - Report information to SITL

(F) DOCUMENTATION LEADER

Dy. Chief Inspector of factories and Tehsildar

- Arranging for complete documentation of proceedings at the incident site
- Maintaining record of what happened and what actions were taken
 - i. Recovering response costs and damages
 - ii. Setting the record straight where there are charges of negligence or mismanagement resulting from the incident
 - iii. Reviewing the efficiency and effectiveness of response actions
 - iv. Preparing for future incident response
 - v. Videotaping of the entire combat the rescue operations

(G) DEMOBILIZATION LEADER

- Responsible for developing incident DMOB Plan
- Review incident resource records to determine the likely size and extent of DMOB effort ⇒ addl. Personnel, work space and supplies needed
- Coordination DMOB with agency representatives
- Monitor ongoing operation section resource needs
- Identify surplus resources and probable release time
- Develop incident check out for all units

(H) TECHNICAL COORDINATORS

Two to Four experts in geo-sciences, fire safety, industrial safety and health shall be nominated as technical experts. Major issues shall be addressed by them are:

A. FORMULATION OF RESPONSE OBJECTIVES AND STRATEGY

TC shall assess the incident before taking actions and formulate realistic response objectives. The assessment shall be based upon following points:

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 59

- Pre-incident plans
- Information related to material involved, container involved, vehicle and structure involved and atmospheric conditions affecting the incident
- Environmental monitoring and sampling data (if available)
- Public protective actions to be initiated
- Resource requirements (trained manpower, specialized protective gear and other equipments)
- Hazards posed to the nearby areas

On the bases of above-mentioned points they will formulate a defensive strategy to protect the public and environment from the immediate spill or discharge area.

B. IDENTIFICATION OF HAZARD ZONE

Technical experts shall be able to determine real time contaminant concentrations at various distances downwind. They shall be responsible to estimate downwind concentrations and feeding the information to the Team leaders of various ESFs for further response. To estimate the hazard zone in a particular emergency scenario, the technical coordinator shall

place the transparency of the vulnerability template with its x-axis along the prevalent wind direction and start point on the source of release on the scaled map.

C. ESTABLISHMENT OF HAZARD CONTROL ZONES AT INCIDENT SITE

Technical expert should determine the zones varying according to the severity of hazard. For example Hot Zone, Warm Zone and Cold Zone. According to the zones local commandant post and rescue operations should take place.

D. SUPPRESSION OF HAZARDOUS GAS OR VAPOR RELEASES

Technical experts should also identify response measures to any other probability of outburst due hazardous gas and vapour release directly in the atmosphere from the ruptured and punctured containers or from the evaporating and boiling pools of liquid that have been formed due to chemical spill.

3.15 SELECTION OF PERSONAL PROTECTIVE EQUIPMENTS (PPES)

Technical persons should able to guide the QRTs entering the hot zone on the correct type of PPEs as it is necessary to ensure that the materials from which clothing is fabricated will not be penetrating by the spill substance.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 60

3.16 MAJOR FUNCTIONS OF LOGISTIC SECTION CHIEF

The logistic section chief is responsible for providing facilities, services and materials in support of incident. Participants in development and implementation of IAP and activates and supervise Logistics Section (**Figure: 3.7**).

- Assign work locations and tasks to section personnel
- Identify service and support requirements for planned and expected operations
- Coordinate and process requests for additional resources
- Provide input to / review communication plan, traffic plan, medical plan etc
- Recommend release of unit resources

- Maintain Unit/ Activity details

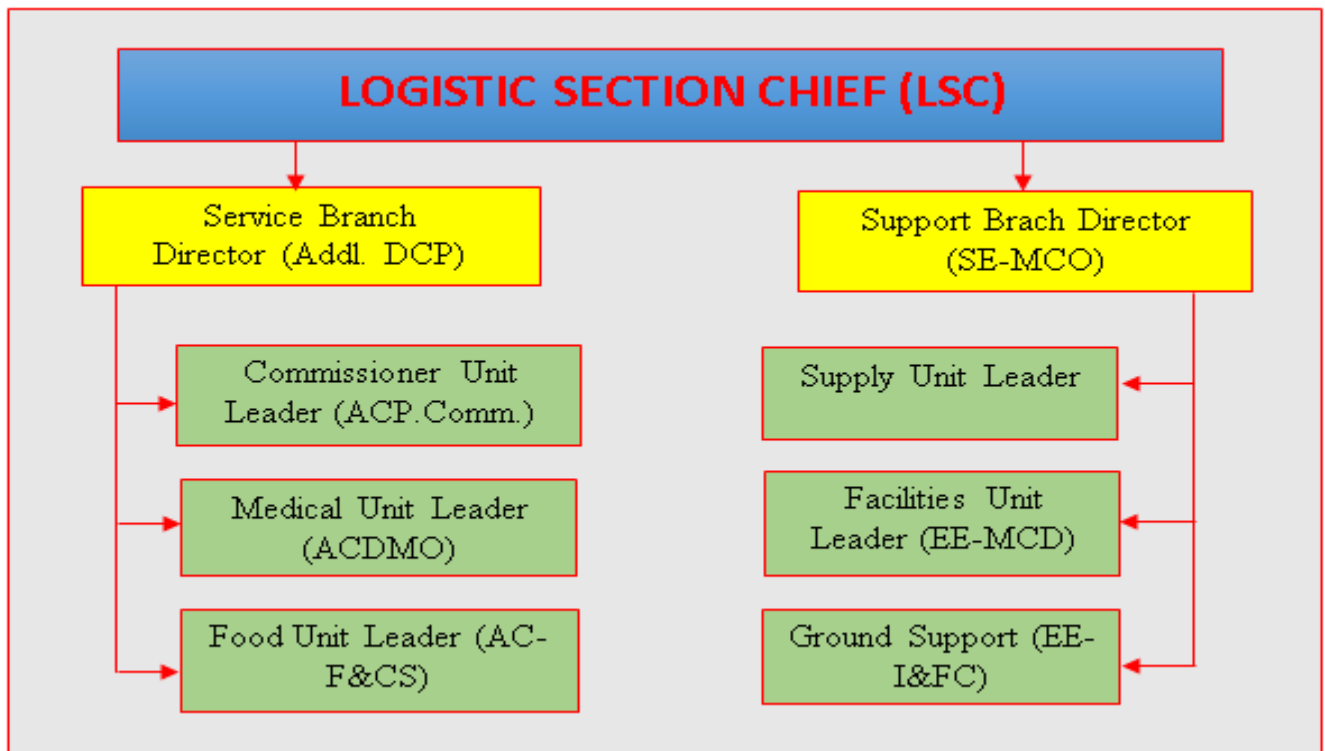


Figure: 3.7, Logistic Section in IRS

3.17 Following are the team members who will assist him in the process under service and support branch.

(A) COMMUNICATION UNIT LEADER

- Prepare & implement incident wireless communication plan
- Ensure that incident communication centre & Message centre are established
- Establish appropriate communication distribution/ maintenance locations within base/ camps
- Ensure communication systems are installed and tested

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

- Ensure equipment accountability system is established
- Ensure personal portable wireless sets from cache is distributed as for incident wireless communication plan
- Provide technical information required on
- Media managed
 - Adequacy of communication system currently in operation
 - Geographic limitation on communication system
 - Equipment capabilities / limitations
 - Number and types of equipments available
 - Anticipated problems in the use of communication equipments

- Ensure equipments are tested and repaired
- Recover equipments from released units.
- Responsible to receive and transmit wireless and telephone messages among personnel to provide dispatch services at the incident
- Set up message centre location as required
- Receive and transmit messages within and external to incident
- Maintain files of general messages
- Maintain a record of unusual incident occurrences.

(B) MEDICAL UNIT LEADER

Responsible for

- Development of medical response plan
- Respond to requests for medical side and transportation for injured & ill incident personnel medical supplies.

(C) FOOD UNIT LEADER

Responsible for supply needs for the entire incident including camps, staging areas.

- Determine food & water requirements
- Determine method of feeding to best fit each facility or situation
- Obtain necessary equipment & supplies and establish working facilities
- Order sufficient food & potable water from the supply unit
- Maintain an inventory of food, water
- Maintain food service areas & ensure that all appropriate health & safety measures are being followed.
- Supervise caterers, cooks and other food unit personnel.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 62

(D) SUPPLY UNIT LEADER

Primarily responsible for ordering personnel, equipment & supplies receiving and storing and storing all supplies for the incident maintaining an inventory of supplies servicing non-expendable supplies to equipment.

- Determine the type & amount of supplies en route
- Order, receive, distribute and store supplies & equipment
- Receive and respond to requests for personnel, supplies and equipment
- Maintain inventory of supplies & equipment.
- Service reusable equipment

(E) ORDERING MANAGER

- Obtain necessary order forms
- Establish ordering procedure
- Establish name and telephone number of personnel receiving orders
- Get names of incident personnel who leave ordering authority
- Check on what has been already ordered
- Orders when possible
- Place orders in a timely manner
- Keep time and location for delivery of supplies
- Keep receiving and distribution manager informed of orders placed

(F) RECEIVING & DISTRIBUTION MANAGER

- Organize physical layout of supply area
- Establish procedures for operating supply area
- Set up a system for receiving and distribution of supplies and equipment
- Develop security requirement of supply area

(G) FACILITIES UNIT LEADER

- Primarily responsible for the layout and activation of incident facilities e.g. base, camps, ICP.
- Provides rest and sanitation facilities for incident personnel
- Manage base and camp operations (to provide security and general maintenance)

(H) GROUND SUPPORT UNIT LEADER

- Support out of service resources.
- Transportation of personnel, supplies, food & equipment.
- Fuelling, service, maintenance and repair of vehicles and other ground support equipment.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

- Implementing traffic plan for the incident

The other roles of this section includes managing

1. Incident Command Post
2. Staging Areas
3. Base
4. Camps

3.18 STAGING AREAS: i.e. temporary location where personnel and equipment are kept while waiting assignment

- Shall be located within 5 min travel time to the area of incident.
- To be set up to meet specific functional needs

- Shall include temporary filling and sanitation facilities

3.19 ADVANTAGE OF USING STAGING AREAS

- ✚ Provide locations for immediately available resources to await assignment
- ✚ Provide for greater accountability by having available personnel and resources at one safe location
- ✚ Minimize excessive communication of resources calling for assignment
- ✚ Allow 1C/OPS to properly plan for resources use and allow for contingencies

BASE

- ✚ All primary services and support activities for the incident are located and performed at the base (one for each incident)
- ✚ Logist IRS section will be located at the base
- ✚ All uncommitted equipment & personnel support operations are located here
- ✚ Managed by Base Manager (within facilities units) in logistic sections

CAMP

- ✚ Temporary locations within general incident area which are equipped and staffed to provide sleeping, food, water and sanitary services to incident personnel
- ✚ Camps are separate facilities – not located at the base.



Figure: 3.8. Finance/Administration Section in IRS

3.20 MAJOR FUNCTIONS OF FINANCE SECTION CHIEF

Responsible to take decisions related to financial and cost related matters under given period (**Figure: 3.8**).

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Following positions would be helping him in conducting his duties:

- Time Unit Leader:** Responsible for status recording and equipments time taken recording
- Procurement Leader:** Responsible for administering all financial matters pertaining to vendor contracts
- Cost Unit Leader:** Responsible for collecting all cast data, performing cost effectiveness analysis & providing cost estimates & cost saving recommendations for the incident

3.21 ONSITE EMERGENCY OPERATION CENTERS

Onsite Emergency Operation Centre (OEOC) are complimentary units to District Emergency Operation Centre in the District (EOC), which will operate close to the disaster sites and will be linked directly with the District Emergency Operations Centre.

These strategic locations will help to cover operations in a calamity in the district in maximum five minutes time.

The concerned SDM is the Commander-in-chief at this level and is responsible of coordinating its functions as per the direction of the Incident Commander with the help of the Incident Management Teams (IMT) with him/her. The EOCs are physically activated only in time of a disaster. The concerned SDM of the EOC unit would be responsible to execute activities at disaster site; however the tasks would be controlled and coordinated from EOC through nodal desk officers.

3.22 TRIGGER MECHANISM

As soon as Emergency Operation centre would get the information about any emergency, the staff on duty in EOC will pass the information to the DM (N) and seek for his instruction for further actions. If the information pertains to the occurrence of a disaster in any part of the district, the staff on duty will also try to inform DDMA members, Emergency Support Functionaries-team leaders, major Hospitals and State Disaster Management Authority etc. The staff on duty will also be responsible to reclaim information related to type, magnitude and location of the disaster and also inform it to responsible authorities. The EOC in-charge will also inform all the details to Divisional Commissioner and State EOC (Figure: 3.9). All the desk officers/team leaders and Incident Command Team members will also be informed to immediately report at District EOC. Incident Command team and Desk officials would respond as per their standard operating procedures and directions of Incident Commander(IC).

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

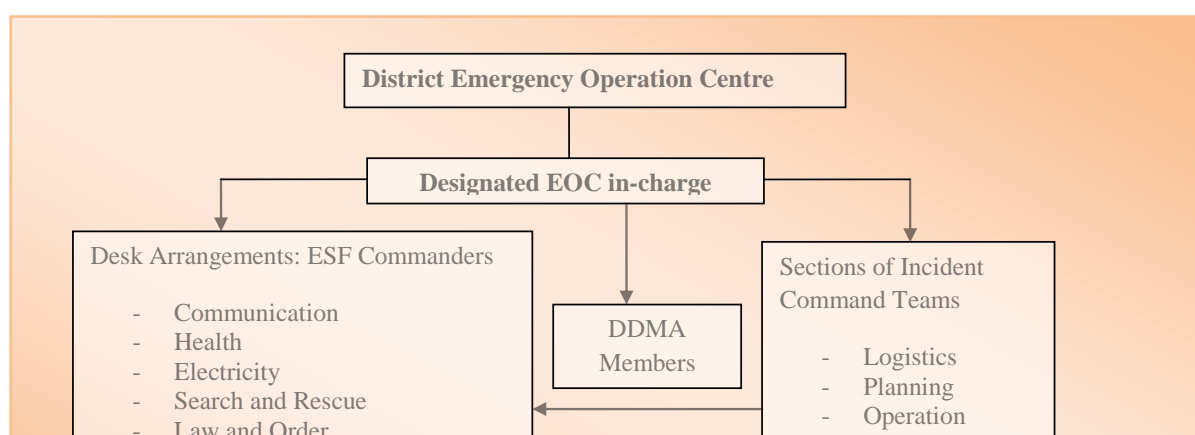


Figure: 3.9.Trigger Mechanism for District EOC

3.23 EMERGENCY SUPPORT FUNCTIONS (ESF)

This is an additional feature in the new mechanism of disaster management. A concerted effort of various agencies is required to manage a disaster. Usually the agencies are able to perform the required function, but lack of proper coordination leaves them under-utilized. To avoid this type of problem, a new mechanism called Emergency Support Functions (ESFs) are formulated in North District.

The basic structure of the ESF depends up on the functions they are supposed to perform. Altogether there are 12 ESFs in district North, each ESF is led by the nodal department in the district and assisted by the other parallel civic bodies.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

3.24 DISASTER MANAGEMENT TEAMS

Each ESF should be well prepared to set up its coordination desks in all three Onsite EOCs as well as in the District EOC at the time of disaster. With this intention, they have to designate a nodal officer and an alternate nodal officer with specific responsibility. Besides they have to constitute a Head Quarter Team as well as Quick Response Teams (QRTs) and minimum three Field Response Teams (FRTs) with at least five members each.

The name and address of the team members shall be updated time to time with latest contact number. It is the function of the Working Group - III for plan review and updation, to coordinate the disaster management teams. The supporting agencies will directly report to the nodal agency and the nodal agency will report to the Incident Commander regarding its functions.

3.25 CONCLUSION

At national level-NDMA has been constituted. An emergency control room along with crises management committee and groups has been constituted. At state level, Office of Divisional Commissioner has been identified as focal point for disaster management. DDMA, State EOC, State steering committees are some of the important organizations laid down to regulate disaster management activities in the state. North District has played a vital role in institutionalizing disaster management within various government and non-government agencies. District has been able to develop a separate control room from where all the disaster management related activities are getting regulated.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 4

PREVENTION AND MITIGATION MEASURES

4.1 INTRODUCTION

Disaster Mitigation contributes to lasting improvement in safety and is essential to integrate disaster management in mainstream planning. Broadly mitigation ways can be divided into two parts i.e. Structural measure and Non-Structural measures. Structural

measures undertake to strengthen buildings, lifelines and infrastructure to withstand any hazard. Non-structural measures emphasis on land-use planning, programmes for sustaining awareness, dissemination of information materials on do's and don'ts at the time of disaster. Once the area has been identified as hazard prone, it becomes important that the government and the community should practice these above-said measures. Based on this ideology, mitigation plan may vary according to hazards. The North district is being considered prone to earthquake and fire related hazards, incidences of building collapse are also very frequent in District North, Delhi.

4.2 DISASTER MITIGATION MEASURES

As it has been discussed in the previous chapters that district North lies in Zone IV. Risk gets compounded when hazard meets with Vulnerabilities as high dense population, weak physical structures and conventional construction technologies. Similarly, the North District is also vulnerable to high degree of Fire, Road Accidents, and Drowning. Although, district has not faced any high intensity earthquake but studies envisages that Delhi can receive an earthquake of 6 to 7.5 richer scale band.

Earthquakes can destroy buildings and infrastructure with secondary effects i.e. fires, embankments failures, release of poisonous gases, release of nuclear radiations, liquefaction etc. Therefore it is important to consider both primary and secondary effects into earthquake disaster mitigation planning following NBC (National building codes) 2004, to make strong and resilient building to lessen stop causalities and injuries.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 68

So, an effective mitigation planning is necessary to reduce the risk involved in the district. For efficient disaster mitigation, the pre-disaster phase needs to be utilized for planning and implementing preventive measures on the one hand and working on preparedness activities on the other. Disaster is caused due to failure of manmade structures, lack of preparedness and awareness. So far, disaster mitigation efforts are mostly reactive. (HPC, 2001).

4.3 STRUCTURAL MITIGATION MEASURES

- ✚ It is immensely important for the planning community to respond towards disaster management positively. The Third Master Plan for Delhi-2022, which is under preparation, should clearly come out with provisions prescribed in the amended legislations related to Disaster Management. Urban disaster management is intimately connected to the wholesome process of urban development and therefore needs a sincere incorporation in the development planning itself. The industrial relocation, unauthorized-regularization issue, slumming, over densification and continuous influx of population to Delhi are some of the open concerns and these besides being a planning challenge are a concern for disaster management.
- ✚ The North District shall take steps for structural mitigation for Disaster Management. The departments that are associated with development of residential and commercial plots shall stick to the NOC norms. The Building Codes shall be strictly enforced in the North District. Only seismically oriented engineers, contractors and masons shall be given certificates for multi storied constructions. Simultaneously retrofitting will also be promoted with expert advice. The two possible structural measures for disaster protection are
 - ✚ Retrofitting of the existing buildings and during earthquake and wall collapse situation.
 - ✚ Construction with Earthquake Resistant Technology.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

TABLE:4.1. CATEGORIZATION OF HOUSING TYPOLOGY IN THE DISTRICT

S. No	Categories	Construction description	Resistance
1	Slums and JJ Clusters /unauthorized colonies etc	Weak constructions	May get damaged due to moderate intensity of earthquake
2	Non-engineered buildings	Brick construction Masonry buildings	May damage due to moderate to high intensity of earthquake

3	Engineered Buildings	R.C.C constructions with good designs but not necessarily earthquake resistant	May damage due to high intensity of earthquake.
---	----------------------	--	---

** Note: Above table is based on reconnaissance survey and general observations*

The Bureau of Indian Standards (BIS) has developed its first code on a seismic design in 1962 (IS:1893-1962). However, till date there is lack of efficient legal framework to implement seismic code provisions in Delhi. As a result most of the building in Delhi does not meet codal requirements on seismic resistance. Even if new constructions may fulfill the requirement of seismic code provisions in their buildings, still a very large inventory of old buildings will remain deficient for seismic safety. Therefore we need to develop a rational seismic retrofitting plan for the government owned buildings and private constructions on priority bases. Generally public buildings are given first priority because they are lesser in number and at the time of disaster people can take shelter in these public buildings. Some of the important public buildings are schools, hospitals, government officers, community halls, fire and police stations, cultural buildings, communication buildings, cinema halls, meetings halls, historical monuments and important installations etc. The proposal for certification of such critical buildings from the point of view of disaster resilience is under consideration.

4.4 RETROFITTING

For an existing building, retrofitting or seismic strengthening is the only solution to make it disaster resistant. In the District, all lifeline buildings such as major hospitals, Schools, Colleges, District Administration offices and other vital installations shall be retrofitted. For retrofitting, a panel of experts shall be approached for assessing the structure and to suggest the type of retrofitting required.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

4.5 EARTHQUAKE RESISTANT CONSTRUCTION

- Promotion of Earthquake resistant construction mainly includes construction safety, quality control and proper inspection. Previously there were no specific guidelines on earthquake resistant constructions and seismic strengthening. Due to this very fact, most of the buildings till 1990s were built without any safety measures. But in the present scenario, there are building byelaws and guidelines to construct earthquake

resistant structures. Civic bodies like MCD, DDA and PWD in the District shall try to enforce these laws. In addition to these the following points have been found in the context of District

- Pockets with high rise buildings or ill-designed high-risk areas exist without specific consideration of earthquake resistance.
- Similarly, unplanned settlements with sub standard structures are also prone to heavy damage even in moderate shaking.
- So far as housing is concerned, vulnerability analysis has never been carried out and preliminary estimate of damages is not available for strengthening of structures under normal development improvement schemes
- All construction, except load bearing buildings up to 3 storeys's, shall be carried out under the supervision of the Construction engineer on Record or Construction Management Agency on Record for various seismic zones. They shall be given a certificate based on the norms on completion of the construction. All the constructions for high-rise buildings, higher than seven storey's, public buildings, and the special structures shall be carried out under quality inspection programme prepared and implemented under the Quality Auditor on Record or Quality Auditor Agency on Record in Seismic Zones IV like Delhi.
- Time to **time** HRVC of building and other high rise structures in district
- Illegal construction, encroachments, unapproved additions, alterations etc of residential buildings and conversion of residential building to commercial purpose etc shall be checked by the District Administration with strict measures. These unauthorized activities may lead to disasters in that particular area.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 71

4.6 NEED OF SYSTEMATIC STUDY TO EVALUATE CONSTRUCTION TYPOLOGY IN THE DISTRICT

As per Vulnerability Atlas of India (2007), out of 33.8 Lakh buildings in Delhi, over 31 Lakh are at medium risk of being affected by an earthquake, while 1.46 Lakh are at high risk. Out of 5,23,703 houses in North district, only 32,381 are concrete (Census of India, 2011). Systematic studies are needed on vulnerability of different types of constructions in

the area. This will require experimental studies to evaluate strength, stiffness, and ductility of different types of constructions as well as analytical studies such as the Push over Analysis. Experiences of past earthquakes both in India and abroad have clearly outlined the vulnerability of multi-storey reinforced concrete buildings if not designed and constructed correctly. Huge number of multi-storey reinforced concrete buildings in Delhi, particularly those with open ground storey to accommodate vehicle parking, could also pose a major challenge in the event of a strong earthquake.

4.6.1 CONSTRUCTION CONTROL

The best mitigation measure is to build strong built-in environment in the district. The district must ensure the implementation of building codes. The quality of buildings measured by their seismic resistance has its fundamental importance. Minimum designs and construction standards for earthquake resistant structures legislated nationally are an important step in establishing future minimum level of protection for important structure. India has building codes and regulations for seismic resistant design, which needs to be enforced by municipal bodies. Some of the policy measures taken at state level are: Municipality Corporation has been asked to bring a circular shortly to make submission of actual structural drawings, besides the structural safety certificates mandatory for all buildings while seeking building plan approval. The Urban Shelter Board, GNCTD has been asked to urgently carry out structural audit of buildings in Delhi with the assistance of experts from NDMA, using RVSA (Rapid Visual Screening Assessment) and DVA (Detailed Vulnerability Assessment) methods.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 72

4.6.2 NON-STRUCTURAL MITIGATION MEASURES

The North District of the state Delhi falls in earthquake Zone-IV, which indicates that the district is highly prone to earthquake. Fire and Drowning are also major incidents in the North District. The non-structural mitigation measures are also essential framed in such a way that the whole population of the North district will be aware on disaster

preparedness/mitigation measure and their capacity shall be developed to cope up with hazardous situations into the future.

4.7 METHODOLOGICAL PREPAREDNESS

Before the disaster mitigation measure we have need some essential steps those are involve in the disaster management cycle, in the first step we have need disaster preparedness plan, instead of waiting for a disaster to occur and then manage it (**figure:4.1**). This plan contains a series of measures for preparedness like sceneries development, emergency planning and training programme in schools, colleges, universities, shopping malls, hospitals, villages and communities. People of every part of the district will be guided to prepare themselves or to prepare their own coping mechanism. In this regard, the District Disaster Management Authority shall suggest the proper methodology for preparedness on regular basis and the district shall plan various activities.



Figure:4.1. Disaster Management Cycle

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

4.8 AWARENESS PROGRAMMES

Disaster is dangerous king of events, which occurred any time anywhere that the results are heavy loss of our valuable life, properties and degraded of our environment. The District Disaster Management Authority has been trying to generate awareness at all levels from gross root level to cities in the North District. A series of awareness programmes has been organized to reach out to the local residents and public of the district and the

programmes are continuing throughout the district. Awareness/sensitization programmes were conducted at Schools, Colleges, Universities Villages Communities, Shopping Mall, Public Places, and Hospitals etc. Basic information related to different kind of disasters is given in the form of Information, Education and Communication materials to the peoples. Different kinds of strategies are being evolved to address different audiences. Special efforts are being made to address the most vulnerable groups during disasters e.g. women, children, the disabled, and the old. The total population of the North District is around 887,978, as per the 2011 census and the district administration intends to reach as many people as possible and different methods are being adopted to spread awareness i.e.

- Public meetings in the root level
- School Training Programme /safety workshop
- Mock-Drills programme
- Distribution of reading materials/ pasting of posters/IEC materials
- Street plays, Puppet show
- Involvement of Electronic media
- Banners and Public Hoardings
- Painting/ quiz competition especially in schools, rallies involving students
- Continuous monitoring any kind of incidents in Weekly, Fortnight, Monthly and annually.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 74

4.9 THE OBJECTIVES OF THE PROGRAMMES ARE

- To created an awareness about disasters/ hazards among the students of all the institutions and residents of all communities in the North district.

- To strict enforcement the capacity building Act for the construction department and contractors.
- Preparation of Building evacuation plans and training the general public to save their lives at the time of earthquake, fire accidents or any other major disaster.
- To sensitize the district administration, other line department officials and other associated agencies.
- Continue monitoring on the disasters/ incidents in the district.

4.10 TRAINING AND CAPACITY BUILDING

A number of training programmes shall be and are already being organized for specialized groups like, the District , Sub Division and Community level office bearers, school teachers and principals, architects, engineers, doctors, masons, etc in the North district. The professionals from all departments and sections shall be trained.

All the volunteer based organizations like Civil Defence, NYKS, NSS, NCC, etc., in the North district, which have more than 100 of volunteers working with them will also be sensitized and given training on disaster management. Besides RWAs, NGOs in the district will also be given training on disaster management. All the VBOs, RWAs, and NGOs shall also be encouraged and supported to organize awareness campaigns in their areas. These have been identified as organizations, which can help, percolate the idea deeper into the society.

4.11 LAND USE PLANNING

Damage of buildings depends primarily upon the soil conditions and topology of the area, which are moderately favourable in the district. Anyhow, to analyze risk within district microzonation planning should take place. It will help to guide modify land use planning in the district accordingly.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

4.12 CAPACITY BUILDING PROGRAMME

Country have a very few experts in mitigation planning. We must focus our attention to the institutionally and work force development at all levels. There is a need to train architects, engineers, planners, and masons in developing safe housing and infrastructure

facilities. District has already arranged two training s for engineers, masons, and architects of public and private sectors where 100 such participants were trained. Manuals have also been developed outlining methodologies for new constructions and retrofitting of old ones. A strong legal and enforcement framework with appropriate incentives and punitive measures is required together with awareness programmes for public. All these components must be taken up simultaneously; ignoring one aspect for the other could be counterproductive.

4.13 INSURANCE

Insurance brings quality consciousness in the infrastructure and a culture of safety by insisting to follow building codes, norms, guidelines, quality materials in construction. It would enforce safety standards by bringing accountability. Hazardous area should be announced, notified, and publicly displayed so that people would be motivated not to settle in those areas and insurance be mandatory in insurance prone areas. Premiums can be changed on the basis of risk proneness. Urban Development Department, GNCTD has been asked to draft a scheme to incentivize house owners to take up retrofitting of their houses.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY



TABLE 4.2: IMPORTANT MITIGATION MEASURES

S. No.	Strategies	Actions Involved	Suggested Institutions Involved

1	Retrofitting of buildings	<p>Prioritization of buildings according to their importance during emergency.</p> <p>First priority buildings are:</p> <ol style="list-style-type: none"> 1. District administration office building, all police and fire stations 2. Nodal 3. All Schools (Government, SDMC and Public) 4. Residences of District Magistrate (Revenue), Deputy Commissioner of Police <p>Second priority buildings are:</p> <ol style="list-style-type: none"> 1. Hospitals and clinics 2. Community centres 3. Residences of other key officials 4. Office buildings of SDMC, PWD, CD & HG and DDA <p>Third Priority buildings are</p> <ol style="list-style-type: none"> 1. Remaining Government Buildings and colonies 	North Delhi Municipal Corporation(Zone Civil Line , Narela and Rohini) (SDMC)/PWD engineers
2.	Enforcement of Building codes	Review and updating of building codes	BIS
		Implementation of codes in new engineered and non-engineered constructions	SDMC
3.	Community Awareness	Large-scale information dissemination about basics of new constructions and retrofitting of existing buildings and encouraging fire-fighting arrangements in the building	SDMC, PWD, District Administration
		Information dissemination about dos' and don'ts at the time of earthquake event and fire-outbreak	District administration, Fire and police department, NGO's
4.	Capacity Building	Priority-wise training to the engineers, architects, and masons for disaster-resistance. These people may further utilized for providing assistance in retrofitting and reconstruction exercises.	District administration, SDMC, PWD and DDA
5.	Insurance	Identification of hazardous areas in the district	DC Office, SDMC
		Provisions of insurance according to building bye laws, codes and hazard proneness	Insurance companies, SDMC

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

4.14 CONCLUSION

-  District consists of weak and illegal constructions, which compounds its vulnerability to earthquake and fires.
-  Buildings constructed through good design are not necessarily built with earthquake safe design

- ✚ There is a need of an urgent mitigation planning under which new constructions should come up as per building-byelaws and standard codes.
- ✚ Retrofitting techniques are very much important to re-strengthen old and weak constructions which needs to be taken up by SDMC and district administration
- ✚ Fire safety assessments and fire-fighting arrangements shall be promoted in multistoried buildings and residential communities
- ✚ Insurance of buildings according to their hazard proneness is important to promote in the district under the supervision of local administration
- ✚ Life-line buildings like Major hospitals, Deputy-commissioner office, residences of key officials, schools, community spaces, police and fire stations etc. shall be retrofit on priority basis.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 5

PREPAREDNESS MEASURES

5.1 INTRODUCTION

Disaster causes sudden disruption to the normal life of society, causes damage to the properties, and lives to such an extent that normal social and economic mechanism available

to the society gets disturbed. Those who are unaware and unprepared generally get affected more due to their lack of knowledge and physiological pressure. Hitherto, the approach towards coping the effects of disasters has been post-disaster management, involving many problems related to law and order, evacuation, communications, search and rescue, fire-fighting, medical, and psychiatric assistance, provisions of relief and shelters etc. After initial trauma, next phase starts with long-term reconstruction planning which takes about 5 to 6 years to normalize the life-style in a particular area.

In view of these problems the district administration, has prepared a comprehensive plan. The plan detailed out preparedness strategy under which communities and district authorities would be prepared so that level of destruction and unnecessarily delay in relief and response can be reduced. The preparedness measures include setting up disaster relief machinery, formulation of community preparedness plans, training to the specific groups and earmarking funds for relief operations (UNDRO, 2004).

5.2 MEASURING COMMUNITY PREPAREDNESS

Generally, community preparedness depends upon following four major components (Cottrell et al- 2001):

- Population characteristics (number of children, squatter settlement etc)
- Building and critical infrastructure such as road, drinking water, communication network, health and sanitation
- Physical environment
- Social environment (social groups)

In view of these components, risk assessment study has been conducted and identified that North District is densely built and consists of a high number of small and big scale industries. Any major earthquake or fire/chemical explosion can affect district very badly. Although the district but still a high degree of awareness and training have taken many steps is required to lay down an organization system within communities.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 79

5.3 COMPONENTS OF PREPAREDNESS PLAN

Looking at the complexity of repose mechanism during disasters two sets of components have been studied to prepare this plan.

5.3.1 COMPONENTS OF COMMUNITY PREPAREDNESS PLAN

Several previous attempts have been made by researchers to measure community preparedness within various indicators. Some of the important components of measuring preparedness are given below (**Figure: 5.1**).

1. **Physical Safety:** i.e. how safe community members are in view of the physical danger from these hazards? The parameters essentially tries to measure how effective structural mitigation measures are e.g. resistance of building structures for earthquakes, availability of safe shelters and its capacity etc.
2. **Hazard awareness** i.e. awareness level about hazards which have a reasonably higher probability of occurrence
3. **Organization preparedness** i.e. how far the community is organized to face disaster i.e. existence of committee at community level, task forces, volunteers of civil defense and other local volunteers , trained disaster management teams and community disaster management plan etc
4. **Infrastructure and services** which tries to measure current state of these services and how well restoring critical services as and when disruptions occur
5. **Recovery ability** i.e. ability of the community members to recover from the impact of the hazard
6. **Physical environment** i.e. state of environment to face hazards e.g. Condition of sub-surface aquifers and vegetation etc
7. **Social capital** i.e. degree to which social networking and cooperation exists among community members
8. **Psychological preparedness** i.e. how safe and prepared do community members feel in view of these hazards
9. **Cultural capital** i.e. cultural richness such as existence, recognition and use of traditional mechanism to cope with such disasters
10. **Household preparedness** i.e. preparedness at a house hold members

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

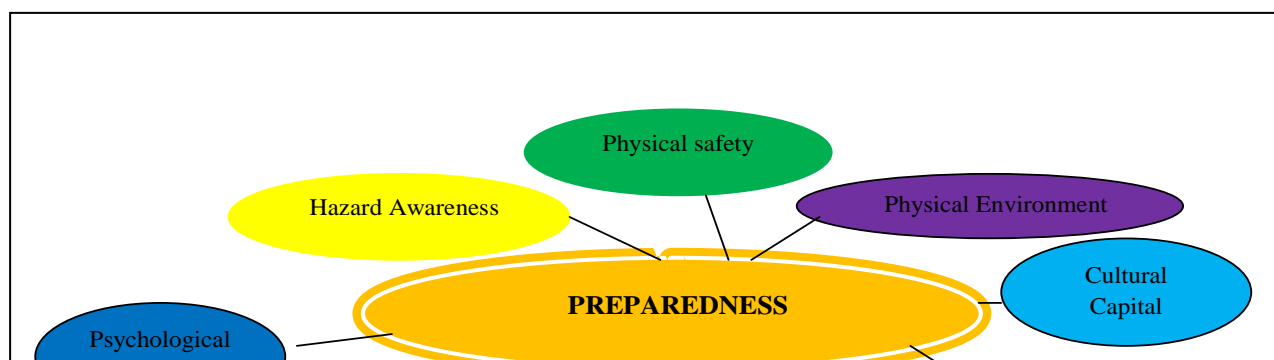


Figure: 5.1. Components of Community Preparedness

5.3.2 COMPONENTS OF ADMINISTRATIVE PREPAREDNESS

Administrative preparedness is another very important issue which helps in reducing relief and response time in a disaster situation. Preparedness plan is based on below-given components

1. Operation readiness of facilities, equipments and stores in advance
2. Maintaining response inventory of equipments and materials required for response
3. Assignment of responsibilities to agencies and organizations
4. Management training of crisis group members, desk officers and officers of respective departments likely to be assigned management duties
5. Specialized trainings of district disaster committee members, officials, community organizations through seminars and workshop
6. Training of RWA's and School training programs
7. Raising community awareness
8. Improving response mechanism through conducting practice drills etc
9. Annual updating of District and community level plans

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DISTRICT DISASTER MANAGEMENT PLAN (NORTH DELHI)

Page | 81

5.4 PREPAREDNESS PLAN

Base on above-mentioned components following arrangements needs to be maintained at district level preparedness plan.

5.4.1 ESTABLISHMENT OF EMERGENCY OPERATION CENTRE (EOC)

To ensure coordination at district headquarter among community organizations, district level organizations and State government during preparedness and response phase, EOC has to play an important role. Directing the operations at the affected site, the need for coordination at the district headquarter and the need for interaction with the state government to meet the conflicting demand at the time of disaster is the responsibility of the District Magistrate and his team. District EOC helps District Magistrate and his team to meet these conflicting demands. Keeping this in view, District Magistrate has established an EOC at district level. EOC has established in the office of District Magistrate. The EOC would be responsible to facilitate following activities.

(a)Activities of EOC

- To ensure that warning and communication systems are in working conditions
- Collection and compilation of district level information related to hazards, resources, trained work force etc.
- Conducting district, sub-division and community level mock drills
- Networking and coordination with community, district and state level departments
- Monitoring and evaluation of community and inter-intra organization level disaster management plans
- Develop a status report of preparedness and mitigation activities under the plan
- Allocation of tasks to the different resource organizations and decisions making related to resource management
- Reviewing and updating response strategy
- Supply of information to the state government

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

(b)Facilities with EOC

Presently, the emergency operation centre is operating in 24/7 mode well equipped with computer, wireless and telephone facilities. In future EOC would include a well-designed control room with workstation, hotlines and intercoms. **Following other facilities shall be made available within the EOC:**

- A databank of resources, action plans, district disaster management plan, and community preparedness plan would be maintained at EOC.
- Maps indicating vulnerable areas, identified shelters, communication link system with state government and inter and intra district departments would strengthened
- Inventory of manpower resources with address, telephone numbers of key contact persons has been maintained
- EOC have to identify desk arrangements during disaster situations
- Frequently required important phone numbers would be displayed on the walls so that they can be referred whole other phones and addresses would be kept under a easy-retrieval and cross-referring system
- Retrofitting of building shall be done so that it can be operational during disaster also.
- EOC shall be operational 24 hours with the help of police, fire and home guard department

(c)Transport Facility

A vehicle has been assigned to the EOC (N) during normal times. Additional vehicle can also be hired during the emergency.

(d) EOC Staffing

To make EOC operational during and post disaster situation there would be a need of keeping adequate staff. There is a need of regular staff, staff-on requirement and staff-on disaster duty. Therefore, trained

Civil Defence volunteers are working 24 hours on shift basis for managing the communication and transportation of rescue equipments in EOC during any disaster. More volunteers are also hired for supporting in rescue and relief operation during emergencies. District Magistrate can appoint staff on disaster duty. This staff can be drawn from the various government departments.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

(e) Desk arrangement

In case of emergency, DC and other team members would be present round the clock in the EOC (Table: 5.1). Therefore, senior officers have been appointed in the capacity of desk officers for the coordination of following emergency response functions:

Table 5.1 List of ESF and desk officers

Nos.	ESFs Function	Nodal Officers
------	---------------	----------------

1	Communication	MTNL
2	Evacuation	Delhi Police
3	Search and Rescue	Delhi Fire Service
4	Law & Order	Delhi Police
5	Medical Response and Trauma Counselling	Directorate of Health-CDMO
6	Water Supply	Delhi Jal Board
7	Relief (Food and Shelter)	Department of Food and Civil Supplies
8	Equipment Support, debris and road clearance	NDMC
9	Help lines, warning dissemination	Department of Revenue
10	Electricity	NDPL
11	Transport	Transport Department

5.4.2 Reliable Communication Systems

During emergency communication plays a very important role. Although Delhi being a capital city has already registered a phenomenal growth but yet in case of disaster like earthquakes witnessed collapse of general communication system which delays flow of information from the disaster site and consequently resulting delays in relief operations. Therefore, a reliable communication is also one of a very important action. Till now TETRA wireless communication system has been found most suitable to rely upon. However, this plan also seeks for installation of satellite phones and HAM equipments in the EOC for strengthened communication system in the district. Plan also advocates training some volunteers of home guards etc in HAM operations.

5.4.3 Preparation of a Response Plan

One of the important tasks during preparedness phase is formulation of a response plan. It helps in quick mobilization of manpower, resources and in performing various duties. The response plan explains a hierarchal system of emergency response functions in-term of tasks and assigned responsibilities to different agencies. It also lay down an Incident Response System under the directions of District Magistrate of the district. This whole exercise may help in prevent confusions during the response phase and result in prompt and coordinated response. Activation of trigger mechanism, functioning of EOC and Response of Emergency Support Functions can be tested every year to resolve perplexity occurring during actual scenario. Broad details of response plan have been included in the Chapter 7.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 6

CAPACITY BUILDING AND TRAINING MEASURES

6.1 TRAININGS AND CAPACITY BUILDING

To enhance organizational and capability skills to deal with emergencies requires trainings and capacity building exercises of the various linked government and non-government officers. Since disaster management is a multi-organizations effort, it emphasizes on trainings in execution and coordination as well. Therefore, wide ranges of trainings related to management skills are highly required for potential officers in order to equip them for specialized disaster-related tasks. They require orientation of various aspects of crises management such as:

- Skill training,
- Planning,
- Trainings on Emergency Response Functions such as first aid, search and rescue, emergency operation centre, emergency feeding and welfare, communication and damage assessment etc.
- Trainings for coordinated disaster management activities and response operations are highly required especially for the persons engaged in emergency services, government –line departments, non-government organizations and important private sector groups

Training requirements are likely to comprise of core activities of emergency management such as Incident Response System, Emergency Response Functions and basic management skills. Persons to be trained shall be:

- Government Officers at par with the rank requirement under Incident Response System
- Team leaders and members under Emergency Support functions
- Quick Response Teams at headquarter and field level
- Community level taskforces including Volunteers, NGOs and home guard volunteers, school and college students, NCC and NSS scouts etc

District Administration can organize seminars and workshops with the help of State disaster management authority, Civil Defence and Home Guard, Fire fighting department, Health departments etc. A record of trained manpower shall be maintained by each department and their representation shall be noticed during mock-drill.

6.2 COMMUNITY AWARENESS AND COMMUNITY PREPAREDNESS PLANNING

The hazard analysis of the district indicates that there is a high need of community awareness through public awareness programmes on the following themes of disaster:

- Types of disasters and basic do's and don'ts related to those disasters
- Post disaster epidemic problems
- Construction and retrofitting techniques for disaster resistant buildings
- Communication of possible risk based vulnerable areas in the district
- Evacuation related schemes and community preparedness problems

Volunteers and social organizations also play a vital role in spreading mass scale community awareness. Media can also play an important role in raising awareness and educating people.

Community Disaster Management Planning is one of the vital components of community preparedness. It involves all important parameters related to hazard awareness, evacuation planning, resource inventory, community level taskforces and committees etc which helps community members in organizing themselves to combat disaster in a pre-planned manner. Preparation of community plans encourages promotes preparedness planning at community level. District administration is also imparting trainings on regular basis to the volunteers of Civil Defence and Home Guards, Residential Welfare Associations, Market Trade Associations, Self Help Group, GRCs and NGOs etc to involve them to into community planning.

6.3 CAPACITY BUILDING OF COMMUNITY TASK FORCES

Community taskforces and community committees has been constituted and trained in all types of communities by government and non-government agencies. District administration, Medical officers, Trained volunteers, Delhi fire Services, Civil Defence and Home Guard volunteers etc. are playing important role in building capacities of community task forces in building their capacities in search and rescue, fire-fighting, warning dissemination, first-aid and damage assessment etc.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

Medical Officer has organized seminars to train taskforces and volunteers in basic first aid. CD & Home Guard, St. John Ambulance and CATS are helping Medical Officer in providing trainings and lectures. Similarly, Delhi Fire Service along with CD & HG gives

trainings on search and rescue and fire fighting. Delhi Police provides trainings on warning dissemination, traffic norms, communication and damage assessment (**Table 6.1**).

6.4 SIMULATION EXERCISES

To encourage participation in a coordinated manner simulation exercises on various disasters are very important. These exercises help in institutional building at various levels. Mock-exercises have been promoted at district and community level. These exercises help in improving response time and test reliability. These mock-drill arranged by involving all required agencies. These drills also help in updating the response plans. District Disaster Management Authority is playing an important role in conducting mock-drills and to update plan. Details of various mock drills conducted in North Delhi are given below:

TABLE 6.1: SIMULATION EXERCISES CONDUCTED IN DISTRICT NORTH

S.No.	Date	Level	Brief Scenario
1	05 th June to 22 nd June, 2015	Mock Drill, District Level	On Earthquake, Fire, Building Collapse, Stampede, Chemical Hazard, Bomb Blast And Terrorist Attract
2	21 th June, 2015	Nukkar Nattak And Puppet Show	On Hospital Safety, Emergency Management, Fire Safety, Communities Awareness Programme
3	28 th July,2012	District Level-Metro Mock drill at Chandini Chowk	On terrorist Attack
4	02Aug,2013	District Level- Akash Cinema hall	On Fire
5	01 st Oct,2013	District Level- hans Cinema Hall	On Fire
6	31 st June,2014	District Level- Batra Cinema Hall	On Terrorist Attack

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

TABLE 6.2: COMMUNITY PREPAREDNESS STRATEGIES

S.No	Tasks	Mode of conduct	Nodal Agencies	Supporting Agencies
1	Priority-wise information dissemination of various hazards, their do's, and don'ts. In addition, preparation of community based disaster management plans shall be promoted in these areas. First priority shall be given to the schools, industrial clusters, Market Trade Associations and Residential areas, slums and resettlement colonies etc located in Kirti Nagar, Raja Garden, Vishnu Garden, Moti Nagar, Punjabi Bagh etc Second Priority shall be given to the communities living in the outer part of the district especially villages.	Through Nukaad Nataks, Film Shows, Rallies, Media, Newspaper Media, Posters and Pamphlets, Group discussions and workshops etc	District Administration	Civil Defence and Home guards volunteers(CD & HG), Nehru Yuva Kendra Sangthan(NYKS), Residential Welfare Associations(RWAs), Market trade Unions(MTAs), Rotary Clubs, Non Government organizations(NGOs), Schools and colleges volunteers, NSS, NCC etc.
2.	Constitution of Community Based Disaster Management Committees and Taskforces	Through community level meetings	District Administration	RWAs and MTAs Members, Local Volunteers etc.
3.	Capacity Building of Community Members	Through mock-drills, preparation of community plans, trainings and workshops on disaster specific topics	District administration	CD & HG, Local NGOs, NYKS, St. John Ambulance, C.A.T.S etc.
4.	Trainings to the taskforces and committee members - First-Aid and Trauma Counseling - Search and rescue and fire-fighting - Warning Dissemination etc.	Trainings and workshops	Revenue Department along with Health, Police and Fire Departments	CD & HG, St. John Ambulance and CATS and NGOs
5.	Post disaster epidemic problems	Seminars and community meetings	Health department	Local health departments, and NGOs
6	Trainings for construction of seismic resistant buildings and retrofitting of the buildings. Target groups are contractors, masons, engineers, architects and local communities (especially those who are taking loans for building constructions and provided assistance under Indira Awas Yojana and other developmental programmes)	Showing Films, videos, distributing posters and brochures, reading materials, etc in trainings and workshops or any other community gathering	Revenue department	NDMC, PWD, Private contractors and NGOs etc

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

DDA has identified a site measuring 1 Ha.(Approx.) on Rohtak Road opposite Shivaji Park in Planning Zone “G” for Disaster Management Centre as per Master Plan 2022. Another site near Tikri Kalan in Planning zone “L” has also been identified for the same purpose.

6.6 RELIEF CENTERS IN DISTRICT North DELHI

District Disaster Management Authority (DDMA), North Delhi has selected some of the colleges and schools premises located in District North as relief centre for undertaking holistic coordinated and prompt response and relief work in any disaster situation happening in the district. List of relief centers identified are as follows:

1. **Aditi Mahavidyalaya (W)**, Auchandi Road, Bawana, Delhi.
2. **Swami Shradhanand College**, Alipur, Delhi.
3. **SBV, Badli**, Delhi.
4. **Sarvodaya Bal Vidyalaya**, Mukherjee Nagar, Delhi .
5. **Sant Nirankari Boys/girls Senior Secondary School**, Delhi.

6.7 RESCUE EQUIPMENT WITH DISTRICT DISASTER MANAGEMENT AUTHORITY

Delhi Disaster Management Authority has purchased heavy rescue and debris clearance equipments and following equipments have been provided to District Disaster Management Authority North for effectively and efficiently responding to any disaster. The list of equipments available in EOC (North) is given in Annexure XV.

6.8 IDENTIFICATION OF TRAINED CIVIL DEFENCE VOLUNTEERS

For immediate response in case of any disaster which is necessary for evacuation and mitigation of ill effects of such disaster. DDMA (N) has developed police- station wise a task force of trained Civil Defense volunteers in each area, who can respond within the shortest possible time to incident/disaster site. 600 ASHA workers have also been identified, who will further get trained in various skill of Disaster Management.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

THE EMERGENCY RESPONSE PLAN

7.1 INTRODUCTION

The need for an effective disaster management strategy is to lessen disaster impact which can be achieved through strengthening and reorienting existing organizational and administrative structure from district – state to national level. The emergency response plan is a first attempt to follow a multi-hazard approach to bring out all the disasters on a single platform and incorporates the ‘*culture of quick response*’. Under the plan, common elements responsible for quick response have been identified and a set of responsible activities has been articulated. It provides a framework to the primary and secondary agencies and departments, which can outline their own activities for disaster response. The plan will also include specific disaster action plans along with modal scenarios in detail to conduct practice drills at district administration level.

7.2 METHODOLOGY OF RESPONSE PLAN

- Identification of disasters in the district depending on:
 - Past records hueristic approach
 - Micro-zonation according to the geological settings
 - Vulnerability associated in context to the disaster
 - Risk assessment according to the socio-economic conditions
- Identification of emergency response functions in consultation to the guidelines provided by state nodal agency
- Identification of responsible government and non-government agencies according to the response functions
- Identification of responsible officers, manpower and resources according to the activities of the identified agencies
- Identification of primary and secondary agencies and demarcation of roles and responsibilities according to their functions
- Conducting regular trainings, meetings and mock drills

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.3 VARIOUS RESPONSE LEVELS

Most of the disasters are to be managed at the state and district level. The centre plays a supporting role in providing resources and assistance. It will mobilize support in terms of various emergency teams, support personnel, specialized equipments, and operating facilities depending upon the scale of the disaster. Active assistance would be provided only after the declaration of national emergency level. (National Disaster Response Plan, 2001) **(Figure:7.1).**

In case disaster may be managed at the district level, district emergency operation system would be activated where state and national level authorities would be on guard in case of assistance needed. Incident commander (IC) of the district would activate the emergency support functions and Incident Response System and similarly according to the guidance disaster management teams and quick response teams would respond.

If disaster may not be managed with district level and required active participation of state resources, State EOC would activate and Divisional Commissioner would take over the IC system.

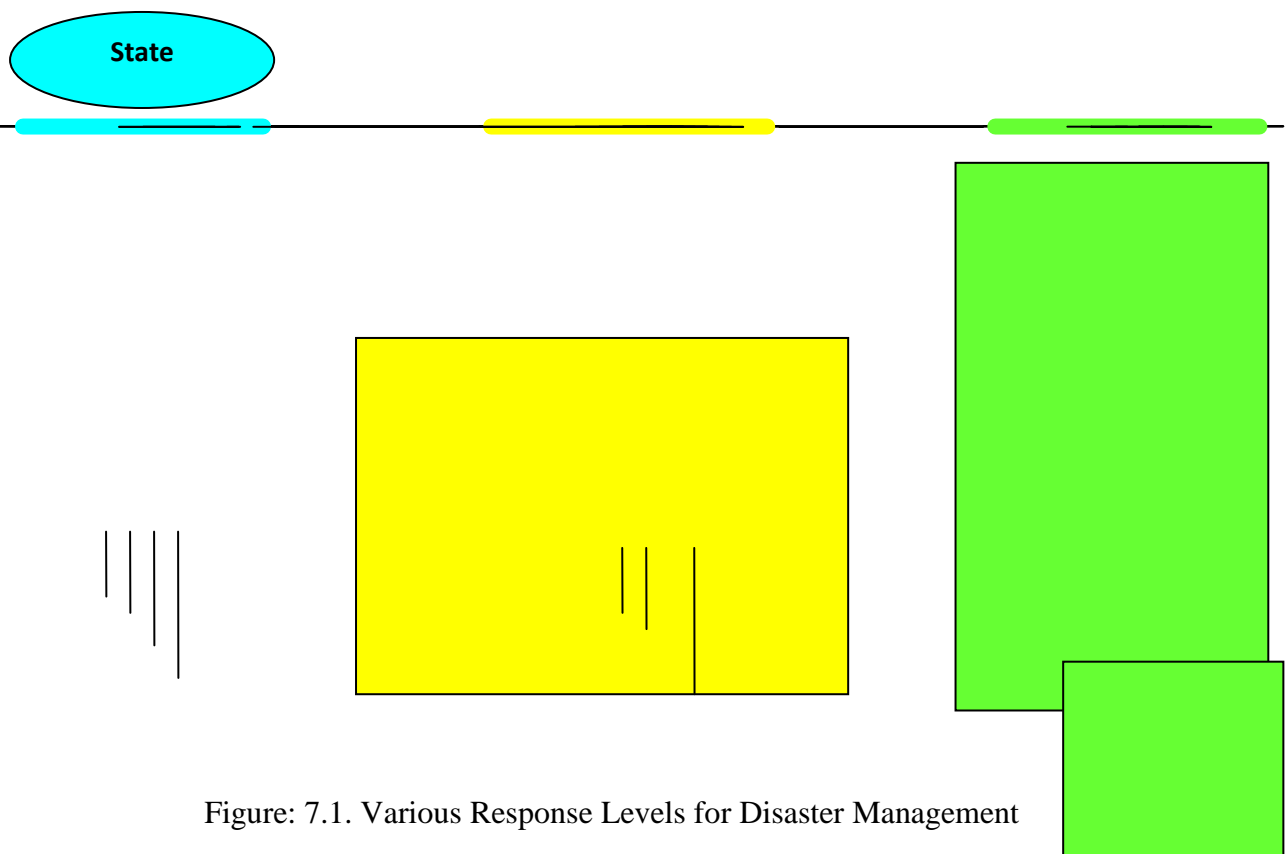


Figure: 7.1. Various Response Levels for Disaster Management

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

7.4 IMPORTANT TERMINOLOGIES USED IN THE PLAN

7.4.1 RESPONSE PLAN

The Response plan establishes an organized setup to conduct ESF operations for any of the Natural and Manmade Disasters. It outlines an implementing framework of sharing resources as per the requirement during an emergency. The Response Plan has structured the response of concerned department's i.e. primary and supporting departments to be organized and function together with grouping capabilities, skills, resources, and authorities across the State and district Government with the ESF plan. The plan unifies the efforts of State Departments and supporting agencies to be involved in emergency management for a comprehensive effort to reduce the effects of any emergency or disaster within the state.

7.4.2 INCIDENT COMMAND SYSTEM (ICS)

The ICS was first established in 1970 after a wild fire outbreak of California. It is widely accepted by Americans and now many other parts of world too. It is assumed that ICS can also be adapted by the Indian system of disaster response. ICS is a modal tool to command, coordinate, and use of resources at the site of the incident. It is based on the management and direction tools that experts and managers are already aware too. It is a very flexible, cost effective, and efficient management system.

7.4.3 EMERGENCY SUPPORT FUNCTIONS (ESFs)

The ESF activates under the guidance of Incident Commander (Deputy Commissioner) who is also a head of Incident Response System (IRS). Under the IRS, a team of 11 ESFs nodal officers works together also called as Disaster Management Team (DMT). DMT would also be constituted at District level with district level nodal officers. The members of Disaster Management team would also heads primary agency and simultaneously coordinate with the secondary agencies. Each of the primary and secondary agencies would also comprise of quick response team trained to carry out their functions at the response site. The success of ESF will be of critical importance and would reflect in the lives saved in the first few hours.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.4.4 PRIMARY AND SECONDARY AGENCIES

The designated primary agency action as a central agency would be assisted by one or more supporting agencies (secondary agencies) and will be responsible to manage activities of the ESFs and ensuring the mission accomplished. The primary and secondary agencies have the authority to execute response operations to directly support the state needs.

7.4.5 SITUATION REPORTS

Situation reports provide an update of relief operation at regular intervals. These reports are crucial for planning response actions to be undertaken in affected areas. The situation reports provide information about the disaster status, casualties, status of flow of relief materials, arrival/departure of teams etc.

7.4.6 QUICK RESPONSE TEAMS (QRTS)

The QRTs at district level should leave for the affected site within 3 to 6 hours of the event after the declaration of emergency. They have to be adequately briefed by their respective departments. Team should be self-sufficient in terms of resources, equipments, survival kits, and response work.

7.4.7 EMERGENCY OPERATION CENTRE (EOC)

EOC is a nodal point for the overall coordination and control of relief work in case of any disaster situation. In case of any disaster district level, EOC has to be activated. The primary function of EOC is to facilitate smooth inflow and outflow of relief and other disaster related activities. These EOCs act as bridges between State and Centre government.

7.5 OPERATIONAL –COORDINATION STRUCTURE

Each organization generally has a framework for direction of its operation and coordination between its different units. Disaster Management generally requires partnership between organizations and stakeholders. An effective and early response requires mobilization of manpower, equipments and materials belonging to different organizations which may not be working together during normal times. Therefore, a framework needs to be prescribed as a part of emergency planning for operational directions and coordination during response phase. This plan recognizes role of District Magistrate in providing overall operational direction and coordination for all the response functions. With the help of District Disaster Management Committee and District Emergency Operation Centre District Magistrate has formulated following coordination structure for response plan.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.5.1 TRIGGER MECHANISM

As soon as Emergency Operation centre would get the information about any emergency, the staff on duty in EOC will pass the information the DC-N and seek for his instruction for further actions. If the information pertains to the occurrence of a disaster in any part of the district, the staff on duty will also try to inform DDMA members, Emergency Support Functions-team leaders, major hospitals and State Disaster Management Authority etc. The staff on duty will also be responsible to reclaim information related to type, magnitude and location of the disaster and also inform it to responsible authorities. The EOC in-charge will also inform all the details to Divisional Commissioner and State EOC. All the desk officers/team leaders and Incident Response Team members will also be informed to immediately report at District EOC.

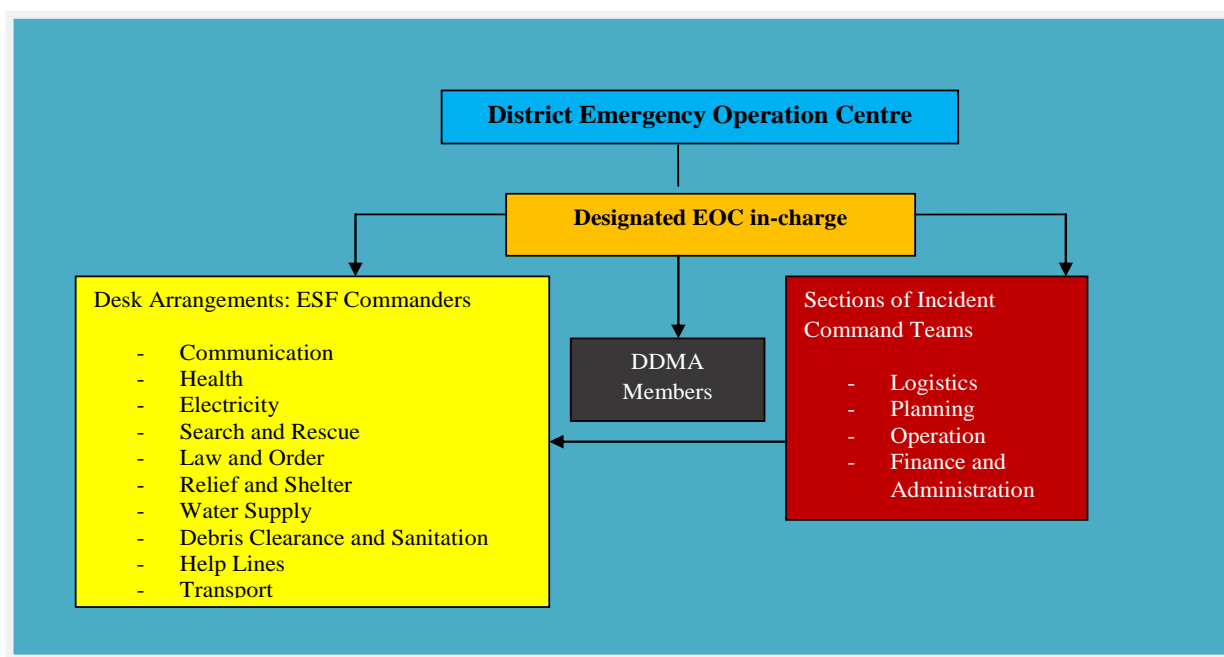


Figure: 7.2. Trigger Mechanism for District EOC

Incident Response team and Desk officials would respond as per their standard operating procedures and directions of Incident Commander(IC).

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.5.2 ACTIVATION OF INCIDENT RESPONSE SYSTEM

The emphasis in Disaster Management has shifted from relief centric approach to proactive regime, and as such a well-coordinated response with clockwork precision becomes one of the most important goals. Incident Response System has been developed in this regard.

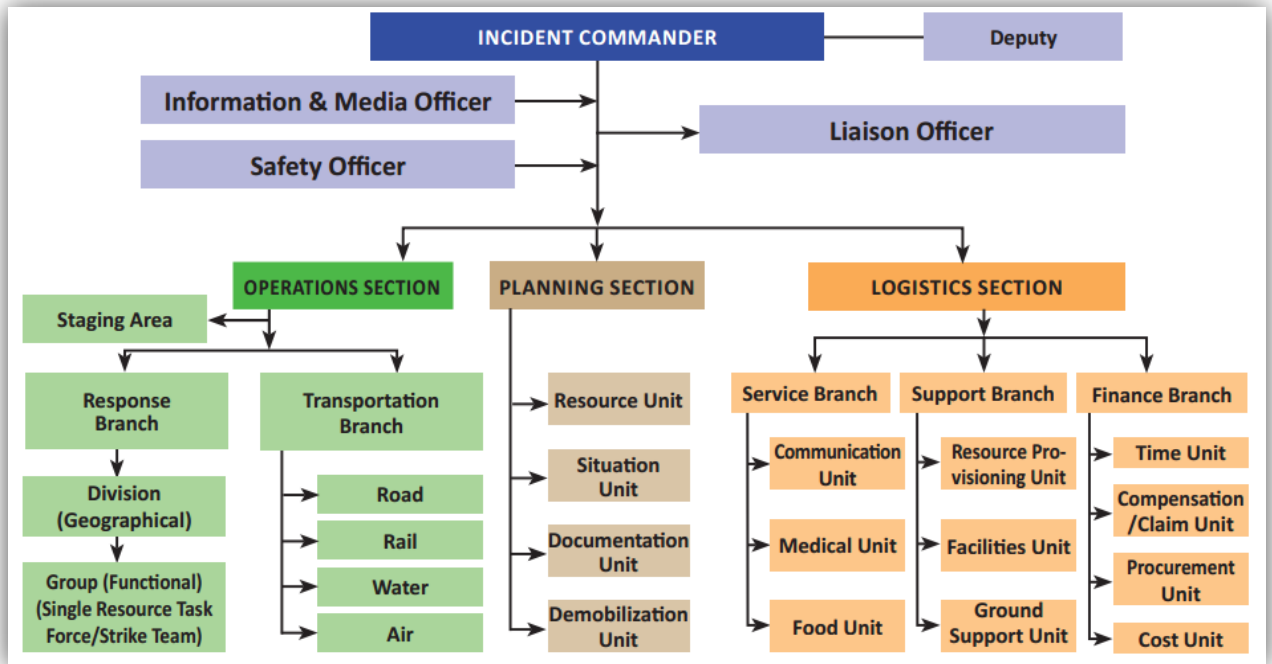


Figure: 7.3. Structure of Incident Response Team

During emergency period DC-N would be designated as Incident Commandant(IC) and shall take up following immediate actions

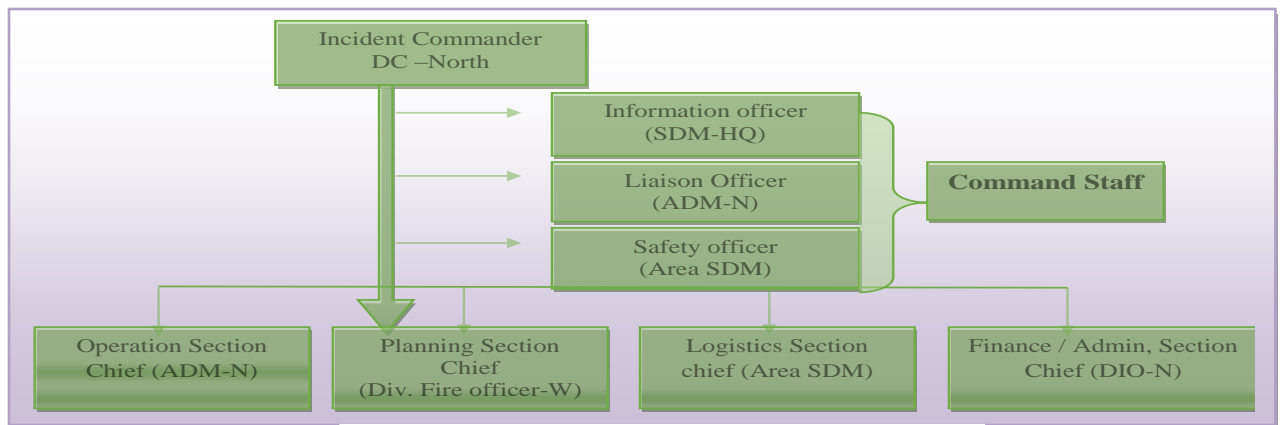


Figure: 7.4. Incident Response System in

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

1. IC will designate IRS members according to the rank requirement and assign responsibilities under four sections of logistics, planning, finance and administration.
2. IC will also direct to the EOC in-charge to inform all the DDMA members about the incident and ICP (Incident Command Post).
3. IC will direct ADM-N to coordinate with the team leader of Emergency Support Functions (ESF)
4. EOC/PCR will also pass the information to the DDMA members about the location of ICP.
5. Direct EOC in-charge to pass the information to the State apex body/Unified commander

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

S.No	IRS Position	Suggested rank and position for District level IRS
1.	Responsible Officer	District Magistrate-North
2.	Incident Commander	Additional District Magistrate-North
3.	Liaison Officer	District Information Officer
4.	Information and Media Officer	District Information Officer
5.	Safety Officer	Specialist from DDMA/NDMA
6.	Operations Section Chief	Additional District Magistrate-North
7.	Staging Area Manager	Area Tehsildar
8.	Response Branch Director	Divisional Fire Officer
9.	Transportation Branch Director	Motor Licensing Officer (North)
10.	Planning Section Chief	Divisional Fire Officer (North)
11.	Situation Unit Leader	Respective Tehsildar and SHO of Police Station concerned
12.	Resource Unit Leader	Area Tehsildar
13.	Documentation Unit Leader	DPO (North)
14.	Demobilization Unit Leader	Area Tehsildar
15.	Technical Specialist	Specialist from NDMA/DDMA
16.	Logistic Section Chief	Area SDM
17.	Service Branch Director	SDM(Election)
18.	Support Branch Director	Tehsildar (HQ)
19.	Communication Unit Leader	SDM (Election)
20.	Food Unit Leader	Tehsildar (Ali Pur)
21.	Facilities Unit Leader	Tehsildar (Narela)
22.	Ground Support Unit Leader	Tehsildar (Model Town)
23.	Medical Unit Leader	CDMO, Distt. North
24.	Finance Branch Director	Account Officer (North)
25.	Time Unit Leader	SDM(Election)
26.	Cost Unit Leader	Accounts Officer, O/o-Dy. Commissioner (North)

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.5.3 RESPONSIBILITIES UNDER INCIDENT RESPONSE SYSTEM

(I) INCIDENT COMMANDER: DM (North)

- Incident Commander (IC) shall rush to the Emergency Operation Center (EOC) where technical experts and section chiefs shall join him. He shall remain in the contact of EOC to know the updated status of incident.
- In consultation to technical experts Incident Command Post (ICP) shall be selected near incident site. Site selection shall be on the basis of the wind prevailing directions and probability of secondary hazards etc.
- Obtain updates of the incident situation from ICP and establish a link for continuous communication through dedicated telephone lines with speaker phones, set of walkie-talkies, computer link etc. with the help of coordinator
- Supervise the overall management of each function through respective members of DDMA and expediting response whenever required
- Identify the hazardous and threatened areas based on map and information received ICP
- Take a decisions on requirement and priorities of evacuation and organize the resources to execute the same
- Based on the inputs from the first responders, and experts available at ICP, identify the additional resources requirement and initiate mobilization with the help of section chiefs.
- Coordinate with the other district authorities and state authority
- After making required arrangement, IC shall visit incident site to supervise the situation
- He shall also take decisions in demobilizing the resources after the incident

Following three officers will support Incident Commander along with Operation, logistic, planning and finance section chiefs.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

1. Recommend measures for assuring safety of responders and to assess or anticipate hazardous and unsafe situations and review it regularly;
2. Ask for assistants and assign responsibilities as required;
3. Participate in planning meetings for preparation of IAP (Incident Action Plan);
4. Review the IAP for safety implications;
5. Obtain details of accidents that have occurred within the incident area if required or as directed by IC and inform the appropriate authorities;
6. Review and approve the Site Safety Plan, as and when required;

LIAISON OFFICER

1. Maintain a list of concerned line departments, agencies (CBOs, NGOs) and their representatives at various locations.
2. Carry liaison with all concerned agencies including NDRF and Armed forces and line department of Government.
3. Monitor Operations to identify current and potential inter-agency problems.
4. Participate in planning meetings and provide information on response by participating agencies.
5. Ask for personnel support if required.
6. Keep IC informed about arrival of all Government and Non – government agencies and their resources.
7. Help in organizing briefing sessions of all Government and Non-governmental agencies with IC.

INFORMATION OFFICER

1. Prepare and release information about the incident to the media agencies and others with the approval of IC.
2. Jot down decision taken and directions issued in case of sudden disasters when Incident Response Team has not been fully activated.
3. Ask for additional personal support depending on the scale of incident and workload.
4. Monitor and review various media reports regarding the incident that may be useful for incident planning.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

5. Organize Incident Action Plan meeting as directed by the Incident Commander.

6. Coordinate with IMD to collect weather information and disseminate it to all concerned.

(II) OPERATION CHIEF: ADDITIONAL DISTRICT MAGISTRATE-North

Most preferred rank for the operation chief is Additional District Magistrate. Following are the duties designated for Operation Chief:

- ✓ Responsible for the management of all operations directly applicable to the primary mission. He will activate the emergency support functions and will coordinate with the team leaders of ESFs.
- ✓ Activates and supervises organization elements in accordance with the Incident Action Plan (IAP) and directs its execution
- ✓ Determine need and request additional resources
- ✓ Review suggested list of resources to be rebased and initiate recommendation for release of resources
- ✓ Make expedient changes to IAP as necessary
- ✓ Report Information about special activities, events or occurrences to Incident Commander
- ✓ Maintain Unit / Activity details

(D) EMERGENCY SUPPORT FUNCTIONS

ESFs shall be activated under Operation Chief. On the receipt of information Team Leaders (TLs) would take up following actions

- a. On the receipt of information about the off-site emergency Team Leaders (TLs) will activate their own Emergency Support Functions (ESFs).
- b. TLs will join IC and Operation Chief (ADM-N) in EOC to ensure coordination and to provide assistance.
- c. TLs would also move to the site for better operational control.
- d. TLs will call the nodal officers of supporting agencies and immediately deploy the quick response teams (QRTs) from the location of nearest to the incident site.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- e. They further reinforce their teams by deploying additional resources from surrounding areas so the effective first respond can be rendered at site.
- f. A high alert would be notified to move additional resources and manpower to the incident site.
- g. According to the feedback report additional TLs will take decision of movement of more team and manpower. In some of cases TLs may need to mobilize resources from nearby districts or states. In such cases chiefs will organize this through respective head quarters.

(III) PLANNING SECTION CHIEF

Planning section chief shall be responsible for performing following duties:

- Collection, evaluation, dissemination and use of information about the development of incident and status of resources. Information is required to understand the current situation and to prepare alternative strategies and control operations.
- Supervise preparation of Incident Action Plan (IAP).
- Provide input to Incident Commander and Operation Chief in preparation of IAP.
- Reassign out of service personnel already on site to other positions as appropriate.
- Determine need for any specialized resources in support of the incident.
- Establish information requirements and reporting schedules for Planning Section Unit (e.g. Resources, Situation Unit).
- Compile and display incident status information.
- Facilitate the preparation and implementation of Incident Demobilization Plan.
- Incorporate Plans (e.g. Traffic, Medical, Site Safety, and Communication) into IAP.
- Maintain Unit / Activity details.

(A) RESOURCE UNIT LEADER

Responsible for maintaining the status of assigned resources (Primary and support) at an incident. This is achieved by overseeing the check-in of all resources, maintaining a status keeping system indicating current location and status of all resources and maintenance of a master list of all resources e.g. by key supervisory personnel, primary land support resources etc.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- Establish check-in function at incident locations.
- Prepare Organization Assignment List & Organization chart.
- Maintain & post the current status and location of all resources
- Maintain master list of all resources checked in at the incident.

(B) CHECK-IN/STATUS RECORDER:

Needed at each check-in location to ensure that all resources assigned to an incident are accounted for:

- Prepare check-in form, resource status boards and status display board.
- Establish communications with the communications Centre and Ground Support unit.
- Post signs so that arriving resources can easily find the check in locations.
- Record check-in information on check-in lists.
- Transmit check-in information to Resources Unit on regular pre-arranged schedule/ as per need.
- Receive, record and maintain status information for single resources, strike teams, task forces, overhead personnel.
- Maintain file of check-in lists.

(C) SITUATION UNIT LEADER

- Begin collection and analysis of incident data as soon as possible.
- Prepare post or disseminate resource and situation status information as required, including special requests.
- Prepare incident status summary
- Provide photographic services and maps if required.

(D) DISPLAY PROCESSOR (*DRAFTSMAN-COMPUTER TRAINED*)

Responsible for display of incident status information obtained for field observers, resource status reports, aerial photographs, etc.

- Determine:-
 1. Location of work assignment
 2. Numbers, types and locations of displays required
 3. Priorities

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

5. Time limits for completion
 6. Field observer assignments & communication means
- Obtain necessary equipment and supplies
 - Obtain copy of LIAP for each period
 - Assist SITL in analyzing and evaluating field report
 - Develop required displays in accordance with time limits for completion.

(E) FIELD OBSERVERS

Responsible to collect situation information from personal observations at the incident & give it to situation team leader.

- Determine:-
 - Location of assignment
 - Type of information required
 - Priorities
 - Time limit for completion
 - Method of communication
 - Method of transportation
- Obtain copy of IAP for the operation period
- Obtain necessary equipment & supplies for his use.
- Collect data like
 - Perimeter of location of hot spots etc.
 - Be prepared to identify all facilities location (e.g. division boundaries)
 - Report information to SITL

(F) DEMOBILIZATION LEADER

- Responsible for developing incident DMOB Plan
- Review incident resource records to determine the likely size and extent of DMOB effort ⇒ addl. Personnel, work space and supplies needed
- Coordination DMOB with agency representatives
- Monitor ongoing operation section resource needs
- Identify surplus resources and probable release time
- Develop incident check out for all units

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

(G) DOCUMENTATION LEADER:

Dy. Chief Inspector of factories and Tehsildar

- Arranging for complete documentation of proceedings at the incident site.
- Maintaining record of what happened and what actions were taken.
 - i. Recovering response costs and damages.
 - ii. Setting the record straight where there are charges of negligence or mismanagement resulting from the incident.
 - iii. Reviewing the efficiency and effectiveness of response actions.
 - iv. Preparing for future incident response.
 - v. Videotaping of the entire combat the rescue operations.

(H) TECHNICAL COORDINATORS

Two to Four experts in geo-sciences, fire safety, industrial safety, and health shall be nominated as technical experts. Major issues shall be addressed by them are:

a. Formulation of response objectives and strategy

TC shall assess the incident before taking actions and formulate realistic response objectives.

The assessment shall be based upon following points:-

- Pre-incident plans.
- Information related to material involved, container involved, vehicle and structure involved and atmospheric conditions affecting the incident.
- Environmental monitoring and sampling data (if available).
- Public protective actions to be initiated.
- Resource requirements (trained manpower, specialized protective gear and other equipments).
- Hazards posed to the nearby areas.

On the bases of above-mentioned points, they will formulate a defensive strategy to protect the public and environment from the immediate spill or discharge area.

b. Identification of Hazard Zone

Technical experts shall be able to determine real time contaminant concentrations at various distances downwind. They shall be responsible to estimate downwind concentrations and feeding the information to the Team leaders of various ESFs for further response. To estimate the hazard zone in a particular emergency scenario, the technical coordinator shall place the transparency of the vulnerability template with its x-axis along the prevalent wind direction and start point on the source of release on the scaled map.

c. Establishment of Hazard Control Zones at Incident Site

Technical expert should determine the zones varying according to the severity of hazard. For example Hot Zone, Warm Zone and Cold Zone. According to the zones local commandant post and rescue operations should take place.

d. Suppression of Hazardous Gas or Vapour Releases

Technical experts should also identify response measures to any other probability of outburst due hazardous gas and vapour release directly in the atmosphere from the ruptured and punctured containers or from the evaporating and boiling pools of liquid that have been formed due to chemical spill.

e. Selection of Personal Protective Equipments (PPEs)

Technical persons should be able to guide the QRTs entering the hot zone on the correct type of PPEs, as it is necessary to ensure that the materials from which clothing is fabricated will not be penetrating by the spill substance.

(IV) LOGISTIC SECTION CHIEF

Responsible to provide facilities, services and materials for effective management of disaster. Participates in development and implementation of Incident Action Plan (IAP) and activates & supervise Logistic section (figure:7.5).

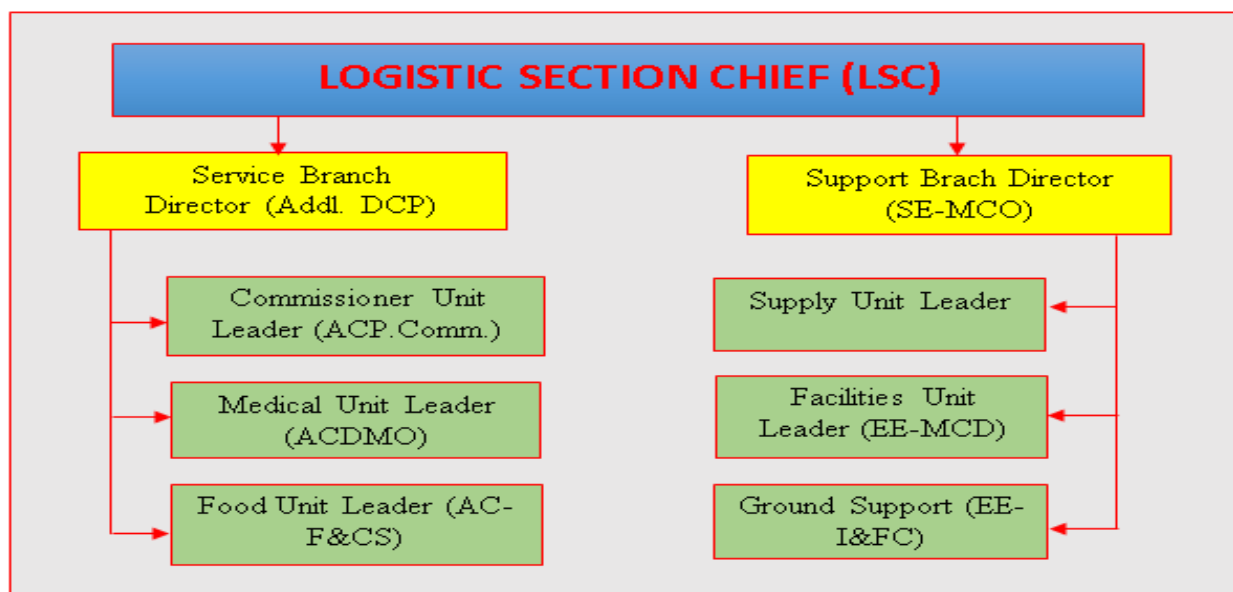


Figure: 7.5. Logistic Section Chief

- Assign work locations & tasks to section personnel
- Participate in preparation of IAP
- Identify service and support requirements for planned and expected operations
- Coordinate and process requests for additional resources
- Provide input to / review communication plan, Traffic plan, medical plan etc
- Prepare service and support elements of IAP
- Recommend release of unit resources as per DMOD plan
- Maintain Unit/ Activity details

Following are the team members who will assist him in the process under service and support branch.

(a) Communication Unit Leader:

- Prepare & implement incident wireless communication plan.
- Ensure that incident communication centre & Message centre are established.
- Establish appropriate communication distribution/ maintenance locations within base/ camps.
- Ensure communication systems are installed and tested.
- Ensure equipment accountability system is established.
- Ensure personal portable wireless sets from cache is distributed as for incident wireless communication plan.
- Provide technical information required on
 - Adequacy of communication system currently in operation
 - Geographic limitation on communication system
 - Equipment capabilities / limitations
 - Number and types of equipments available
 - Anticipated problems in the use of communication equipments
 - Ensure equipments are tested and repaired
 - Recover equipments from released units.
 - Responsible to receive and transmit wireless and telephone messages between

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

- Set up message centre location as required
- Receive and transmit messages within and external to incident
- Maintain files of general messages
- Maintain a record of unusual incident occurrences.

(b) Medical Unit Leader:

Responsible for

- Development of medical response plan
- Respond to requests for medical side and transportation for injured & ill incident personnel medical supplies.

(c) Food Unit Leader:

Responsible for supply needs for the entire incident including camps, staging areas.

- Determine food & water requirements
- Determine method of feeding to best fit each facility or situation
- Obtain necessary equipment & supplies and establish working facilities
- Order sufficient food & potable water from the supply unit
- Maintain an inventory of food, water
- Maintain food service areas & ensure that all appropriate health & safety measures are being followed.
- Supervise caterers, cooks and other food unit personnel.

(d) Supply Unit Leader:

Primarily responsible for ordering personnel, equipment, & supplies receiving and storing all supplies for the incident maintaining an inventory of supplies servicing non-expendable supplies to equipment.

- Determine the type & amount of supplies en route
- Order, receive, distribute and store supplies & equipment
- Receive and respond to requests for personnel, supplies and equipment
- Maintain inventory of supplies & equipment.
- Service reusable equipment

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

(e) Ordering Manager:

- Obtain necessary order forms
- Establish ordering procedure
- Establish name and telephone number of personnel receiving orders
- Get names of incident personnel who leave ordering authority
- Check on what has been already ordered
- Orders when possible
- Place orders in a timely manner
- Keep time and location for delivery of supplies
- Keep receiving and distribution manager informed of orders placed

(f) Receiving & Distribution Manager:

- Organize physical layout of supply area
- Establish procedures for operating supply area
- Set up a system for receiving and distribution of supplies and equipment
- Develop security requirement of supply area

(g) Facilities unit leader:

- Primarily responsible for the layout and activation of incident facilities e.g. base, camps, ICP.
- Provides rest and sanitation facilities for incident personnel
- Manage base and camp operations (to provide security and general maintenance)

(h) Ground support unit leader:

- Support out of service resources.
- Transportation of personnel, supplies, food & equipment.
- Fueling, service, maintenance and repair of vehicles and other ground support equipment.
- Implementing traffic plan for the incident

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

(V) FINANCE AND ADMINISTRATION SECTION CHIEF

Responsible to take decisions related to financial and cost related matters under given period.

Following positions would be helping him in conducting his duties

(a) Time Unit Leader: Responsible for status recording and equipments time taken recording

(b) Procurement Leader: Responsible for administering financial matters pertaining to vendor contracts.

(c) Cost Unit Leader: Responsible for collecting all cost data, performing cost effectiveness analysis & providing cost estimates & cost saving recommendations for the incident.

7.5.4 DESK ARRANGEMENTS

District EOC will expand to include desk arrangements with responsibilities for specific tasks. The desk arrangement may continue to operate from EOC till the time long term plan for rehabilitation are finalized. The desk arrangements provide for divisions of tasks, information gathering, and record keeping and accountability of the desk officer to the district commissioner. The Team leaders of emergency support functions shall be the desk officer and work under the coordination of Operation Chief. The desk officers shall be responsible to prepare, update, and process reports according to the formats. Below emergency support functions of each desk officer/team leader has been discussed in detail.

7.5.5 EMERGENCY SUPPORT FUNCTIONS

Emergency Support Functions (ESFs) are the essentials of Emergency Management comprising of various coordinating agencies, which manage and coordinate specific kinds of assistance common to all disasters types. The plan establishes an organized set-up to conduct ESF operations for any of the Natural and Manmade Disasters. It outlines an implementing framework of sharing resources and co-coordinating, preparedness, Mitigation, response and recovery as per the requirement. The Plan has structured the activities of concerned agencies i.e. primary/nodal and support agencies into an organised manner according to their capabilities, skills, resources, and authorities across the state and district government. It also attempts to unify efforts of state departments so that they are involved in emergency management comprehensively to reduce the effects of any emergency or disaster within the state.

(I) ORGANISATION SETUP OF THE ESF AT DISTRICT LEVEL

The Revenue Department of the district, which may be renamed as ‘Department of Revenue and Disaster Management’, as directed by the Ministry of Home Affairs, is the prime co-coordinating agency for disaster risk management efforts. However, there will be other agencies involved in-charge of different ESFs. Each ESF is headed by a lead organization and assisted by supporting organizations for coordinating the delivery of resources and services to the disaster-affected area.

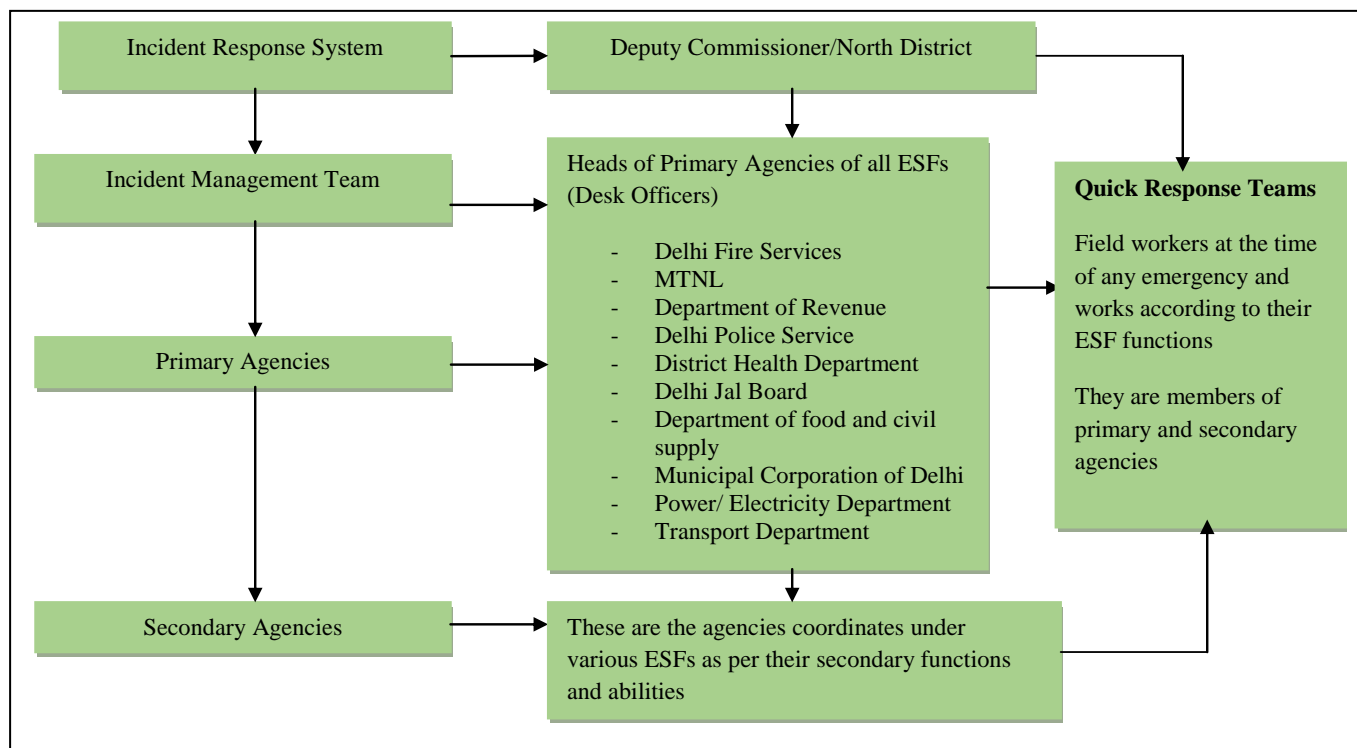


Figure: 7.6. District Level Incident Response System

These ESFs form an integral part of the EOC and each ESF should coordinate its activities from the allocated EOC. Extension teams and quick response teams (QRTs) would be required to follow their response procedures at the affected site. Nodal officers of all the ESFs would constitute Incident Management Team. Nodal officer would also nominate names for the QRT members who will accomplish disaster management related work at the field level. Similarly supporting agencies would also nominate their nodal officers and QRT members who will assist to the primary officers during response phase. Additional names should also be proposed to backstop the requisite positions.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

Nodal and Supporting agencies comprising of QRTs shall be trained to carry out their functions at the response site. The success of ESF will be of critical importance and would reflect in the lives saved in the golden hour. All ESFs have to assist the Incident Commander i.e. District Magistrate at State level as per their assigned duties described in the SOP's and to be followed during emergency within the District/State.

A detailed organizational setup of all ESFs and team leaders has been given below:

In any case of any disaster Police, Fire, Medical and revenue department have been identified as first responder.

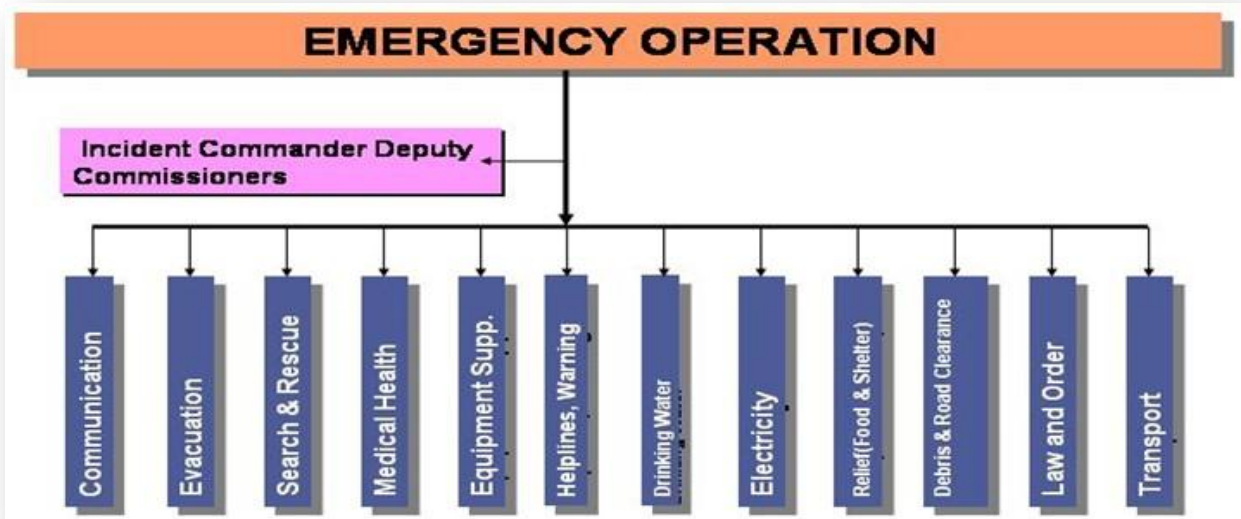


Figure. 7.7 Emergency Support Functions

A set of clearly defined responsibilities for all the ESFs have been mentioned below:

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

Table 7.2 ESFs Teams

ESF	Function	Coordinator	Members
ESF1	Communication	MTNL	NIC, Police, Revenue Wireless, Private Telecom
ESF2	Evacuation	Police Department	Army, Health Dept, Civil Defence, Delhi fire Service, NCC
ESF3	Search and Rescue	Fire Department	Fire Deptt, Police, Civil Defence, Army
ESF4	Medical Health/Trauma	Health Department (CDMO)	Major Hospitals, CATS, St. John Ambulance, Civil Defence
ESF5	Equipment Support	NDMC	MCD, PWD, NDMC, Cantt. Board, DDA, JAL Board
ESF6	Help lines, Warning Dissemination & coordination Media coverage	District Magistrate (Revenue/Disaster Management)	All Emergency Support Functionaries (ESFs), Media Agencies
ESF7	Drinking Water	CEO, Jal Board	DJB
ESF8	Electricity	NDPL	Transco, Power Companies (NDPL/BSES)
ESF9	Relief (Food and Shelter)	District Magistrate (Revenue/Disaster Management)	Civil Supplies Corporation, Civil Defence, Volunteer Organizations
ESF10	Debris and Road Clearance	Commissioner, MCD	PWD, NDMC, Cantt. Board, DDA, MES, CPWD
ESF11	Law and Order	Commissioner, Police	Civil Defence, Home Guards
ESF12	Transport	Transport Department	DTC,DMRC

7.5.6 ACTION PLAN FOR EMERGENCY SUPPORT FUNCTION

1. COMMUNICATION

Situation Assumption:

Due to extreme fire explosions or a high intensity earthquake telephone wires might get damaged so communication from the site is not possible There is a need to inform to various departments and to establish a temporary communication system.

Primary Agencies : Mahanagar Telephone Nigam Limited (MTNL)

Supporting Agencies: NIC, Private telecommunication and Mobile phone operators

Immediate Actions :

1. Team Leader (TL) will activate ESF immediately and intimate to his supporting officers.
 2. He will establish a contact with district EOC for First Information Report.
 3. He will decide upon the extent of damage to telecom services and network and will provide possible arrangements to establish reliable networks.
 4. In such kind of large explosion, the communication systems of the affected installation may get severely damaged and be rendered useless. In such case communication coordinator would be responsible to provide emergency communication system to the incident site. It shall comprise through wireless (available within the Delhi Administration), mobile phones, and landlines available with the industries.
 5. Coordinator will establish an all call system on telephonic network for notification of emergency in the areas likely to be affected.
 6. Prepare a standard message format (in Hindi and English) for use in radio/television broadcast or outdoor notification through megaphone to facilitate and reduce time necessary to alert the public of a problem and inform them of the protective actions to be taken.
 7. Establish a warning system for different levels of emergency.
 8. TL should send Quick Response Team (QRT) at the incident site with required equipments and resources.
 9. TL will inform to IC about the restoration of telecom services and will communicate new phone numbers.
 10. HAM radio operators would be informed about the current requirement and coordination mechanism.
 11. TL monitors the situation and arranges staff required to operate established systems.
- ***ACTION TO BE UNDERTAKEN BY QUICK RESPONSE TEAMS (QRTS)***
1. QRT members will reach to the incident site as soon as they get instructions.
 2. QRT will take stock of the situation from the IC and also from the members of the other QRTs.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

3. QRT will assess the ground situation and send reports to state ESF agencies. The report would contain assessment of overall damage listing, overhead route damage (mts/kms), cable damaged(in yards/mts) and specific equipment damage.
4. Establish a temporary communication facility for the use of public.
5. Identify requirement of manpower, resources and equipments.
6. Begin restoration by removing and salvaging wires and poles.
7. Reporting to the head office.

Coordinating ESFs: Help lines, Relief, Medical response, Law and order, Search and rescue, etc.

2. EVACUATION

Situation Assumption:

People who are residing in vulnerable location may get affected due to the chemical explosions/fire/earthquake. These areas may be nearby installation, industries, railways and other institutions. Under such circumstances, TL should take up decision either to evacuate the places or not.

Primary Agency : *Police department*

Supporting Agencies : Police department, Fire department, Civil Defense, Home Guard department, NCC, NSS, NYKS and NGOs.

Task Involved :

The Team Leader (TL) with the Help of QRTs shall perform following duties:

a. Identification of people to be evacuated

The decision of the area under dangerous location will largely depend upon the wind speed, direction, and rate of explosion.

b. Evacuation of public

- On the directions of Incident Commander(IC), the ESF Team Leader will perform evacuation. He will instruct the team to initiate evacuation of the areas expected to be exposed and threatened by the explosions.
- The QRT shall move along with adequate material and resources to carry out evacuation. People will be directed to move towards safer areas identified by technical experts.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- The team leader will designate in-charge of relief centre and keep in touch with them for regular head count and care of evacuees.
- Police, Fire, Civil Defence & Home Guard (CD & HG) and other government employees may have to go door to door to ensure that residents have been alerted about the emergency.

C. EVACUATION ROUTES AND ASSEMBLY POINTS

1. In planning process routes shall be defined well in advance. These routes should be clearly spelt out in warning signals as also the location of the shelters to where people with automobiles should proceed and people without automobile should gather.
2. Designated evacuation routes should be major roads preferably but according to the wind speed and directions.
3. As evacuation would be declared police and fire should be prepared to control roads and traffic on evacuation route.
4. Apart from above mentioned duties TL should also dispatch following notifications:-
5. The Team Leader will ensure that notification has been communicated to the nearby institutions such as schools, hospitals, residential colonies and similar facilities having large group of people
6. The team leader will also ensure that nearby water users (industries, farm irrigations, drinking supplies) and water treatment plants are informed to get water at the incident sites
7. On getting instructions from the Incident Commander(IC), the team leader of the ESF will ensure notification to the general population for evacuation immediately and rush to safer sites
8. It is important to note that next kin are promptly notified of fatalities or severe injuries carefully in a supportive fashion. This activity can be discussed with Police, Red Cross society, voluntary organizations and NGOs

Coordinating ESFs : Law and Order, Search and Rescue, Food and Shelter

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
 DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
 DELHI DISASTER MANAGEMENT AUTHORITY

3. SEARCH AND RESCUE, FIRE FIGHTING

Situation Assumption:

There may be a massive destruction, aggressive fire explosions, there may be a need of repairing leakages to reduce fire explosions, situation can aggravate due to mishandling or carelessness

Primary Agency : Delhi Fire Service

Supporting Agencies:

Trained fire fighting/search and rescue team of incident site and nearby installations (IOCL, BPCL, HPCL), Civil Defence and Home Guard, Police department.

▪ **Immediate Tasks :**

1. TL will activate the ESF and give instructions to the QRTs to reach at incident site to person rescue operations
2. TL will coordinate with LCP and EOC to judge the situation
3. TL will coordinate in deputing rescue team to enter in hazardous areas
4. TL will coordinate with technical experts, safety coordinators and material coordinator for quick response in case of any requirement in conducting rescue operations

IMMEDIATE TASKS OF QRTS

Fire fighting teams will undertake these services in case of extreme fire explosions and chemical disaster.

On-scene Assessment

1. First fire vehicle to reach at incident site will contact the site controller and collect the necessary information regarding chemical leak, action taken, current status and type of equipment required.
2. Driver will park their vehicle in a manner to prevent exposure to air-borne chemical contaminants and fire explosions.
3. Each crewmember will wear the necessary PPEs (Personnel Protective Equipments) before entering in the “hot zone”. They will work in pairs and coordination.
4. The situation will be communicated to the FCR to provide the update of additional resource and manpower requirement.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Plugging/Stopping of Leaks

Few crewmembers having good knowledge of basic tools and knowledge to limit the losses from punctured or leaking tanks will work for plugging holes. Plugs of varying sizes and shapes (conical, cylindrical, square or wedge shaped wood pieces, rubber or metal sheets) can be jammed in the wholes to reduce the leaking.

Suppression of Hazardous Gas or Vapour Releases

Based on the guidance of technical coordinators, the response team shall take rapid measures to reduce the rate of amount of hazardous vapors or gases entering in the atmosphere-using one or combination of the following measures:-

- Physical restriction of liquid pool surface areas, transfer to an alternate or standby container if available.
- Use of fire-fighting or specialized hazardous material foams, dilute or coverage of liquid pools with water or other compatible liquids.
- Use of water sprays or fogs, neutralization of spilled liquids, cooling of spilled liquids or venting tanks

Search and Rescue Operations

1. According to the instructions of rescue coordinators QRTs should enter into the hazardous areas and rescue injured and trapped people.
2. For common safety practice, QRTs should work in pairs.
3. QRT should initiate search and rescue operations of trapped people under the guidance of technical experts.
4. QRT of rescue operations should carry a self-contained breathing apparatus (SCBA) to carry out their mission without falling victim. They should also carry a spare SCBA unit, which will help them to escape people trapped in the hazardous areas, and sometimes rescue workers require extra air supplies to accomplish prolonged rescue.

Coordinating ESFs : Law and Order, Relief, Evacuation, Water Supply

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

4. LAW AND ORDER

Situation Assumption:

There may be a chaos in the affected area. People may rush without proper following proper instructions, which may increase the expected loss. Traffic may become out of control and lead to jams.

Primary Agency : Police Department (Police and Traffic Police)

Supporting Agencies : Civil Defence and Home Guard

Immediate Actions of Police:

1. Deploying quick response teams (QRTs) to maintain law and order at the incident site.
2. QRTs deployed at the site will be equipped and will coordinate with following activities.
3. Quick Assessment of law and order situation in affected areas.
4. Cordon off the site to restrict movement of curious onlookers, vehicles and pedestrians .
5. Control and monitor traffic movements.
6. Support and coordinate with local administration.
7. Prepare updates on the law and order situation in every 2 hours and brief the authorities.
8. Ensure law and order at assembly points and evacuation points.
9. Control situation of rioting and looting and cordon off affected areas.
10. Provide traffic diversions so as to ease movement of response vehicles to incident site.
11. Gather and disseminate information about the traffic flow on alternate routes for decongestion.
12. Ensuring law and order in rehabilitation centre.
13. Communicate with PCR on regular basis regarding field activities including deployment of manpower and resources.
14. To advice home-guards and civil defence to remain alert for responding to call from Police.
15. To contact nearby hospitals for making emergency arrangements for receiving injured persons.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Immediate actions of Traffic Police:

1. To coordinate and communicate with concerned functionaries.
2. To detail traffic staff to reach the place of occurrence.
3. To give directions whenever necessary to ensure free passage for fire brigade ambulance, police vehicles and vehicles of other respondents.
4. DCP (traffic) to coordinate with the DTC and other private transporters for additional vehicles.

- **Coordinating ESFs** :
- Communication, Search and Rescue, Transport, Help lines and Warning dissemination and Relief Supply etc.

5. MEDICAL RESPONSE AND TRAUMA COUNSELING

Situation Assumption:

Expect large number of casualties There may be a requirement of more trained professionals and specialists in various fields There may be a requirement to maintain a close contact with the other major hospitals in case of more severe conditions

Primary Agency : Directorate of Health Service

Secondary Agencies: CATS, DDU Hospital, GGS Hospital, Indian Red Cross Society, St. John Ambulance, Installations (IOCL, BPCL, HPCL), CD & HG, IMA representatives, NCC, NSS, NYKS and NGOs

Immediate Actions :

1. Ensure the adequate number of medical professional to reach at the site including specialist in chemical exposure handling.
2. DDHS in consultation with the respective medical superintendents of major hospitals should also responsible to prepare a mass causality plan.
3. Ensure high sanitation standards at resettlement site to reduce epidemic outbreak.
4. Providing adequate treatments to the victims of explosions.
5. Trained profession should be mobilized by psychological support.
6. Ensure setting up of temporary information centre at hospitals with the help of communication ESF.
7. Send vehicle and additional equipments.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Immediate Actions of QRTs:

Establishment of Triage Station

- a. Mass casualty situation will require establishment of field hospitals to take care for the injured and to identify stabiles and transport more serious cases to the hospitals
- b. Codes should be used to recognize serious and stable cases such as red –critical, yellow-stable and green-wounded
- c. Treatment should be provided according to the casualty of the victims
- d. Medical coordinators should propose rehabilitation centre as per the type of casualties
- e. Field hospitals shall maintain a record of all the patients so as to enable accounting of personnel and their destinations after triage

Medical Support for Response Personnel

Properly equipped medical personnel and ambulances should be made available to check and treat injured or contaminated response personnel

Medical support at temporary shelters

- a. A team will take care of the people who become ill during evacuation or later.
- b. Team should be aware of the signs and symptoms of exposure to toxic materials so that they can easily identify victims and provide them treatment and care
- c. Contaminated individuals should be segregated from the unexposed people until they are adequately decontaminated
- d. Special facility should be given for care of the handicapped and elderly

Coordinating ESFs: Search and Rescue, Evacuation, Communication

6. WATER SUPPLY

Situation Assumptions:

There may be a need of supplying water for fighting operation there may be a need for drinking purpose rehabilitation site might be requiring temporary/mobile toilets, there may be need to ensure clean environment

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Primary Agency : Delhi Jal Board (DJB)

Supporting Agencies: Irrigation and Flood Control Department, SDMC, Railways

Immediate Tasks :

- a. The team leader will ensure that Quick Response Teams are on the site along with the required resources.
- b. He shall be ensuring uninterrupted supply of water for fire-fighting to all the brigades in operation.
- c. He shall coordinate with the transport coordinator for replenishing the depleted stock of fire water at the incident site through water tanks.
- d. Carry out the task of repairing all damages to water supply system.
- e. Arranging alternate storage of potable water at temporary shelters.
- f. Ensure restoration of potable water as per standards and procedures laid down under 'Standards for Potable Water.
- g. Plan for emergency accommodation of water supply in or near temporary shelters.
- h. Establish temporary sanitation facilities at the shelters.
- i. Ensure cleanliness of sanitation facilities, relief shelters and local commandant post.

Coordinating ESFs: Shelter, Relief, Evacuation, Medical, Search and Rescue

7. RELIEF (FOOD AND SHELTER) SUPPLY

A. Food Supply

Situation Assumption:

There may be a need to distribute food packets and drinking water to the victims.

Action to be taken by: Food and Civil Supplies Department

Supporting Agencies:

Indian Red Cross Society, NGOs, NYKS, NCC, NSS and Education department

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Immediate Tasks :

1. The team leader(TL) will activate ESF on receiving the information about the incident and will also inform to the supporting agencies.
2. Food coordinator would gather information about the locations of shelters and number of persons housed in each of these shelters.
3. The TL will guide QRTs to reach at rehabilitation centre to provide food packages.
4. The TL will keep on coordinating about the distribution of food items to the evacuees and will give appraisal to the IC.
5. In case of shortage of food items the TL will arrange more food packages and will ensure continuous supply.

▪ Tasks for QRTs :-

1. Management and distribution of relief items to affected victims.
2. Report the progress on action them to the TL.
3. Inform the TL about more requirements of staff members, additional materials and food packages.
4. Initiate procurement of food items available at nearby markets.
5. Prepare take-home food packets for the families.
6. Ensuring equal distribution of relief material including children, aged groups, women and poor people.

Coordinating ESFs: Evacuation, Shelter, Water and Sanitation and Medical response.

B. Shelter Arrangements

Situation Assumption:-

There may be a situation of transferring victims to the safer temporary shelter, there may also be a need to establish triage station for medical treatments

▪ Primary Agency : Revenue Department

Supporting Agencies: Nehru Yuva Kendra Sangthan, Education Dept, NSS, NCC.

a. Immediate Actions:-

- b. The team leader (TL) would be the in-charge of rehabilitation centers who will ensure number of people evacuated , care of evacuees and availability of essential supplies

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- c. Those who will reach to the relief centre would also like to know about their missing members. TL will response to their queries and also pass on the message to the evacuation and rescue related coordinators
- d. The Quick Response Team(QRT) will help them in arranging temporary shelters, food and sanitary facilities
- e. Medical facilities will also be provided to the victims and injured people

Coordinating ESFs: Search and Rescue, Evacuation, Medical Response, Law and Order, Relief Supply and Water and Sanitation

8. Equipment Support, Debris and Road Clearance, Sanitation

Situation Assumptions:

There may be a requirement of arranging equipments to perform fire fighting and search and rescue Roads may get blocked due to debris

Primary Agency : MCD(Rohini, Narela, Civil Lines)

Supporting Agencies : PWD, DJB, DMRC, DDA, Installations (BPCL, IOCL, HPCL),

Task Involved :

- a. The team leader (TL) will inform Quick Response Teams(QRTs) and Supporting agencies about the incident
- b. Coordinate with supporting agencies to mobilize equipment form warehouse
- c. Assessing road blockage and building damage through QRTs

In Addition to the above, coordinator would also coordinate with following activities:-

a. Availability of respiratory protective devices

In case of large scale explosion, sometimes there may be a shortage of protective devices. Therefore, coordinator would judge the requirement of personal protective equipments and clothing for members of emergency teams.

b. Availability of Special Protective Clothing

In the crises situation sometimes there may be requirement of more complete protection of the body by clothing that is resistant to the damaging effects of the spilled substance. Such situation may require clothing such as boots, gloves and disposable suits, air-tight fully encapsulating ‘astronaut’ suits made of chemical resistant materials.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

c. Ensuring availability of support services for response teams

Field response teams would be working day and night at incident site. These personnel will require rest areas, food and sanitation facilities etc. Therefore material coordinator along with the NGOs and coordinators of food and shelter will arrange rest areas, food, shelter and other facilities.

d. Maintenance of Apparatus and Equipments

There would be few equipments requiring refuelling and minor maintenance for uninterrupted operation. Therefore on-scene services should be arranged so that operation can be continued without any problem.

Tasks for Quick Response Teams :

- a. Conduct damage assessment including location, number of structure damaged and severity of damage
- b. Enlisting type of equipments required for conducting debris clearance
- c. Report the situation and progress report to EOC and TL
- d. Undertake construction of temporary roads to serve as access to the site by other response agencies

Coordinating ESFs: Search and Rescue, Medical, Evacuation, Help lines and warning dissemination, Food and Shelter.

9. HELP LINES

Situation Assumptions:

A large number of reporters are arriving at the scene to get the correct information. There is a need to spread cautions to the local people about their movement towards safer areas. There may be rumors about the information.

Primary Agency : Revenue Department

Supporting Agencies: NIC, MTNL, Publicity and Information department, Press trust of India, Important Media channels and newspapers, AIR, Doordarshan and Press Information Bureau

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Tasks Involved :

- a. Coordinator will transfer an adequate information to the large number of reporters arriving on scene and attempting to interview response teams and officers so that unwanted rumors can be reduced
- b. Designate one specific individual and an alternate press officer to join the team of press officers
- c. Coordinator should try to communicate the timely and right information so that confusions and rumors can be reduced
- d. Compile the list of telephone numbers of local radio, televisions and other related personnel who can help in air announcements
- e. Provide the desired support to the press officers with secretariat support, photocopy machines, and means of communications with overall command of the response operations
- f. Establish a firm policy among all local officials and response personnel as to who should speak or should not speak to media personnel
- g. Ensure that key emergency response personnel understand the need to relay up-to-date “status report” to press on a regular basis

Coordinating ESFs: Search and Rescue, Evacuation, Relief and Shelter, Transport, law and Order and Medical Response etc.

10. ELECTRICITY

Situation Assumptions:

Expect electric short circuits in the affected area which may aggravate the fire explosions. Electric fitting of the affected areas may get damaged and may need to be repaired, there may be a requirement of temporary lightening arrangements in the relief shelters and local commandant post.

Primary Agency : BSES- Rajdhani Limited/Reliance Energy

Supporting Agencies: NDPL, TRANSCO

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Task Involved :

- a. Team leader will activate the Emergency Support Function(ESF) by informing his headquarter team and field team
- b. Informing nodal and supporting agencies about the incident

a. Notification and shutdown of electricity utilities

Major explosions may be caused by breaking of power supply line and electrocution hazard to those who might contact with any downed lines. To avoid such cases, it is desired to shutdown electric power system rapidly in the area and nearby areas. As per the instruction given by IC, coordinator should instruct to concerned officers of BSES/NDPL to shut down the power supply immediately.

b. Provisioning Backup Power during Emergency

Once power system is closed down, but power would still be required for response teams, LCP, EOC, water supply stations, temporary houses and temporary hospitals. Therefore electricity coordinator will be responsible for providing back-up or alternate source of uninterrupted power supply for smooth operations

In addition to the above, QRTs should also undertake following responsibilities:

- a. Take stock of situation immediately on reaching the incident site.
- b. Coordinate with other team leaders and provide essential help expected from the electricity department.
- c. Conduct repairing work of dismantled connections .
- d. Provide temporary electricity supply to EOC, LCP and relief centre
- e. Report to the team leader about the situation appraisal.

Coordinating ESFs: Road and Debris Clearance, Incident Command Post, Relief and Shelter, Medical response etc

11. TRANSPORT

Situation Assumptions: There may be a need of diverting transport immediately or there may be a need to transport affected population to the safer places

Primary Agency : Department of Transport

Supporting Agencies : Delhi Transport Corporation

Immediate Tasks :

1. Direct the local transport coordinator to direct the fleet(drivers)and coordinate the following transport activities during emergency
2. Closely liaison with the communication and evacuation coordinators
3. On the basis of instructions delivers by IC, he will affect the warning/ Instructions/ notification /operation
4. Arrange for the fleet of vehicles at a pre-designated location so that they can transport the affected population of safer areas(relief centre)
5. Transporting people from vulnerable areas to safer areas
6. Also transporting required equipments, materials and personnel etc.

Coordinating ESFs: Medical Response, Law and Order, Debris and Clearance, Evacuation, Search and Rescue.

7.5.7 INCIDENT COMMAND POST

In case of emergency IC should propose an incident command post as a complimentary unit to EOC, which will operate close to the disaster site and shall be linked directly with the District Emergency Operations Centre. Concerned SDM shall be the nodal officer from district administration responsible of coordinating with emergency response teams at field level. The Incident Commander shall also appoint an administrative officer to monitor and co-ordinate the activities of Incident Command Post. All information shall be conveyed to the Collector from the SDM and administrative officer appointed at SOC. The QRT unit of the respective vital departments would be responsible to execute activities at disaster site, however the tasks would be controlled and coordinated from EOC through nodal desk officers/ESF team leaders.

7.6 OVERALL ROLE OF DISTRICT MAGISTRATE (NORTH)

The District Magistrate (N) will be the focal point at the district level for directing, supervising and monitoring relief measures for disasters and for preparation of district level plans. He will exercise coordinating and supervisory powers over functionaries of all the departments at the district level. During actual operations for disaster mitigation or relief, the powers of all District Magistrate (N) are considerably enhanced, generally, by standing instructions or orders on the subject, or by specific Governments order, if so required. Sometimes, the administrative culture of the concerned state permits, although informally, the District Magistrate (N) to exercise higher powers in emergency situations and the decisions are later ratified by the competent authority.

The District Magistrate (N) will maintain the close liaison with the central government authorities in the districts, namely army, air force and ministry of water resources etc, who supplement the effort of the district administration in the rescue and the relief operations. The District Magistrate (N) will also coordinate all voluntary efforts by mobilizing the non-government organizations capable of working in such situations.

In the event of a serious disaster, the District Magistrate (N) will have sole right to appoint senior officers of any State Government Department, posted in the district as '*Field Relief Managers*' for monitoring and coordinating the relief operations in the affected area.

7.6.1 DUTIES AT THE TIME OF DISASTER

- Maintenance of law and order; prevention of trespassing, looting, keeping roads clear from sightseeing persons so that free movement of rescue vehicles is assured, etc.
- Evacuation of people.
- Recovery of dead bodies and their disposal.
- Medical care for the injured.
- Supply of food and water and restoration of water supply lines.
- Temporary shelters like tents, metal sheds.
- Restoring lines of communications and information.
- Restoring transport routes.
- Quick assessment of damage and demarcation of damaged areas according to grade of damage.
- Cordoning off of severely damaged structures that are liable to collapse during aftershocks.
- Temporary shoring of certain precariously standing building to avoid collapse and damage to other adjoining buildings.

7.6.2 DUTIES AT POST-DISASTER SCENARIO

- Particular attention is paid to women's views in the assessment stage.
- Women's actual responsibility in domestic (in terms of household subsistence, health, and child care) and production and economic activity beyond the subsistence level are taken into account in determining the consultation process.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- Women representatives are included at all level of planning, decision-making, implementation, and evaluation.
- The particular constraints faced by households maintained by women are taken explicitly into account in designing and implementing relief programmes.
- Special attention is provided to unaccompanied women, lone parents and widows. Issue of legal, sexual and physical protection are properly identified and addressed.

7.7 OVERALL ROLE OF THE POLICE DEPARTMENT

The primary areas of Police responsibility have been summarized as follows:-

- The saving of life in conjunction with other emergency services.
- Co-ordination of the emergency services and other organizations.
- Traffic and crowd control.
- The investigation of the incident in conjunction with other investigative bodies where applicable.
- The collation and dissemination of causality information.
- Identification of victims.
- The restoration of normality at the earliest opportunity.

7.7.1. ACCESS AND CROWD CONTROL

Whenever a disaster takes place, the police should immediately cordon off the area and prevent people from thronging the scene. The experience has shown that a large number of people try to reach the scene of occurrence out of sheer curiosity or with the intention of extending their assistance to, affected persons,. It becomes then necessary that police establish an outer cordon around the site of the disaster to control access to the whole of the disaster site, if practical. Stricter access control shall be enforced by the police and it should be ensured that no unwarranted person gains entry to the scene of disaster. An easily located Rendezvous point, away from, but within easy reach of the incident, should be immediately selected and manned by Police to receive and direct emergency service vehicles and personnel. Immediate traffic arrangements shall be made to divert the traffic away from the scene of disaster. The motorists shall be suitably notified about the traffic diversion through the P.A. system, Radio, TV as well as by the traffic policemen present at the spot.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

The area should also be kept clear of all the traffic so as to ensure that the vehicles of emergency services face no hindrance to reach the site. The obstruction of way to site of disaster may delay the arrival of fire brigades, ambulances and other vehicles as well as the staff and is likely to affect the rescue and relief operations.

Adequate arrangements are to be made by the police to prevent the crowd to reach that site of disaster. Those who have already reached there should be asked to move away. Sometimes the public also gets agitated and displays their annoyance against the government, which soon turns into a law and order problem. The police should deal with them effectively but tactfully. They should be properly equipped to deal with such a situation.

7.7.2. SEARCH, RESCUE, AND EVACUATION

During the disaster, normally the police is first to reach the spot. Till the arrival of other emergency service personnel, it should reach the area and remove the casualties from the site. It should also extend full co-operation to other services and the local authority in the rescue and evacuation operations.

Normally the police recommend whether or not to evacuate and define the area to be evacuated. Their recommendation should, however, take into account the advice from the fire service on risks associated with fire, contamination and other hazards, from the ambulance and local authorities. The police can only recommend evacuation and have no power to require people to leave their homes.

7.7.3. SCENE CONTROL AND LEGAL ACTION

It is vital that the scene and surrounding area of any major incident should be protected for:

- Safety of victims and
- Protection and preservation of evidence
- Protection of properties of the affected persons against theft, looting, etc. during the disaster and its post impact period.

It must be accepted that large numbers of police officers will be required to achieve this aim and therefore, the in charge of the district or Incident Commander should take early action for the reinforcements.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Unless a disaster has been caused by severe weather or other natural phenomena, the police would be required to treat the scene at and around a disaster as a scene of crime and preserve it accordingly. It has to initiate necessary legal action regarding registration of a criminal case and investigation of the crime. Police has also to facilitate inquiries carried out by the responsible accident investigation body such as Railway, Civil Aviation, Medical and other departmental investigating agencies. The police process casualty information and have responsibility for identifying and arranging for the removal of the dead. Wherever appropriate, the police has to identify the culprits, arrest and subsequently prosecute them.

7.7.4. VVIP/VIP Visits

Visits by VIP's can lift the morale of those affected by the disaster as well as those who are involved with the response. It has been seen that the Ministers, members of Parliament and State legislatures, local councillors, leaders of various political parties, etc. visit the scene of a disaster and the injured to mark public concern and see the disaster response. It may be possible that the scale of a disaster will in addition prompt visits of the Prime Minister, Governor, Chief Minister, etc. Sometimes their visit to the disaster site is likely to adversely affect the rescue operations, particularly if casualties are still trapped. It should be ensured that their visits do not interrupt rescue and life saving work and the police, as co-coordinators of the disaster response, should explain the ground situation to them and try to avoid their visit, if possible. However, in case the visit becomes inevitable, it should fix up the timings of visits. The additional need for their security would also cause a problem. The police and the local services are, however, experienced at handling VIP visits and many of the usual considerations will apply to their visit to a disaster site.

It would be desirable to restrict media coverage of such visits, in which case the police should liaise with the government press officer to keep their number to minimum. It may also be necessary for the police to brief the VVIP/VIP beforehand about the details of casualties, damage and the nature of the disaster. It should, therefore, a brief note for such briefings be prepared.

7.7.5. ESTABLISHING RECEPTION CENTRE

During disasters, many people come to see and check their relatives and friends at incident site. Therefore the police in consultation with the local authority and commercial, industrial, or other organizations concerned shall establish reception centre for friends and relatives, staffed by the police, local authority, and suitably prepared voluntary organizations.

The fullest possible information should be given to enquirers seeking news of those involved in a disaster. It helps to ensure consistent and non-contradictory information being given out. Friends and relatives who may be feeling intense anxiety, shock, or grief, need to be treated with sympathy and understanding. Access to the reception centre should be controlled to prevent those inside being disturbed by uninvited media representatives or onlookers.

7.7.6. INTIMATION REGARDING FOREIGNERS

If foreign nationals have been involved in the disaster, the police will in accordance with the Vienna convention on Consular relations, inform the Consular authorities of the death or injury to any of their nationals by quickest possible means.

7.8 DEPARTMENT WISE ROLE OF PRIMARY AND SECONDARY AGENCIES

7.8.1 Role of NDMC

NDMC will be involved in the following activities:

- ✓ Search and Rescue operations
- ✓ Providing Temporary Shelters
- ✓ Public Information
- ✓ Relief Distribution
- ✓ Construction materials
- ✓ Restoration of infrastructure

7.8.2 Role of DDA

DDA will be involved in the following activities:

- ✓ Providing Temporary Shelters
- ✓ Construction materials
- ✓ Restoration of infrastructure

7.8.3 Role of Fire Services

Fire will be involved in the following activities:

- ✓ Search and Rescue operations
- ✓ Evacuation
- ✓ Disposal of Dead (as per customs)
- ✓ Public Information

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.8.4 Role of PWD

PWD will be involved in the following activities:-

- ✓ Construction materials
- ✓ Restoration of infrastructure
- ✓ Providing temporary shelters

7.8.5 Role of Civil Defence

Civil Defence and Home Guards will be involved in the following activities:-

- ✓ Cordoning off area
- ✓ Search and Rescue operations
- ✓ Evacuation
- ✓ First Aid operations

7.8.6 Role of Home Guards

- ✓ Providing Temporary Shelters
- ✓ Relief Distribution
- ✓ Reception/ Information Centres

7.8.7 Role of Department of Health

Department of Health will be involved in the following activities:-

- ✓ Medical aid (Treatment of injuries and surgical operations)
- ✓ Health and sanitation
- ✓ Disposal of Dead (as per customs)

7.8.8 Role of Irrigation and Flood Control

Irrigation and Flood Control Department. Will be involved in the following activities:

- ✓ Construction materials
- ✓ Restoration of infrastructure

7.8.9 Role of MTNL

MTNL will be involved in the following activities:-

- ✓ Communication
- ✓ Reception/ Information Centres
- ✓ Restoration of infrastructure

7.8.10 Role of Delhi Jal Board

Delhi Jal Board will be involved in the following activities:-

- ✓ Drinking Water arrangements
- ✓ Restoration of infrastructure

7.8.11 Role of Delhi Transport Corporation

Delhi Transport Corporation will be involved in the following activities:

- ✓ Provision of vehicles
- ✓ Transportation of materials, manpower etc

7.8.12. Role of BSES/NDPL

BSES will be involved in the following activities:

- ✓ Restoration of infrastructure
- ✓ Provision of power

7.8.13 Role of CATS

CATS will be involved in the following activities:

- ✓ Emergency ambulance services round the clock through trained paramedics who will be mainly performing following functions:
 - ✓ Assessing the patients
 - ✓ Resuscitation
 - ✓ Stabilizing that includes clearing airway, control of bleeding and circulation, splint age etc
 - ✓ Rushing the patient to the suitable hospital
 - ✓ Paramedic services in case of disasters
 - ✓ Training of the public, students and others in emergency first aid
 - ✓ Maintaining round the clock control room, wireless connectivity with CATS control room numbers: 102/1099/23861102/23860160

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

7.8.14 Role of Red Cross

Red Cross will be involved in the following activities:

- ✓ Providing Temporary Shelters
- ✓ Medical aid (Treatment of injuries and surgical operations)
- ✓ Health and sanitation
- ✓ Relief Distribution

7.8.15 Role of St. John Ambulance

St. John Ambulance will be involved in the following activities:

- ✓ Providing first aid training
- ✓ Ambulance services
- ✓ Relief Distribution

7.8.16 Role of I & PR Department

I & PR will be involved in the following activities:

- ✓ Public Information
- ✓ Communication
- ✓ Reception/ Information Centres

7.8.17 Role of Army and NCC

Army will be involved in the following activities:

- ✓ Search and Rescue operations
- ✓ Evacuation
- ✓ Traffic Management and Security of properties
- ✓ Temporary Shelters
- ✓ Disposal of Dead
- ✓ Relief Distribution
- ✓ Relief Supplies

7.8.18 Role of Air Force

Air Force will be involved in the following activities:

- ✓ Search and Rescue operations
- ✓ Aerial Reconnaissance

- ✓ Evacuation
- ✓ Disposal of Dead
- ✓ Relief Distribution
- ✓ Relief Supplies
- ✓ Restoration of infrastructure

7.8.19 Role of selected NGOs/ RWAs and NYKS

Emerging trends in managing natural disasters have highlighted the role of non-governmental organizations (NGOs) as one of the most effective alternative means of achieving an efficient communications link between the disaster management agencies and the effected community. In typical disaster situation, they can be of help in preparedness, relief and rescue, rehabilitation and reconstruction and also in monitoring and feedback. The role of NGOs is a potential key element in disaster management. The NGOs operating at grassroots level can provide a suitable alternative as they have an edge over governmental agencies for invoking community involvement. This is chiefly because, the NGO sector has strong linkages with the community base and can exhibit great flexibility in procedural matters vis-à-vis the government.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 8

RECONSTRUCTION REHABILITATION AND RECOVERY MEASURES

8.1. INTRODUCTION

Rehabilitation relates to the work undertaken in the following weeks and months, for the restoration of basic services to enable the population to return to normalcy. Actions taken during the period following the emergency phase is often defined as the recovery phase, which encompasses both rehabilitation and reconstruction.

Rehabilitation refers to the actions taken in the aftermath of a disaster to enable basic services to resume functioning, assist victims' self-help efforts to repair physical damage and community facilities, revive economic activities and provide support for the psychological and social well being of the survivors. It focuses on enabling the affected population to resume more-or-less normal (pre-disaster) patterns of life. It may be considered as transitional phase between immediate relief and more major, long-term development.

Reconstruction refers to the full restoration of all services, and local infrastructure, replacement of damaged physical structures, the revitalization of economy and the restoration of social and cultural life. Reconstruction must be fully integrated into long-term development plans, taking into account future disaster risks and possibilities to reduce such risks by incorporating appropriate measures. Damaged structures and services may not necessarily be restored in their previous form or location. It may include the replacement of any temporary arrangements established as part of emergency response or rehabilitation.

The following sectors can be vulnerable to disaster impact, and which, therefore, will require rehabilitation and reconstruction inputs.

- Buildings
- Infrastructure
- Economic assets (including formal and formal commercial sectors, industrial and agricultural activities etc.)
- Administrative and political

- Psychological
- Cultural
- Social
- Environmental

“The disaster scenario offers a range of opportunities for affected communities to respond to the crisis, how community responds to a disaster and post disaster aid sets the tone for the transition from disaster to development”. After earthquake in Latur, people of that area started to monitor construction works, retrofitting of houses and behaved like “community construction watch dogs” (IDR, Oxford, 2000).

As discussed earlier rehabilitation and reconstruction comes under recovery phase immediately after relief and rescue operation of the disaster. This post disaster phase continues until the life of the affected people comes to normal. This phase mainly covers damage assessment, disposal of debris, disbursement of assistance for houses, formulation of assistance packages, monitoring and review, cases of non-starters, rejected cases, non-occupancy of houses, relocation, town planning and development plans, awareness and capacity building, housing insurance, grievance redressal and social rehabilitation etc.

8.2 POST DISASTER RECONSTRUCTION AND REHABILITATION

Post disaster reconstruction and rehabilitation should pay attention to the following activities for speedy recovery in disaster hit areas. The contribution of both government as well as affected people is significant to deal with all the issues properly.

- Damage assessment
- Disposal of debris
- Disbursement of assistance for houses
- Formulation of assistance packages
- Monitoring and review
- Cases of non-starters, rejected cases, non-occupancy of houses
- Relocation
- Town planning and development plans
- Reconstruction as Housing Replacement Policy

- Awareness and capacity building
- Housing insurance
- Grievance redressed

8.3 ADMINISTRATIVE RELIEF

The district is the primary level with requisite resources to respond to any natural calamity, through the issue of essential commodities, group assistance to the affected people, damage assessment and administering appropriate rehabilitation and restoration measures. The district level relief committee consisting of official and non-official members including the local legislators and the members of parliament review the relief measures. North district is sub-divided into 3 sub-division i.e. Alipur, Narela and Model Town. The head of a subdivision is called the Sub-District magistrate (SDM) while the head of a Tehsil is known as a Tehsildar. When a disaster is apprehended, the entire machinery of the district, including the officers of technical and other departments, swings into action and maintains almost continuous contact with each village in the disaster threatened area.

8.4 RECONSTRUCTION OF HOUSES DAMAGED / DESTROYED

Houses should be reconstructed in the disaster hit areas according to the following Instructions:-

- ✚ Owner Driven Reconstruction
- ✚ Public Private Partnership Programme (PPPP)
- ✚ Under the PPPP the houses are reconstructed by the NGOs for the beneficiaries to be registered in the joint names of the husband and wife.
- ✚ All the houses should be insured.
- ✚ Owner Driven Reconstruction
- ✚ Financial, technical and material assistance provided by the government.
- ✚ The designs for seismic reconstruction of houses provided by the government.
- ✚ The material assistance provided through material banks at subsidized rates.
- ✚ Design of 20 model houses provided to the public to choose from with an option to have one's own design.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

8.5 MILITARY ASSISTANCE

If the district administration feels that the situation is beyond its control then immediate military assistance could be sought for carrying out the relief operations.

8.6 MEDICAL CARE

Specialized Medical Care may be required to help the affected population. Preventive medicine may have to be taken to prevent outbreak of diseases.

8.7 EPIDEMICS

In the relief camps set up for the affected population, there is a likelihood of epidemics from a number of sources. The strategy should be to subdue such sources and immunize the population against them. The public health centres, health departments can practice vaccination drives, public awareness to drink boiled water, use chlorine tablets to purify the water sources.

8.8 CORPSE DISPOSAL

Disposal of dead bodies is to be carried out as a part of the operation to prevent outbreak of epidemics. Minimum official requirements should be maintained as it is a very sensitive issue. The following points may be considered by the concerned authorities at the time of corpse disposal:-

1. Mass photographs of corpses,
2. Consent of the relatives or hand over to them
3. Make a panchnama of concerned localities.

8.9 SALVAGE

A major effort is needed to salvage destroyed structure and property. Essential services like communications, roads, bridges, electricity would have to be repaired and restored for normalization of activities.

8.10 OUTSIDE ASSISTANCE

During disaster situations, considerable relief flows in from outside, thus there is an immediate need to co-ordinate the relief flows so that the maximum coverage is achieved and there is no duplication of work in the same area.

8.11 SPECIAL RELIEF

Along with compensation packages, essential items may have to be distributed to the affected population to provide for temporary sustenance.

8.12 INFORMATION

Information flow and review is essential part of the relief exercises. Constant monitoring is required to assess the extent of damage, which forms the basis of further relief to the affected areas.

8.13 SOCIAL REHABILITATION

Disabled persons

- ✚ Artificial limbs fitted to affected persons.
- ✚ Modern wheelchairs, supportive devices provided.

Children

- ✚ Orphaned children are fostered.
- ✚ Day centre set up
- ✚ Orphanages established.
- ✚ Child help lines established.

Paraplegics

- ✚ Pension scheme introduced for paraplegics.
- ✚ Physiotherapy under continuous supervision of doctors.

Old Persons

- ✚ Aged persons given pensions.
- ✚ Old Age Homes established.

Women

- ✚ Pension sanctioned.

8.14 RECOVERY

The long-term response plans are related with Recovery and Reconstruction activities on one side and institutionalizing disaster management in district administration on the other side. There are Standard Operation Procedures (SOPs) for the Emergency Support Functions. In long term measures the following actions shall be undertaken duly:

1. Constitution of Emergency Support Functions, Disaster Management Teams, Quick Response Teams, Field Response Teams
2. Refresher trainings for all such teams in a regular interval of time and exercise of Mock Drills
3. Continuous awareness/sensitization programmes for the stakeholders and the general Public.
4. Getting pre-contract with vender's and merchant establishments to procure relief materials in times of disaster

Most of the Line Departments in the District, Autonomous Bodies and Organizations are part of the Emergency Support Functions. The action plans for ESFs for disaster management are discussed in other chapter of the plan. The DDMA (N)/ESFs shall ensure that these actions plans are updated bi annually and practiced through mock drills and other activities in the district.

Recovery and rehabilitation is the final step. The incident Command System shall be deactivated as the rehabilitation phase is over. Thereafter the normal administration shall take up the remaining reconstruction works in the disaster-affected areas. These activities shall be performed by the Working Group for relief and rehabilitation under the direction of the DDMA (N)/ESFs.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 9

BUDGET AND FINANCIAL ALLOCATIONS

9.1 THE INDIAN CONTEXT

In most countries where relief activity is primarily the responsibility of State/Provincial Governments, assistance from the Federal/Central Government to the lower levels of government is mostly in the form of case-specific grants/ reimbursement. These are more in the nature of the NCCF scheme of our country and, in that sense, the CRF scheme that provides for a structured fiscal transfer from the Central to State Governments for the purpose of financing relief expenditure is unique. Through the CRF scheme, successive Finance Commissions have built in the requirement of relief expenditure financing in the overall scheme of fiscal transfers. In the case of the NCT of Delhi, even calamity relief fund is not available. Fortunately, the concept is developing such a way that the Planning Commission has conceptually agreed to have an exclusive mechanism to fund and to monitor the financial arrangements of disaster management.

9.2 RECOMMENDATION BY 13TH FINANCE COMMISSION

The Thirteenth Finance Commission (2010-2015) has responded very positively to the long pending request for greater allocation of fund for disaster management. The finance commissioner suggested various recommendations to solve the issue in state and district level.

Every state has a State Calamity Relief Fund (CRF) for immediate action after math of a disaster. But in the case of the state of NCT of Delhi, there is no CRF. There is police modernization fund, which is utilized mostly to modernize the police department to fight against disaster.

An alternative mechanism is to be constituted in all the districts of Delhi to tackle the disasters. Every year, the annual allocation of 10 per cent will be a relief to the administration to organize various disaster preparedness activities in the district. Similarly each line department in the district shall allocate minimum 2 per cent to 10 per cent of its developmental fund with the same purpose.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

9.3 DISTRICT CALAMITY RELIEF FUND

Besides, the DDMA (N)/ ESFs North Delhi shall constitute a District Calamity Relief Fund (DCRF). This amount shall be raised purely from the General Public through donations. There can be a committee under the leadership of the District Magistrate North, to operate the fund. Once the fund is created, every year the DDMA (N)/ ESFs shall prepare reports on the utilization of fund, disasters faced in the previous financial year as well as potential programme planning for utilization of this fund.

9.4 STATE ALLOCATIONS

As an alternative option, the DDMA (N)/ ESFs shall forward a request to the Government of NCT of Delhi to grant 50 per cent of the targeted DCRF as one time grant and a matching amount shall be collected from the general public through donations.

Section 46 to section 49 of Disaster Management Act, 2005 seeks to provide for the constitution of the following funds:

1. Section 46, Constitution of National Disaster Response Fund
2. Section 47, Constitution of National Disaster Mitigation Fund
3. Section 48, Seeks to provide for the establishment of State & District Disaster Response Fund and Disaster Mitigation Funds.
4. Section 49, Seeks to enjoin upon every ministry or department of Government of India to make provision of funds in its annual budget for the purposes of carrying out the activities or programmes set out in its Disaster Management Plan.

9.5 DISTRICT ALLOCATIONS

The district authority gets 100% financial assistance from Govt. of NCT of Delhi for carrying out various activities such as sensitization programmes, trainings, street plays, mock drills etc.

Table 9.1: The budgetary details of DDMA (N) for the year 2014-15 are as under

Budget allocated	Rs. one crore
Utilized till septemver,2014	Approx. Rs. 94 lakhs /-

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

9.6 RISK POOLING AND INSURANCE

As regards risk pooling and insurance, we are inclined to agree with the views expressed by the earlier Finance Commissions on this subject, that the pooling of disaster risk at the individual level poses huge administrative challenges in a country like India where the majority impacted by disasters are primarily the poor who have, consequently, very little capacity to pay the risk premium involved. Apart from the fact that payment of risk premium towards insurance against natural disasters could be a highly unpopular step, the administrative cost of collection of such premium from a large number of potential beneficiaries spread over a wide geographical area would, indeed, be daunting. Disaster relief has long come to be viewed as a public good, to be delivered gratis by the state, and in the very likely event that no (or an insignificantly small) insurance premium can be levied, the very concept of risk pooling would become infructuous. In our view, for high-frequency-low intensity disaster events, it would indeed be cheaper for the State Governments to directly provide disaster relief, as is being done presently, instead of going through an insurance intermediary. For low frequency-high impact disasters, financing through insurance mechanisms is certainly a feasible option. However, given the low level of insurance penetration in India, insurance products covering disaster events may only materialize sometime in the future.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

Table 9.2 State-wise Allocation of Grants in Aid (in Lakhs)

S.No.	States	Centre Allocation	State Government Contribution
1.	Andhra Pradesh	837.00	209.25
2.	Arunachal Pradesh	372.00	37.20
3.	Assam	437.00	43.70
4.	Bihar	703.00	175.75
5.	Chhattisgarh	979.00	244.75
6.	Goa	38.00	9.50
7.	Gujarat	1250.00	312.5
8.	Haryana	361.00	90.25
9.	Himachal Pradesh	403.00	100.75
10.	Jammu & Kashmir	266.00	66.50
11.	Jharkhand	342.00	85.50
12.	Karnataka	513.00	128.25
13.	Kerala	266.00	66.50
14.	Madhya Pradesh	2355.00	588.75
15.	Maharashtra	665.00	166.25
16.	Manipur	471.00	47.14
17.	Meghalaya	483.00	48.30
18.	Mizoram	327.00	32.70
19.	Nagaland	552.00	55.20
20.	Orissa	970.00	242.50
21.	Punjab	323.00	80.75
22.	Rajasthan	1708.00	427.00
23.	Sikkim	151.00	15.10
24.	Tamil Nadu	1045.00	261.25
25.	Tripura	76.00	7.60
26.	Uttar Pradesh	1330.00	332.50
27.	Uttarakhand	247.00	61.75
28.	North Bengal	342.00	85.50

Source: State level Programmes for strengthening disaster management in India Initiatives by Ministry of Home Affairs, GoI

The scales for grant of ex-gratia relief in various eventualities after Cabinet decisions No. 1005 of 31.10.2005 and No. 912 of 11.09.2004 are as per details given below:-

(i) **Fire & Other Accidents (caused by individual or natural calamities):**

- | | | |
|----------------------|---|-----------------------------|
| a) Death (Major) | : | Rs. 2,00,000/- in each case |
| b) Death (Minor) | : | Rs. 1,00,000/- in each case |
| c) Serious Injury | : | Rs. 50,000/- in each case |
| d) Minor Injury | : | Rs. 10,000/- in each case |
| e) Orphaned children | : | Rs. 1,00,000/- in each case |

(ii) **Bomb Blasts, Communal Riots & Other Riots, Terrorist Attacks:**

- | | | |
|-----------------------------|---|-----------------------------|
| a) Death (Major) | : | Rs. 3,00,000/- in each case |
| b) Death (Minor) | : | Rs. 1,50,000/- in each case |
| c) Permanent Incapacitation | : | Rs. 1,50,000/- in each case |
| d) Serious Injury | : | Rs. 1,00,000/- in each case |
| e) Minor Injury | : | Rs. 10,000/- in each case |
| f) Orphaned children | : | Rs. 1,00,000/- in each case |

(iii) **Loss of Moveable Property (in riots):**

- | | | |
|--|---|--------------------------|
| a) Animals (Source of Income / livelihood) | : | Rs. 2,000/- each |
| i) Farm Animals | : | Cows, Buffaloes, Sheep's |
| ii) Cart Animals | : | Hoses, Oxen, Camel |
| b) Rickshaw | : | Rs. 1,500/- each |

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

(iv) **Damage to residential unit (In riots / fire / natural calamities [other than jhuggies]):**

- | | | |
|-----------------------|---|--------------|
| a) Total Damage | : | Rs. 50,000/- |
| b) Substantial Damage | : | Rs. 25,000/- |
| c) Minor Damage | : | Rs. 5,000/- |

(v) **Damage to uninsured commercial property / commercial articles (In riots / fire / natural calamities etc.):**

50% of the loss up to a maximum of Rs. 1,00,000/-.

(vi) **Damage to Jhuggies (In case of fire / riots etc.):**

Total damage of Jhuggies : Rs. 5,000/- in each case.

(Rupees Five thousand only)

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 10

PROCEDURE AND METHODOLOGY FOR MONITORING, EVALUATION, UPDATION AND MAINTENANCE OF DDMP

10.1 PREPARATION AND UPDATION OF DDMP

District Disaster Management Plan for the North Delhi is a public document. It is neither a confidential document nor restricted to any particular section or department of administration. The underlying principal of disaster management is that it has to be part of all departments and none can fold fingers against it.

The District Disaster Management Plan is the sum and substance of the *Horizontal and the Vertical* disaster management plans in the district. Horizontal plans included plans prepared by line departments such as Delhi Police, Delhi Fire Service, MCD, Irrigation and Flood Control, Delhi Civil Defence, Department of Food and Civil Supplies, Public Works Departments etc where as the Vertical plan includes Sub Divisional Plans, Community Plans, School/Hospital plans and all other logical units' plan at the lower level and State disaster management plans and National disaster management plans at the higher level.

- ✓ Preparation of plan is the ultimate responsibility of the District Disaster Management Committee (DDMA (N)/ESFs) or the person / sub committee appointed by the DDMA (N)/ESFs in the district. The first draft plan is to be discussed in the DDMA (N)/ESFs and later the Chairman of the DDMA (N)/ESFs shall ratify it.
- ✓ The same procedure is to be followed in updating of the plan document. The District plan is to be updated biannually by the District Disaster Management Committee or the sub committee appointed by the DDMA (N)/ESFs. In order to update the document, all Vertical and Horizontal plans shall be collected and incorporated to the District Plan.
- ✓ After each biannual updating of the DDMP, version number shall be given serially. A copy of the updated document shall be circulated to each stakeholder of disaster management in District North.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

10.2 REGULAR UPDATION OF DDMP

Besides the above said procedure of updation of the DDMP, a regular data collection system shall be set up at district EOC. This is just to be ready to face any situation, though the Plan Document has not been updated since last few couple of months. The EOC in-charge, under the supervision of the DDMA (N)/ESFs Chairman shall enter the collected data to an online system or shall be documented properly.

10.3 POST DISASTER EVALUATION MECHANISM

Disasters are always unexpected. Each disaster causes huge loss of human lives, live stocks and property as well. It is said that, every disaster repeats after a particular interval. Also lessons learnt from a particular disaster will help to plan for another potential hazard. The DDMA (N)/ESFs Chairman shall make special arrangements to collect data on a particular disaster irrespective of size and vulnerability. This post disaster evaluation mechanism shall be set up with qualified professionals and researchers and the collected data shall be thoroughly crosschecked and documented in the EOC for further reference.

10.4 MEDIA MANAGEMENT

Media Management is one of the core issues related to disaster management. Usually, in case of disaster, hundreds of media crew reaches the site even before the outside disaster management agencies and they assess the situation. The report they release on air is contradicting and creates panic. In order to control the situation certain arrangements shall be made by the district. As a disaster is noticed the Incident Commander shall do the following measures to control the media:

1. Along with information dissemination to the vertical and horizontal agencies, press people also shall be called and given preliminary data based on assessment. This shall reduce the guesswork of the media people.
2. Only the state owned electronic, print media should be taken to the site. More people mean more confusion and hazard in disaster management.
3. In every one hour or so the Incident commander shall give press release in order to control false information to the outside world.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-23968768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

4. No media shall be allowed to air or print pictures of dead bodies with worst condition. There is a tendency to do so by the media to make sensitivity.

In a disaster situation, only the incident commander or his assignee in district level will communicate with the media and provide brief, No other parallel agency or ESF or voluntary agency involved in the disaster management shall give any sort of press briefings.

10.5 DISASTER MOCK DRILLS

The ultimate objective of the Training programme on preparedness and mitigation is to conduct mock drill, which is an artificial scenario of a disaster. The objectives encompassed in the mock drill are to validate the Standard Operating Procedures (SOP) and ascertain the capabilities created by District Disaster Management Committee (DDMA (N)/ESFs) in managing and responding to natural disasters.

A sample note, which describes a likely scenario of earthquake in district North has been given below. It also lays down the sequence of actions to be taken by different agencies in response to the scenario.

MODEL SCENARIO FOR MOCK DRILL IN North

The objectives encompassed in the mock drill are to validate the Standard Operating Procedures (SOP) and ascertain the capabilities created by district Disaster Management Committee (DDMA (N)/ESFs -N) in managing and responding to natural disasters.

CONCEPT

1. This document describes a likely scenario of earthquake in North Delhi. It also lays down the sequence of actions to be taken by different agencies in response.
2. The emergency response to the scenario is to be evaluated at four phases of activity levels, as given below:
 - Notification Phase: During this phase the incident will be identified and relevant agencies will be notified and their responses ascertained.
 - Response Phase: In this phase the capabilities available with the government at various levels will be put into effect for controlling the situation.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- Recovery Phase: the setbacks suffered as a result of the earthquake will be restored.
- Restoration Phase: the site clearance and resumption of normal activity will be ensured.

Specific Assumptions

- Certain aspects of damage assessment system are purported to be in place.
- Restricted avenues of reaching the incident site.
- Certain fire tenders/rescue vehicles are declared off-road due to mechanical faults and routine commitments.

Instructions

1. The following control rooms to be activated:-
 - a. Delhi Disaster Management Authority
 - b. Delhi Police
 - c. Delhi Fire Service
 - d. Municipal Corporation of Delhi
 - e. Department of Irrigation and Flood Control
 - f. Delhi Jal Board
 - g. Delhi Metro Rail Corporation
 - h. Delhi Transco
 - i. Public Works Department
 - j. Ministry of Home Affairs
 - k. Indian Army
 - l. Other critical departments/agencies
2. Wherever the control room does not exist, a nominated officer will be the duty officer. He will receive messages and disseminate information as per the Standard Operating Procedures.
3. Traffic rules will not be violated while responding
4. Wherever a road is declared out of use, detours will be taken to reach the site of incident.
5. A report pertaining to this exercise should be submitted within next two working days to the Divisional Commissioner of Delhi.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

CHAPTER 11

STANDARD OPERATING PROCEDURES

11.1 INTRODUCTION

Disasters cause human lives in a massive scale. If a formalized and timely response would not take place death toll can increase immensely. Therefore each district in coordination to State formulates a District Response Plan consisting 11 Emergency Support Functions(ESFs) related to Communication, Search and Rescue, evacuation, law and order, medical response and Trauma Counselling, water supply, electricity, warning and transport etc. All of these emergency functions consist of emergency plans that would be activated at the time of emergency.

The ESFs document outlines the purpose, scope, organization setup and Standard Operating Procedures (SOPs) for each function of operation that is to be followed by the respective ESF agencies when the Incident commander will activate the response plan. Standard Operation Procedures (SOPs) provides a basic concept of the operations and responsibilities of Disaster Management Team, Nodal and Secondary agencies. IRS

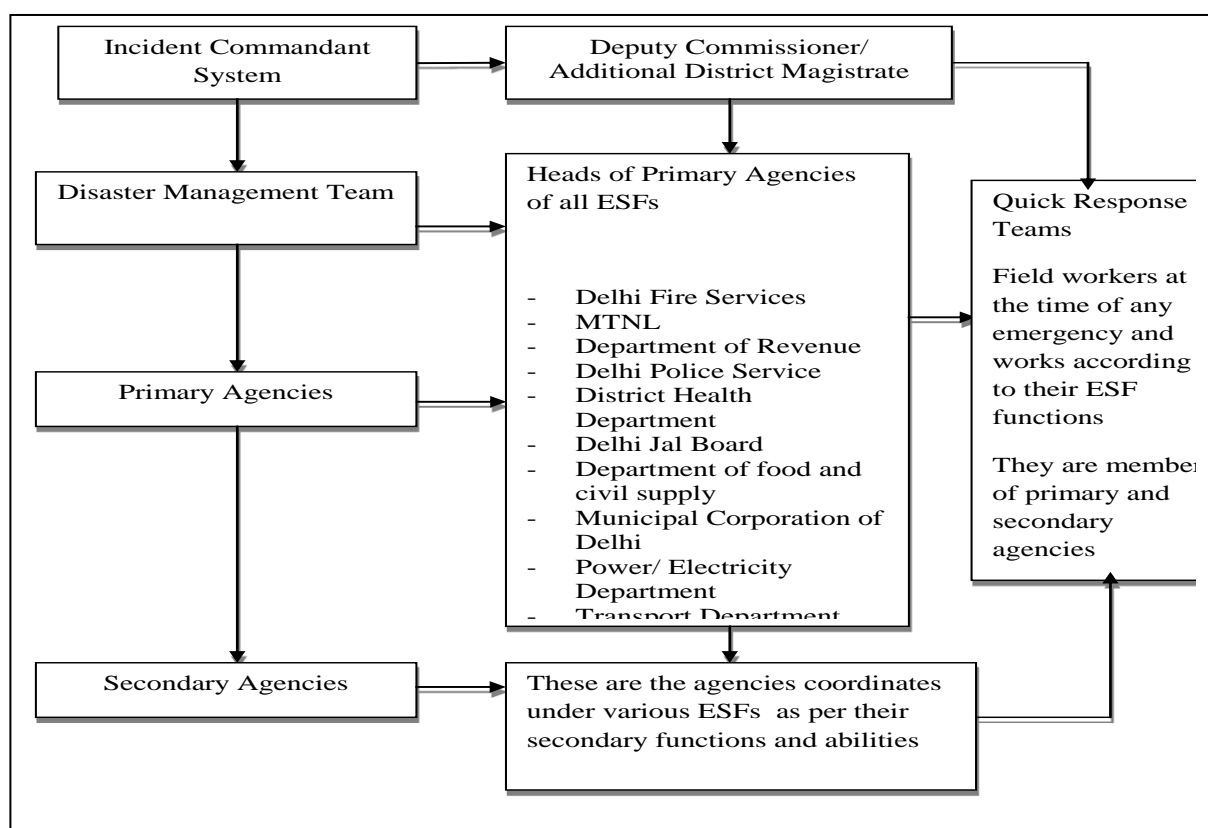
11.2 ESF RESPONSE ACTIONS, ORGANISATIONAL SETUP AND INTER-RELATIONSHIPS

The Response plan establishes an organised setup to conduct ESF operations for any of the Natural and Manmade Disasters. It outlines an implementing framework of sharing resources as per the requirement within National and State level department will be engaged to support during an emergency situation. The Response Plan has structured the response of concerned departments i.e. primary and supporting departments to be organized and function together with grouping capabilities, skills, resources, and authorities across the State and district Government with the ESF plan. The plan unifies the efforts of State Departments and supporting agencies to be involved in emergency management for a comprehensive effort to reduce the effects of any emergency or disaster within the state.

The ESF activates under the guidance of Incident Commander (District Magistrate/ Additional District Magistrate) who is also a head of Incident Commander System (ICS). Under the ICS a team of 11 ESFs nodal officers works together also called as Disaster Management Team(DMT). DMT would also be constituted at District level with district level nodal officers. The members of Disaster Management team would also heads primary agency and simultaneously coordinate with the secondary agencies. Each of the primary and secondary agencies would also comprise of quick response team trained to carry out their functions at the response site. The success of ESF will be of critical importance and would reflect in the lives saved in the golden hour. Below a list of ESFs has been given which will activate at district level during emergency situation.

Table 1: ESFs Activates at the Time of the Disaster

All ESFs have to assist the Incident Commander i.e. District Magistrate at State level as per their assigned duties described in the SOP's and to be followed during emergency within the District/State. A detailed organizational setup of all ESFs and team leaders has been given below:-



IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

11.3 ESF - 1 COMMUNICATIONS

Background:

The communication ESF is primarily responsible for restoration of communication facilities. The ESF on Communication should ensure the smooth flow of information that can cater to the outreach in a time-sensitive manner at state level in response efforts.

Situation Assumptions

1. There would be a congestion in the network because of increased calls to control rooms due to panic created in the community.
2. The initial reports on damage may not give a clear picture of the extent of damage to communication network.
3. The affected site may cut off from the state control rooms and the officials on site and find difficulty in communicating to the District/State EOC.

Nodal agency at state level: Mahanagar Telephone Nigam Ltd. (MTNL)

Suggested supporting agencies: NIC, Revenue wireless, Ham Operators, Private telecommunication service operators and mobile phone services operators

11.4 SOPS FOR NODAL AGENCY

- Team leader (TL) of Communication ESF will activate the ESF on receiving the intimation of occurrence of the disaster from the State EOC.
- TL would inform Nodal Officers (NOs) of support agencies about the event and ESF activation.
- TL would establish contact with the district EOC for First Information Report.
- TL requests for reports from local ESF contact persons (this would be the local office of ESF Nodal Agency) to understand the current situation and action taken.
- Based on information given by the supporting agencies, TL decides on the need to launch an assessment mission to estimate the extent of damage to telecom services and network as well as to come up with possible arrangements to establishing reliable and appropriate network.
- TL communicates situation to supporting agencies and also requests to provide details on the status of equipment and infrastructure in the affected area(s).

- TL informs the Incident Commander on the status of telecom services.
- TL works out a plan of action for private telecom companies and convenes a meeting of all ESF members to discuss and finalize the modalities.
- TL issues orders to establish systems and reports to State and District EOCs on the action taken. New phone numbers and details of contact persons would also be communicated. If required mobile exchanges would be deployed.(need explanation--- mobile exchanges)
- TL gets the temporary telephone facilities established for the public. Prior information on this would be announced through media
- HAM radio operators would be informed about the current requirements and coordination mechanisms shared.
- TL monitors the situation and arranges emergency staff required to operate established systems.
- TL sends the District Quick Response (SQR) team at the affected site with the required equipments and other resources.

11.5 SOPS FOR QUICK RESPONSE TEAM ON COMMUNICATION

- The QRT (Quick Response Team) members will reach to the nodal office as soon as they will get instructions from the TL.
- Once the QRTs receive any intimation from the nodal officer to reach at the site they would rush to the site.
- At the emergency site QRT members will take stock of the situation from the IC and would also know about their counter parts.
- QRTs would assess the ground situation and would send report to the State ESF agency.

A report would contain following contents:

- An assessment of overall damage, listing specifically:
 - Overhead route damage (in miles/kilometers).
 - Cable damage (in yards/meters).
 - Specific equipment damaged.
 - Establish a temporary communication facility for use by the public
- Identify requirements of manpower, vehicles and other materials and equipment's Give priority and concentrate on repairs and normalization of communication system at disaster affected areas.

- Begin restoration by removing and salvaging wires and poles from the roadways with the help of casual labourers.
- Carry out temporary building repairs to establish a secured storage area for the s equipment's and salvaged materials.
- Report all activities to head office
- Begin restoration by removing and salvaging wires and poles from the roadways through recruited casual labourers.
- Establish a secure storage area for incoming equipment's and salvaged material.

11.6 ESF - 2 EVACUATIONS

Background: The ESF on evacuation is primarily responsible for establishing evacuation plans, identification of fastest evacuation routes and alternate routes and coordinating evacuation logistics during field operations.

Situation Assumptions

- Most of the buildings would be damaged and would not remain serviceable.
- Many structures would be damaged and there would be an urgent need to evacuate.

Nodal agency at state level: Department of Revenue

Suggested supporting agencies: Delhi Police, Delhi fire Service, Directorate of Health Service and Civil Defence, NCC, Army etc

11.6.1 SOPs for Nodal Agency:

- Team leader (TL) of Evacuation ESF would activate the ESF on receiving the warning of the disaster from State EOC.
- TL would inform Nodal Officers (NOs) of supporting agencies about the event and ESF activation.
- TL will direct the QRTs to be deployed at the affected site.
- TL will gather information on availability of predefined evacuation routes.
- Where the predefined evacuation routes are not available, the nodal officer would coordinate through State EOC with other ESFs nodal officers and the support agencies about clearing of routes and identifying alternate routes.

11.6.2 SOPs for Quick Response Team on Evacuation

- The QRT members will reach the nodal office as soon as they get instructions to do so from the TL.
- Once the quick response teams receive an order from the nodal officer for reaching the site they would rush to the site.
- On reaching at the site the QRT members will take stock of the situation from the Incident Management Team at the site and their counter parts.

- The quick response teams with the help of local task forces will start evacuating peoples to safe shelters or open areas.
- The QRT members should concentrate more on evacuation in areas that have been worst affected by the disasters.
- Reporting about all the activities to head office

11.7 ESF - 3 SEARCH AND RESCUE

Background: Search and Rescue operations are one of the primary activities taken up in a post disaster situation. The promptness in these operations can make a remarkable difference in the amount of loss of life and property.

Situation Assumptions

- Local community task forces will initiate search and rescue at residential level.
- Spontaneous volunteers will require coordination.
- Access to affected areas will be limited.
- Some sites may be accessible only through air routes only.

Suggested Nodal Agency: Delhi Fire Service

Support agency: Department of Revenue, Delhi Police, Army, Civil Defence and Directorate of Health Services.

11.7.1 SOPs for Nodal Agency

- IC will call the TL of Primary Agency and get the ESF activated.
- TL of primary agency will call nodal officers of supporting agencies.
- TL would activate the State Quick Response Team.
- Quick Assessment of the S&R operations through Aerial surveys.
- Assessments of the specific skill sets and the other equipments required.
- Using IDRN network to check and map the availability of resources in and round the disaster site.

11.7.2 SOP for Quick Response Team on Search & Rescue

- Assessment of damage (locations, number. of structures damaged, severity of damage).

- The QRTs will be deployed at the affected site.
- Enlisting the types of equipment required for conducting the S&R.
- QRTs will report the situation and the progress in response activities to the respective EOCs.

11.8 ESF - 4 LAW AND ORDER

Background: The ESF on Law and Order maintains the law and protects the property and valuable commodities. It is mainly responsible to control crowd and avoid riots situations.

Situation Assumptions

- There would be panic and people will gather at a place.
- The crowds may go out of control.
- Riots may also take place.

State Nodal Agency: Delhi Police Service

Suggested Support Agencies: Civil Defence and Home guards, Central Paramilitary Forces, Army etc

11.8.1 SOPs for Nodal Agency

- IC will call the TL of Primary Agency and get the ESF activated.
- TL of primary agency will call nodal officers of supporting agencies.
- TL would activate the State Quick Response Team.
- The QRTs will be deployed at the affected site.
- Cordoning off area to restrict movement of onlookers, vehicular and pedestrian traffic should be done.
- Any additional requirements at site to be taken care of.

11.8.2 SOP for Quick Response Team on Law and order

- Quick assessment of law and order situation in affected areas
- Support and coordinate with Local Administration
- Prepare updates on the law and order situation every 4-6 hours and brief the authorities
- Controlling situations like rioting and looting, and cordon off sensitive areas
- QRTs will guide property and valuables in affected areas.
- Control and monitor traffic movement.

IN CASE OF ANY DISASTER IN DELHI CALL 1077 (TOLL FREE) (24 X 7)
DISTRICT DISASTER CONTROL ROOM (EOC- North) - 011-27708768 (24 X 7)
DELHI DISASTER MANAGEMENT AUTHORITY

- QRTs will provide diversion of traffic on alternate routes as and when it is necessary.
- The QRTs will also provide information about traffic flow along various corridors, especially heavy traffic or congested roads.
- QRTs will communicate to police control rooms, details on the field activities including deployment and reinforcement of staff and resources and communicate nature of additional requirements.

11.9 ESF -5 MEDICAL RESPONSES AND TRAUMA COUNSELING

Background: The ESF on Medical Response and Trauma Counselling will look after emergency treatment for the injured people immediate after the disaster take place.

Situation Assumptions

- Emergency Medical services will be required by affected population
- Likely outbreaks of epidemic diseases after the disaster.
- Hospital services would be affected

Suggested Nodal Agency: State Health Department

Suggested Support Agencies: CATS, MCD, DGHS (Central Govt), Indian Red Cross, Civil Defence, Delhi Fire Service.

11.9.1 SOPs for Nodal Agency

- IC will call the TL of Primary Agency and get the ESF activated.
- Team leader (TL) of primary agency will call nodal officers of supporting agencies.
- In coordination with the transportation ESF, it will ensure a critical number of medical professionals to be reached at the site including specialists from other states.
- If temporary housing arrangements are being made for the affected population, the ESF must ensure high standards of sanitation in settlements in order to reduce epidemic outbreak.
- Ensuring the provision and continuous supply of medical facilities (medicines, equipments, ambulances, doctors and manpower etc) required at the disaster affected site and the hospital health centres catering to disaster victims.
- In case of orthopaedic care required in disasters like earthquakes the immediate response would have to be complimented by a follow up treatment schedule for a majority of the patients in/ near their place of residence.
- Trained professionals should be mobilized by psychosocial support.

- Ensuring setting up of temporary information centre at hospitals with the help of ESF through help lines and warning dissemination system.
- TL will coordinate, direct, and integrate state level response to provide medical and sanitation health assistances.
- On the recommendations of the EOC, the TL also responsible to :
- Send required medicines, vaccines, drugs, plasters, syringes, etc.
- Arrange for additional blood supply. Send additional medical personnel equipped with food, bedding and tents etc.
- Send vehicles and any additional medical equipments.

11.9.2 SOP for Quick Response Team (QRT) on Medical Response and Trauma Counseling

- QRTs will provide situation and progress reports on the action taken by the team to the respective EOCs.
- QRT's will assess type of injuries, number of people affected and possible medical assistance needs.
- QRTs will ensure timely response to the needs of the affected victims such as:
 - Establishing health facility and treatment centers at disaster sites.
 - Providing medical services as reported by the District Civil Surgeon with District Control Room.
 - Procedures should be clarified in between
 - Peripheral hospitals
 - Private hospitals
 - Blood banks
 - General hospitals and
 - Health services established at transit camps, relief camps and affected villages.
- QRTs should maintain check posts and surveillance at each railway junction, ST(full form) depots and all entry and exit points from the affected area, especially during the threat or existence of an epidemic.

11.10 ESF- 6 WATER SUPPLY

Background

The ESF on drinking water and water supply will ensure provision of basic quantity of clean drinking water and water for other purposes in a manner that does not allow the spread of diseases through the contamination of water.

Situation Assumptions:

- Existing water storage bodies will be damaged and unusable.
- There would be an urgent need of water to assist victims in rescue operation.
- Break down of sanitation system.
- Contamination of water due to outflow from sewers or due to breakage of water pipelines.

State nodal agency: Delhi Jal Board

Support Agency: MCD, Irrigation and Flood Control

11.10.1 SOPs for Nodal Agency

- Team leader (TL) of ESF on Water Supply will activate the ESF on receiving the intimation of the disaster from State EOC.
- TL would inform Nodal Officers (NOs) of support agencies about the event and ESF activation.
- TL will ensure special care for women with infants and pregnant women.
- Provide for sending additional support along with food, bedding, tents
- Send vehicles and any additional tools and equipments needed.

11.10.2 SOP for Quick Response Team (QRT) on Water Supply

- QRTs will ensure that supply of drinking water is made available at the affected site and relief camps
- QRT's will ensure the temporary sewerage lines and drainage lines are kept separate.
- QRTs will report the situation and the progress on action taken by the team to the EOC.
- QRTs will intimate their TL of the additional resources needed.
- Carry out emergency repairs of all damages to water supply systems.

- Assist health authorities to identify appropriate sources of potable water.
- Identify unacceptable water sources and take necessary precautions to ensure that no water is accessed from such sources, either by sealing such arrangements or by posting the department guards.
- Arrange for alternate water supply and storage in all transit camps, feeding centre's, relief camps, cattle camps, and also the affected areas, till normal water supply is restored.
- Ensure that potable water supply is restored as per the standards and procedures laid down in "Standards for Potable Water".
- Plan for emergency accommodations for staff from outside the area.
- QRTs will ensure timely response to the needs of the affected victims.
- QRTs will set up temporary sanitation facilities at the relief camps.

11.11 ESF – 7 RELIEFS (FOOD AND SHELTER)

Back Ground: In the event of a disaster there would be a need of disbursing relief materials due to massive destruction of life and property taken place. The ESF on Relief should ensure coordination of activities involving with the emergency provisions of temporary shelters, emergency mass feeding and bulk distribution of relief supplies to the disaster victims as also the disaster managers and relief workers.

Situation Assumptions

- Probability of shortage of a critical resources
- Immediate assistance to the community at the time of resource shortage particularly when affected area is larger.

State Nodal Agency: Department of Food and Civil Supplies

Support Agency: Department of Revenue, Urban Development, Municipal Corporation of Delhi, PWD, Delhi Development Authority,

11.11.1 SOPs for nodal agency

- TL will activate the ESF on receiving the information of the disaster from State EOC.
- TL would inform Nodal Officers (NOs) of support agencies about the event and ESF activation.
- TL will coordinate with all state and district level suppliers as identified with under IDRN.
- TL will coordinate with other ESFs related to transportation, debris and road clearance to ensure quality supply chain management of relief materials.
- Ensuring composite relief with availability of complimentary relief material.

11.11.2 SOP for Quick Response Team (QRT) on Relief

- QRTs will report to site of the relief camps
- QRTs will be responsible to manage and distribute relief items to the affected victims
- QRT's will be responsible for reporting the progress on action taken by the team to the EOC.
- QRTs will provide information to their TL about the need of additional resources.
- Clearing of the areas to establish relief camps
- Setting up relief camps and tents using innovative methods that can save time
- Assist local authorities to set up important telecom and other service related facilities
- Initiate, direct and market procurement of food available from different inventories and reassuring food supplies to the affected population
- Preparing take-home food packets for the families
- Ensuring distribution of relief material to the all the people including vulnerable groups of the target area such as women with infants, pregnant women, children, aged people and handicapped.
- Ensuring support to Local Administration

- Locating adequate relief camps based on damage survey
- Develop alternative arrangements for population living in structures that might be affected even after the disaster

11.12 ESF- 8 EQUIPMENT SUPPORT, DEBRIS AND ROAD CLEARANCE

Background: The importance of this ESF emanates from the fact that most large scale hazards such as earthquakes, cyclones, floods primarily affect the building structures.

Situation Assumptions

- Access to disaster-affected area would depend upon the re-establishment of ground and water routes.
- Early damage assessment may be incomplete, inaccurate and general. A rapid assessment may be required to determine response time.

Engineers and masons may be required in large scale for the inspection of present buildings

State nodal agency: Municipal Corporation of Delhi

Support Agencies: PWD,DDA, DMRC, DTC,

11.12.1 SOPs for Nodal Agency:

- Team leader (TL) will activate the ESF on receiving the information of the disaster from State EOC.
- TL would inform Nodal Officers (NOs) of support agencies about the event and ESF activation.
- TL will coordinate with the supporting agency to mobilize equipments from the warehouses through IDRN database
- The respective supporting agencies will contact their respective personal to move the equipments to central warehouse
- The equipments like JCB, concrete cutters identified as per the need will be transported to the site.
- As per the information the nodal officer of Debris road clearance will make an assessment on of the damages of roads and built structures at the site and surrounding areas
- The nodal officers of Supporting Agencies will immediately start debris clearance operation to enable movement to the affected site.

- Review of the current situation is taken up by the nodal agency to update the support agencies and to delegate their respective personnel to take precautionary measure to plan de-routes for the transportation ESF's to be operational
- All supporting agencies will inspect the road and rail network and structures within the disaster site and surrounding.
- TL will also ensure proper corpse disposal and post mortem by coordinating with ESF on medical response.

11.12.2 SOP for Quick Response Team on Equipment support, debris and Road Clearance

- Damage assessment including locations, number of structures damaged and severity of damage
- The QRTs will be deployed at the affected site.
- Enlisting the types of equipment as compiled from IDRN resource inventory required for conducting the debris clearance
- The QRTs will report the situation and the progress in response activities to the respective EOCs.
- Undertake construction of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for disaster victims.
- Repairing of all paved and unpaved road surfaces including edge metalling, pothole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions.

11.13 ESF – 9 HELP LINES, WARNING DISSEMINATION

Background: The ESF on help lines and warning dissemination should process and circulate information about the welfare of citizens of affected area and managing the tremendous flow of information. The help lines will be responsible for providing, directing and coordinating logistical operations.

Situation Assumptions

- There may be a flood of information and confusion about the injured population.
- The communication with affected area may be partially impaired.

State nodal agency: Department of Revenue

Support Agencies: NIC, AIR, Doordarshan, Press Information Bureau, NGO Rep.

11.13.1 SOPs for Nodal Agency:

- IC will call the TL of Primary Agency and get the ESF activated.
- TL of primary agency will call nodal officers of supporting agencies.
- TL would activate the State Quick response Team.
- The QRTs will be deployed at the affected site.
- QRTs will report the situation and the progress in response activities to the respective EOCs.
- Sending flash news of latest updates/donation requirements for disaster area all over the state
- Assisting the EOC in providing updated information to national as well as at the state level.
- Setting up of toll free numbers for emergency information assistance.

11.13.2 SOP for Quick Response Team on Help Lines, Warning Dissemination

- The QRT members will reach to the nodal office as soon as they will get instructions.
- QRT teams would reach to the site immediately after receiving instructions from the nodal officer
- On the site QRT members will take stock of the situation from the IC at the site and their counter parts.
- The QRTs will coordinate, collect, process, report and display essential elements of information and facilitate support for planning efforts in response operations.

11.14 ESF – 10 Electricity

Background: The ESF on electricity will facilitate restoration of electricity distribution systems after a disaster. In the event of a disaster there would be major electricity failure and many power stations damaged.

Situation assumptions

- Prolonged electricity failure.
- The affected victims may be panicked
- Halt of all activities specially jamming communication networking systems in the affected site.

State nodal agency: State Department of Power

Support Agencies: NDPL

11.14.1 SOPs for Nodal Agency:

- IC will call the TL of Primary Agency and get the ESF activated.
- TL of primary agency will call nodal officers of supporting agencies.
- TL would activate the State Quick response Team.
- The QRTs will be deployed at the affected site.
- TL will dispatch emergency repair teams equipped with tools, tents and food.

11.14.2 SOP for Quick Response Team on Electricity

- The QRT members will reach the nodal office as soon as they get instructions to do so from the TL.
- QRT members would reach to the site immediately after receiving instructions from the nodal officer
- On the site QRT members will take stock of the situation from the IC at the site and their counter parts.
- The QRTs will coordinate, collect, process, report and display essential elements of information and facilitate support for planning efforts in response operations.
- Begin repairing and reconstruction work
- Assisting hospitals in establishing an emergency supply by assembling generators and other emergency equipments, if necessary.
- The members of QRTs will establish temporary electricity supplies for other key public and private water systems.
- The members of QRTs will establish temporary electricity supplies for transit camps, feeding centre's, relief camps and SOC, District Control Room and on access roads to the same.
- The members of QRTs will establish temporary electricity supplies for relief material go downs.
- Compile an itemized assessment of damage, from reports made by various electrical receiving centre and sub-centre
- Report about all the activities to the head office.

11.15 ESF -11 TRANSPORT

Background: The ESF on Transport should ensure smooth transportation links at state and district level. Within the disaster context, quick and safe movement of material and humans are a priority. It should coordinate the use of transportation resources to support the needs of emergency support forces requiring transport capacity to perform their emergency response, recovery and assistance missions.

Situation assumptions

- The state civil transportation infrastructure will sustain damage, limiting access to the disaster area.
- Access will improve as routes are cleared and repaired.
- The movement of relief supplies will create congestion in the transportation services.

State nodal agency: State Department of Transport

Support Agencies: DTC, DMRC, Northern Railways, Civil Aviation, PWD, MCD and Civil Defence etc.

11.15.1 SOPs for Nodal Agency:

- TL of Transportation ESF will activate the ESF on receiving the intimation of the disaster from State EOC.
- TL would inform Nodal Officers (NOs) of support agencies about the event and ESF activation.
- TL establishes contact with the district EOC for FIR
- TL requests for reports from local Transportation ESF contact person
- TL communicates situation to support agencies and requests for detailed information on the status of transportation infrastructure in the affected area(s).

11.15.2 SOP for Quick Response Team on Transport

- The QRT members will reach to the nodal office as soon as they will get instructions to do so from the TL.
- As quick response teams will receive instructions from the nodal officer they would reach to the site immediately.
- QRTs would report the situation and the progress on action taken by the team to the respective EOCs

- QRT will send a requirement schedule for the different modes of transportation e.g. trucks, boats, helicopters to be put on stand-by.
- QRTs will ensure timely re-establishment of the critical transportation links.
- The members of QRTs will establish temporary electricity supplies for relief material go-downs.
- Compile an itemized assessment of damage, from reports made by various electrical receiving centre's and sub-centre's.
- Reporting about all activities to the head office.

Table: 12.1. SOP for Community Task Forces

Task Force Group	Primary	Secondary
Search and Rescue	<p>To trace and locate people who are physically trapped and distressed, people in the buildings and houses etc.</p> <p>To move out these people to the safe locations identified in advance and to organize further care</p>	<p>Administering primary health care to rescued victims</p> <p>Assisting the sanitation group in carcass disposal and the cremation of dead bodies</p> <p>Coordination with the evacuation team to shift rescued persons to safe shelters in case of recurring heavy rains</p>
First Aid and Health	<p>To provide primary health care to the ill or injured until more advanced care is provided and the patient is transported to a hospital</p>	<p>Assisting the sanitation team to inoculate against water borne and other diseases</p> <p>Assisting the communication team to disseminate precautionary information on post-disaster health hazards and remedies</p>
Water	<p>Restoring and maintaining the water supply and minimum quality and quantity parameters</p>	<p>Assisting the sanitation team in ensure that there is enough water stored in buckets at latrines and for bathing</p> <p>Assisting the sanitation team in deciding the location for the construction of latrines away from ground water sources</p> <p>Assisting the shelter group to ensure that there is sufficient water stored in the water tank in the safe shelter</p>
Sanitation	<p>To ensure that the minimum basic facilities such as temporary toilets and common bathing units are constructed near the relief camp, that these facilities and the surroundings are kept clean, garbage disposed, dead bodies cremated and that normal drainage systems function smoothly</p>	<p>Assisting the shelter team to ensure that water spouts and water harvesting tanks at the safe shelter are clean and functional</p> <p>Assisting the relief group to ensure that containers for storing water are clean, narrow necked and covered</p>

Relief Coordination	To establishing contact with the District Control Room and organizing the distribution of assistance in terms of food, water, medicines and so on, in a fair and equitable manner	<p>coordinating with the shelter group in the distribution of material for the construction of temporary shelters</p> <p>Assisting the shelter group to ensure that the safe shelter is well stocked in terms of dry food, water and so on in order to cater for the needs of evacuees after a cyclone or flood warning has been issued</p>
Warning and communication	To ensure that: (a) the warning of the impending disaster reaches every single household, thereby allowing people to take timely action to protect their lives and property (b) accurate information is provided regularly as events unfold (c) information flows quickly and reliably upwards to District level and downwards from District level to Community/Neighborhood/Village level.	<p>Assisting the relief group in disseminating information about the quantity and type of ration to be distributed for each distribution cycle</p> <p>Assisting the sanitation group in raising awareness about water borne diseases and vaccination programs</p>
Evacuation and Temporary Shelter Management	To construct/identify maintain and make repairs to the flood shelter, to evacuate people on receipt of a warning and to make all the necessary arrangements to accommodate evacuees during a flood.	<p>Assisting the communities in accessing compensation</p> <p>Assisting the relief group in stocking up dry food, medicines, water and temporary shelter materials</p> <p>Assisting the sanitation group in the construction of latrines, soak pits and drainage channels</p>

LIST OF TABLES, MAPS & FIGURE

S.NO	TABLES/MAPS & FIGURE	TABLES/MAPS & FIGURE CONTENT	PAGE NO
1	Map 1.1	Seismic Index In India	2
2	Map 1.2	Administrative Map Of Delhi	3
3	Figure 1.3	District Disaster Management Plan Of The North Delhi	7
4	Figure 1.4	Sub Divisional Map Of District North	10
5	Figure 2.1	Factors, Influencing Vulnerability	17
6	Table 2.1	Seismic Zone Areas Of India	19
7	Figure 2.3	Seismic Zonation Map Of India	20
8	Table 2.2	Hazard & Vulnerability Profile Of District North	22
9	Table 2.3	Annual Statistic Of Incidents Of North District For Year 2013 (January-December)	23
10	Figure 2.3	Annual Statistic Of Incidents Of North Delhi-2013	24
11	Table 2.4	Annual Statistic Of Incidents Of North District For Year 2014 (January-December)	25
12	Figure 2.4	Annual Statistic Of Incidents Of North Delhi-2014	25
13	Table 2.5	Annual Statistic Of Incidents Of North District For Year 2015 (January-December)	26
14	Figure 2.5	Annual Statistic Of Incidents Of North Delhi-2015	27
15	Table	Annual Statistic Of Incidents Of North District For Year 2016 (January-December)	27-28
16	Figure	Annual Statistic Of Incidents	29
17	Table	Annual Statistic Of Incidents Of North District For Year 2017 (January-December)	30
18	Figure	Annual Statistic Of Incidents	31
19	Table	Annual Statistic Of Incidents Of North District For Year 2018 (January-December)	34
20	Figure 3.1	Institutional Arrangements For Disaster Management	38
21	Table 3.1	Delhi Disaster Management Authority	38 -39
22	Figure 3.2	Disaster Management Hierarchy In Delhi	40
23	Table 3.2	Government Body Of District Disaster Management Authority (North District)	41
24	Table 3.3	Government Body Of Ddma (North)	41-42
25	Figure 3.3	Institutional Arrangements At District Level	42
26	Figure 3.4	Structure Of Incident Response Team	49
27	Figure 3.5	Operation Section In Irs	51
28	Figure 3.6	Planning Section In Irs	52
29	Figure 3.7	Logistic Section In Irs	57

30	Figure 3.8	Finance/Administration Section In Irs	60
31	Figure 3.9	Trigger Mechanism For District Eoc	62
32	Figure 4.1	Disaster Management Cycle	69
33	Table 4.2	Important Mitigation Measures	73
34	Figure 5.1	Components Of Community Preparedness	77
35	Table 5.1	List Of Esf And Desk Officers	80
36	Table 6.1	Simulation Exercises Conducted In District North	83
37	Table 6.2	Community Preparedness Strategies	84
38	Figure 7.1	Various Response Levels For Disaster Management	87
39	Figure 7.2	Trigger Mechanism For District Eoc	90
40	Figure 7.3	Structure Of Incident Response Team	91
41	Figure 7.4	Incident Response System In	91
42	Table 7.1	Rank For District Level Incident Response Team	93
43.	Figure 7.5	Logistic Section Chief	101
44	Figure 7.6	District Level Incident Response System	106
45	Figure 7.7	Emergency Support Functions	107
46	Table 7.2	ESF'S Teams	108
47	Table 9.1	Budgetary Details Of Ddma (N) For The Year 2014-15 Are As Under	140
48	Table 9.2	State-Wise Allocation Of Grants In Aid (In Lakhs)	142
49	Table 12.1	Sop For Community Task Forces	167- 168