

# **DISASTER MANAGEMENT PLAN**



## **MUNICIPAL CORPORATION FARIDABAD**

**Prepared by  
Center for Disaster Management,  
Haryana Institute of Public Administration (HIPA),  
Sec-18, Gurgaon (Haryana).**

# Abbreviations

AAR	After Action Report
AC	Area Commander
ADC	Additional District Collector
ADM	Additional District Magistrate
AIDS	Acquired Immune Deficiency Syndrome
ATF	Aviation Turbine Fuel
RBD	Response Branch Director
BDO	Block Development Officer
CBDM	Community Based Disaster Management
CBO	Community Based Organization
CBRN	Chemical, Biological, Radiological and Nuclear
CCMNC	Cabinet Committee on Management of Natural Calamities
CCS	Cabinet Committee on Security
CD	Civil Defense
CDRN	Corporate Disaster Resource Network
CEO	Chief Executive Officer
CM	Chief Minister
CMG	Crisis Management Group
CMO	Chief Medical Officer
CO	Circle Officer
Com./CUL	Compensation/ Claims Unit Leader
CPMFs	Central Para Military Forces
CRF	Calamity Relief Fund
CS	Chief Secretary
Com.UL	Communication Unit Leader
CUL	Cost Unit Leader
DAE	Department of Atomic Energy
DC	Deputy Commissioner
DDMA	District Disaster Management Authority
Demob-UL	Demobilization Unit Leader
DFO	Divisional Forest Officer
DIPRO	District Information and Public Relations Officer
DM	Disaster Management
DP	Display Processor
DRDA	District Rural Development Agency
DRO	District Revenue Officer
DSS	Decision Support System
DTO	District Treasury Officer
DUL	Documentation Unit Leader
Dy.	Deputy
EOC	Emergency Operations Centre
ESF	Emergency Support Function
ETA	Expected Time of Arrival
FB	Finance Branch
FBD	Finance Branch Director
FC	Finance Commission
FO	Field Observer
FUL	Food Unit Leader
GIS	Geographic Information System

GoI	Government of India
GPS	Global Positioning System
GSU	Ground Support Unit
GSUL	Ground Support Unit Leader
He	He/She
His	His/Her
Him	Him/Her
HLC	High Level Committee
HQ	Headquarters
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IDKN	India Disaster Knowledge Network
IDP	Incident Demobilization Plan
IDRN	India Disaster Resource Network
IMD	India Meteorological Department
IMG	Inter Ministerial Group
IMO	Information and Media Officer
IRS	Incident Response System
IRTs	Incident Response Teams
ISS	Incident Status Summary
Jt.	Joint
LBSNAA	Lal Bahadur Shastri National Academy of Administration
LO	Liaison Officer
LG	Lt. Governor
LS	Logistics Section
LSC	Logistics Section Chief
MBO	Management by Objectives
MHA	Ministry of Home Affairs
MoD	Ministry of Defense
MUL	Medical Unit Leader
NAC	Notified Area Committee
NCC	National Cadet Corps
NCCF	National Calamity Contingency Fund
NCMC	National Crisis Management Committee
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NEC	National Executive Committee
NGO	Non Governmental Organization
NIDM	National Institute of Disaster Management
NO	Nodal Officer
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
OS	Operations Section
OSC	Operations Section Chief
PD	Project Director
PHD	Public Health Department
POL	Petrol, Oil and Lubricants
PRIs	Panchayati Raj Institutions
PS	Planning Section
PSC	Planning Section Chief

PUL	Procurement Unit Leader
PWD	Public Works Department
RB	Response Branch
RBD	Response Branch Director
RC	Relief Camp
RO	Responsible Officer
RPUL	Resource Provisioning Unit Leader
RTI	Regional Training Institute
RUL	Resource Unit Leader
SA	Staging Area
SAM	Staging Area Manager
SBD	Service Branch Director
SDM	Sub-Divisional Magistrate
SDMA	State Disaster Management Authority
SDO	Sub-Divisional Officer
SDRF	State Disaster Response Force
SEC	State Executive Committee
SO	Safety Officer
SOPs	Standard Operating Procedures
SP	Superintendent of Police
SUL	Situation Unit Leader
Sup.BD	Support Branch Director
TB	Transportation Branch
TBD	Transportation Branch Director
TS	Technical Specialist
TUL	Time Unit Leader
UC	Unified Command
ULBs	Urban Local Bodies
UN	United Nations
USAID	United States Agency for International Development
USFS	United States Forest Service
UT	Union Territory
CDM	Centre for Disaster Management
HSDMA	Haryana State Disaster Management Authority
DM	Disaster Management
NEC	National Executive Council
SEC	State Executive Council
FDMA	Faridabad Disaster Management Authority
MCF	Municipal Corporation, Faridabad
GIS	Geographical Information System
NSDI	National Spatial Data Infrastructure
ARMVs	Accident Relief Medical Vans
MCFDRP	Municipal Corporation, Faridabad Disaster Response Plan

# CONTENTS

<b>Chapter No.</b>	<b>Title</b>	<b>Page No.</b>
1	MUNICIPAL CORPORATION, FARIDABAD: AN INTRODUCTION	5-8
2	HAZARD, VULNERABILITY AND RISK ANALYSIS OF MCF	9-21
3	INSTITUTIONAL AND LEGAL ARRANGEMENTS OF MCF	22-29
4	MITIGATION AND PREPAREDNESS PLAN OF MCF	30-35
5	CONTROL ROOM, MCF	36-42
6	INCIDENT RESPONSE SYSTEM OF MCF	43-65
7	STANDARD OPERATION PROCEDURE	66-71
8	RESOURCE INVENTORY	72-104
9	ANNEXURE	
	ANNEXURE-I INCIDENT BRIEFING-IRS FORM 001	105-108
	ANNEXURE-II INCIDENT STATUS SUMMARY (ISS)- IRS FORM 002 (MAJOR COMPONENT)	109-110
	ANNEXURE-III UNIT LOG-IRS FORM 003	111
	ANNEXURE-IV RECORD OF PERFORMED ACTIVITIES-IRS FORM 004	112
	ANNEXURE-V ORGANIZATION ASSIGNMENT LIST-IRS FORM 005	113
	ANNEXURE-VI INCIDENT CHECK-IN AND DEPLOYMENT LIST- IRS FORM 006	114
	ANNEXURE-VII ON DUTY OFFICER LIST- IRS FORM 007	115
	ANNEXURE-VIII MEDICAL PLAN-IRC FORM 008	116
	ANNEXURE-IX COMMUNICATION PLAN-IRS FORM 009	117
	ANNEXURE-X DEMONIZATION PLAN _IRS FORM 010	118
	ANNEXURE-XI NUCLEAR/RADIOLOGICAL EMERGENCY	119
	ANNEXURE-XII- APPENDIX	120
	ANNEXURE-XIII	120-128
	ANNEXURE-XIV- CRF NORMS	129-130

# Chapter-1

## Municipal Corporation, Faridabad: An Introduction

### 1.1 Introduction

Faridabad is situated on the Delhi – Mathura National Highway No. 2 at a distance of 32 km. from Delhi, at 28° 25' 16" north latitude and 77° 18' 28" east longitude. The town is bounded on the north by Delhi State, on the east by Agra and the Faridabad canals and on the west by the Aravali Hills. The Yamuna flows very near to the city at its northern side and moves away as it goes south. Having been located in seismic zone IV, this industrial district of Faridabad comes under high earthquake risk zone. The eastern boundary of the district is prone to floods and some of the sensitive industrial units like Indian Oil are prime target for terror attacks. Proximity to the national capital also makes it sensitive target area with regard to terror attacks. Considering Faridabad's vulnerability to various disasters, Municipal Corporation of Faridabad realizes the importance to actualize institutional strengthening for disaster management at various levels as envisaged under the National Disaster Management Act, 2005. The Multi Disaster Mitigation Plan is hence, prepared by the Municipal Corporation of Faridabad (MCF) under this exercise with the objective of better disaster preparedness for an effective disaster response.

The major part of Faridabad city is underlain by Quaternary Alluvium consisting of sand, clay and silt. In the western and northwestern part of the town, the quartzite ridges of the Delhi system can be observed. Along the Yamuna flood plain towards the eastern part of the town, the younger alluvium is mainly sandy with a thickness of about 10-15 m. The main water –bearing horizons (aquifers) consisting of a sandy layer is generally confined to 60m below ground level. Beyond this depth alluvium is more clayey and generally aquifers are not potential water sources even though depth of bedrock is more than 200m. The limited thickness of aquifers further restricts the development of ground water on a large scale. In the Delhi quartzite's, the availability of ground water is also limited and is controlled by secondary permeability imparted by joints and fractures.

The Municipal Corporation of Faridabad (MCF) came into existence in 1992 and constituted the erstwhile municipalities of Faridabad Township/ New Industrial Township (NIT), Faridabad Old, Ballabgarh and 38 numbers of revenue villages then referred to as the Faridabad Complex Administration. MCF is governed by the Haryana Municipal Corporation Act, 1994 (HMCA). As per this Act, MCF is obligated to provide basic infrastructure like water supply, drainage, sewerage and roads, and services such as conservancy, fire fighting, streetlights, education and primary health.

The present geographical area of Faridabad is 207.88 sq.km. and has remained thus since its inception as a Municipal Corporation. The density of the Corporation in 2001 was 5080 persons per sq.km.; in 1991, the density was 3007 persons per sq.km. As on date, the density of population in Faridabad city is estimated to be about 6129 persons per sq.km.

Since its inception, the Municipal Corporation of Faridabad (MCF) has been the provider and facilitator of all core municipal services, including water supply and

sewerage, in its jurisdictional area. However, the jurisdictional area as a term is contiguous as there is more than one service provider and implementing agency within MCF's jurisdictional area. These are HUDA, HSIIDC and Haryana Housing Board etc. HUDA, for example, provides services in the areas being developed by them and transfers these areas/ sectors to MCF for maintenance purposes only after five years of development. This clearly presents the multiplicity of authorities and functions against the purpose of the 74<sup>th</sup> Constitutional amendment.

## **1.2 Faridabad Today And Tomorrow**

Rapid urbanization, population growth, growing economy and emerging opportunities in the region have placed an enormous demand for quality civic infrastructure. Apart from being plagued by huge gaps in infrastructure to service the current population, Faridabad faces other common challenges like accumulation of garbage, traffic congestion, deteriorating roads, pollution, and a strain on civic supplies like water, drainage and electricity.

In order to meet its future challenges, MCF needs to be more responsive and action-oriented. Faridabad is set to become a modern township. But, if the vision for tomorrow has to be realized, it will need the commitment and support of every participating citizen and institution as well as MCF to the implementation of the CDP proposals.

Having formulated the vision for a structured development of the city, it would be mandatory to commit to reforms to attract resources for providing adequate infrastructure. With assistance under JNNURM, the Corporation can create state-of-the-art infrastructure and encourage investments (public and private) in creating quality infrastructure.

Faridabad shows adequate potential to accommodate future population additions, indicating prospects of large-scale real estate activity in the near future. The city also boasts of an extensive green belt, which could induce large sections of population to reside in Faridabad. The town planning function is yet to be devolved on MCF, against what has been envisaged in the 74<sup>th</sup> CAA. This presents a major challenge for MCF, implementing the Development Plan proposals in the true sense. Bringing in uniformity in the provisions of building byelaws of all planning-related agencies like HUDA and MCF is a necessity. There is a need to adopt a high-rise, high-density policy for residential areas and a Flatted Factory policy for industrial areas, to better serve and accommodate the future additions. The present DP will complete its tenure in 2011, thereby necessitating a revision of the Plan. The same needs to be taken up through GIS-based systems

## **1.3 Key issues:**

### **1.3.1 Lack of alternate parallel corridors to NH**

The lack of alternate corridors to NH2, coupled with the absence of inter-connectivity between the eastern and western sides of the railway line, virtually

makes the NH the spine of the city. Any trip generated within the city needs to go through or cross the NH. Neither are there any bypass/ regional corridors for the regional traffic. Thus it inevitably enters the city roads and mixes with the city traffic, contributing to increased vehicular emissions into the city's atmosphere along the stretch of the NH.

### **1.3.2 Lack of a public transport system**

The lack of an organized public transport system in the city has led to an increase in the number of private transport vehicles like stage carriers and seven-seaters. These contribute significantly to carbon emissions in the city. Faridabad also receives a lot of regional traffic and floating population from Delhi, who travel by private vehicles. This increasing number of private vehicles is consequently causing more vehicular emissions and higher noise levels in the city.

### **1.3.3 Lack of Common Effluent Treatment systems for Faridabad Industrial Complex**

The present industrial water demand is about 20 MLD and the same is expected to reach 100 MLD in another 20 years owing to the growth of the industry. For this large quantum of industrial water supply, the generation of waste water would be equally large and the absence of common treatment facilities (from economic point of view) of these wastewaters is clearly felt in the wake of the large scale pollution of the river Yamuna.

## **1.4 Slums in Faridabad**

The booming industry in the city during the 70s and the 80s and the growth of its economy has also contributed to the growth of slums. Large numbers of laborers from different parts of the country have migrated in groups to the city in lieu of opportunities and settled on available vacant lands, largely belonging to the Central and State Govt. MCF, HUDA, Wakf board, Rehabilitation Department, and even private lands. Further, the meager provisions in the Development Plan for EWS/ LIG housing and the non-availability of adequate service levels in several of these remote locations have been leading to a deteriorating environment in the city.



In all, there are 67 identified slum clusters in the city. The survey conducted during 2001 identified the total population living in these slums as 132424. It is estimated that as on date, the population living in the slums would be about 1.47 lakhs. That accounts for about 12 percent of the total city population.



The majority of the slums are concentrated at critical locations like along the alignment of the Badarpur bypass, the entire area between Old Faridabad and G.T. Road, and several lands acquired by HUDA for residential and industrial purposes.

## **1. 5 Disaster**

Disaster Preparedness refers to measures taken to prepare for and reduce the effects of disasters. That is, to predict and-where ever possible-prevent them, mitigate their impact on vulnerable populations, and responds to and effectively cope with their consequences.

It is an ongoing and an integrated process which involves contributions from varying fields, like health sector, water and sanitation, logistics, institutional development etc. Preparedness cannot be achieved by distinct sectoral activities. It requires proper readiness measures to undertake various activities like emergency response, rehabilitation and recovery with an objective of providing targeted assistance. International Federation of Red Cross and Red Crescent Societies recognizes that a comprehensive disaster preparedness strategy should include following elements:

- a) Hazard, risk and vulnerability assessments
- b) Response mechanisms and strategies
- c) Preparedness Plan
- d) Coordination
- e) Information management
- f) Early warning systems
- g) Resource mobilization
- h) Public education, training and rehearsals
- i) Community based disaster preparedness

John Mitchell (1999) opines that since disaster preparedness depends on shared goals and activities across sectors, it is important that the concept be integrated into all on- going projects.

An important characteristic of a powerful disaster is infrastructure collapse in the affected region which could severely impact the coping capacity of the affected community. Further it could make the function of Relief Chain Management extremely challenging in a disaster response. A prompt disaster response requires rapid deployment of aid and assistance to the affected area within a shortest possible time, while surpassing, immense dynamic hurdles posed by the collapsed infrastructure. Ptashkin (2008) recognizes another challenge, i.e., to synchronize network plans, operations, technologies and data to accomplish two objectives: manage, monitor and deliver supplies and services to citizens, service providers and survivors, and enable adaptation and response to alerts and recovery from daily operating events and catastrophic incidents. Lack of co-ordination amongst various governmental and non-governmental organization working in disaster response is often prevalent. This lack of coordination leads to confusion at last mile (Murray, 2005).

The Multi Disaster Mitigation Plan prepares a hazard, risk and vulnerability analysis of the area in Faridabad that falls under the purview of Municipal Corporation. It evaluates the institutional and legal arrangement and on its basis, it goes on to prepare a multi-disaster mitigation and preparedness plan. The document elaborates on the Incident response System within which it clearly mentions the roles and responsibilities of various officers under different departments. Finally it documents the Standard Operating Procedure of the Municipal Corporation defining the procedure and work required to deal efficiently with any disasters.

## Chapter-2

# Hazard, Vulnerability and Risk Analysis

### 2.1 Introduction

The increased vulnerability of many urban areas especially in developing countries is a major reason of concern. Therefore, to analyze the Multi Hazard Risk and Vulnerability of Faridabad city, and as such assessment shall provide the necessary data base for prioritizing action in emergency, preparedness, response and community based disaster mitigation. The district faces a number of hazards, like Earthquake, Hailstorm, Flood, Fire, Accidents, LPG cylinder blast, Chemical and Industrial Accidents, Terrorism and Epidemics, which pose the threat of disaster. The threat (Risk) and possible impact (Vulnerability) which can be actualized from these hazards ranges from minor impacts affecting one village to events impacting larger than the state alone.

During last two decade, Faridabad has undergone major changes and has now developed into modern township. Over the years, disasters have caused threat to life and property and have adversely impacted economic development.

### 2.2 Earthquake Hazard:

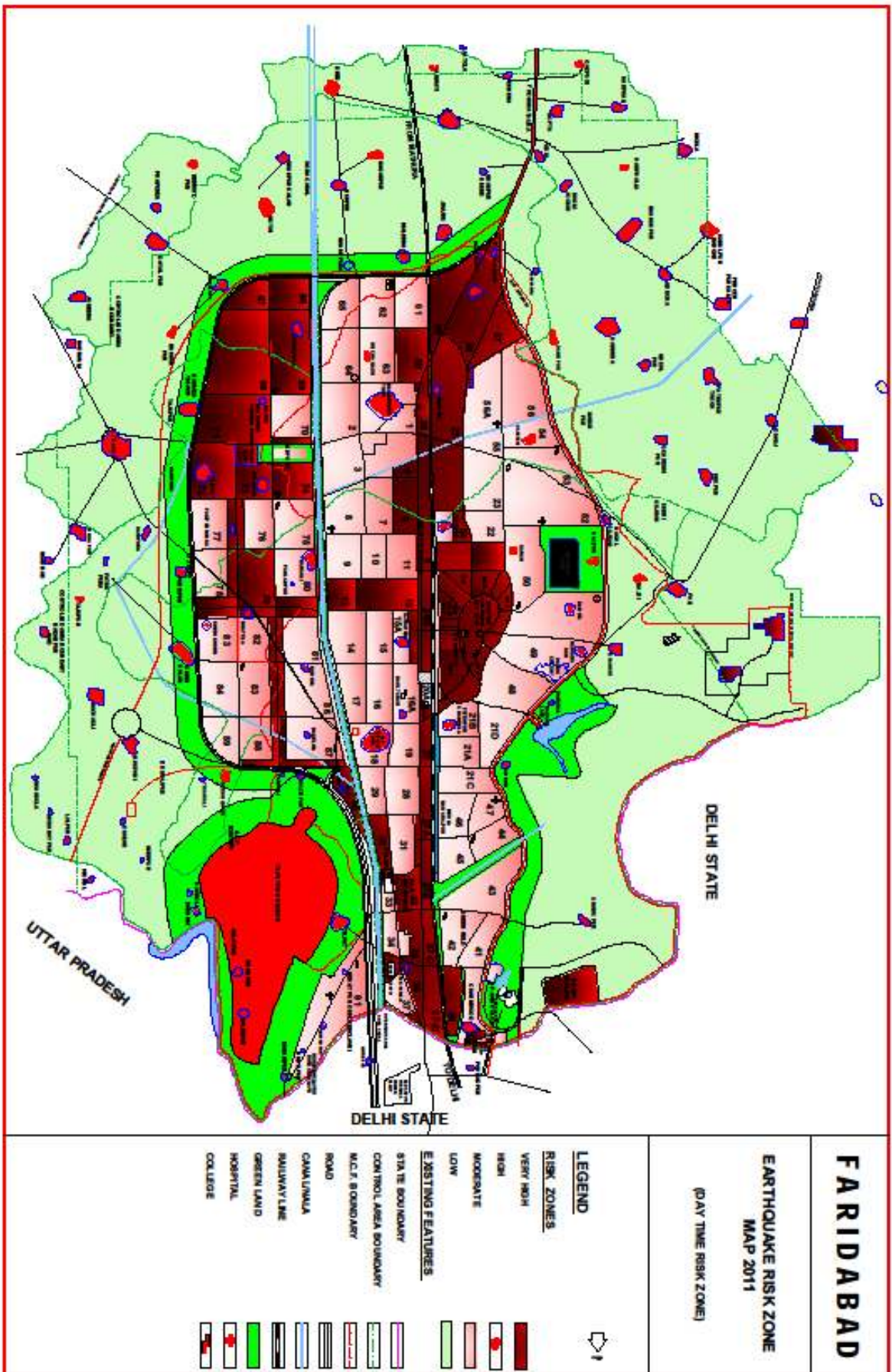
The entire region of Faridabad falls in high risk seismic zone IV and corresponds to MSK intensity VIII making it highly vulnerable to Earthquakes.

The major tectonics features affecting Faridabad are as follows:

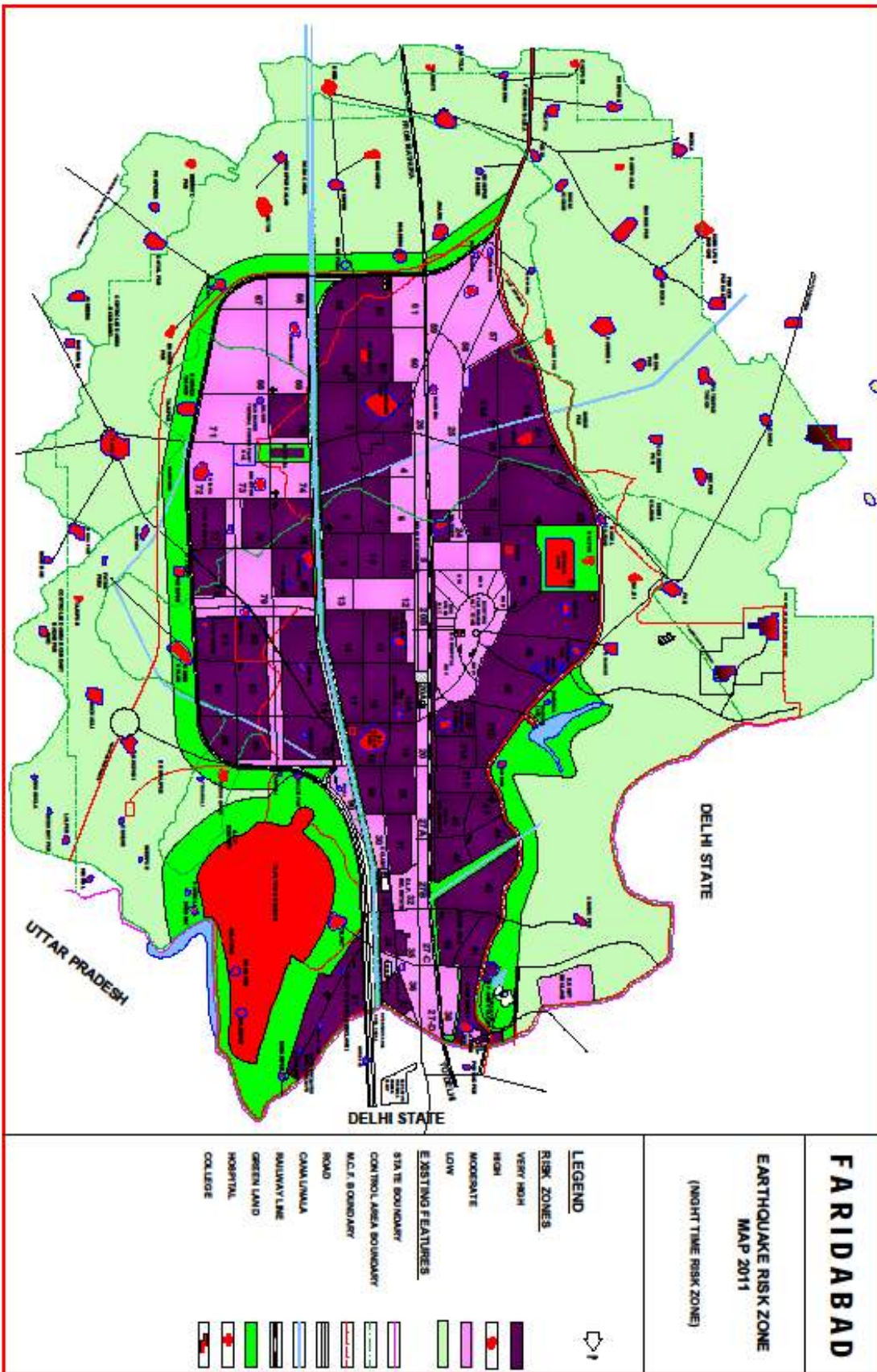
- I. Delhi Moradabad Fault
- II. Mathura Fault
- III. Etha Fault
- IV. Sohna Fault
- V. Moradabad Fault
- VI. Delhi-Haridwar Fault

Earthquake risk assessment is all the more difficult in Faridabad district because of the lack of seismic instrumentation in large parts of the district. In addition to the nature of earthquake and the site (such as the magnitude, duration, soil type), there is big whether the high rise buildings in Faridabad are Earthquake resistant? Whether the latest technology was used for establishing these multi storied buildings? If used then, were the mason trained enough to use the technology for the construction of the infrastructure? Are the buildings being constructed by following National Building Code? Is the standard material used for the construction is techno legal frame work of building by-laws is in place?

A comprehensive micro level study is required to conduct an earthquake risk zonation while considering the above mentioned determining factors. Considering the practical limitations an earthquake risk zone map has been prepared which includes only few of the key determinants. The map (Map No. 01 & 02) has been developed while considering the population density pockets during various time zones of a day. The risk zones have been, thus divided into (a) Very High Risk Zone (b) High Risk Zone (c) Moderate Risk Zone and (d) Low Risk Zone areas. The areas within the same categories changes during day time and the night time, as the density pockets also changes due to occupational practices of the people. During day time, density of people gets concentrated at commercial places, which includes shops, office complexes, Markets, Industrial areas etc.. During Night time maximum density gets concentrated in the residential areas. The two maps thus depict these risk zones in Faridabad.







## **2.3 Drought:**

Drought has been described as “creeping Disaster” in the United Nations publications. Thus emphasizing that a situation of drought develops gradually by giving sufficient warning of its coverage, extent and intensity unlike a flood, cyclone or earthquake which offers little time and opportunity for immediate planning and preparedness.

Rapid industrialization, urbanization and withdrawal of huge ground water are leading factors for the occurrence of drought in Faridabad district. The droughts in 1987 & 2001 were worst droughts in the state of Haryana.

Faridabad receives most of its rainfall from the ‘summer’ monsoon and continuous up to the middle of August. The summer monsoon sets during the month of July and starts withdrawing from the end of August or first week of September. Due to this uncertain rainfall pattern the entire district receive less than one month of rainy session. Hence the department of agriculture and cooperation, ministry of agriculture and government of India has categorized Faridabad in chronically in drought affected area.

## **2.4 Flood:**

River Yamuna causes recurrent floods in the district, particularly in the eastern boundary of Faridabad and Ballabgarh tehsils. Other than Yamuna, there are several barsati nallahs spread across the district. These local streams also increase the quantum of floods in the area. Excessive rainfall and excessive discharge of water from Tajewala head mainly leads to the over flooding in Yamuna. Various other factors like dam bursts and flashfloods on the upstream of Yamuna might result into sudden and devastating floods in the district. Flow of the river is checked by Dakpathhar Barrage, Asan Barrage, Hathnikund Barrage, Tajewala barrage and Okhla barrage before it enters Faridabad.

Areas which fall under the jurisdiction of MCF are not flood prone. However, this does not negate the possibility of flooding in future; therefore areas with little probability of flooding have been identified. Flood Control Order 2010 for the district Faridabad identifies that Budhiya Nallah system and Ankhir Nallah system brings in some possibility of flooding. Ankhir Nallah which carries water from hills of Badkhal and Ankhir passing through Barapulla bridge affects the areas of Old Faridabad particularly the locality of Raja Garden, Gopi Colony, Baba Nagar, Shiv Colony and effects the area of village Daultabad. The order also recognizes that Sector 16, 16-A, 17, 14 and 19 is gripped with problems of water accumulation due to construction of Agra and Gurgaon Canals.

## 2.5 Epidemics:

In the district of Faridabad, preventive, and curative health is being looked after by health department. There are also dispensaries, referral hospitals and community hospitals supplementing the task. With a view of detecting epidemics at the earliest an epidemiological cell has been established under the Directorate of Health Services. The following epidemic are monitored in Faridabad: cholera, Gastroenteritis, acute Diarrhea/dysentery, infective hepatitis, encephalitis, poliomyelitis, typhoid, In addition to these Food Poisoning, Viral Fever, Dengue Fever and Meningitis outbreaks are also monitored:

## 2.6 Fire:

The short circuits, LPG blasts and chemical industrial fire are the major reasons to worry in the district.

Most of the reported accidents are in the city of Faridabad, mainly due to the inadequate safety measures in the electrical installation and chemical and LPG blasts, as well as careless practices while handling and storage of inflammable materials.

Unlike in the case of hazards such as floods or road accidents, identification of specific vulnerable spots is not possible. However, a broad identification of the types of locations where there is a positional threat of fire is possible. These are:

- Storage area of flammable/explosive material in the vicinity of populated area;
- Hotels and restaurants in crowded area using improper practices of storage of cooking fuel such as LPG, kerosene etc;
- Multi storey buildings especially in the cities, with inadequate fire safety measures;
- Narrow lanes, congested and overcrowded buildings, and old building with poor internal wiring.

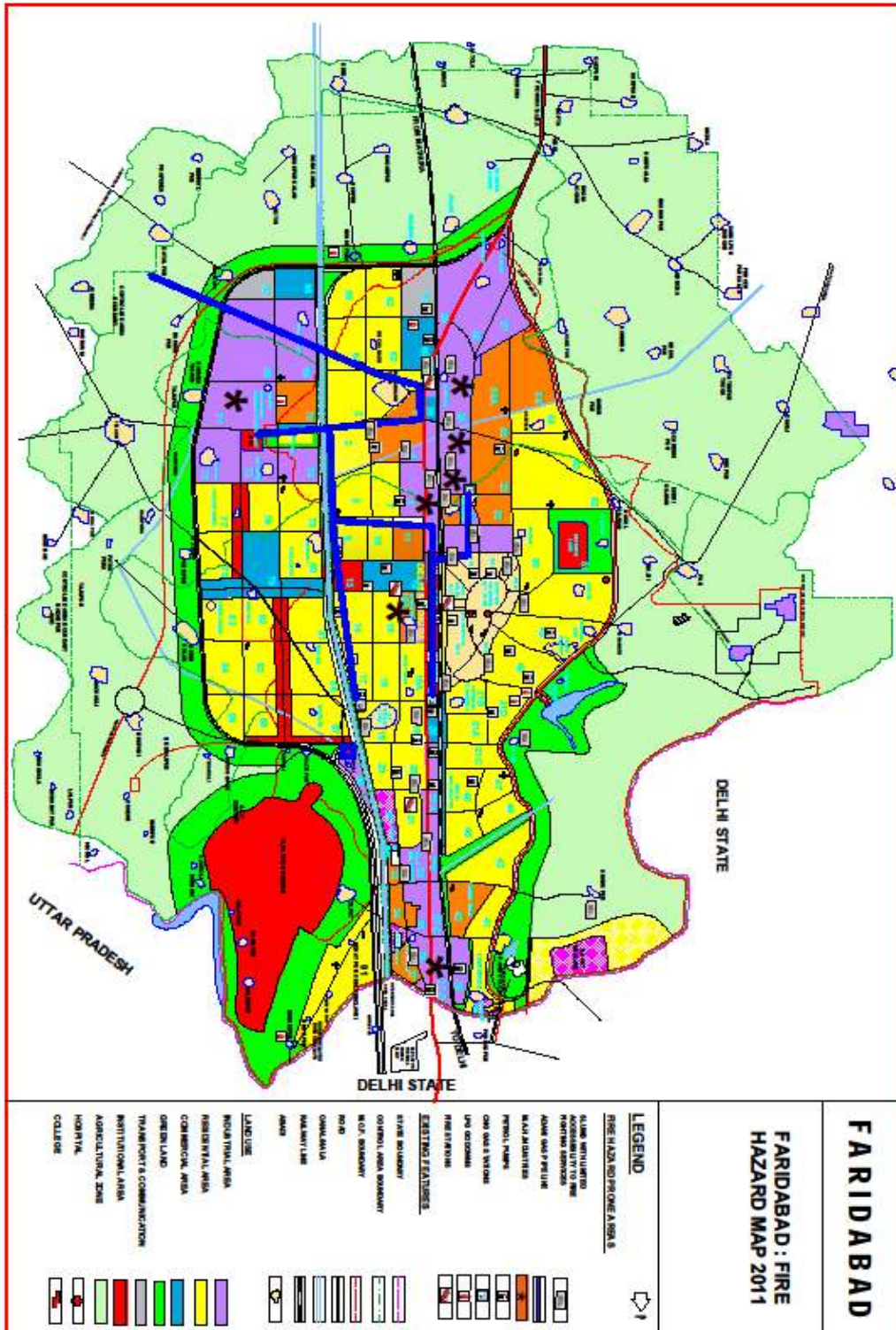
The facilities in each fire station are appropriate to the municipality's financial position. However, due to the paucity of funds in most municipalities, except in Faridabad city in the district, the fire-stations are poorly equipped. In addition to combating fire related hazards, fire frightening services are also required during building collapse, road accidents, and industrial hazards and earthquake etc. Therefore, the need for a well equipped, well maintained, and adequate fire station cannot be under estimated.

Fire services are also required in smaller di for government regulation to simplify bureaucra travel across municipal limits. Stream lining of fire





required. Need for immediate communication after fire accidents, granting of blanket permission during emergency, and up-gradation by providing wireless and computer system, mapping of areas prone to fire accidents based on the frequency of occurrence of these hazards is necessary.



## 2.7 Chemical, Biological Radiation and Nuclear Disaster (CBRN) :

All nuclear facilities have specialized Crisis Management Groups (CMGs) for onsite response under the aegis of Department of Atomic Energy (DAE). For the offsite incident response at those locations, the RO /Deputy Commissioner ensure that the stakeholders and communities are properly sensitized in advance through regular mock exercises. Support from local experts for such purpose may be obtained wherever available. The State Government should train and equip its own HDRF for this purpose. The help of NDRF may be taken for immediate response and for training the HSDRF.

For the purpose of specialized response to a threatening disaster situation or disasters/emergencies both natural and man-made such as those of CBRN origin, the DM Act, 2005 has mandated the constitution of a NDRF. The general superintendence, direction and control of this force is vested in and exercised by the NDMA and the command and supervision of the Force will vest in an officer to be appointed by the Central Government as the Director General of NDRF. Presently, the NDRF comprises ten battalions. Two additional battalions have been sanctioned by the Government and are in the process of being formed. These battalions are located at strategic locations and will be deployed proactively as required. NDRF units will maintain close liaison with the designated State Governments/ UTs and will be available to them in the event of any serious threatening disaster situation. Presently four out of eight of them have been equipped and trained to respond to situations arising out of CBRN emergencies. In future plans exist to train rest of the battalions also for CBRN response. The NDRF units will also impart basic training to all the stakeholders identified by the State Governments in their respective locations. Further, a National Academy will be set up to provide training for trainers in DM and to meet related national and international commitments. Presently the location and area of responsibility of the various NDRF battalions in the country are as follows:

Location	Area of responsibility for natural disaster	Area of responsibility for CBRN emergencies
Guwahati	N.E. States	Kolkata battalion
Kolkata	West Bengal, Bihar, Sikkim, Jharkhand	
Mundali	Orissa, Chhatisgarh, North Andhra Pradesh (Srikakulam, Vizianagaram, Visakhapatnam)	Arakkonam battalion
Arakkonam	Tamil Nadu, Kerala, South Andhra Pradesh, Puduchery, A & N Islands, Lakshadweep	
Pune	Maharashtra, Karnataka, Goa	Pune battalion
Gandhi Nagar	Rajasthan, Gujarat, Madhya Pradesh, Dadra & Nagar Haveli, Daman & Diu	
Bhatinda	Chandigarh, Punjab, J&K, Himachal Pradesh	Ghaziabad battalion (Grater Noida)
Ghaziabad	U.P., Uttar Khand, <b>Haryana</b> , Delhi	
Patna*		
Vijayawada*		

\* Patna (Bihar) and Vijaywada (Andhra Pradesh) have also been approved in principle to locate NDRF battalions for natural disaster, and therefore, the area of responsibility will be readjusted once these two NDRF battalions are made functional.



## 2.8 Industrial Hazard

Industrial accidents are most likely during chemical processing, manufacturing, storage, transport and disposal of toxic waste. The types of industries prone to accidents are those involved in the manufacture of:

- Chemicals and chemical products
- Non metallic mineral petroleum
- Fire

The causes of accidents in these industries are:

- Explosion resulting from electricity, fire, excessive pressure of steam and air, gas, vapour etc.
- Fires including back fire in boilers and others; and
- gassing

An Industrial hazard risk map (See Map03) has been prepared for the district of Faridabad. The methodology used is as follows:-

List of Multi Accident Hazards Factory/installation (MAH industries) was procured from Government of Haryana. MAH industries falling within the boundaries of MCF was, then plotted on the map. Industrial Zones were then identified and plotted. Proximity of residential areas to these industrial zones were then identified and marked as high risk residential areas. Limitation of the study is that industry specific impact assessment was not taken into account.

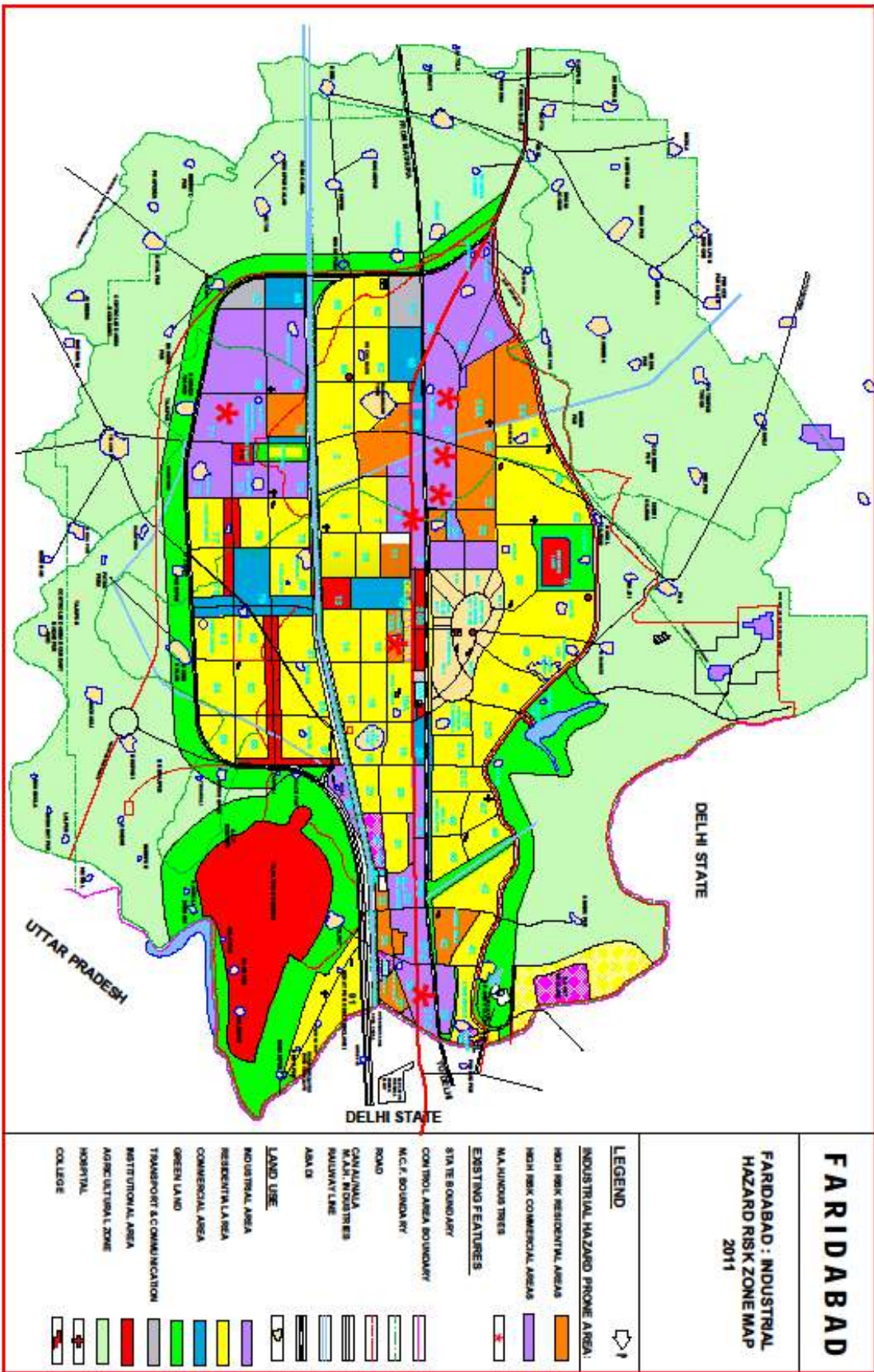
The lists of MAH Units falling under the jurisdiction of MCF are shown as under:-

<b>Maximum Accident Hazards Units falling under the jurisdiction of Municipal Corporation Faridabad</b>		
SN	District	Name of the Factory and Address
01	Faridabad	NTPC Gas Power Plant. Village Mujedy Thneemka, District Faridabad
02	Faridabad	High Polymer Labs Ltd., P.No. 06-08, Sec-25, District Faridabad
03	Faridabad	Yamaha Motor (P) Ltd., 19/6M/Road, District Faridabad
04	Faridabad	Nuchem Ltd., 54 Industrial Area, NIT, District Faridabad
05	Faridabad	Bharat Gears Ltd., M/Road, District Faridabad
06	Faridabad	Thomson Press Ltd., 18/35, M/Road, District Faridabad
07	Faridabad	Demaco Polymers Ltd., P.No. 86, Sec-25. District Faridabad

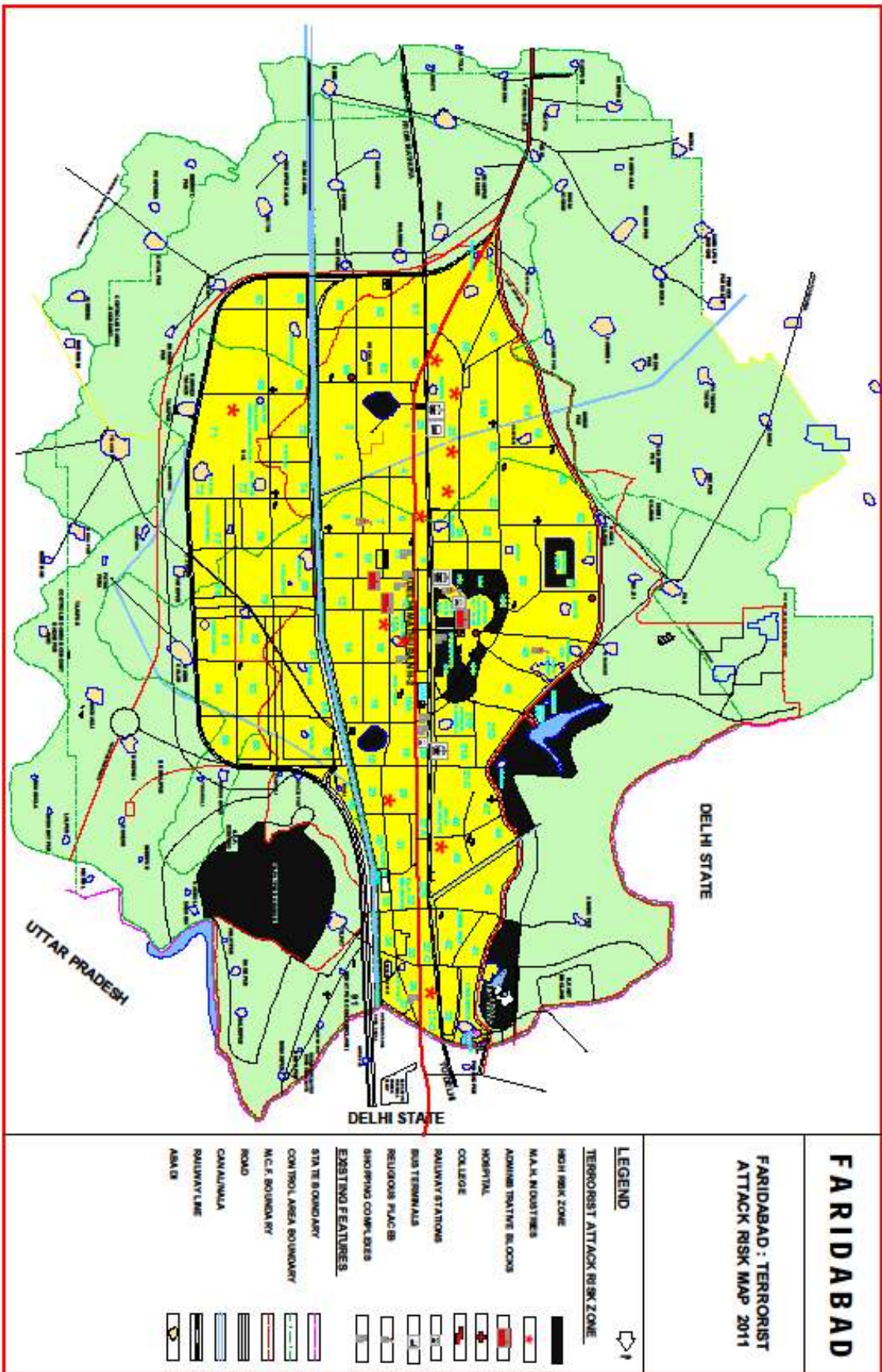
Apart from district plans, emergency response centers (ERCs) have been established in some of the industrial area in the state of Haryana. There is a need to identify district wise the possible industrial and chemical hazards, the agencies presently dealing with the management of these hazards, resources available and present level of preparedness. Based on this information Standard operating procedure may be formulated to respond to these hazards. Detailed district level information towards this is being collected from the Deputy Commissioner.

## **2.9 Terrorist Attack:**

Faridabad is also at risk from the view point of terrorism as it is considered one of the India major outsourcing hubs. Public- private sector partnership model in real estate development has been the major force behind Faridabad emerging as the corporate capital. The growth prospect, increasing employment opportunities and a cleaner environment has propelled the growth forwards. It is Faridabad that initiated organized retail boom in Delhi and NCR in the form of over half a dozen operational malls. All these factors are responsible to make Faridabad prone to terrorist attack. A risk zone map for terror attacks has been prepared (see map 4). The map plots probable hot spots for terror attacks. These Includes key administrative buildings, shopping malls, congested market areas, public places like railway stations, bus stand, colleges and hospitals. Places of religious significance and tourist destinations have also been plotted. Key institutional areas and major industrial settings have also been identified as probable targets.







## 2.10 Vulnerability analysis for the district of Faridabad:

Faridabad District is located at south of Haryana. The threat (risk) and possible impact (vulnerability) which can be actualized from these hazards (Table1), ranges from minor impact affecting one area to event impacting larger than the state alone.

The analysis of hazard, risk and disaster impact in Faridabad, it indicates that disaster planning at the Faridabad district level should first focus on the functional response to Earthquake & Air Accident. The functional response to these events have links to the response to Earthquake, Flood, Hail-Storms & Drought. Typical response to these disaster events also can apply to fire, industrial Accidents, failure of critical infrastructure and building collapse (Table 1).

**Table 1**

**Faridabad: Hazard Risk and Vulnerability Analysis**

Hazards	Probability rating	Impact rating	Vulnerability rating	Potential Impact	Vulnerability	Vulnerable areas
<b>Earthquake</b>	4	Catastrophic	16 (high)	Loss of lives, buildings, roads, infrastructure, public property	<ul style="list-style-type: none"> <li>• Loss of Road and telecommunication network,</li> <li>• Loss of livestock &amp; vulnerable people,</li> <li>• Loss of infrastructure, buildings, economic loss</li> </ul>	All Area of the District
<b>Flood</b>	3	High	16	Loss of crop, human and bovine life, infrastructure, houses, livelihood system etc.	<ul style="list-style-type: none"> <li>• Loss of Road and telecommunication network,</li> <li>• Loss of agriculture/ horticulture, and drinking water source-tube wells, wells.</li> </ul>	Low lying area of District
<b>Drought</b>	3	Moderate	15	Loss of crop, livelihood	<ul style="list-style-type: none"> <li>• Loss of drinking water food's scarcity.</li> </ul>	All Area of the District
<b>Hailstorms</b>	3	Moderate	8	Loss of property and life	<ul style="list-style-type: none"> <li>• Loss of property and life</li> </ul>	All Area of the District

<b>Epidemics</b>	1	Low	1	Loss of human and bovine life	• Vulnerable people	All Area of the District
<b>Fire</b>	4	Catastrophic	16	Loss of lives (human and animal)	• Vulnerable people	All Area of the District
<b>Industrial accidents</b>	4	Catastrophic	16	Loss of crops	• Loss of crops and livelihood	Industrial area of the District
<b>Road accidents</b>	4	Catastrophic	16	Loss of property, livelihood	• Loss of lives, property (social & economic disruption)	congested road of the district
<b>Terrorism</b>	3	Moderate	15	Loss of environment	• Loss of environment	All area of the district
<b>Heat Wave Cold Wave</b>	2	Insignificant	Low	Loss of Lives		All area of the district
<b>Rail Accidents</b>				Loss of Lives		
<b>Air Accidents</b>				Loss of Lives		

## Chapter 3

# Institutional and Legal Arrangements

### 3.1 The Disaster Management Act, 2005

The DM Act 2005 and the National Policy on Disaster Management lay down situational mechanisms at the National, State, District and Local levels. Though these institutions are at different levels, they will work in close harmony. The new institutional frameworks are expected to usher in a paradigm shift in DM from relief centric approach to a proactive regime that lays greater emphasis on preparedness, prevention and mitigation. The States which have not already put in place the appropriate institutional mechanism like SDMAs and DDMA have to take necessary steps in that direction at the earliest.

#### A. Institutional Framework under the DM Act,2005

### 3.2 National Disaster Management Authority (NDMA)

NDMA, as the apex body for DM, is headed by the Prime Minister and has the responsibility for laying down policies, plans and Guidelines for DM and coordinating their enforcement and implementation for ensuring timely and effective response to disasters. The Guidelines will assist the Central ministries, departments and States to formulate their respective DM plans. It will approve the National Disaster Management Plan and DM Plans of the Central ministries/departments. It will take such other measures, as it may consider necessary, for the prevention of disasters, or mitigation, or preparedness and capacity building, for dealing with a threatening disaster situation or disaster. Central ministries/ departments and State Governments will extend necessary cooperation and assistance to NDMA for carrying out its mandate. It will oversee the provision and application of funds for mitigation and preparedness measures. NDMA has the power to authorize the departments or authorities concerned, to make emergency procurement of provisions or materials for rescue and relief in a threatening disaster situation or disaster. The general superintendence, direction and control of the National Disaster Response Force (NDRF) is vested in and will be exercised by the NDMA. The National Institute of Disaster Management (NIDM) works within the framework of broad policies and Guidelines laid down by the NDMA.

The NDMA is mandated to deal with all types of disasters, natural or manmade, whereas such other emergencies including those requiring close involvement of the security forces and/ or intelligence agencies such as terrorism (counter-insurgency), Law and Order Situations, Serial Bomb Blasts, Hijacking, Air Accidents, Chemical, Biological, Radiological and Nuclear Weapon Systems, Mine Disasters, Ports and Harbour emergencies, Forest Fires, Oilfield Fires and Oil Spills will continue to be handled by the extant mechanism i.e. National Crisis Management Committee (NCMC).

NDMA may, however, formulate Guidelines and facilitate training and preparedness activities in respect of CBRN emergencies. Cross-cutting themes like Medical Preparedness, Psycho-Social Care and Trauma, Community Based Disaster Preparedness, Information & Communication Technology, Training, Preparedness, Awareness Generation etc., for natural and man-made disasters in partnership with the stakeholders concerned. Resources available with the DM authorities at all levels, which are capable of discharging emergency support functions, will be made available to the nodal ministries and agencies concerned during times of such disaster(s) / impending disaster(s) .

### 3.3 National Executive Committee (NEC)

The NEC comprises the Union Home Secretary as the Chairperson, and the Secretaries to the GoI in the Ministries/Departments of Agriculture, Atomic Energy, Defense, Drinking Water Supply, Environment and Forests, Finance (Expenditure), Health, Power, Rural Development, Science and Technology, Space, Telecommunications, Urban Development, Water Resources and the Chief of the Integrated Defense Staff of the Chiefs of Staff Committee as members. Secretaries in the Ministry of External Affairs, Earth Sciences, Human Resource Development, Mines, Shipping, Road Transport and Highways and the Secretary, NDMA will be special invitee to the meetings of the NEC.

The NEC is the executive committee of the NDMA and is mandated to assist the NDMA in the discharge of its functions and also ensure compliance of the directions issued by the Central Government. The NEC is to coordinate the response in the event of any threatening disaster situation or disaster. The NEC will prepare the National Plan for DM based on the National Policy on DM. The NEC will monitor the implementation of Guidelines issued by NDMA. It will also perform such other functions as may be prescribed by the Central Government in consultation with the NDMA.

### 3.4 Haryana State Disaster Management Authority (HSDMA)

As per section 14(1) of the DM, Act 2005, the Haryana State Disaster Management Authority headed by the Hon'ble Chief Minister has been formed and notified and will lay down policies and plans for DM in the Haryana State. It will, inter alia, approve the State Plan in accordance with the Guidelines laid down by the NDMA, coordinate the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures and review the developmental plans of the different departments of the State to ensure integration of prevention, preparedness and mitigation measures. The other members of the HSDMA are as under:

- |  |  |
|--|--|
| 1. Chief Minister, Haryana                                     | Chairperson, Ex-officio                    |
| 2. Finance Minister, Haryana                                   | Member                                     |
| 3. Health Minister, Haryana                                    | Member                                     |
| 4. Rural Development & Panchayats<br>Minister, Haryana         | Member                                     |
| 5. Minister of state for Revenue                               | Member                                     |
| 6. Chief Secretary Haryana                                     | Member and chief Executive<br>Officer,     |
| 7. Ex-officio Financial Commissioner, Revenue                  | Member and Disaster<br>Management, Haryana |
| 8. Home Secretary, Haryana                                     | Member                                     |
| 9. Representative of National Disaster<br>Management Authority | Member                                     |

The State Government Haryana has also constituted a State Executive Committee (SEC) to assist the HSDMA in the performance of its functions. The SEC will be headed by the Chief Secretary (CS) to the State Government and coordinate and monitor the implementation of the National Policy, the National Plan and the State Plan. The SEC will also provide information to the NDMA relating to different aspects of DM.



### **3.5 District Disaster Management Authority (DDMA)**

Each DDMA of Haryana will be headed by the Dy. Commissioner with the Chairman of Zila Parishad as the Co-Chairperson. DDMA will act as the planning, coordinating and implementing body for DM at District level and take all necessary measures for the purposes of DM in accordance with the Guidelines laid down by the NDMA and HSDMA. It will, inter alia, prepare the District DM plan for the District and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan concerning its own District and prepare the District Plan. The DDMA will also ensure that the Guidelines for prevention, mitigation, preparedness and response measures laid down by NDMA and HSDMA are followed by all Departments of the State Government, at the District level and the Local Authorities in the District.

### **3.6 Local Authorities**

The Faridabad Municipal Corporation, Faridabad control and manage civic services. Hence, Municipal Corporation, Faridabad has prepared its Disaster Management Plans in consonance with the Guidelines of NDMA. The Municipal Corporation, Faridabad will also ensure capacity building of their officers and employees for managing disasters, carry out relief, rehabilitation and reconstruction activities in the affected areas.

### **3.7 National Institute of Disaster Management (NIDM)**

NIDM, in partnership with other research institutions has capacity development as one of its major responsibilities, along with training, research, documentation and development of a national level information base. It will network with other knowledge based institutions and function within the broad Policies and Guidelines laid down by NDMA. It will organize training of trainers, DM officials and other stakeholders. NIDM will strive to emerge as a 'Centre of Excellence' in the field of DM.

### **3.8 National Disaster Response Force (NDRF)**

For the purpose of specialized response to a threatening disaster situation or disasters/emergencies both natural and man-made such as those of CBRN origin, the DM Act, 2005 has mandated the constitution of a NDRF. The general superintendence, direction and control of this force is vested in and exercised by the NDMA and the command and supervision of the Force will vest in an officer to be appointed by the Central Government as the Director General of NDRF. Presently, the NDRF comprises eight battalions. Two additional battalions have been sanctioned by the Government and are in the process of being formed. These battalions are located at strategic locations and will be deployed proactively as required. NDRF units will maintain close liaison with the designated State Governments/ UTs and will be available to them in the event of any serious threatening disaster situation. While the handling of all natural disasters rests with all the NDRF battalions, presently four of them have been equipped and trained to respond to situations arising out of CBRN emergencies. Future plans exist to train rest of the battalions also for CBRN response. The NDRF units will also impart basic training to all the stakeholders identified by the State Governments in their respective locations. Further, a National Academy will be set up to provide training for trainers in DM and to meet related national and international commitments.

Presently the location and area of responsibility of the various NDRF battalion in the country are as follows:

<b>Location</b>	<b>Area of responsibility for natural disaster</b>	<b>Area of responsibility for CBRN emergencies</b>
Guwahati	N.E. States	Kolkata battalion
Kolkata	West Bengal, Bihar, Sikkim, Jharkhand	
Mundali	Orissa, Chhatisgarh, North Andhra Pradesh (Srikakulam, Vizianagaram, Visakhapatnam)	Arakkonam battalion
Arakkonam	Tamil Nadu, Kerala, South Andhra Pradesh, Puduchery, A & N Islands, Lakshadweep	
Pune	Maharashtra, Karnataka, Goa	Pune battalion
Gandhi Nagar	Rajasthan, Gujarat, Madhya Pradesh, Dadra & Nagar Haveli, Daman & Diu	
Bhatinda	Chandigarh, Punjab, J&K, Himachal Pradesh	Ghaziabad battalion (Grater Noida)
Ghaziabad	U.P., Uttar Khand, <b>Haryana</b> , Delhi	
Patna*		
Vijayawada*		

*\* Patna (Bihar) and Vijaywada (Andhra Pradesh) have also been approved in principle to locate NDRF battalions for natural disaster, and therefore, the area of responsibility will be readjusted once these two NDRF battalions are made functional.*

### **3.9 Haryana Disaster Response Force (HDRF)**

The Haryana Disaster Response Force has been constituted to create response capabilities from within their existing resources. To start with, Haryana may aim at equipping and training a company of Haryana Armed Force. The SDRF will also include women members for looking after the needs of women and children. NDRF battalions and their training institutions will assist the States/UTs in this effort. In addition the Haryana Police will also be encouraged to include DM training in the basic and in-service courses of their respective Police Training Colleges for gazetted and non-gazetted police officers.

### **3.10 Disaster Mitigation Reserves**

Experience in major disasters in India in the last decade has clearly established the need for pre-positioning some essential relief and response reserves at crucial locations, including some for the high altitude areas. These reserves are intended to augment the resources at the State level. Mitigation reserves will be placed at the disposal of NDRF for enhancing their emergency response capabilities for assisting the State Governments during a disaster or disaster-like situation.

## **B. Existing Institutional Arrangements**

### **3.11 Cabinet Committee on Management of Natural Calamities (CCMNC) and the Cabinet Committee on Security (CCS)**

CCMNC was constituted to oversee all aspects relating to the management of natural calamities including assessment of the situation and identification of measures and programmes considered necessary to reduce its impact, monitor and suggest long term measures for prevention of such calamities, formulate and recommend programmes for public awareness for building up society's resilience to them. The Cabinet Committee on Security (CCS) deals with issues related to the defense of the country, law & order and internal security, policy matters concerning foreign affairs that have internal or external security implications, and economic and political issues impinging on National security.

### **3.12 High Level Committee (HLC)**

In the case of calamities of severe nature, Inter-Ministerial Central Teams are deputed to the affected States for assessment of damage caused by the calamity and the amount of relief assistance required. The Inter Ministerial Group (IMG), headed by the Union Home Secretary, scrutinizes the assessment made by the Central teams and recommends the quantum of assistance to be provided to the States from the National Calamity Contingency Fund (NCCF). However, assessment of damages by IMG in respect of drought, hail-storms, and pest attacks continue to be carried out by the Secretary, Ministry of Agriculture and Cooperation. The recommendations of the IMG are considered and approved by the High Level Committee chaired by the Union Agriculture Minister. The HLC comprises the Finance Minister, Home Minister, Agriculture Minister and Deputy Chairman of the Planning Commission as members. The constitution and composition of HLC may vary from time to time. The Vice Chairperson, NDMA will be a special invitee to the HLC.

### **3.13 Central Government**

In accordance with the provisions of the DM Act 2005, the Central Government will take all such measures, as it deems necessary or expedient, for the purpose of DM and will coordinate actions of all agencies. The Central Ministries and Departments will take into consideration the recommendations of the State Governments while deciding upon the various pre-disaster requirements and for deciding upon the measures for the prevention and mitigation of disasters. It will ensure that the Central Ministries and departments integrate measures for the prevention and mitigation of disasters into their developmental plans and projects, make appropriate allocation of funds for pre-disaster requirements and take necessary measures for preparedness and to effectively respond to any disaster situation or disaster. It will have the power to issue directions to NEC, State Governments/SDMAs, SECs or any of their officers or employees, to facilitate or assist in DM, and these bodies and officials will be bound to comply with such directions. The Central Government will extend cooperation and assistance to the State Governments as required by them or otherwise deemed appropriate by it. It will take measures for the deployment of the Armed Forces for DM if required. The role of the Armed Forces will be governed by the instructions laid out in Instructions on Aid to Civil Authorities 1970. The Central Government will also facilitate coordination with the UN Agencies, other International organizations and Governments of foreign countries in the field of DM. Ministry of External Affairs, in coordination with MHA, will facilitate external co-ordination and cooperation.

### **3.14 Role of Central Ministries and Departments**

As DM is a multi-disciplinary process, all Central Ministries and departments will have a key role in the field of DM. The Secretaries of the Nodal Ministries and Departments of GoI i.e. the Ministries of Home Affairs (MHA), Agriculture, Civil Aviation, Environment and Forests, Health, Atomic Energy, Space, Earth Sciences, Water Resources, Mines, Railways etc. are all members of the NEC and will continue to function as nodal agencies for specific disasters based on their core competencies or as assigned to them.

### **3.15 National Crisis Management Committee (NCMC)**

NCMC, comprising high level officials of the GoI headed by the Cabinet Secretary, will continue to deal with major crises which have serious ramifications. It will be supported by the Crisis Management Groups (CMG) of the Central Nodal Ministries and assisted by NEC as may be necessary. The Secretary, NDMA will be a permanent invitee to this Committee.

### **3.16 Haryana Governments**

The primary responsibility for DM rests with the Haryana Government. The institutional mechanisms put in place at the Centre, State and District levels will help the States manage disasters in an effective manner.

The DM Act, 2005 mandates the Haryana Governments, inter alia, to take measures for preparation of state DM plans, integration of measures for prevention of disasters or mitigation into state development plans, allocation of funds, establishment of early warning systems and to assist the Central Government and other agencies in various aspects of DM.

### **3.17 Centre for Disaster Management, Haryana Institute of Public Administration, Gurgaon**

CDM, HIPA in partnership with National/regional Institute and other research institutions has capacity development as one of its major responsibilities, along with training, research, documentation and development of state level information base. It will network with other knowledge based institutions and function within the broad Policies and Guidelines laid down by HSDMA. It will organize training of trainers, DM officials and other stakeholders. NIDM will strive to emerge as a 'Centre of Excellence' in the field of DM in Haryana.

### **3.18 District Administration**

At the District level in Haryana, DDMA's will act as the planning, coordinating and implementing body for DM and will take all measures for the purposes of DM in the respective Districts in accordance with the Guidelines laid down by NDMA and HDMA.

### **3.19 Management of Disasters impacting more than one State**

At times, the impact of disasters occurring in one State may spread over to the areas of neighboring States. Similarly, preventive measures in respect of certain disasters, such as floods, etc may be required to be taken in one State, though the impact of their occurrence may affect another. The administrative hierarchy of the country is organized into the National, State and District level administrations. This presents some difficulties in respect of disasters impacting more than one State. Management of such situations call for a coordinated approach which can respond to a range of issues quite different from those that normally, present themselves, before, during and after the event. NDMA will encourage identification of such situations and promote

the establishment of mechanisms on the lines of Mutual Aid Agreements, for coordinated strategies, for dealing with them by the States, Central Ministries and Departments and other agencies concerned.

## **C. Other Important Institutional Arrangements**

### **3.20 Armed Forces**

Traditionally, the Armed Forces are called upon to assist the civil administration only when the situation is beyond their coping capacity. In practice, however, the Armed Forces form an important part of the Government's response capacity and are immediate responders in all serious disaster situations. On account of their vast potential to meet any adverse challenge, speed of operational response, and the resources and capabilities at their disposal, the Armed Forces have historically played a major role in emergency support functions. These include providing services for communications, search and rescue operations, health and medical facilities and transportation, especially in the immediate aftermath of a disaster.

Airlift, helilift and movement of relief assistance and emergency response to neighboring countries primarily fall within the expertise and domain of the Armed Forces. The Armed Forces will participate in imparting training to trainers and DM managers, especially in CBRN aspects, heli-insertion, high-altitude rescue, waterman ship and training of paramedics. At the National level, the Chief of the Integrated Defense Staff to the Chairman Chiefs of Staff Committee is a member of the NEC. Similarly, at the State and District levels, the local representatives of the Armed Forces may be included in their executive committees to ensure closer coordination and cohesion.

### **3.21 Central Para Military Forces (CPMFs)**

The CPMFs which are also the Armed Forces of the Union, play a key role at the time of immediate response to disasters. Besides contributing to the NDRF, they will develop dequate DM capabilities within their own forces and respond to disasters which may occur in the areas where they are deployed. The local representatives of the CPMFs wherever they are located may be co-opted or invited to attend the meetings of the executive committee at the State and District level.

### **3.22 Haryana Police Force, Home Guard and Fire Services**

The Haryana Police Forces, the Fire and Emergency Services and Home Guards are crucial and most immediate responders to disasters. The Police will be trained and the Fire and Emergency Services upgraded to acquire multi-hazard rescue capability. Home Guards volunteers will be trained in disaster preparedness, emergency response, community mobilization, etc. The Haryana Government may take the help of NDMA for capacity building and sensitization of their forces.

### **3.23 Civil Defense (CD) and Home Guards**

The mandate of the Civil Defense (CD) and the Home Guards will be redefined to assign an effective role in the field of disaster management. They will be deployed for community preparedness and public awareness. A culture of voluntary reporting to duty stations in the event of any disaster will be promoted. A proper CD set up in every District will be a boon for disaster response as the neighborhood community is always the first responder in any disaster. The proposal to make CD District centric and be involved in disaster response has already been approved by the Govt. of India. Its phase wise implementation has also begun. Haryana Government will ensure their operationalisation in their respective districts.

### **3.24 Role of National Cadet Corps (NCC), National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS)**

Potential of these youth based organizations will be optimized to support all community based initiatives and DM training would be included in their programmes.

### **3.25 International Cooperation**

Disasters do not recognize geographical boundaries. Major disasters may often simultaneously affect several countries. It will be the National Endeavour to develop close cooperation and coordination at the International level in all spheres of DM.

## Chapter 4

# Mitigation and Preparedness Plan

Disasters often disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often pushing nations, in quest for progress, back by several decades. Thus, efficient management of disasters, rather than mere response to their occurrence, has in recent times, received increased attention both within India and abroad. This is as much a result of the recognition of the increasing frequency and intensity of disasters, as it is an acknowledgement that good governance in a caring and civilized society, needs to deal effectively with the devastating impact of disasters.

On 23 December 2005, the Government of India (GOI) took a defining step by enacting the Disaster Management Act, 2005, (hereinafter referred to as the Act) which envisaged the creation of the National Disaster Management Authority (NDMA), headed by the Prime Minister, State Disaster Management Authorities (SDMAs) headed by the Chief Ministers, and District Disaster Management Authorities (DDMAs) headed by the Deputy Commissioner as the case may be, to spearhead and adopt a holistic and integrated approach to DM. There will be a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach for conserving developmental gains and to minimize loss of life, livelihood and property.

Unlike man-made disasters, natural hazards like floods, earthquakes, and Drought cannot be avoided. However, with mitigation measures along with proper planning of developmental work in the risk prone area, these hazards can be prevented from turning into disasters. A multi-pronged approach needs to be adopted to undertake mitigation measures:

- Building mitigation measures into all development projects.
- Initiating Municipal level mitigation projects by the FDMA, in high priority areas, with the help of the NDMA, HSDMA, Central Ministries and concerned Departments of State Government.
- Indigenous knowledge on disaster and coping mechanisms will be given due weight age with special focus on protection of heritage structures.

### 4.1 Risk Assessment and Vulnerability Mapping

Hazard zonation, mapping and vulnerability analysis in a multi-hazard framework will be carried out utilizing Geographic Information System (GIS) based databases such as Municipal Corporation, Faridabad area Database for Emergency Management and Municipal Corporation, Faridabad Spatial Data Infrastructure and developing a GIS based Decision Support System (DSS). As a first step towards addressing disaster vulnerabilities, the Faridabad Municipal Corporation & Faridabad disaster Management Authority need to carry out risk and vulnerability assessment of all disaster prone areas of the Municipal Corporation, Faridabad. Hazard zonation mapping and vulnerability analysis based on GIS and remote sensing data, need to mandatorily include a ground check component. Hazard and Consequence Mapping on GIS shall be prepared for all chemical accident prone areas of Municipal Corporation, Faridabad.