



District Disaster Management Plan DDMP-2022



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CHAPTER – 1

1. Introduction:

- a. What is Disaster?
- b. Aim/Objective/Necessity of the plan
- c. Authority and Responsibilities
- d. Approach to Disaster Management:-
- e. Plan Review and updation

a. What is disaster?

Disaster management is a process or strategy that is implemented when any type of catastrophic event takes place. Sometimes referred to as disaster recovery management, the process may be initiated when anything threatens to disrupt normal operations or puts the lives of human beings at risk. Governments on all levels as well as many businesses create some sort of disaster plan that make it possible to overcome the catastrophe and return to normal function as quickly as possible.

b. Aim/ Objective of the Disaster Management Plan

Recognizing the fact that most tasks and actions before and following a disaster are common at the district level, the Jamnagar district administration has used a multi-disaster approach (all disasters covered by one plan) while developing disaster management plan for the district. The present plan is not intended to provide comprehensive explanations and background information about a disaster, or serve as a training manual on how to respond to a disaster or conduct a disaster related task. This is simply a multi hazard Management Plan consisting details regarding different hazards affect the district with the response structure to deal with , and having linkages of subsidiary DM plans of all levels and of sectors with it.

❖ Following are the main objectives of this Plan.

- To protect and minimize loss of human lives from effects of different disasters.
- Promoting a culture of prevention and preparedness by ensuring that disaster management receives the highest priority at all levels.
- Ensuring that community is the most important stakeholder in the disaster management process.
- To minimize sufferings of people due to different disasters.
- Mainstreaming disaster management concerns into the developmental planning process.
- To minimize property and Infrastructure damage and losses.
- Reduce vulnerability aspect of both people and infrastructure due to different disasters.
- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- To create awareness and preparedness and provide advice and training to the agencies involved in disaster management and to the community.
- To assess the risks and vulnerabilities associated with various disasters.
- To provide clarity on roles and responsibilities for all stakeholders concerned with disaster management so that disasters can be managed more effectively.
- To strengthen the capacities of the community and establish and maintain effective systems for responding to disasters.
- To strengthen the existing Response mechanism.
- To incorporate all concerned aspects of DM for pre, during and post disaster phenomena.
- To integrate and link up of all level specific and department specific DM plan.

Scope of the Plan:

The Disaster Management and Response Plan for Jamnagar District have been prepared for its operationalisation by various departments and agencies of the district and other Non-governmental Agencies expected to participate in disaster management. This plan provides for Vulnerability Assessment and Risk Analysis, Preventive Measures, Mainstreaming disaster management concerns into Developmental Plans, Preparedness Measures, Response Mechanism, and Partnership with Stakeholders, Financial Arrangement, Roles and Responsibilities of the various agencies interlinks in disaster management and the scope of their activities. An elaborate inventory of resources has also been formalized.

c. Authority and Responsibilities:-

The requirement for district and subsidiary plans is set by the Gujarat State Disaster Management Authority (GSDMA) under the authority of the Gujarat State Disaster Management Act of 2003. The Act authorizes the collector to secure cooperation and assistance from other parties in efforts to avoid or reduce the impact of disasters.

The Collector (Specifically) and Government authorities (generally) are responsible for managing hazards and disasters, which affect a district, with support from GSDMA, the relief commissioner and other public and private parties as, may be needed. The roles, responsibilities and obligation of the Collector and other parties are set out in detail in the Act and are considered as part of this plan.

D. Approach to Disaster Management:-

The Government of Gujarat takes an inclusive approach to disaster management. Disaster impact decrease is divided into three broad areas:

D.1 Warning, Relief and Recovery

Necessary actions are intended to eliminate the loss of life and property and hardship due to disasters. Plans and SOPs at District level should provide as seamless as possible provision of warning, relief and recovery assistance to avoid or reduce losses and hardship.

The focal point for early warning, relief and recovery is the District Collector, who directs and coordinates these efforts within the district. The Collector is also answerable for coordinating warning, relief and recovery with similar activities in neighboring districts and with the GSDMA and Revenue Department.

The Collector is further responsible for developing long term relief, recovery and rehabilitation plans during the course of a disaster. These plans will include steps to reduce disaster impact in the future and be coordinate with the GSDMA in terms of policy and implementation.

D.2 Mitigation, Preparedness and Prevention

Mitigation, preparedness and prevention actions are to be taken before a disaster to reduce the probability of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district can avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability;

- Long term planning for mitigation, preparedness and prevention investments in the district,
- Enforcement of regulations, particularly building and safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,
- Capacity building including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

The Collector, assisted by the District Development Officer, is responsible for developing plans and activities to effect mitigation, preparedness and prevention using the mechanism noted above.

The overall approach to disaster management is based on six elements;

- Precise risk and Vulnerability assessment
- Planning and efficient allocation of resources,
- Capacity building and training
- Provision of ample resources
- The assignment of disaster management roles and responsibilities which correspond to normal roles and responsibilities (if possible) and,
- Use of diverse legal and operational mechanisms to accomplish disaster management objectives.

Base on the interim assessment of risk and vulnerabilities, the District will focus on the following areas for mitigation, preparedness and prevention;

- Resilience of lifeline systems (water, power and communications)
- Reduction in disaster impact on health care facilities, schools and roads
- Vulnerability reduction in flood-prone areas
- Vulnerability reduction to high winds
- Improvement of off-site Preparedness near industrial sites.

D.3 Finance

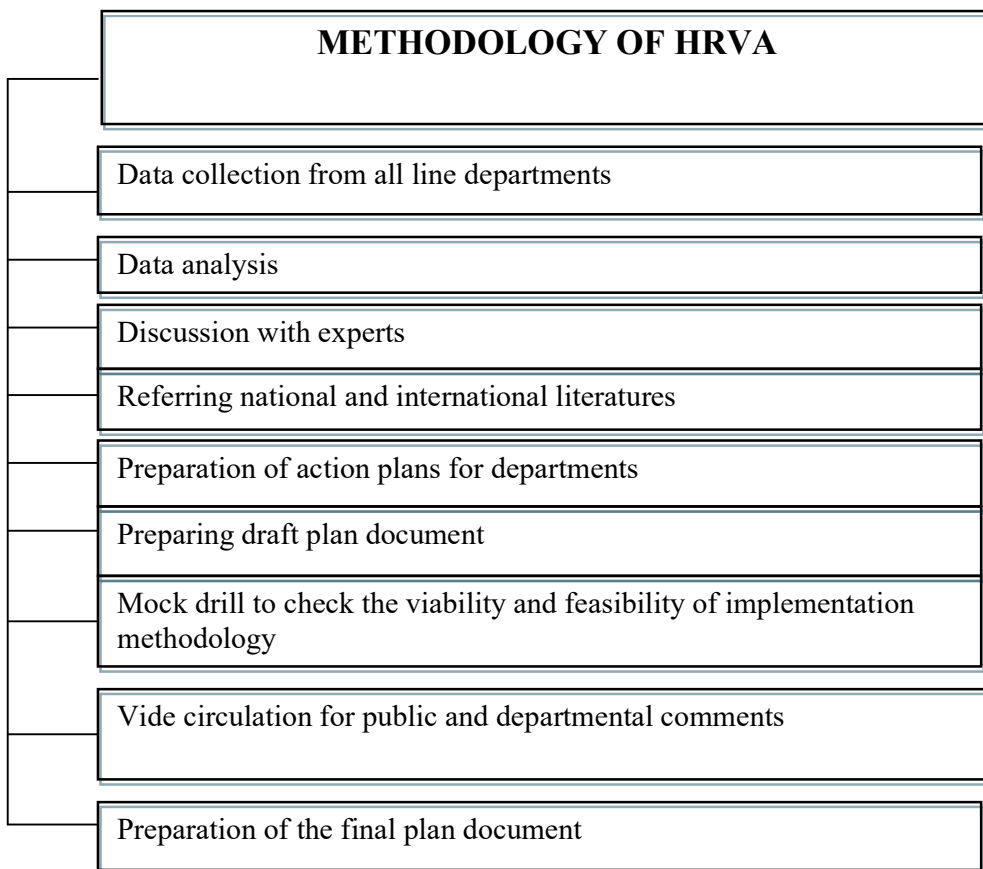
The finance arrangement as per the fund granted by GSDMA / State nodal agencies to the district.

District Collector has authorities to distribute / impart the fund to the counter partners of Disaster management in the District as per required activities, according to the instructions of Government of Gujarat.

a. Preparations and Revision of The Plan :-

The District Collector is responsible for the preparation and revision of the District Disaster Management Plan in collaboration with the line departments and other organizations in the district. The plan should be reviewed annually/half yearly and updated:

- When significant changes in the nature of any hazards
- Lessons learnt following any major disaster or
- When there is any significant change to organization or responsibility of primary members of the task forces defined in the plan.
- DDMC shall compile its learning and proposed new mechanisms for improvement of the capacity to deal with disasters



○ **District Profile**

1. Introduction:-

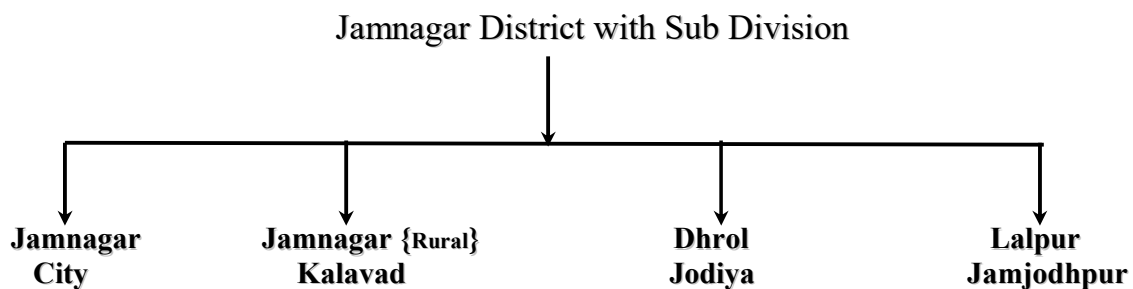
Jamnagar is Located in the north-western corner of Gujarat State. Its mainland extends between 21-degree - 42 min and 22 degrees - 58-min north latitude and between 68 degree 56 Min and 70 degree - 40-min longitude. It is bounded by Gulf of Kutch in the north, Porbandar district in the south, Rajkot district in the east and Devbhumi Dwarka in the west. Its coastline is 78.80 kms Long. The district is having an area of 6026.44 Sq. Kms and accounting for above 7.21 % of the total state land accommodates a population of 14.07 lakhs persons (as per 2011 census) and it is about 4.09 % of the total state population. Literacy rate of Jamnagar is 65.64 (Male: 72.45, Female: 58.37) District having Length from North to South 140.6 kms and From East to West 178.4 kms

2. Area & Administration:- - Geographical Information

Area wise Jamnagar is the large District of the state. The District has 6 Taluka (Under four Sub divisions). The information of Taluka is as under

Sr. No.	Name of Taluka	Number of Villages
1	Jamnagar	102
2	Lalpur	72
3	Kalavad	99
4	Dhrol	42
5	Jodiya	38
6	Jam Jodhpur	69
Total		422

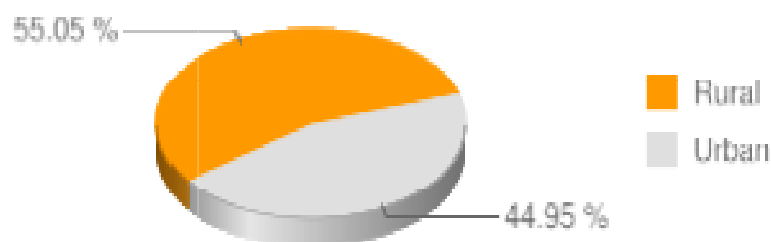
Jamnagar town is District Head quarter and has 1 Municipal Corporations in the District. There are 4 Municipalities and 413 Gram Panchayats. Dhrol, Kalavad, Jamjodhpur and Sikka are Nagarpalika Boroughs.



1. TALUKA WISE POPULATION (2011) :

Sr No	Taluka	Male	Female	Total	Sex Ratio
1	Jamnagar City	313214	287729	600943	917
2	Jamnagar Rural	130528	120477	251005	917
2	Jodiya	43582	42376	85958	973
3	Dhrol	40581	38734	79315	960
4	Kalavad	70977	68752	139729	971
5	Lalpur	60516	57671	118187	954
6	Jamjodhpur	68228	64270	132498	970
	Total	727626	680009	1407635	939(93%)

Rural Urban Jamnagar



2. GEOGRAPHICAL PROFILE:

Sr. No.	Taluka	Area Sq kms	No. Village	Distance from District Head Quarter	Land Under Cultivation (hector)	Forest (hector)
1	Jamnagar	1173.91	102	0	361533	27846
2	Jodiya	868.66	38	45		
3	Dhrol	569.89	42	40		
4	Kalavad	1244.37	99	50		
5	Lalpur	1078.29	72	36		
6	Jamjodhpur	1091.32	69	90		
	Total	6026.44	422	261		

3. Climate: - Coastal Villages

The Climate of Jamnagar District can be regarded as one of extreme kind with hot summers & cold winters except in the coastal region, where it is generally pleasant all throughout the year. The air is humid due to coastal location. The Details of **coastal villages** are as under: Annexure-Q

Sr. No.	Taluka	Number of Villages	Population
1	Jamnagar	12	55,474
2	Jodiya	8	17,747
3	Lalpur	2	3,482
	TOTAL	22	76703

4. River & Dams:-

The District has no major river. There are seasonal rivers streams. Amongst these are the river Aji, Und, Vartu, Ghee, Rangmati, Nagmati, Fulzar, Sasoi, Ruparel, Dhandhar, Demi, Kankavati, Falku, and Pandho. Flow of the river is towards the Gulf of Kutch in the north and in north-west.

There are no major dams in Jamnagar District. There are 25 medium and minor dams are in the district. Details of Dam are attached in Annexure-1

5. Ports & Fisheries:-

Out of 1600 Kms Length of Coastal line of Gujarat the coastal belt of Jamnagar District is blessed with 170 Kms extending from Balambha village in the northwest to Sikka village in south. There are 13 ports in the Jamnagar District. Viz. Bedi, Rozi are cargo ports and Sikka, Sachana, Jodiya are fisheries ports. There are six fish landing centres in Jamnagar district. Total no. of mechanized boats are 3062 in Jamnagar District.

There are 9 fishing villages in Jamnagar District. There are 15267 fishermen out of which 3635 are active fishermen. Out of them 7862 Male and 7405 are female fishermen. Total 3062 mechanical boats of different capacity are available. Entire Coastal area is active in fishing activity and 5505 Metric ton of fish per year are caught and marketed out of which 1437 M. Tones fish are exported to abroad.

Total 12 fishing societies have been registered in this district, out of which 11 are active.

6. Salt works:-

Due to large sea shore in the District, Salt Industries has developed very well. There are 10 Salt factories in the district and occupies 15212 acres of land (except Tata Chemicals Ltd.). Annual production of Industrial and table salt is around 7.50 Lacks M. Tones.

7. Live Stock:-

Cattle wealth occupies pivotal place in the rural economy of the district, Livestock position is as below

Total livestock	=	648129 lakhs
(a) Cows		139176
(b) Buffaloes		162333
(c) Sheep		214785
(d) Goats		130282
(e) Other		1553

There are 1 Veterinary polyclinic and 20 Dispensaries and 17 First Aid Vaternity center in the district.

8. Industries:-Health and Safety-DISH

Jamnagar district has many factories registered under the Indian factories Act. Major factories like petrochemicals Refinery like. Reliance, and Bharat Petroleum, Indian Oil and GSFC, DCC, TPS, etc. Besides the district is known for Brass part industries and 'Bandhani' Sarees. At Present 617 Factories are registered under the Factories Act-1948 at the office of Assistant Director, Industrial safety & Health, Jamnagar. Out of this Total 82 factories are Chemical Factories and 6 Factory is MAH unit.

9. Roads & Railway:-

The district has 1163 Kms length of pakka roads connecting to 432 villages/towns in the district. 249 villages are connected by kachha roads and 43 villages accessible only in fair weather.

Total length of railway track is 557 kms in the Rajkot region, out of that total covered under Broad Gauge. Total 13 Station is located in Jamnagar district that is Jaliya Devani, Aliyabada, Jamvanthali, HAPA, Jamnagar, Kanalus, etc.GUJSHIL

10. Health:-

The district has 18 Hospitals, 33 PHCs and 6 CHCs and 207 SHC in the District to cater the people. Major hospitals are -Irwin Group of Hospital, Samarpan Hospital, and Anandabawa Eye Hospital. Location of the CHCs and PHCs in different talukas is as follows.

Sr. No.	Taluka	Name of CHCs	Name of PHCs
1	Jamnagar	Sikka	Lakhabaval, Moti Banugar, Dhutarpar, Jam Vanthali, Aliyabada, Vasai, Falla, Dared
2	Lalpur	Lalpur	Dabasang, Padana, Pipartoda, Bhangor, Mota Khadba, Modpar
3	Jodiya	Jodiya	Balamba, Hadiyana, Pithad
4	Jamjodhpur	Jamjodhpur	Samana, Jamvali, Vansajaliya, Ghunada, Sheth Vadala, Dhrafa, Paradva
5	Kalawad	Kalawad	Nikava, Navagam, Kharedi, Bhalsan Beraja, Mota Panch Devda, Mota Vadla
6	Dhrol	Dhrol	Latipur, Jalia Devani, Laiyara

11. Temperature and Rainfall data

The temperature at Jamnagar district headquarters ranges from 42.2 degree centigrade higher on 14/4/2017 in the summer and 4.2 degree centigrade lowest in the winter.

The average annual rainfall is 730 mm. The soil found in the District may broadly be classified as alluvial, black, light brown and alkaline. The last ten years rainfall data is as under.

Sr	Taluka	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	Jamnagar	680	380	1473	367	322	380	624	405	1234	1187
2	Kalawad	509	311	801	481	569	647	690	469	1140	1507
3	Lalpur	807	402	887	297	368	766	607	351	886	1632
4	Dhrol	973	390	744	408	441	1207	524	153	1138	1205
5	Jodiya	764	250	769	762	722	538	919	170	1337	1359
6	Jamjodhpur	896	340	1208	555	569	852	677	502	1228	1778
	Total Rainfall of District	4629	2073	5882	2870	2991	4390	4041	2050	6963	8668
Average years		771	345	980	478	498	731	673	341	1160	1445

Chapter-2 Hazard Vulnerability and Risk Assessment Interim Guidance

Risk and Vulnerability Ranking-Analysis

(Adapted from Technical Note 1.4.1. Probability, impact and Risk Ranking Disaster Management Planning Workshop module (pages 20-21), prepared by Jeff Klenk, Interworks, for the ADB-funded CBERR Project.)

All events or activities carry some risk and are associated with some level of vulnerability. Risk and vulnerability ranking is the process of assigning scores to the risk and possible impact of hazards to be able to compare the likely vulnerability and make informed management decisions about which hazards are of greatest concern and when planning and preparation efforts should be directed. A crude risk and vulnerability ranking process can be accomplished in five steps.

Matrix of past Disaster-Flood

Year	Magnitude	Talukas and No.Of villages affected	Life and cattle loss	Damage to Property	Economical loss
2013	4	2-Jodia and Jamnagar Taluka	12 Human Death and Cattle loss 70	As Per ABCD report	--

Matrix of past Disaster-Earthquake

Year	Magnitude	Talukas and No.Of villages affected	Life and cattle loss	Damage to Property	Economical loss
2001	4	Zone IV Jamnagar, Dhrol, Jodia, Lalpur. Zone III Jamjodhpur, Kalavad.	Total 118 Person were dead	--	--

Matrix of past Disaster-Cyclone

Year	Magnitude	Talukas and No.Of villages affected	Life and cattle loss	Damage to Property	Economical loss
1998	4	Very High Damage risk zone [50 m/s.] 1.717 million population and 17 ports in the district likely to be affected 3 Taluka.	--	--	--

Matrix of past Disaster-Industrial Accident/Chemical disaster

Year	Magnitude	Talukas and No.Of villages affected	Life and cattle loss	Damage to Property	Economical loss
2006	5	Jamnagar,Lalpur	00	0	0

Step 1: Identify the Hazards of Concern

Complete the hazards column for the following table. Typical hazards have already been identified, but these should be confirmed at this step and additional hazards added as appropriate.

Risk and Vulnerability Analysis-State Level

Hazard	Probability	Impact	Vulnerability Rating (Probability times Impact)	Specific Locations and populations of concern.
Earthquake (resulting in damage)	4	4	16 [High]	Zone IV Jamnagar, Dhrol Jodia, Lalpur. Zone III Jamjodhpur, Kalavad. Total 118 Death
Wind (cyclone)	4	3	12 (Medium)	Very High Damage risk zone [50 m/s.] 1.717 million population and 17 ports in the district likely to be affected + 3 Taluka.
Sea surge (cyclone)	3	3	9 (Medium)	0.22 Million [2, 27,264] population and 63 coastal villages in 6 talukas are likely to be affected. Maximum surge record 3 meter.
Flood	5	4	20 (High)	May occur due to very heavy rainfall, sea surge or dam failure
Industrial Accident	4	5	20 (High)	Jamnagar, Lalpur
Drought	3	2	6 (Low)	Whole District
Heat/cold wave	4	2	8 (Medium)	Whole district
Hail storm	1	1	1 [Low]	
Landslides mudflows	1	1	1 [Low]	
Dam Failure	1	1	1 (Low)	
Mine fires/collapse	2	1	2 [Low]	Dist. has no major dams but having 17 medium/minor dams.

Road/rail/air accident	5	4	20 (High)	Jamnagar, Dhrol to Okha High way connected villages.
Oil spill & Road (marine)	3	2	6 (Low)	Sea shore, coastal belt
Boat sinking	4	2	8 (Medium)	Jamnagar
Building collapse	4	3	12 (Medium)	4 ULB & Jamnagar City(JMC)
Communal Disease (epidemics)	3	3	9 (Medium)	Whole District
Food poisoning	3	3	9 (Medium)	Whole district
Animal disease (epidemics)	2	3	6 (Low)	
Terrorism (consequences)	1	3	3 [Low]	
Critical Infrastructure Failure (e.g. extended power outage)	4	3	12 (Medium)	The Hydrocarbon Cross-contra pipeline running for Jamnagar may be affected.
Civil Unrest	3	2	6 (Low)	Whole district
WAR	2	4	8 (Medium)	Whole District
TSUNAMI	2	4	8 (Medium)	Coastal Talukas : Jamnagar Jodiya Lalpur Total 25 Coastal Villages Approx. Populatuon 69366

Step 2: Assign the Probability Ratings

Assess the probability-or "livelihood" of each hazard by reaching a consensus on probability and then assign each hazard a "Probability Level," as indicated in the following table. Enter the score for each hazard in the probability column of the table in Step 1.

Probability	Score	Description
Almost certain	5	A regular event, on the average at least once in a 12 month period
Likely	4	Will occur at least once every two years.
Moderate	3	Will occur at least once every 5 years.
Unlikely	2	Will occur sometime in a 25 years period.
Rate	1	Can be expected to occur sometime in a 100 year period

Step 3: Assign the Impact Ratings

Assess the potential magnitude or impact of each hazard and assign each an "Impact Level" as in the following table. Enter the impact score for each hazard in the table in Step 1.

Impact	Scope	Description
Catastrophic	5	Massive insecurity, substantial loss of life likely. Large and generalized assistance urgently needed for large segments of population. Additional management, administrative, and technical expertise urgently needed. Large volumes of materials inputs needed.
Major	4	Security threatened for large segments of population; substantial impacts on vulnerable groups likely. Some loss of life likely. Life-saving programs likely needed to handle impact of emergency situation. Large volumes of material inputs and additional administrative staff and technical expertise likely to be needed.
Moderate	3	Security is threatened for potential target groups, some interventions may be needed, particularly for groups who likely face increase in vulnerability. Organization can likely respond with existing country/regional management structures.
Minor	2	Momentary insecurity local groups able to respond adequately to those in need. Some technical assistance by organization may be helpful to local respondents, although not urgently needed.
Insignificant	1	Little or no significant change in conditions, no expected loss of life, injuries or significant loss of property for usual target groups as the result of the hazard Normal operations continue.

Step 3: Assign the "Vulnerability" Ranking

Multiply the probability and the impact scores in the table in Step 1. The resulting score indicates crude vulnerability. Scores above 15 indicate high vulnerability; scores between 7 and 15 indicate medium vulnerability and scores below 7 indicate low vulnerability.

Probability Rating: Class and (score)	Impact Rating: Class and (score)				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (5)	Low-5	Moderate - 10	Moderate - 15	High-20	High-25
Likely (4)	Low-4	Moderate-8	Moderate - 12	High-16	High-20
Moderate (3)	Low-3	Low-6	Moderate - 9	Moderate - 12	Moderate -15
Unlikely (2)	Low-2	Low-4	Low-6	Moderate - 8	Moderate -18
Rare (1)	Low-1	Low-2	Low-3	Low-4	Low-5

These three classes related to the immediate vulnerability to disaster and provide guidance on disaster response planning. Assessing risk and vulnerability to low likelihood but high impact hazards (e.g., earthquakes) requires a different, more long-term focused, assessment process.

Note that the rating process presumes that:

- Populations are better able to respond to disaster which more likely and do not have severe (major) impacts and,
- Steps taken to prepare for moderate or high vulnerability events will also improve the ability to respond to low vulnerability events.

The divisions between low, moderate and high crude vulnerability can be changed but should be used consistently for all similar assessments in the state.

TYPES OF HAZARDS THE DISTRICT PRONE TO:





Jamnagar district is highly prone to multi hazards like Cyclone, earthquake, flood, Accidents. The history of disasters in the district will provide a clear picture of the vulnerability to which the district is prone.

Probability Period/Seasonality of Disasters

TYPE OF HAZARDS	TIME OF OCCURRENCE	POTENTIAL IMPACT
Flood	June –September	Loss of life, livestock, crop and infrastructure
Epidemics	Anytime	Loss to human life
Fire Accidents	March-May	Human Loss and house damage
Earth Quake	Anytime	Loss of Life, Livestock and Infrastructure
Cyclone	April-May October-November	Loss of Life, Livestock and Infrastructure
Drought	July-October	Damaged to crops
Chemical Accidnt	Anytime	Loss of life and property

The made degree and extent of Response to fight out any crisis depends upon the nature, degree and extent of disaster, but some of the points are almost common to all kinds of situations.

PROBABILITY PERIOD / SEASONALITY OF DISASTERS

Name of Disaster	Month											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Flood												
Cyclone												
Drought												
Earthquake												

For example it is to be ensured in all types of crisis that:-

1. Appropriate steps are to be taken.
2. Preparedness is required to contain the damages and casualties out of the crisis.
3. Steps for recovery reclamation and restoration of community life within the reasonable time will have to be taken care of.

All events or activities carry some risk and are associated with some level of vulnerability. Risk and vulnerability ranking is the process of assigning scores to the risk and possible impact of hazards to be able to compare the likely vulnerability and make informed management decisions about which hazards are of greatest concern and when planning and preparation efforts should be directed. A crude risk and vulnerability ranking process can be accomplished in five steps.

Step 4: Identify Areas with Highest Vulnerability

Once vulnerability ranks have been identified, the locations and populations considered most vulnerable should be identified. This aids in knowing where disaster assistance may be most needed, as well as providing a quick indication of where vulnerability reduction efforts could be most productive. Note that vulnerability reduction can include education, structural measures, and non-structural measures like evacuation planning. Where possible, the areas of high vulnerability should be mapped and included in disaster planning documents.

➤ Outcome

Hazards are defined as “Phenomenal that pose a threat to people, structures or economic assets and which may cause a disaster. They could be either man-made or naturally occurring in our environment.” A disaster is the product of a hazard coinciding with a vulnerable situation, which might include communities, cities or villages. Vulnerability is defined as “the extent to which a community, structure, service or geographical area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to a hazardous terrain or disaster prone area.

➤ **Hazard analysis:**

A detailed analysis of the hazards likely to impact the state will be carried out by the Department of Disaster Management, in consultation with the DMC of the state H.C.M. RIPA and experts from the field. Hazard assessment is concerned with the properties of the hazard itself. The Vulnerability Atlas of Gujarat, developed by BMTPC, Govt of India, will be used as the baseline for all analyses. The State Disaster Management Authority shall take all appropriate steps to complete a comprehensive hazard assessment of the State.

1. Earthquake

The District is located in Zone-IV of seismic vulnerability as captured in the Vulnerability Atlas. While earthquakes cannot be predicted, a detailed mapping of seismic fault systems and seismic source regions, quantification of probability of experiencing various strengths of ground motion at a site in terms of return period for intensity will be carried out and appropriate regulations put in place to decrease the vulnerability of built environment.

Different types of ground do shake with different severity in an earthquake. Softer soils and those with high water content generally shake more than rocky sites. Wherever possible site structures on firmer ground. This will reduce the severity of vibrations experienced in an earthquake. Capital intensive infrastructure, hazardous facilities and materials, and other important buildings should not be located in the vicinity of a known fault. Since early warning is not possible in case of earthquakes, the best choice is to ensure that seismicity is monitored and integrated with the GIS. Jamnagar District's situation indicates that some parts of the District like Jodiya, Dhrol and Jamnagar Taluka have been adequately provided with the seismic instrumentation. It is necessary that mitigation strategy considers instrumentation of all other areas in order to have a total assessment of the seismic activity. This would enable reconfirmation and up gradation of micro zonation activities.

2. Flood

River flooding is a regular hazard faced by the District. All the major river systems in the District are vulnerable to flooding, as captured in the Vulnerability Atlas. The urban areas like Jamnagar City, Jodiya, Lalpur and some parts of Kalawad are facing flooding primarily due to drainage and increased run-off loads in hard surfaces.

Regulations would include.

- Not permitting unrestricted new development in the hazard prone areas
- Anchoring and flood proofing structures to be built in known flood prone areas
- Built-in safe guards for new water and sewage systems and utility lines from flooding
- Enforcing risk zone, base flood elevation, and flood way requirements
- Prohibition on development in wetlands
- Prescribing standards for different flood zones on flood maps.

To meet these requirements, local governments will have to adopt specific flood plan Management into zoning and subdivision regulations, housing and building codes, and resource protection regulations.

In low-lying areas, close to the coast, and on flat land in river valleys, there may be a Potential for coastal or river flooding. In geologically younger river valleys, in mountains, and Foothills there may be a potential for flash-flooding.

It is important to check the history of flooding in the area. Wherever possible

- Map the extent of land covered by past flood waters
- Get an indication of the depth of past flood waters
- Find out about the severity of past floods; how much damage they have caused, how fast they flowed and how much debris they left behind and
- Find out how often flooding has happened, over at least the past 20 years.

3. Cyclone

In meteorology, a cyclone is an area of closed, circular fluid motion rotating in the same direction as the Earth. This is usually characterized by inward spiraling winds that rotate counter clockwise and clockwise of the Earth. Most large-scale cyclonic circulations are centered on areas of low atmospheric pressure. The largest low-pressure systems are cold-core polar cyclones and extra tropical cyclones which lie on the synoptic scale.

Coastal areas of District like Jodia, Jamnagar and some parts of Lalpur taluka are particularly prone. Cyclones originate out at sea and become hazardous when they come ashore. They also drive the sea level up to cause coastal flooding.

At a community level, the GSDMA has proposed to provide temporary cyclone shelter. There are 2 identified sites to construct Cyclone Shelter on Coastal Belt at Lalpur taluka of Jamnagar District. These shelters will be, with built-in safety against high wind velocity and heavy rainfall and within easy reach of the people most affected. Educational buildings or places of worship may also be designed as cyclone shelters, for evacuation and temporary occupation.

4. Chemical Disasters

Growth of chemical process industry in Gujarat has received a dramatic accelerated Momentum in last one decade. Sophisticated technology complex processes and a wide range of chemicals and chemical products have emerged to provide better standards and improved way of living to millions of people.

Jamnagar district has specific chemical zone of factories. However the disaster Preparedness as precautionary measures have envisaged by involving all the major Departments who are directly or indirectly responsible for Chemical hazard. Total 6 MAH unit is in this district. Most probability of chemical disaster in this district.

Industries involved in the production or transportation of inflammable, hazardous and toxic materials hold the responsibility for preparing an off-site plan and communicating the same to district collector. Simulation exercises are also undertaken in the adjoining communities.

- Poison centers established in Civil Hospital-Jamnagar which lays near the industrial estates with facilities for detoxication and also in industries hospital.
- All transport of hazardous and toxic materials are communicating to the RTO.
- Small scale industries releasing toxic waste in water have to be encouraged to set up common effluent treatment facility.
- A common format for chemical data sheets used by DISH for collect information from all Industries in the district are same available with both fire brigade and police.

5. Tsunami

Tsunamis are ocean waves produced by earthquakes or underwater landslides. Tsunamis are often incorrectly referred to as tidal waves, but a tsunami is actually a series of waves that can travel at speeds averaging 450 (and up to 600) miles per hour in the open ocean. However, waves that are 10 to 20 feet high can be very destructive and cause many deaths or injuries.

Tsunamis are most often generated by earthquake-induced movement of the ocean floor. Land slides, volcanic eruptions, and even meteorites can also generate a tsunami. Areas at greatest risk are less than 25 feet above sea level and within one mile of the shoreline. So far as Jamnagar District is concern there are 5 coastal talukas and as per Analysis of Mean Sea level of Jamnagar

District there are 25 villages of 3 coastal taluka are less than 2 km far from sea and on less than 10 meter of height from ocean level. Most deaths caused by a tsunami are because of drowning. Associated risks include flooding, contamination of drinking water, fires from ruptured tanks or gas lines, and the loss of vital community infrastructure.

6. Epidemics

The Public Health Department is the nodal agency responsible for monitoring and control of epidemics. Local governments and municipal authorities also have a responsibility for taking appropriate steps in this context. Therefore, success of mitigation strategy for control of epidemics is depending on the type of coordination that exists between the Health Department and local authorities. Mitigation efforts for control of epidemics would include

1. Surveillance and warning
- 2 Preventive and Primitive measures
3. Strengthening institutional infrastructure... Like...
 - Promoting and strengthening community hospitals with adequate network of Para-professionals will improve the capacity of the Health Department for surveillance and control of epidemics.
 - Establishing testing laboratories at appropriate locations in different divisions within the State/district will reduce the time taken for diagnosis and subsequent warning.
 - Establishing procedures and methods of coordination between Health Departments and local authorities.

7. Nuclear Disaster: -

In the Past there is no any nuclear disaster was occurred...

8. Drought:

Low rainfall coupled with erratic behavior of the monsoon in the state make Jamnagar the most vulnerable to drought. Of all the natural disasters, drought can have the greatest impact and affect the largest number of people. Drought invariably has a direct and significant impact on food production and the overall economy. Drought, however, differs from other natural hazards. Because of its slow onset, its effects may accumulate over time and may linger for many years. The impact is less obvious than for events such as earthquakes or flood but may be spread over a larger geographic area. Because of the pervasive effects of drought, assessing their impact and planning assistance becomes more difficult than with other natural hazards.

9. Fire:

Fires may be caused due to earthquakes, explosions, electrical malfunctioning and various other causes. The State shall take up detailed assessment of fire hazards like preparation of inventories/maps of storage locations of toxic/hazardous substances, provision and regular maintenance of firefighting equipment, identification of evacuation routes, fail-safe design and operating procedures, planning inputs, transportation corridors etc.

DISASTER MANAGEMENT BASIC CONCEPTS

HAZARD: A potentially damaging physical event, natural phenomenon or human activity that may adversely affect human life, property or social and economic disruption or environmental damage.

VULNERABILITY: The conditions determined by physical, social, economic and environmental factors which increase the damageability or proneness of an individual or community/society to impact of hazards.

RISK: Expected or anticipated losses from impact of a hazard at a given element over a specific period of time.

CAPACITY: The ability of stakeholders to cope with/resist/respond to the effects of a hazard or a catastrophic event.

Disaster Risk = H + V – C

Human vulnerability to disasters is inversely related to human capacity to withstand the effects of disasters.

DISASTER: Disaster Management Act, 2003 Gujarat defines Disaster as: “Disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.

DISASTER MANAGEMENT: Disaster Management Act, 2003 defines Disaster Management as:

“Disaster Management means a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary for prevention of danger or threat of any disaster; mitigation or reduction of risk of any disaster or its severity or consequences; capacity building; preparedness to deal with any disaster; prompt response to any threatening disaster situation or disaster; assessing the severity or magnitude of effects of any disaster; evacuation, rescue and relief; and rehabilitation and reconstruction.

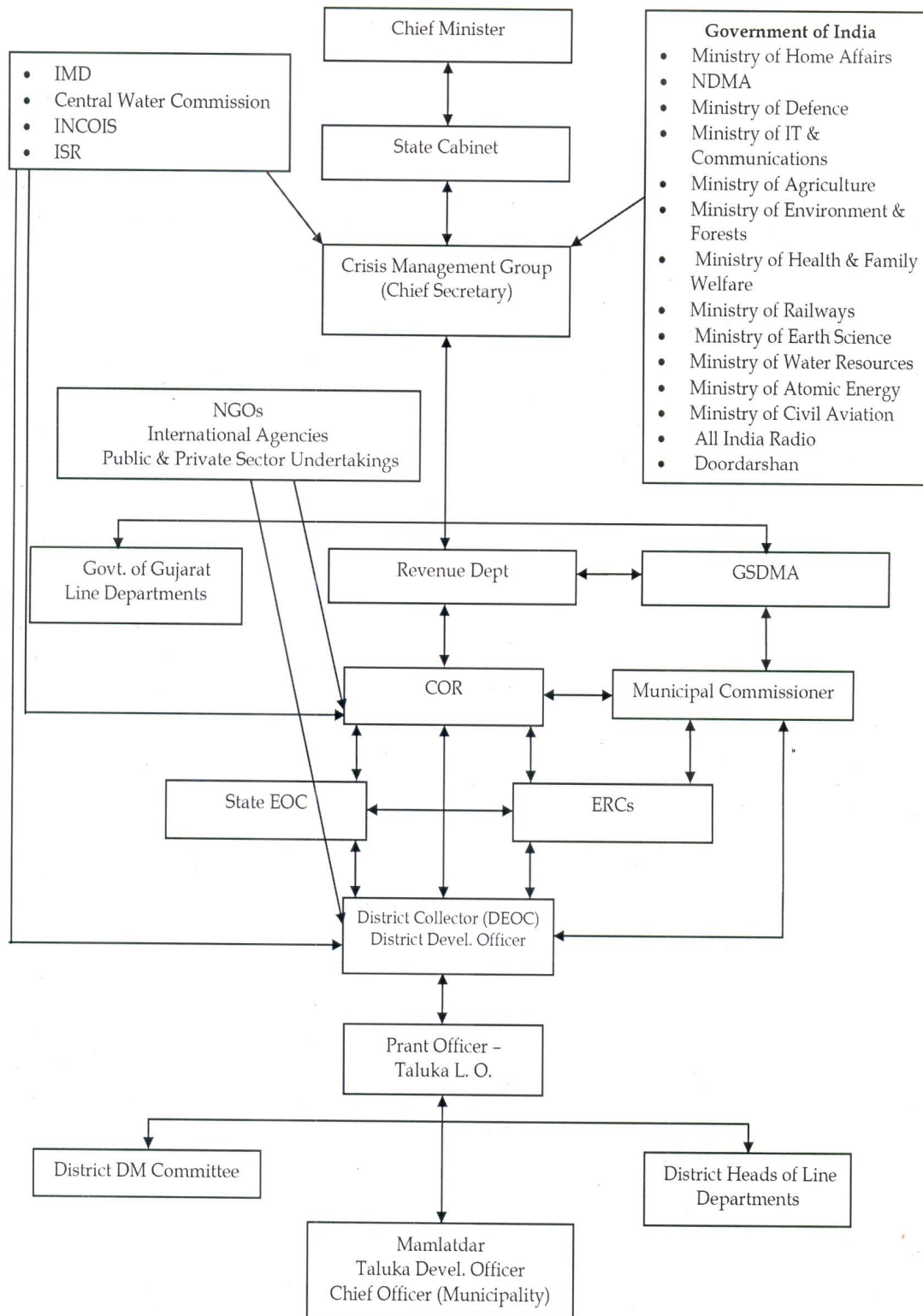
Chapter-3

Institutional Arrangement

The plan incorporate multi level institutional as well as response planning mechanism at district level. That is.....

The DM structure in the State is as per the Gujarat State Disaster Management Act – 2003. The National Disaster Management Act – 2005 resembles the State Act with only a few provisions which are not a part of the State Act but are there in the Central Act. Those provisions include designating a Vice Chairman to the SDMA, constitution of a State Executive Committee, establishment of a District Disaster Management Authority in each District and creation of a District Disaster Response & Mitigation Funds. The State has existing institutional arrangements in place for addressing the roles / responsibilities envisaged through the above provisions and hence does not find it compelling to implement the provisions afresh.

1.10 DM Structure in the State



The District Collector will be responsible for coordinating all disaster management activities at the district level. There shall be a District Disaster Management Authority headed by Collector. The District Disaster Management Authority shall approve a district disaster management planning and review all measures relating to preparedness and response to various hazards. The District Disaster Management Committee comprises members from Jilla Panchayat, different line departments, NGOs and others to be notified by the Department of Disaster Management from time to time. In times of disasters, Dist. Collector shall constitute a District Relief Committee to oversee management of relief. Following member should be club at district level committee.

B. DDMC: -District Disaster Management Committee

Sr. No.	Detail
1	Collector
2	DDO
3	SP
4	Resident Additional Collector
5	District supply officer
6	Exe. Engineer-R&B State
7	Exe. Engineer-R&B Panchayat
8	Exe. Engineer-R&B State Irrigation
9	Superintending Engineer- PGVCL
10	District Home guard commandant
11	Superintendent G.G.Hospital
12	Port Officer-GMB
13	District forest Officer
14	Dy. Director-Information Department
15	Chief fire officer
16	Regional Officer-GPCB
17	District Agriculture Officer
18	SDM
19	Regional Transport officer
20	Divisional Controller-State transport
21	Dy. Controller –Civil Defense
22	District Education Officer
23	District Primary Education officer
24	NGO Member
25	Media Person

C. TDMC: - Taluka Disaster Management Committee

Block/Taluka level Disaster Management Committees will be constituted and will be Headed by Mamlatdar as the case may be Officers from different departments and representatives of local panchayat body will be members of this Committee. The Committee will look into all the aspects of disaster management including mitigation preparedness, response and relief. Following member is club in TDMC.

Sr. No.	Detail
1	Dy.Collector/ Dy.D.D.O.
2	Mamlatdar
3	Taluka Development Officer
4	Dy. Executive Engineer- R & B (State)
5	Dy. Executive Engineer- R & B (Panchayat)
6	Dy. Executive Engineer – Irrigation
7	Dy. Executive Engineer –GEB
8	Dy.Executive Engineer – Water Supply
9	Junior Engineer-Telecom
10	Medical Officer (Mother PHC)
11	Police Inspector/ Police Sub Inspector
12	Taluka Home Guard Commandant
13	Taluka Kelvani Nirikshak
14	Godown Manager- Civil Supply Corporation
15	Depot Manager – S.T.
16	Port Officer
17	Range Forest Officer (Head Quarter)
❖ <u>Non- Government Members</u>	
18	Presedent-Taluka Panchayat
19	M.P.
20	M.L.A.
21	Chairman- Social Justice Committee (Taluka Panchayat)
22	Woman Member - Taluka Panchayat
23	NGO Representative

D. CDMC: -City Disaster Management Committee

In each City / Nagarpalika, there shall be a Disaster Management Committee which will oversee all activities in disaster management. The ULB will also constitute a City Disaster

Management Team consisting of officials and non-officials and organize training for them to be able to discharge their duties properly.

Sr. No.	Department
1	Dy.Collector/SDM/Dy.DDO
2	Chief Officer
3	Chief fire officer
4	Mamlatdar
5	Town planning Head
6	Dy.Exe.Engineer-R&B state
7	Dy.Exe.Engineer-state-Irrigation
8	Dy.Exe.Engineer- PGVCL
9	Dy.Exe.Engineer-GWSSB
10	Junior Engineer Telecom
11	Medival Officer-C.H.C.
12	Medical Officer Municipality Health Centre
13	Head Transport committee
14	PI/PSI
15	Taluka Homeguard Commandent
16	Education Officer Municipality Education committee
17	Project Coordinator-UCD
18	Port officer
19	Range forest officer-Extension
Non Governmental Member	
20	President Municipality
21	Member of Parliament
22	Member of Legislative assembly
23	Chairman- Standing Committee committee
24	Chairman-Water Supply committee
25	Chairman City planning committee
26	Chairman Construction Committee
27	Women Member of Municipality
28	Scheduled caste Member of municipality
29	Local N.G.O.
30	Other-Decide By CDMC

E. MDMC: - Municipal corporation Disaster Management Committee

The responsibility to manage disasters in the urban areas will rest with the Municipal Commissioner under the overall supervision of District Collector. The urban local body will be responsible for putting in place techno-legal regime and its compliance, training and capacity building of municipal staff, Disaster Management Plan, awareness raising in the urban areas, functioning of fire services, setting up of search and rescue teams and such other activities to be notified by Relief Commissioner and CEO-GSDMA from time to time.

Sr. No.	Department
1	Commissioner-Municipal corporation
2	Additional collector
3	Dy. Commissioner
4	Dy. Commissioner
5	Asst.Commissioner
6	Chief Fire officer
7	Dy.S.P.-City
8	Project officer-GSDMA DRM Programme
9	Dy.Controller-Civil Defense
10	CDHO
11	Education Officer-Municipal corporation Education committee
12	CEO-JADA
13	Project Officer-UCD
14	City Engineer
15	Estate Manager
16	Exe.Engineer Water Supply-City
17	Exe.Engineer Drainage Municipal corporation
18	Town Planning Officer
19	Dy.engineer-Slum
20	Dy. Engineer Civil Department-Zone1,2,3,4
21	E.D.P. Manager
22	Dy.Engineer Light Department
23	Dy. Engineer Project planning
24	Dy.Engineer Water Works
25	Inquiry officer Municipal corporation
26	Medical officer-Health Branch
27	Representative Lead Bank
28	Representative from Engineer College
29	In charge N.S.S.Unit

F. VDMC: - Village Disaster Management committee

Each village shall have a Disaster Management Committee consisting of officials and nonofficials. The Committee will be constituted to oversee by the gram sabha. The Committee will be responsible for awareness generation, warning dissemination, community preparedness plan, adoption of safe housing practices and organizing and cooperating relief in post disaster Situations. The member is.

Sr. No.	Detail
1	Sarpanch-Chair Person
2	Talati cum Mantri
3	Primary Principal
4	Health Worker
5	Anganwadi Worker
6	President Seva Co operative
7	President Milk cooperative
8	Community Representative
9	Community Representative
10	Community Representative
11	Fair price shop holder

DISTRICT CRISIS GROUP – JAMNAGAR

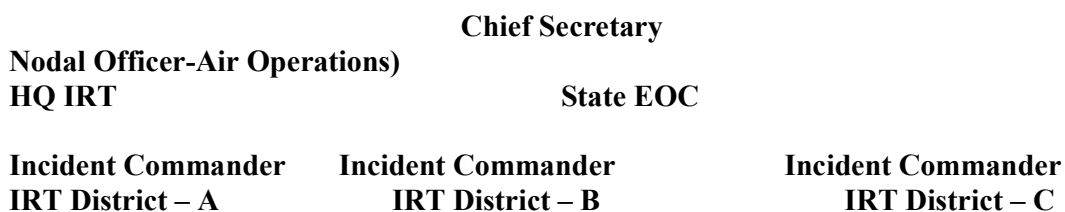
Sr. No.	Designation	Name, Address & Telephone No.	Position in Crisis Group
1	District Collector JAMNAGAR	Dr Sourabh Pardhi, IAS, (O) (0288) 2555869, 2555899, (R) (0288) 25504059	<i>Chairman</i>
2	Dy. Director, Industrial Safety & Health	I/C Shri Kunjan Ravat, Office of Dy. Director, Industrial safety &Health, “Sweet House” Opp. Hotel Bansi, Indira Marg Jamnagar 361 008 (O) 2678206 (M) 9662021546	Member Secretary
3	Commissioner Municipal Corporation, Jamnagar	Shri Vijay karadi - IAS Office of the Commissioner, Jubilee Garden, Jamnagar (O) (0288) 2552321 (R) (0288) 2552372	<i>Member</i>
4	Suptd. Of Police Jamnagar	Shri Prem Sukh dhelu O/o DSP, LalBuibglow, Jamnagar (O) (0288) 2554203 (R) (0288) 2555868 (Control Room – 2550200)	Member
5	Chief Fire Officer – JMC Jamnagar	Shri K.K. Bishnoi Jamnagar Municipal Corporation, Jubilee Garden, Jamnagar. (O) 2550340 (R) 2550340 M – 9879531101	<i>Member</i>
6	Dy. Controller of Civil Defence, Jamnagar	Shri V.K. Upadhyay Civil Defence Office, LalBunglow, Jamnagar (O) (0288) 2540371 / 2671828 M-9979399977	Member
7	Dy. Director of Information Jamnagar	Shri Raju Jani O/o District Information, Multi Storied Building, LalBunglow, Jamnagar. (O) (0288) 2556827 / 2679234, (R) (0288) 2672939 M-9825765599	Member
8	Dy. Chief Controller of Explosive, Vadodara	Shri Vinod Kumar 8 th floor Yashkamal Building Sayajiganj Opp. MS University Vadodara. 390 001(O) (0265) 2225259	Member
9	Gen. Secretary MajurMahajanSangh , Jamnagar	Shri Pankaj Joshi O/o MajurMahajanSangh, K.V. Road, Opp. P.W.D. Office, Jamnagar (O) (0288) 2677775	Member
10	Chief District Health Officer Jamnagar	I/C Dr. Biren Manvar JillaPanchayat Health Branch, Jamnagar. (O) (0288) 2671097 (R) 2756252 (M) – 7567880025	Member
11	CEO & Superintending Engineer PGVCL, Jamnagar	Shri C.K. Patel PGVCL, City Division, Circle Office, Nr. LalBunglow, Jamnagar. (O) (0288) 2550301, (M) 9925209912	Member

12	Executive Engineer, Public Health Works, Zone 1 Jamnagar	Shri C.B.Zala O/o Executive Engineer, Public Health Works, Jalbhavan, Sarusection, Jmanagar. (O) (0288) 2677279 / (M) 9978407184	Member
13	Regional Officer GPCB Jamnagar	I/C Shri B.M.Makavana O/o GPCB, Sardar Patel Bhavan, Rameshwar Nagar, Jamnagar. (O) (0288) 2752366 (R) (0288) 2540741(M)-9825622089	Member
14	District Agriculture Officer, Jamnagar	Shri H.V.Gosai O/o. District Agriculture Officer, JillaPanchayat,(Agriculture Branch) Jamnagar (O) (0288) 2550286 / 2550287 (R) (0288) 2551707, (M) 9427708661	Member
15	HSE&F Chief. RIL R.I.L Padana. Ta. Lalpur.	Shri Sunil G.Kumar Reliance Industries Limited, Refinery Division , Village : Meghpar-Padhana, Taluka : Lalpur (O) (0288) 3551327/3528768 (M) 9766586727	Member
16	Vice President (HSEF) Nayara Energy Limited- Vadinar	Dr.Prabandhan R.Dixit Jamnagar-Okha Highway P.O.Box No. 24, Jamkhambhaliya. (O) (02833) 662017 Mob: 9909908685	Member
17	VP - Fire Services RIL, Jamnagar	Mr.Umesh Khandalkar Reliance Industries Ltd., Motikhavdi,Jamnagar (O) (0288) 2311193 (R) (0288) 2319589 M - 9998972008	Member
18	Dy. Gen Mgr. (Safety & Fire) GSFC Sikka Unit	Shri P.R.Patel Gujarat State Fertilizers & Chemicals Ltd., (Sikka Unit) Dist. Jamnagar, P.O. Motikhavdi – 361140. (O) (0288) 2349267 (R) (0288) 3019371 (M) 8238021992	Member
19	Regional Transport Officer, Jamnagar.	Shri J.J.Chaudhri Regional Transport Officer. Nr. Lal BungalowJamnagar. (O) (0288) 2550360 / 2672100 (R) (0288) 2712576 (M)9408701779	Member
20	Sr. Vice President GSFC Sikka Unit.	Shri C.K.Mehta Gujarat State Fertilizers & Chemicals Ltd., (Sikka Unit)Dist. Jamnagar, P.O. Motikhavdi – 361140 , (O) (0288) 23444100(R) (0288) 2846075 (M) 9909965793	Member
21	Chairman of Local Crisis Group	Sub Divisional Magistrate-Jamnagar (O) 0288-2570063 (M)9978405182	Member

22	Medical Supritendent Civil Surgeon Jamnagar	Dr.Tiwari-Medical Supritendent G. G. Hospital, Jamnagar (O) (0288) 2666215 / 2550240 (M)7984779399	Member
Co-opt member of District			
1	Dy.S.P./DCIO (Central IB)	Shri Ram Sukh-Dy.S.P.-DCIO Plot No.67/2-Mehul Nagar,80Ft. Road, Nr. Mehul Nagar Tele.Exchange-Khidiyar Colony- Jamnagar-361006 O-0288-2713152 M-8527085201	Co opt Member
2	Airforce	Mr.Raghvendra, Airforce Jamnagar M-9841558704	Co opt Member
3	Army	Lt.Colonel-Mr.Indrajit Ghosh Hq-31INFBDE,Pin 908031 C\O- 56 APO M-9932595553	Co opt Member
4	INS-Valsura	Lt.Sanjibsharan, INS Valsura Jamnagar M-9828359137	Co opt Member
5	SSB	Shri Diveshkumar,Commandant-SSB- Bedeshwar-Jamnagar O-0288-2750856- M-9496455984	Co opt Member
6	Asst.Commandant- CISF	Shri VarunPandey-Asst.Commandant Surxanagar-MotiKhavdi-RIL, 0288-4012925, M-08128690208	Co-Opt Member

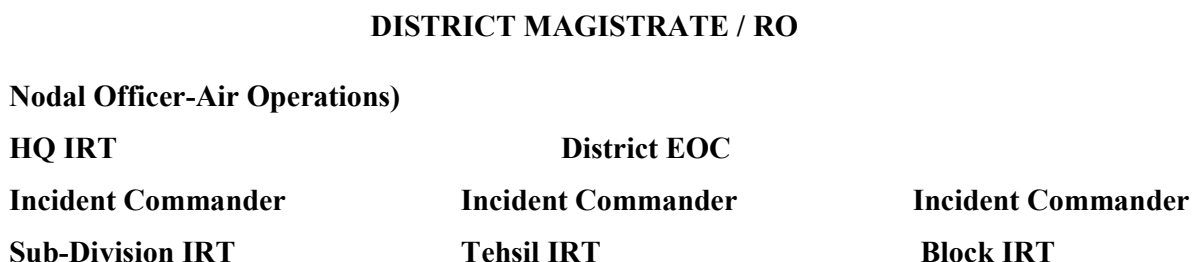
Incident Response at the State Level

In any disaster response, the initial efforts would always be taken by the District Administration. However, when Districts are overwhelmed in any situation, the support necessarily has to come from the State and National level. While the IRS is mainly relevant at the basic functional level, it is absolutely necessary that the support functionaries from the State and the National level also conform to the principles of IRS in the emergency support duties. This will be greatly beneficial for the proper coordination of the various response efforts at the National and State Level with that of the District. It is therefore necessary to clearly understand the structure of the IRS in the context of State response. The hierarchical representation of RO with State EOC, Headquarters IRT and its lower level of IRTs at District levels are shown in Fig. 4.



Incident Response at the District Level

The District Magistrate/DC is the head of the District administrative set up and chairperson of the DDMA as per the DM Act, 2005. He has been designated as the RO in the District. The heads of different departments in the District will have separate roles to play depending on the nature and kind of disaster. The roles and responsibilities of the members of the DDMA will be decided in advance in consultation with the concerned members. The roles of other line Departments also have to be clearly delineated in various disaster situations in the District DM Plan which will be duly approved by the State Government, so that there will be no ambiguity about their functions during response.





Emergency Rescue Kit-EOC Set up and Facilities available

As a part of preparedness following equipment were allocated in this district

EMMERGENCY RESCUE KIT AT TALUKA PLACES OF JAMNAGAR/JAMNAGAR DISTRICT

No.	Name of Taluka Mamlatdar Office	Artical included in each ECRs		
		Life Saving Jacket	200 ft. Ropes	100 ft.Ropes
1	Mamlatdar Office – Jamnagar Rural	35	4	8
2	Mamlatdar Office – Jodia	35	4	8
3	Mamlatdar Office – Jamnagar City	25	4	8
4	Mamlatdar Office – Kalavad	10	2	4
5	Mamlatdar Office – Dhrol	10	2	4
6	Mamlatdar Office – Lalpur	10	2	4
7	Mamlatdar Office – Jamjodhpur	10	2	4
8	DEOC-Inflatable light	2		



Public and private emergency service facilities available in the district

Sr. No.	Name Of municipality	Water bauser	Fire tender	inflatable light	fire bullet	remarks
1	Sikka	--	1	2	--	--
2	Dhrol	1	1	2	-	-
3	Kalavad	1	1	2	-	-
4	Jamjodhpur	1	1	2	-	-

➤ **Forecasting and warning agencies:**

9.4 Warning or Occurrence of Disaster

On the receipt of warning of alert from any such agency which is competent to issue such a warning, or on the basis of reports from Divisional Commissioner/ District Collector of the occurrence of a disaster, all community preparedness measures including counter-disaster measures will be put into operation. The Chief Secretary/ Relief Commissioner will assume the role of the Chief of Operations for Disaster Management.

It is assumed that the district administration would be one of the key organizations for issuing warnings and alert. Additionally, the following agencies competent for issuing warning or alert are given below.

<u>Disaster</u>	<u>Agencies</u>
Earthquakes	IMD
Floods	Meteorological Department, Irrigation Department.
Cyclones	IMD
Epidemics	Public Health Department
Road Accidents	Police
Industrial and Chemical Accidents	Industry, Police, District Collector
Fire	Fire Brigade, Police, Collector
Rail Accident	Railways, Police, Collector
Air Accident	Police, Collector, Airlines
Ammunition Depot-Fire	Army, Police, Collector.

➤ **The occurrence of the disaster will be communicated to :**

Governor, Chief Minister, Home Minister, Relief Minister and non-officials namely MPs and MLAs from the affected district. Chief Secretary, Principal Secretary, Disaster Management & Relief Department, Secretary, Disaster Management & Relief Department, Cabinet Secretary, Secretary, Home and Defense, Government of India. Secretary, Agriculture, and Joint Secretary, NDM, Ministry of Agriculture, GOI Local Area Commander of the Army.

➤ **The Occurrence of the Disaster would essentially bring into force the following :**

- ❖ The Emergency Operations Centre will be put on full alert and expanded to include Branch arrangements, with responsibilities for specific tasks, depending on the nature of disaster and extent of its impact. The number of branches to be activated will be decided by the Chief of Operations.
- ❖ All Branch Officers and Nodal Officers will work under the overall supervision and administrative control of the Chief of Operations. All the decision taken in the EOC have to be approved by the Chief of Operations.
- ❖ Immediate access to the disaster site.
- ❖ Telephonic and VSAT, wireless communication and hotline contact with the Divisional Commissioner, and Collector/s of the affected district/s will be activated.

The EOC in its expanded form will continue to operate as long as the need for emergency relief and operations continue and the long-term plans for rehabilitation are finalized for managing long-term rehabilitation programmes, such as construction of houses, restoration of infrastructure etc. the responsibilities will be that of respective line departments. This will enable EOC to attend to other disaster situation, if the need be.

Chapter-4

District Specific Prevention and Mitigation Measures

(Prepared by Charles Kelly, Babbie Group, ADB CBERR Project)

Prevention and Mitigation Plan

For disaster prevention and mitigation, both structural and non-structural interventions can be planned. Structural interventions include construction of physical engineering and non engineering structures to reduce hazard risks. Non structural mitigation includes awareness and capacity building at official and community level, formulation of new plans and overall promoting a commitment for safety.

Mitigation measures can be divided in two categories:

- i) Structural measures: On site works, construction, and engineering works and
- ii) Non-structural measures: Which include studies, research, regulations, policy changes and capacity building activities that support the structural measures

The taluka disaster management plan includes hazard specific structural and non structural mitigation plans in consultation and convergence with various Departments. For example, the MGNREGA work can take up activities on construction of embankment for flood safety or the forest department may take up mangrove plantation in the coastal areas, while the water supply department can construct hand pumps on raised platforms.

Departments shall draw out its own plan, goals and milestones and review it annually for its achievements and planning for next year.

Summary of Mitifgations measures

4.1 Mitigation Measures

Structural Mitigation Measures for Flood (Identified works of concerned Departments)

Probable Mitigation Measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Desilting and deepening of water chanel (kaans)	1.	Irrigation and Rural Development	Departmental program & MGNREGS	2020-21
Construction of embankments/ protection wall	On coastal belt to reduce land erosion by sea water	Rural Development, Forest	Departmental program & MGNREGS, watershed	2020-21
Repair of embankments/ protection wall		Rural Development, R & B	Departmental program & MGNREGS	Regularly
Repair and maintenance of Flood Channels, canals, natural drainage, storm water lines		Irrigation department	Departmental or special plan	2020-21
Construction of Safe Shelters (new	2 villages from Lalpur that is Zankhar and singach	Collectorate and R&B	NCRMP	Regularly

Probable Mitigation Measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
construction through Indira Awas, Sardar Awas and Ambedkar Awas)				
Protection wall and mangroves and vegetative cover against sea level intrusion and land erosion		Forest and Rural development department	Department schemes, MGNREGS, IWMP	2020-21
Desilting of water bodies like river and ponds	Village ponds and	Irrigation DDO Rural Development	MGNREGA and Land Development	2020-21

Non-Structural Mitigation Measures for Flood

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/program	Time Frame
Safety audit of existing and proposed housing stock in risk prone areas	Flood risk prone villages	DDO, Rural development	IAY, Sardar Awaas and other rural housing schemes	Regularly
Promotion of Traditional, local and innovative practices like bamboo/plastic bottle rafts etc	Flood risk prone villages	DDMC, SHGs and youth groups, NGOs	Training and capacity building plan for disaster management	2020-21
Capacity building of volunteers and technicians	Flood risk prone	DDMC	Training and capacity building plan for disaster management	2020-21
Awareness generation on health and safety of livestock	Flood risk prone	veterinary officer, rural development	Departmental Scheme	Regularly

Structural Mitigation Measures for Cyclone

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/Program	Time Frame
Plantations (mangroves) and Shelter Belt in the Coastal Area	Cyclone prone 2 villages	Forest department, Port Authority, DIC, TDO, Rural development department	Departmental schemes, MGNREGS	2020-21
Identification and repair/ retrofitting of houses and buildings unsafe for		R & B (Zila Panchayat)	Departmental Scheme	Regularly

cyclone				
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Note: Zankhar and singach from Lalpur have been taken up in National Cyclone Risk Mitigation Program. (NCRMP)
(Land allotted for Cyclone Shelter)

Non-Structural Mitigation Measures for Cyclone

Non-Structural measures	Location/ coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Strengthening of Early warning mechanisms	Cyclone prone villages	DDMC		Regularly
Training and awareness generation for use of safety jackets/rings/buoys/rope etc for fisher folks		DDMC, TDMC, VDMC	TDMP	2020-21
Enforcing strict compliance to coastal regulation zone		Department of Environment & Forest		2020-21
Registration of fishing boats		Fisheries Department		2020-21
Regulate and issue orders for poor quality hoardings/buildings or any other objects		R & B Department		2020-21

Structural Mitigation Measures for Earthquake

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Retrofitting (if required) of public utility buildings like offices, schools/ banks/ markets etc	EQ prone 5 Taluka under zone 4	R & B (State and Panchayat), DDO, Rural department		2020-21
Retrofitting of unsafe rural houses		DDMC	Rural housing schemes and departmental programs	2020-21
Identifying and safely dismantling unsafe structures		R & B department		2020-21

Non Structural Mitigation Measures for Earthquake

Non-Structural measures	Location/ coverage area	Implementing Departments	Convergence with agency/program	Time Frame
Capacity building of architects, engineers and masons on earthquake resistant features	EQ prone 5 Taluka under zone 4	R & B (State and Panchayat), DDMC		2020-21
Registration of trained and certified mason		R & B (State and Panchayat), DDMC		2020-21

Strict enforcement of guideline pertaining to seismic safety for government rural housing		DDO	Rural housing schemes	2020-21
Mock-drills for Schools, Hospitals and , Public Buildings and trainings for mason, engineers and architects		DDMC, Schools	DDMC	2020-21

Structural Mitigation Measures for Drought

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Development of Pasture land in common property, seed farms and trust land	Drought prone villages	Forest, Rural Development, Panchayat	Departmental Scheme	2020-21
Rain Water Harvesting storage tanks at household level and public buildings		GWSSB, (WASMO), Rural Development,	MGNREGS, Swajaldhara	2020-21
Structures for water harvesting and recharging like wells, ponds, checkdams, farm ponds, etc		DDO, Rural development, irrigation department	MGNREGS ,Watershed program, departmental schemes	2020-21
Development of fodder plots/banks		DDMC,forest department , animal husbandry department		2020-21
Repair and maintenance, de-siltling of water sources, check dams, hand pumps etc.		Irrigation, Rural Development	MGNREGS, Watershed	2020-21

Non-Structural Mitigation Measures for Drought

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Listing/developing shelf of work for drought proofing/scarcity works including Identification of potential sites of water bodies	Drought prone villages	Rural Development	MGNREGS	2020-21
Farmer education to practice drought resistant crops and efficient water use		Agriculture & horticulture department	Departmental schemes	2020-21
Set up control mechanism for regulated water use (ponds, small dams, check dams) on the early onset.		Panchayats		Regularly

Industrial (Chemical) Structural Measures (in coordination with LCG, DCG district and state level authorities)

Structural measures	Activities	Implementing Departments	Convergence with agency/ program	Time Frame
Monitoring impact of	Data collection of impact on natural resources (ground water monitoring wells,	DDMC, DCG GPCB		Regular interval

industries on NRM (land, water and air)	air quality test, etc)			
Safety assessment	Carry out structural safety inspection/audit	DISH, DCG (Asst.Director. Industrial safety and health)		regular interval
	Any Other			

Industrial (Chemical) Non-Structural Measures (in coordination with LCG, DCG, district and state level authorities)

Non tructural Measures	Activities	Implementing Departments	Convergence Agencies	Time Frame
Planning	Prepare an onsite and offsite emergency plan	Occupier, DISH		2020-21
	Conduct mock drills as per the regulations	DISH and LCG		regular interval
	Update the plan as per the requirement	Occupier, DISH		regular interval
	Monitor similar activities in all the factories/ industries	DISH and LCG		regular interval
Capacity Building	Develop IEC material for Publication & Distribution	TDMC		2020-21
	Awareness generation to general public and medical professional residing near MAH factories for immediate steps	TDMC, LCG		2020-21
	Organize training programmes, seminars and workshops (e.g. for drivers of HAZMAT transport, line departments officers, Mamlatdar etc)	TDMC, LCG		2020-21
	List of experts/ resource person/ subject specialist (District emergency Off site plan)	TDMC, LCG		2020-21
	Encourage disaster insurance	Labour & employment department		2020-21
Medical	Listing of hazardous chemicals and gases.	Occupier, LCG, DISH, THO		2020-21
	Keep check on availability and validity of relevant antidotes for chemical hazards prevalent in Taluka	Occupier, LCG, DISH, THO		2020-21
	Workshops and trainings for medical professionals to handle potential chemical and industrial hazard	THO, Occupier, LCG, DISH		Regularly
Compliance	Environmental Protection Act, Factory Act, Mutual Aid SOPs	DISH , GPCB		Regular interval
	Any other			

At the District level, the District Crisis Management Group (DCG) is an apex body to deal with major chemical accidents and to provide expert guidance for handling them. DCG has a strength of 34 members which includes District Collector, SDM and Dy. Collector, DDO, Dy. Director – Industrial Safety & Health, DSP, PI, Fire Superintendent of the City Corporations or important Municipalities, Chief District Health Officer, Civil Surgeon, SE, Chief Officer, Dy. Chief Controller of Explosives, Commandant – SRPF, Group-I, Dy. Director – Information to name a few. At Taluka level Local Crisis Management Group (LCG) is formed for coordination of activities and executing the operations.

Structural Mitigation Measures for Tsunami

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Constructing shelter belts in coastal areas	-	Rural Development	Departmental programs , MGNREGS	2020-21

Non-Structural Mitigation Measures for Tsunami

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/program
Provisions of Coastal Regulation Zone to be effectively implemented	--	Department of Environment & Forest	2020-21
Capacity building of task forces in coastal villages		TDMC	Periodically

List Of On going Project

- **DRM**

Disaster Risk Management Programme (DRM) has taken strong roots at various levels of administration in Gujarat. The Department of Revenue & Disaster Management is the nodal Department in Government of Gujarat that handles the subject with GSDMA. Disaster Management Committees are formed at various levels and are assigned the task of implementing the programme. Representation for these committees are drawn from elected representatives, officials of line departments, professional bodies, Civil Defense, NGO and CBO representatives and local opinion leaders. Major Activities are being carried out under DRM program are Plan Development at Various Levels, Emergency Resources Database maintain through SDRN / IDRN, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

- **NCRMP:**

Gujarat being prone to cyclones, it is the topmost priority of the State Government to reduce the effect of cyclone and minimize the loss to property and lives in the coastal regions of the State through creation of suitable infrastructure. Gujarat has therefore been included in the NCRMP initiated by the National Disaster Management Authority and funded by the World Bank.

- **National School Safety Programme:**

Gujarat School Safety Initiative (GSSI) – I & II. The pilot programs were designed for promoting a culture of disaster safety in schools and reduce risk through structural and non-structural measures in the schools.

Gujarat School Safety Initiative – I

One hundred and fifty schools were selected from the cities of Ahmadabad (100), Jamnagar (15) and Vadodara (35) cities on basis of the school's disaster vulnerability, number of students and willingness to implement the suggested measures. The following activities were conducted in each of the project schools:

- School management was first approached and a presentation was made about why and how the concerned school can work on school safety

A School Safety Committee was formed with the help of school administration

A three day programme on orientation of the school disaster management committee on school disaster management planning

Orientation about basic disaster awareness to coordinators and members of the school task forces

Detail training of the task force members on task force skills such as activities to be done for search and rescue, first aid, etc

Imparting lessons on emergency response in each classroom

Conducting mock drill and holding a debriefing meeting to evaluate the mock drill

Gujarat School Safety Initiative – I is completed in all the 152 schools, covering training of 1,00,000 students (primary and secondary standards) and 1,500 teachers in the basics of disaster management. School based DM plans were prepared for all the 152 schools. Earthquake drills were conducted in 80 schools attended by around 40,000 students and 640 teachers. As part of the long-term sustainability of the program, an assessment of non-structural mitigation measures was completed and school safety clubs have been opened in all the project schools. A short play on disaster awareness was also organized in 68 schools.

Gujarat School Safety Initiative – II

This initiative was designed for creation of cadre of master trainers and a pool of trained teachers at district level in disaster risk reduction across all the 25 districts of the State. It was designed for creating a pool of 100 Master Trainers (4 from each district). These master trainers would provide training to 625 teachers (25 from each district). Twenty five model schools were selected & School DM Plans were prepared involving the trained teachers. It was planned that trainings will be conducted for 1,000 teachers and 7,500 students in model schools.

In order to achieve the objectives, rollout workshop was held for sensitization of education department officials, district level administrators (District Education Officers & District Primary Education Officers), teachers and students. Eighty six master trainers were trained in 4 regional workshops, 593 teachers were trained throughout the State in 3 day workshops. Twenty five model schools were selected where 25,543 students and 861 teachers have been trained. One model school developed for each district. Methodology for School Safety program has been developed and tested, including templates for developing a School Disaster Management Plan. Training and awareness material has been developed. Also, draft text books for class VII, VIII, IX were prepared incorporating the basics of Disaster Management.

Over and above the softer issues highlighted above, GSDMA has provided all the existing Government schools in Gujarat with ISI marked portable Water-CO2 type of Fire Extinguisher (31746 Government schools covered of which 31336 are primary and 410 are secondary and higher secondary schools). For the necessary guidance/instruction for use of fire extinguishers, GSDMA has prepared an 18 minute short education film in Gujarati on fire safety for schools. This was shown to all government primary schools through the satellite network.

Structural: Structural Mitigation Measures

- a. Retrofitting of Buildings: In Jamnagar region maximum buildings are non-engineered or kuchcha, having lower seismic resistant capacity. There are mainly four major types of constructions:

Category A:	Adobe, fieldstone Masonry Buildings
Category B:	Brick Construction Masonry Buildings
Category C:	R. C. C. Construction
Category X:	Traditional & Conventional Construction

The buildings of Category A are very weak and may get damaged even due to a lower intensity earthquake. There is a need for detailed assessment of buildings, which are vulnerable and may cause losses to life. Assessment of these buildings will help to evolve a strategy for their retrofitting.

.After assessment of vulnerability of buildings the priority for structural mitigation has to be defined. 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 examples of important buildings are hospitals, clinics, communication buildings, fire and police stations, water supply, cinema halls, meeting halls, schools and cultural buildings such as museums, monuments and temples. The second priority goes to other type of buildings like housing, hostels, offices, warehouses and factories.

b. Construction control: The best protection against earthquake is a strong built environment. The quality of buildings, measured by their seismic resistance is of fundamental importance. Minimum design and construction standards for earthquake and flood resistant structures legislated nationally, are an important step in establishing future minimum levels of protection for important structures. India now has building codes and regulations for seismic and flood resistant design. These codes are in constant review by the experts. The below mentioned building codes are generally practiced in India:

- **IS: 1893, 1984** - Criteria for earthquake resistance design of structures
- **IS: 13828, 1993** - Guidelines for improving low strength earthquake resistant masonry buildings
- **IS: 13920, 1993** - Ductile detailing of reinforced concrete structures subjected to seismic forces- code of practice
- **IS: 13827, 1993** - Guidelines for improving earthquake resistance of earthen buildings
- **IS: 13935, 1993** - Guidelines for repairing & seismic strengthening of buildings

In Hoshangabad, building by-laws and the Seismic Code must be enforced by the municipal and panchayat bodies.

NON STRUCTURAL:

Land use planning: Damage to a building depends primarily upon the soil conditions and topology of the area. Jamnagar district comes under moderate risk zone in terms of earthquake (Zone 3) and flood disaster. But a part of it is also recommended by DMI to be included under zone 4 of earthquake as it lies on a cross fault Junagadh region.

Training and awareness programmes: Mitigation also includes training of people for making the houses safe from earthquakes and floods. Training modules have to be prepared for different target groups viz. engineers and masons about safe building practices and general 'do's and don'ts' for general public.

Mitigation strategies

The mitigation strategy for Jamnagar district involves the following elements:

- Further growth of human settlements in the low lying areas should be checked through land-

use planning. Such areas are vulnerable not only from flood hazards but are also vulnerable to earthquake liquefaction, which may increase the damage manifold. The department of Town and Country Planning will take care of seismic hazards while preparing the development plans for the district;

- Appropriate building codes will be made applicable for new engineered & non engineered constructions, and should be strictly enforced by local body. The Municipal Corporation of local area will ensure the construction as per Indian Standard Building Codes;
- Infrastructure department will do the retrofitting of public buildings under their maintenance charge. Generally PWD, Rural Engineering Services and Housing Board maintain the public buildings. The expenditure for such retrofitting will be taken care under maintenance head.
- Community awareness will be raised regarding seismic resistant building construction techniques and seismic retrofitting of existing buildings. Housing Board will be the nodal agency to provide training through workshops and demonstrations. PWD and RES will support MPHB in these efforts;
- Community awareness will be raised regarding 'do's and don'ts' in the event of an earthquake with the involvement of Panchayati Raj institutions and CBOs. Revenue department will be the nodal agency for this activity.

Development schemes:

NREGS: The MGNREGA achieves twin objectives of rural development and employment. The MGNREGA stipulates that works must be targeted towards a set of specific rural development activities such as: water conservation and harvesting, a forestation, rural connectivity, flood control and protection such as construction and repair of embankments, etc. Digging of new tanks/ponds, percolation tanks and construction of small check dams are also given importance. The employers are given work such as land leveling, tree plantation, etc. It has a very broad spectrum which can be used for the benefit of the population that are vulnerable and are likely to be affected.

1. Construction of Tube wells can be done.
2. Building of Roads for places which are not connected to other parts of the district.
3. Leveling of low lying areas during flood to a higher level to prevent those areas.
4. Construction of check dams and embankments and drainage systems to prevent flooding of those areas.

PMAY:

This scheme can be used for the rehabilitation of the affected villages by making constructions for the affected population.

Sarva Shiksha Abhiyan:

This scheme can be used for creating awareness about mitigation and preparedness about accidents that are in control of man, in collaboration with educational institutions to the people so that they can make use of it when required.

NRHM:

This scheme can be used to facilitate for voluntary first aid during disaster and training the local population to deal with minor injuries so that they do not have to wait for professional help to help any individual. Training of nurses can be carried out as a preparatory plan.

Mukhyamantri Avas yojana:

The scheme can facilitate the rehabilitation programs among the affected villages or the ones that are likely to be affected and lie in the vulnerable zone. They can come up with collaboration with the construction norms.

Jal- Abhishekh Abhiyan:

The aim of the scheme is to provide safe drinking water so it can be used to provide for clean drinking water during response and relief period .It can work in collaboration with sanitation systems during relief period and help in avoiding any kind of future epidemics in the affected region.

Samagra Swachta Abhiyan:

This scheme can also be used for providing sanitation in the relief camps to the affected population. Since relief camps are the places where lot of diseases and epidemics may break out, proper defecation and sanitation should be ensured by this scheme.

Madhyanah Bhojan Karyakram:

The scheme can provide for food supply during emergency situations in the affected areas or even in the relief camps.

JNNURM Localization and Project Uday Institutionalization with replication

Risk Management Funding

Short term provisions are expected to cover the immediate loss, incurred due to disasters. Whereas long term provisions include the set up of fire stations, watershed management, planting trees along the river etc.

Insurance schemes are important source of funds for restoration of private business enterprises. The Collector will coordinate with Insurance Companies to speed up settlement of insurance claims. It will help in restoration of private business enterprises. He will also coordinate with commercial banks for ensuring smooth flow of financial assistance from commercial banks for restoration of private business enterprises.

Agriculture department shall provide seeds and the required finance as loans through local banks for the resumption of agriculture activities. The district administration shall elicit the support funding of agencies like Care, CRS etc. for the resumption of agriculture and livelihood activities.

Revenue/Book Circulars contains standing instructions of the Government for distribution of ex-gratia payments to poor families, who suffer from disasters to initiate their recovery process. This assistance will be provided very promptly to the poor families by the functionaries of the Revenue Department.

In order to achieve the objectives, rollout workshop was held for sensitization of education department officials, district level administrators (District Education Officers & District Primary Education Officers), teachers and students. Eighty six master trainers were trained in 4 regional workshops, 593 teachers were trained throughout the State in 3 day workshops. Twenty five model schools were selected where 25,543 students and 861 teachers have been trained. One model school developed for each district. Methodology for School Safety program has been developed and tested, including templates for developing a School Disaster Management Plan. Training and awareness material has been developed. Also, draft text books for class VII, VIII, IX were prepared incorporating the basics of Disaster Management.

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Chapter-5

Preparedness Measures

Identification of Stake holder involve in disaster management

Formation of Person training for...

Search & rescue

It is the duty of the DDMA to provide specialized life saving assistance to district and local authorities. In the event of a major disaster or emergency its operational activities include locating, extricating and providing on site medical treatment to victims trapped in collapsed structures. In the event of any disaster the Home Guards along with the support of the Police dept. form teams to locate injured and dead and try to rescue the ones in need. There are other bodies too that help these departments in this work, like the PWD, Health dept, Fire dept and also the people that voluntarily form teams to help the ones in need. Proper training for search and rescue process needs to be undertaken so as to minimize the time taken in rescuing someone. Also proper methodology and resources are needed to carry out a search & rescue mission.

The tactics used in the search & rescue process vary accordingly with the type of disaster that we are dealing with. In case of flood, a boat and trained swimmers are a must while in case of an earthquake sniffer dogs and cutting tools with trained manpower is a binding requirement. The household register that is maintained by the warden should be maintained for every village as it proves to be of great help in case of a disaster like an earthquake. Because in case of the aforementioned disaster people get trapped in the debris of buildings and houses and it becomes difficult to estimate how many people are present in the debris. But if a household register is maintained then the task becomes quite easy and effective to find out almost correctly that how many people would be present in any building/house at any given time. Thus the resources can be justifiably distributed and more lives can be saved. This kind of process is highly recommended in this particular district which lies in moderate earthquake prone region.

For flood it is recommended that the boats that are used should be light weight and the motor should be of 'luma' type, so that it becomes easy for the rescue team to lift the boat and carry it to the spot.

Search & rescue Team

S.No.	designation of trained S&R Team member
	<p><i>The Search & Rescue team is formed as and when required and the members & equipments are taken according to the nature of the disaster (and also on their availability).</i></p> <ul style="list-style-type: none">• Police Officers (2 or more)• Home guards (2 or more)• Swimmers (In case of flood)• A construction engineer (From P.W.D.)• Driver (For Every vehicle)• Any person with the prior experience of the disaster (From Home Guard/Police Dept.)• A doctor or nurse or at least a person having first aid training• A Class IV Officer (Health Dept.)

Early Warning:

The early warning systems for different disasters should be in place so that the concerned administrative machinery and the communities can initiate appropriate actions to minimize loss of life and property. These should give an indication of the level of magnitude of the mobilization required by the responders. The goal of any warning system is to maximize the number of people who take appropriate and timely action for the safety of life and property. All warning systems start with the detection of the event and with their timely evacuation. Warning systems should encompass three equally important elements viz detection and warning, dissemination of warning down to the community level and the subsequent quick response.

The State acknowledges the crucial importance of quick dissemination of early warning of impending disasters and every possible measure will be taken to utilize the lead-time provided for preparedness measures. As soon as the warning of an impending calamity is received, the EOCs at the State, District and Block levels will be on a state of alert. The Incident Commander will take charge of the EOC and oversee the dissemination of warning to the community. The District Collector will inform the District Disaster Management Committees who will alert the block and Village level DMCs and DMTs to disseminate the warning to the community. On the basis of assessment of the severity of the disaster, the State Relief Commissioner (Incident Commander) shall issue appropriate instructions on actions to be taken including evacuation to the District Collector, who will then supervise evacuation. In situations of emergency, the District Collector will use his own discretion on the preparedness measures for facing the impending disaster.

At the village level, members of the VDMCs and DMTs or village level Volunteers will coordinate the evacuation procedures to the pre-designated relief centers, taking special care of the vulnerable groups of women, children, old people etc. according to the plans laid down earlier.

Evacuation:

Evacuation is a risk management strategy, which may be used as a means of mitigating the effects of an emergency or disaster on a community. It involves the movement of people to a safer location. However, to be effective, it must be correctly planned and executed. The process of evacuation is usually considered to include the return of the affected community.

Shelter provides for the temporary respite to evacuees. It may be limited in facilities, but must provide protection from the elements as well as accommodate the basic personal needs, which arise at an individual level in an emergency.

The plan must allocate responsibility for management of each of the elements of shelter. Considering the wide range of services, agencies and issues to be managed, it becomes essential for 'shelter' to be managed within a structure, which facilitates the coordination of agencies and services and support of emergency workers. The following factors may need consideration:

- Identification of appropriate shelter areas based on safety, availability of facilities, capacity and number of victims.
- Approaches to the shelter location in light of disruption due to hazard impact and traffic blockades.
- Temporary accommodation
- Provision of essential facilities like drinking water, food, clothing, communication, medical, electrical and feeding arrangements, etc.
- Security
- Financial and immediate assistance
- First-aid and counseling

Types of evacuation

For the purpose of planning, all evacuations may be considered to be one of two generic types:

(a) Immediate evacuation, which allows little or no warning and limited preparation time as in the case of earthquakes and air accident.

(b) Pre-warned evacuation resulting from an event that provides adequate warning and does not unduly limit preparation time as in the case of flood and cyclones.

Principles of Evacuation Planning

- Establishment of a management structure for organization, implementation, coordination and monitoring of the plan.
- Determination of legal or other authority to evacuate.

- Clear definition of rules and responsibilities.
- Development of appropriate and flexible plans.
- Effective warning and information system.
- Promoting awareness and encouraging self-evacuation.
- Assurance of movement capability.
- Building confidence measures and seeking cooperation of the affected community.
- Availability of space for establishment of relief camps having requisite capacity and facilities.
- Priority in evacuation to be accorded to special need groups like women, old and sick, handicapped and children.
- For effective evacuation, organization and running of relief centers, cooperation and involvement of all agencies viz. Community, volunteers, NGOs, NCC / NSS, Home guards and civil defense, district and village bodies be ensured.
- Security arrangement and protection of lives and property.
- Preparation and updating of resource inventories.
- Appropriate welfare measures throughout all stages
- Test exercise of prepared plans and recording of lessons learnt
- Documentation.

Stages of Evacuation

There are five stages of evacuation as under:

- Decision of authorities to evacuate victims
- Issue of warning and awareness
- Ensuring smooth movement of victims to designated relief camps
- Ensuring provision of all requisite facilities like security, safe-housing, feeding, drinking-water, sanitation, medical and allied facilities
- Safe return of personnel on return of normalcy

Decision to Evacuate

Vulnerability analysis may indicate that for certain hazards and under certain conditions, sheltering in place could well be the best protection. Available lead-time may influence the decision to evacuate the public before the impact of emergency (e.g. floods) and reducing the risk to lives and property. Decision would also be dependent on factors like ready availability of suitable accommodation, climatic condition, and severity of likely hazard and time of the day.

The Collector would be the authoritative body to issue directions for evacuation. The OIC of DECR would convey directions to Desk Officers of concerned agencies, which are responsible to execute evacuation.

Basic consideration for Evacuation

The DCG will define area to be evacuated as also the probable duration of evacuation on the basis of meteorological observations and intimations by the concerned forecasting agencies. It should also identify number of people for evacuation, destination of evacuees, lead-time available, welfare requirements of evacuees as also identify resources to meet the needs of victims, viz. manpower, transport, supplies equipments, communications and security of the evacuated area.

The evacuating agency should set priorities for evacuation in terms of areas likely to be affected and methodology to execute evacuation:

- Delivery of warning
- Transport arrangement
- Control and timing of movement
- Fulfill welfare needs including medical treatment
- Registration of evacuees

All agencies involved in evacuation operation like Home guards, Police, PWD, PHED, etc. will coordinate in field. They will remain in touch with the Desk officials in the DECR for issuing warning, information and advise the public.

Evacuation Warning

An evacuation warning must be structured to provide timely and effective information. Factors, which may influence the quality and effectiveness of warning, include time, distance, visual evidence, threat characteristic and sense of urgency e.g. the more immediate the threat, the greater the resilience of people to accept and appropriately react to the warning.

The warning should be clear and target specific. The warning statement issued to the community should be conveyed in a simple language. The statement should mention:

- The issuing authority, date and time of issue
- An accurate description of likely hazard and what is expected
- Possible impact on population, area to be in undated or affected due to earthquake
- Need to activate evacuation plan
- Do's and Don'ts to ensure appropriate response
- Advise to the people about further warnings to be issued, if any

Damage & Loss Assessment

Immediately after the disaster there is an urgent need of damage assessment in terms of loss of life, injury and loss of property. The objectives of damage assessment are to mobilize resources for better rescue and relief, to have detailed information of damage extent and severity of disaster and to develop strategies for reconstruction and restoration facilities.

- Damage is assessed with regard to building stock, standing crops, agricultural area, livestock lost, forest cover decimated, vital installations etc. In damage assessment of building stock, generally three types of flags are used; green, yellow and red. The green colour is given to the buildings that are safe and require 2-3 days to return to their original function. Yellow flags depict the considerable damage to the buildings and considered to be unsafe for living, as they require proper structural repairs and careful investigation. The red flag is assigned to buildings that are partially or completely collapsed. Immediately after a disaster event, damage assessment will be conducted in 2 phases viz. Rapid Damage Assessment and Detailed Damage Assessment.



Training need analysis -Education and Capacity Building and arrangement for training:-

Although education about disaster mitigation and prevention and capacity building would seem to be ideal district-level efforts, the lead for both probably best rests with the state level, with districts having a facilitating role. The issue is that if 25 districts independently embark on education and capacity building it will be hard to coordinate and standardize the results across districts. A significant consequence would be an inequality in capacities across districts, and thus uneven mitigation and prevention results.⁵ How to fund these activities remains open. Options range from GSDMA grants to set-asides in budget allocations. Project Impact in the US and similar programs in Australia and Canada are good models for the former approach.

Training, capacity building and other proactive measures Training:

Task	Activity	Responsibility
Training	1. Training to civil defence personal in various aspect of disaster management 2. Training to fire/home Guards/NCC personal in various aspect of disaster management including search and rescue	<input type="checkbox"/> Home Dept. <input type="checkbox"/> District Home Guards Commandant <input type="checkbox"/> Dy. Controller Civil Defence ▪ Disaster Management Cell and F&ES
3. Training to NCC and NSS personal in various aspect of disaster management		<input type="checkbox"/> Education Dep. <input type="checkbox"/> NCC <input type="checkbox"/> Collector Office
4. Training to educational and training institutions personal in various aspect of disaster management		DDMC
5. Training to civil society, CBOs and corporate entities in various aspect of disaster management		DDMC
6. Training to fire and emergency service personal in various aspect of disaster management		Fire Dept DDMC
7. Training to police and traffic personal in various aspect of disaster management		DDMC Police Dept.
8. Training to media in various aspect of disaster management		DDMC Information Dept.
9. Training to govt. officials in various aspect of disaster management		DDMC
10. Training to engineers, architects, structural engineers, builders and masons in various aspect of disaster management		DDMC

Awareness

Task	Activity	Responsibility
Information education And communication	1. Advertisement, hording, booklets, leaflets, banners, shake-table, demonstration, folk dancing and music, jokes, street play, exhibition, TV Spot, radio spot, audio-visual and documentary, school campaign, - Planning and Design - Execution and Dissemination	<input type="checkbox"/> Information Dept. <input type="checkbox"/> Education Dept. <input type="checkbox"/> All line dept. <input type="checkbox"/> Dist. Collector <input type="checkbox"/> Municipal Commissioner <input type="checkbox"/> Other Dist. Authorities

Activation of Incident Response System in the District and identification of quick response team

Command:

This function establishes the framework within which a single leader or committee can manage the overall disaster response effort. A single Incident Commander is responsible for the successful management of the response during operational period in an area. If the incident grows in size and extends throughout many jurisdictions, multiple incident commanders can be useful with an area command authority may be established to coordinate among the incidents. Incident Commander requires the following Command Staffs to support him, which are as followings,

- Public Information Officer – the single media point of contact
 - Safety Officer – Responsible for identifying safety issues and fixing them, he has the authority to halt an operation if needed.
 - Liaison Officer – Point of contact for agency to agency issues.
1. **Operations:** this section carries out the response activities described in the IAP along with coordinating and managing the activities taken the responding agencies and officials that are directed at reducing the immediate hazard, protecting lives and properties. This section manages the tactical fieldwork and assigns most of the resources used to respond to the incident. Within operations, separate sections are established to perform different functions, such as emergency services, law enforcement, public works...etc.
 2. **Planning:** this section supports the disaster management effort by collecting, evaluating, disseminating, and uses information about the development of the emergency and status of all available resources. This section creates the action plan, often called “Incident Action Plan” (IAP), which shall guide emergency operations/response by objectives. Followings are the six primary activities performed by the planning section, including,
 - Collecting, evaluating, and displaying incident intelligence and information
 - Preparing and documenting IAPs
 - Conducting long-range and contingency planning
 - Developing plans for demobilization
 - Maintaining incident documentation
 - Tracking resources documentation
 3. **Logistics:** the process of response includes personnel, equipments, vehicles, facilities...etc, all of which will depend upon the acquisition, transport, and distribution of resources, the

provision of food and water, and proper medical attention. The Logistic section is responsible for the mentioned process.

4. **Finance and Administration:** this section is responsible for tracking all costs associated with the response and beginning the process for reimbursement. The finance and administration section becomes very important when the national government provides emergency funds in place that guarantee local and regional response agencies that their activities, supply use, and expenditures will be covered.

A traditional command structure exists in the administrative hierarchy which manages disasters in India. It has been planned to strengthen and professionalise the same by drawing upon the principles of the ICS with suitable modifications. The ICS is essentially a management system to organise various emergency functions in a standardised manner while responding to any disaster. It will provide for specialist incident management teams with an incident commander and officers trained in different aspects of incident management, such as logistics, operations, planning, safety, media management, etc. It also aims to put in place such teams in each district by imparting training in different facets of incident management to district level functionaries. The emphasis will be on the use of technologies and contemporary systems of planning and execution with connectivity to the joint operations room at all levels.

The local authorities do not have the capacity to play an efficient role at local level to support the DEOC's requirements for field information and coordination. The DEOC will therefore need to send its own field teams and through them establish an Incident Command System. The system will comprise:

- Field command
- Field information collection
- Inter agency coordination at field level

Management of field operations, planning, logistics, finance and administration



Awareness Generation: -

As a part of Preparedness Awareness generation among community will be continuous process. From District to Taluka, Village level awareness programme must be conducted. With the help of Print Media, Electronic media, folk media authority can create awareness among community.

➤ NGO and Other stake Holder coordination -

For arrangement of water supply, temporary sanitation facilities, search and Rescue activity, Relief distribution can be sought with help of special agencies, NGOs and CBOs.

➤ **Seasonal preparedness: -**

Whether personal or institutional, all collections are subject to risks that can seriously affect the lifetime and value of a collection. For many museums, galleries, and private collectors, an essential aspect in Collection Management is maintaining a loss prevention plan for seasonal disasters.

Hazards from these storms come in many forms including high winds, tornadoes, storm surges and flooding. Natural disasters make all of us acutely aware of our vulnerabilities to disaster. Fortunately, catastrophes of a large magnitude are rare, but disaster can strike in many ways. Large or small, natural or man-made, emergencies put collections in danger. Hazards can often be mitigated or avoided altogether by a comprehensive, emergency-preparedness plan. Such plans provide a means for recognizing and responding effectively to emergencies. The goal is to hopefully prevent damage or, at least, to limit the extent of the damage.

➤ **Identifying Risks**

A prudent first step is to list geographic and climatic hazards and other risks that could jeopardize the building and collections. These might include geographical susceptibility to hurricanes, tornadoes, flash flooding, earthquakes, or forest fires, and even the possibility of unusual hazards such as volcanic eruptions. Consider man-made disasters such as power outages, sprinkler discharges, fuel or water supply failures, chemical spills, arson, bomb threats, or other such problems. Take note of the environmental risks that surround you. Chemical industries, shipping routes for hazardous materials, and adjacent construction projects all expose you to damage. Any event that is a real possibility should be covered under your Emergency Preparedness Plan. It is also important to determine the vulnerability of the objects within the collections. What types of materials are included? Are they easily damaged? Are they particularly susceptible to certain types of damage such as moisture, fire, breakage, and the like? How and where are collections stored? Are they protected by boxes or other enclosures? Is shelving anchored to structural elements of the building? Is it stable? Are any artifacts stored directly on the floor where they could be damaged by leaks or flooding? All items should be raised at least four inches from the floor on waterproof shelves or pallets. Are materials stored under or near water sources? Analyze your security and housekeeping procedures. Do they expose collections to the dangers of theft, vandalism, or insect infestation? Consider vulnerabilities. Are your collections insured? Is there a complete and accurate inventory? Is a duplicate of the inventory located at another site? Although there may be a wide range of disaster scenarios, the most common are water, fire, physical or chemical damage, or some combination of these. The specific procedures of a disaster plan focus on the prevention and mitigation of these types of damage.

➤ **Decreasing Risks**

Once your hazards are specified, the disaster planner should devise a program with concrete goals, identifiable resources, and a schedule of activities for eliminating as many risks as possible. While water damage is the most common form of disaster for collections, everyone needs a good fire-protection system. Wherever possible, collections should also be protected by a fire suppression system. Preservation professionals now recommend wet-pipe sprinklers for most collections. In addition, water misting suppression systems have become available within the last several years; these can provide fire suppression using much less water than conventional sprinkler systems. Before choosing a fire-protection system, be sure to contact preservation professional or a fire-protection consultant for information about the latest developments in fire protection and for advice appropriate to your collections and situation. An inventory will provide a basic list of holdings, and will be essential for insurance purposes. Improved collection storage, such as boxing and raising materials above

the floor level, will reduce or eliminate damage when emergencies occur. Comprehensive security and housekeeping procedures will ward off emergencies such as theft, vandalism, and insect infestation. They will also ensure that fire exits are kept clear and fire hazards eliminated.

➤ **Identifying Resources**

An important step in writing your plan is to identify sources of assistance in a disaster. Research these services thoroughly--it is an essential part of the planning process. These can range from police, fire, and ambulance services to maintenance workers, insurance adjusters, and utility companies. If possible, invite local service providers to visit in order to become familiar with your site plan and collections in advance of an emergency. For example, you may want to provide the fire department with a list of high-priority areas to be protected from water if fire-fighting efforts permit. Other valuable sources of assistance are local, state, or federal government agencies.

SDRN/IDRN data updation: -

State disaster Resource network and India Disaster Resource Network is a crucial database for response any disaster. SDRN, a decision support tool, is layered using the existing IT Wide Area Network (WAN) of the State - GSWAN. SDRN uses the map-based GeoSpatial Information Systems developed by the Gujarat based organization Bhaskaracharya Institute for Space Applications and Geo-Informatics (BISAG). Currently, the SDRN network is being integrated with the GIS based Decision Support System using Java, MS-Access, Visual Studio 2005 with Database SQL Server 2005. The GIS Visualizer does not require any GIS software. The GIS visualizer contains multi layered options depicting roads-highways, taluka, district boundaries, rivers, ports, airways, etc.

India Disaster Resource Network (IDRN): -

IDRN, a web based information system, is a platform for managing the inventory of equipments, skilled human resources and critical supplies for emergency response. The primary focus is to enable the decision makers to find answers on availability of equipments and human resources required to combat any emergency situation. This database will also enable them to assess the level of preparedness for specific vulnerabilities. Total 226 technical items listed in the resource inventory. It is a nationwide district level resource database. Each user of all districts of the state has been given unique username and password through which they can perform data entry, data updation on IDRN for resources available in their district. The IDRN network has functionality of generating multiple query options based on the specific equipment, skilled human resources and critical supplies with their location and contact details.

DRM Programme: -

i) GSDMA DRM activities:

Disaster Risk Management Programme (DRM) has taken strong roots at various Levels of administration in Gujarat. The Department of Revenue & Disaster Management is the nodal Department in Government of Gujarat that handles the subject with GSDMA. Disaster Management Committees are formed at various levels and are assigned the task of implementing the programme. Representation for these committees are drawn from elected representatives, officials of line departments, professional bodies, Civil Defence, NGO and CBO representatives and local opinion leaders. Major Activities are being carried out under DRM program are Plan Development at Various Levels, Emergency Resources Database maintain through SDRN / IDRN, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

The Disaster Risk Management Program (DRM) being implemented by Gujarat State Disaster Management Authority (GSDMA) aims to strengthen the response, preparedness and mitigation measures of the community, local self-governments, the District administration and the State in Gujarat. Under the DRM Programme

For the Prepared level specific plan following process will followed.

District Level Process

2. Orientation of District level officers and PRI members including line department officials
3. Formation of District Disaster Management Committee.
4. Development of manuals and guidelines Capacity building of DDMC members, government officials, training institutes, other concerned organizations at district level
5. Development of the District Disaster Management Plan
6. Use of IEC materials for awareness generation for preparedness, risk reduction and mitigation
7. Data updation on IDRN

Taluka level process

8. Orientation cum sensitize Taluka level officers and PRI members.
9. Formation of Taluka Disaster Management Committee.
10. Capacity building of government officials
11. Development of the TDMP
12. Use of IEC material and media sources for create awareness at taluka level
13. TDMP update on SDRN

City-ULB level process

14. Orientation of City level officers, elected members & leaders.
15. Formation of CDMP
16. Capacity building of municipal official and concerned organizations at city level
17. Development of the CDMP.
18. Use of IEC material for create awareness at city level
19. CDMP updation on SDRN

Village Level Process

20. Formation Cluster within 10 to 12 village and conduct cluster meetings over 10-12 villages
21. Organize gramsabha in each village
22. Undertake PRA exercise at village level for hazard, vulnerability assessment and resource analysis
23. Facilitate the formation of the Village Disaster Management Committee (VDMC)
24. Conduct training programs for DMT and DMC Members and volunteers
25. Awareness campaigns on risk reduction mechanisms, Risk Transfer- insurance, disaster resistant construction
26. Developed Village Disaster Management Plan (VDMP)
27. Conduct mock drills for test the VDMP
28. Update VDMP twice in a year (by VDMC)

Jamnagar district had taken the preparedness measures from village level to District level. at the villages village Task forces was formed and trained about First aid and Health, Search and Rescue and Disaster Management. Some volunteers were also trained in Disaster Management and plans like VDMP were prepared and updated. officers reviewed the disaster preparedness of the villages and interacted with the Village level Disaster Management team members, In the pre-monsoon meeting all departments, and stake holders were asked to get prepared departmental plan. SOP's were also discussed with them so that quick response can be assured and any kind of risk due to water lodging, flood, heavy rainfall and dam overflow can be reduced.

Preventio and Mitigation and preparedness actions are to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction.

Base on the interim assessment of risk and vulnerabilities, certain majors for mitigation, preparedness and prevention has been taken with respect to Jamnagar District. These are.....

The proposed state-level disaster-planning format sets out priorities for mitigation, prevention and preparedness activities. The underlying concept is to incorporate these three types of activities into normal (developmental) policies, procedures and undertakings and targeting specific areas for concerted effort.

Complementary priorities, plans and activities need to be established at the district level. This process is complicated by five realities:

1. Developmental policies and budgets are set at the state-level and project implementation is not always under the control of district authorities
2. District authorities have limited policy and funding independence.
3. The range of possible mitigation, prevention and preparedness actions within a district is significant but can be difficult to prioritize.
4. Many activities require popular participation and should be focus on the family or community, which requires time and effort to effectively organize.
5. The local commercial sector is cost-conscious and tends to avoid investments in activities which do not immediately improve profits.

A set of possible district-level approaches to mitigation, prevention and preparedness are summarized below based on these realities. These approaches need to be reviewed at the district and state level and, to the degree possible, harmonized vertically within the government structure and across public and private sector organizations and districts. At the same time, the focus of efforts can vary between and even within districts depending on their particular hazards, risks and vulnerabilities³.

One approach to developing this harmonization is to hold a state-district conference on mitigation, preparedness and prevention, complemented by annual review workshop. The initial conference would define and harmonize policies, procedures and approaches vertically and horizontally. The workshop would serve to recognize progress and adjust plans to take into account changing local and state-level conditions.






District-level Approaches to Mitigation, Prevention and Preparedness

Preventive measure (for all disasters)

Preventive actions have to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district can avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability;

1. Long term planning for mitigation, preparedness and prevention investments in the district,
2. Enforcement of regulations, particularly Structural-building and safety codes and land use plans,
3. Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,
4. Capacity building, including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

The Collector, assisted by the District Development Officer, is responsible for developing plans and activities to effect mitigation, preparedness and prevention using the mechanism noted above. Based on the interim assessment of risk and vulnerabilities, the Jamnagar District will focus on the following areas for mitigation, preparedness and prevention;

-  Resilience of lifeline systems (water, power and communications)
-  Reduction in disaster impact on health care facilities, schools and roads
-  Vulnerability reduction in flood-prone areas
-  Vulnerability reduction to high winds
-  Improvement of off-site Preparedness near Industrial sites.

 **Mitigation measure (for all disasters)**

1) Town and Country Planning Acts and their related provisions:

The Department of Disaster Management, being a member of all regulatory bodies will coordinate with the Town & Country Planning Board and constitute a committee of experts to evaluate the provisions of the State Town & Country Planning Act in place. The Committee will consist of experts from the fields of disaster management, town and country planning and legal experts and will be chaired by the State Relief Commissioner.

 **Zoning Regulations and their related provisions:**

The State Urban Development Department, in consultation with the Department of Disaster Management will constitute a committee of experts with members from the Institute of Town Planners, town development, State Pollution Control Board, Chairpersons of major Development Authorities/Notified Area Authorities, eminent faculty from planning, architecture and civil engineering departments of engineering colleges, eminent resource persons and such other experts nominated from time to time to study the existing zoning regulations and suggest necessary amendments to incorporate components for vulnerability reduction. The State Chief Town Planner will be the Convener of the Committee.

 **Development Control regulations:**

The same committee of experts constituted to evaluate the zoning regulations will also evaluate the development control regulations and suggest measures to incorporate the disaster management concerns into them.

Government-sponsored programmes and schemes:

The State Planning Department will prepare a report on the government sponsored programmes and schemes running in the State and how far each programme/scheme addresses the issue of disaster management and submit to the government. The Disaster Management Group which is constituted under the chairmanship of the Chief Secretary with concern Secretaries of the Departments of Disaster Management, Urban Development, Rural Development, Health, Home, Finance, Science & Technology, Transport, and Agriculture to evaluate and suggest disaster mitigation measures to be incorporated.



Community Warning system-Early Warning System (EWS)

It is often observed that communities living in remote and isolated locations do not receive timely and reliable warnings of impending disasters. Hence, it is necessary to have robust and effective early warning systems, which can play crucial role in saving lives and limiting the extent of damage to assets and services. Outreach and reliability of warnings are key factors for planning and implementing response measures. Post disaster advisories like information on rescue, relief and other services are important to ensure law, order, and safety of citizens.

Early Warning Action Plan

Type of Action	Flood	Cyclone	Chemical and industrial accidents	Tsunami
Existing EWS	Irrigation department /dam authority/ IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages	IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages	Industrial Association/industries ↓ DCG ↓ LCG ↓ Mamlatdar	IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages
Responsible Agency for warning dissemination	Mamlatdar office/TDO	Mamlatdar office/TDO	Mamlatdar office/TDO	Mamlatdar office/TDO
Trained personnel and operators available (Y/N)	Yes	Yes	No (Team to be formed and trained)	No (Team to be formed and trained)
Villages covered	All risk prone villages			
Villages/habitation not covered or difficult to access	Communities in remote locations (fisher folk, salt pan workers, maldharis etc)			
Measures required to improve timeliness and outreach (For example, voice enabled SMS)	Contact of communities in remote locations (fisherfolk, saltpan workers, Maldharis etc)			

During and Post Disaster Advisory Action Plan

Type of Hazard	Flood	Cyclone	Earthquake	Drought	Chemical and industrial accidents	Tsunami
Responsible Agency	DDMC,Mamlatdar office & TDO					
Villages covered	All risk prone villages					
Villages/habitation not covered or difficult to access	communities in remote locations (fisher folk, salt pan workers, Maldharis etc)					
Measures required for outreach	Contact of communities in remote locations (fisher folk, salt pan workers, Maldharis etc)					

Procurement: -

Providing logistical support to government and agencies for procurement of relief goods, transportation etc, and monitoring illegal price escalations, stocking etc. during crisis.

Protocol and arrangement for VIP Visit

It is important to immediately inform VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumours and chaos during the disaster. Visits by VIPs can lift the morale of those affected by the disaster as well as those who are involved in the response. Care should be taken that VIP visits do not interrupt rescue and life saving work. Security of VIPs will be additional responsibility of local police and Special Forces. It would be desirable to restrict media coverage of such visits, in which case the police will liaise with the government press officer to keep their number to minimum.

Media Management

The role of media, both print and electronic, in informing the people and the authorities during emergencies becomes critical, especially the ways in which media can play a vital role in public awareness and preparedness through educating the public about disasters; warning of hazards; gathering and transmitting information about affected areas; alerting government officials, helping relief organizations and the public towards specific needs; and even in facilitating discussions about disaster preparedness and response. During any emergency, people seek up-to-date, reliable and detailed information.

The State Government has established an effective system of collaborating with the media during emergencies. At the State Emergency Operation Centre (SEOC), a special media cell has been created which is made operational during emergencies. Both print and electronic media is regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground. A similar set up is also active at the District Emergency Operation Centre (DEOC).

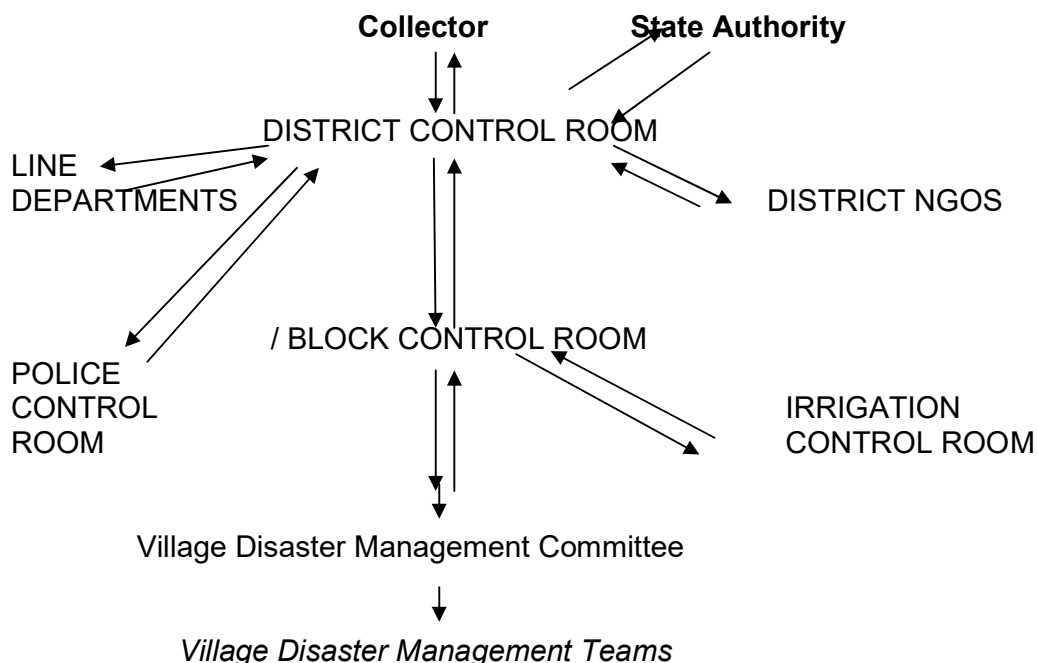
Chapter-6

Response Measures-Multi Hazard

Response measures are those which are taken instantly prior to, and following, a disaster aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by disaster. Response process begins as soon as it becomes apparent that a disastrous event is imminent and lasts until the disaster is declared to be over. Since response is conducted during periods of high stress in a highly time-constrained environment and with limited information and recourses (in majority of the cases), it is by far, the most complex of four functions of disaster management. Response includes not only those activities that directly address the immediate needs, such as search and rescue, first aid and shelters, but also includes systems developed to coordinate and support such efforts. For effective response, all the stakeholders need to have a clear perception/vision about hazards, its consequences and actions that need to be taken in the event of it. The Revenue Department of the State is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever it occurs. The District EOC, ERCs and other control rooms at the District level should be activated with full strength.

➤ District Disaster Information Management System-Flow Chart

Any disaster related information flow happens in both the directions, from nodal authorities to concerned stakeholders, and from the stakeholders to the nodal authorities/ departments as well, stage wise. And for each stage, there should be a designated nodal officer, and also should be dedicated control room, to be used exclusively for the disaster related information dissemination purpose. Control room is a nodal centre in terms of disaster Management which performs the function of collecting and transmitting information to the appropriate places and people. Therefore Control room has to be equipped with the latest telecom communication facilities. All the important information of the district administration in case of emergency is also available in the control rooms. The control room is connected to all the line departments, collectorate, NGOs, police control room, and block control room which is connected to village task force and irrigation control room. Collector controls all the information flow through control room in the district and with the state authority. The enclosed schematic diagram is self explanatory, and it addresses the linkages of the flow at district and sub district level.



Alert Mechanism – Early Warning

On the receipt of warning or alert from any such agency which is competent to issue such a warning, or on the basis of reports from District Collector of the occurrence of a disaster, the response structure of the State Government will be put into operation. The Chief Secretary/Relief Commissioner will assume the role of the Chief of Operations during the emergency situation. The details of agencies competent enough for issuing warning or alert pertaining to various types of disasters are given below;

<u>Disaster</u>	<u>Agencies</u>
Earthquakes	IMD/ISR
Floods	Meteorological Department, Irrigation
TSuanmis	IMD/ISR/INCOIS
Cyclones	IMD
Epidemics	Public Health Department
Road Accidents	Police
Industrial and Chemical Accidents	DISH, Police, Collector
Drought	Agriculture
Fire	Fire Brigade, Police, Collector
Rail Accident	Railways, Police, Collector
Air Accident	Police, Collector, Airlines
Ammunition Depot-Fire	Army, Police, Collector.

➤ **District CMG meeting**

At the District level, the District Crisis Management Group (DCG) is an apex body to deal with major chemical accidents and to provide expert guidance for handling them. DCG has a strength of 34 members which includes District Collector, SDM and Dy. Collector, DDO, Dy. Director – Industrial Safety & Health, SP, PI, Fire Superintendent of the City Corporations or important Municipalities, Chief District Health Officer, Civil Surgeon, SE, Chief Officer, Dy. Chief Controller of Explosives, Commandant – SRPF, Group-I, Dy. Director – Information to name a few. At Taluka level Local Crisis Management Group (LCG) is formed for coordination of activities and executing the operations. DCGs as well as LCG. Meeting will meet periodically twice in a year.

Activation of EOC

Emergency Operation Center (EOC) is a physical location and normally includes the space, facilities and protection necessary for communication, collaboration, coordination and emergency information management.

The EOC is a nodal point for the overall coordination and control of relief work. In case of an L1 Disaster the The Local Control room will be activated, in case of an L2 disaster DEOC will be activated along inform with the SEOC.

Media Management: -

The role of media, both print and electronic, in informing the people and the authorities during emergencies becomes critical, especially the ways in which media can play a vital role in public awareness and preparedness through educating the public about disasters; warning of hazards; gathering and transmitting information about affected areas; alerting government officials, helping relief organizations and the public towards specific needs; and even in facilitating discussions about disaster preparedness and response. During any emergency, people seek up-to-date, reliable and detailed information.

The State Government has established an effective system of collaborating with the media during emergencies. At the State Emergency Operation Centre (SEOC), a special media cell has been created which is made operational during emergencies. Both print and electronic media is regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground. A similar set up is also active at the District Emergency Operation Centre (DEOC).

Media can play crucial role during response time. Media management to ensure precise communication of the impact of disaster and relief measures being taken and generate goodwill among community and other stakeholders;

Role & Responsibilities of each department.

➤ Each Department and Govt. agency involved in Disaster Management and Mitigation will :

- Designate a Nodal officer for emergency response and will act as the contact person for that Department/agency.
- Ensure establishment of fail-safe two-way communication with the state, district and other Emergency control rooms and within the organization.
- Emphasis on communication systems used regularly during LO with more focus on the use of VHF's with automatic repeaters, mobile phones with publicized numbers, VHF radio sets etc. It should be remembered that SAT phones fail during prolonged emergencies and electric failure if the phones cannot be re-charged.
- Work under the overall supervision of the IC / the District Collectors during emergencies.

Other Departmental plan incorporated in DMRP

1. Agriculture

□□□□ Prevention Activities:

- awareness generation regarding various plant diseases, alternate cropping practices in Disaster-prone areas, Crop Insurance, provision of credit facilities, proper storage of seeds, etc.
- Hazard area mapping (identification of areas endemic to pest infections, drought, flood, and other hazards).
- Develop database village-wise, crop-wise, irrigation source wise, insurance details, credit etc.
- Regular monitoring at block level; the distribution and variation in rainfall. Prepare the Farmers and department officers to adopt contingency measures and take up appropriate Course of action corresponding to the different emerging conditions.
- Detail response manuals to be drawn up for advising the farmers for different types of Disasters, e.g., rain failure in July or September & development of a dynamic response plan Taking into account weekly rainfall patterns.
- Develop IEC materials to advise the farming communities on cropping practices and Precautionary measures to be undertaken during various disasters.
- Improving irrigation facilities, watershed management, soil conservation and other soil, water and fertility management
- Measures keeping in mind the local agro climatic conditions and the proneness of the area to specific hazards.
- Promotion of alternative crop species and cropping patterns keeping in mind the vulnerability Of areas to specific hazards.
- Surveillance for pests and crop diseases and encourage early reporting.
- 11. □□ Encourage promotion of agro service outlets/enterprise for common facilities, seed and agro input store and crop insurance.

0.2 Preparedness Activities before disaster seasons

- Review and update precautionary measures and procedures, especially ascertain that adequate stock of seeds and other agro inputs are available in areas prone to natural calamities.
- Review the proper functioning of rain gauge stations, have stock for immediate replacement of broken / non-functioning gadgets/equipments, record on a daily basis rainfall data, evaluate the variation from the average rainfall and match it with the rainfall needs of existing crops to ensure early prediction of droughts.

□□□□ Response Activities:

1. Management of control activities following crop damage, pest infestation and crop disease to minimize losses.

2. Collection, laboratory testing and analysis of viruses to ensure their control and eradication.
3. Pre-positioning of seeds and other agro inputs in strategic points so that stocks are readily available to replace damage caused by natural calamities.
4. Rapid assessment of damage to soil, crop, plantation, irrigation systems, drainage, embankment, other water bodies and storage facilities and the requirements to salvage, replant, or to compensate and report the same for ensuring early supply of seeds and other agro inputs necessary for re-initiating agricultural activities where crops have been damaged.
5. Establishment of public information centers with appropriate and modern means of communication, to assist farmers in providing information regarding insurance, compensation, repair of agro equipments and restarting of agricultural activities at the earliest.

Recovery Activities

- ☐☐☐ Arrange for early payment of compensation and crop insurance dues.
- ☐☐☐☐ Facilitate provision of seeds and other agro inputs.
- 3. Promotion of drought and flood tolerant seed varieties.
- ☐☐☐ Review with the community, the identified vulnerabilities and risks for crops, specific species, areas, which are vulnerable to repetitive floods, droughts, other natural hazards, water logging, increase in salinity, pest attacks etc. and draw up alternative cropping plans to minimize impacts to various risks.
- 5. Facilitate sanctioning of soft loans for farm implements.
- ☐☐☐☐ Establishment of a larger network of soil and water testing laboratories.
- ☐☐☐ Establishment of pests and disease monitoring system.
- ☐☐☐ Training in alternative cropping techniques, mixed cropping and other agricultural practices which will minimize crop losses during future disasters.

2. Health Department

2.1. Disaster Events

☐☐ **Prevention Activities:**

- ☐☐ Assess preparedness levels at State, District and Block levels.
- ☐☐ Identification of areas endemic to epidemics and natural disasters.
- ☐☐ Identification of appropriate locations for testing laboratories.
- ☐☐ Listing and networking with private health facilities.
- ☐☐ Developing a network of volunteers for blood donation with blood grouping data.
- ☐☐ Strengthening of disease surveillance, ensuring regular reporting from the field level workers (ANMs/LHV etc) and its compilation and analysis at the PHC and District levels, on a weekly basis (daily basis in case of an epidemic or during natural disasters), forwarding the same to the State Disease Surveillance Cell and monthly feed back from the State to the district and from the District to the PHC.
- ☐☐ Formation of adequate number of mobile units with trained personnel, testing facilities, communication systems and emergency treatment facilities.
- ☐☐ Identification of locations in probable disaster sites for emergency operation camps.
- ☐☐ Awareness generation about various infectious diseases and their prevention.
- ☐☐ Training and IEC activities
- ☐☐ Training of field personnel, Traditional Birth Attendants, community leaders, volunteers, NGOs and CBOs in first aid, measures to be taken to control outbreak of epidemics during and after a disaster, etc.

- ☐ ☐ Arrangement of standby generators for every hospitals.
- ☐ ☐ Listing of vehicles, repair of departmental vehicles that will be requisitioned during emergencies for transport of injured.

☐ ☐ **Preparedness Activities before Disaster Seasons**

☐ ☐ **For heat wave :**

☐ ☐ Preparation and distribution of IEC materials, distribution of ORS and other life-saving drugs, training of field personnel on measures to be taken for management of patients suspected to be suffering from heatstroke;

☐ ☐ For flood and cyclone : Assessment and stock piling of essential medicines, anti snake venom, halogen tablets, bleaching powders. ORS tablets, Pre-positioning of mobile units at vulnerable and strategic points.

☐ ☐ **Response activities:**

☐ ☐ Stock piling of life-saving drugs, detoxicants, anesthesia, Halogen tablets in vulnerable areas.

☐ ☐ Strengthening of drug supply system with powers for local purchase during Level-0.

☐ ☐ Situational assessment and reviewing the response mechanisms in known vulnerable pockets.

☐ ☐ Ensure adequate availability of personnel in disaster sites.

☐ ☐ Review and update precautionary measures and procedures.

☐ ☐ **Sanitation**

☐ ☐ Dispensing with post-mortem activities during L1, L2 and L3 when the relatives and/or the competent authority are satisfied about cause of death.

☐ ☐ Disinfections of water bodies and drinking water sources.

☐ ☐ Immunization against infectious diseases.

☐ ☐ Ensure continuous flow of information.

☐ ☐ **Recovery Activities**

☐ ☐ Continuation of disease surveillance and monitoring.

☐ ☐ Continuation of treatment, monitoring and other epidemic control activities till the situation is brought under control and the epidemic eradicated.

☐ ☐ Trauma counseling.

☐ ☐ Treatment and socio-medical rehabilitation of injured or disabled persons.

☐ ☐ Immunization and nutritional surveillance.

☐ ☐ Long term plans to progressively reduce various factors that contribute to high level of vulnerability to diseases of population affected by disasters.

2.2 Epidemics

☐ ☐ **Preventive Activities:**

☐ ☐ Supply of safe drinking water, water quality monitoring and improved sanitation.

☐ ☐ Vector Control programme as a part of overall community sanitation activities.

☐ ☐ Promotion of personal and community latrines.

☐ ☐ Sanitation of sewage and drainage systems.

☐ ☐ Development of proper solid waste management systems.

☐ ☐ Surveillance and spraying of water bodies for control of malaria.

☐ ☐ Promoting and strengthening Primary Health Centres with network of paraprofessionals to improve the capacity of surveillance and control of epidemics.

☐ ☐ Establishing testing laboratories at appropriate locations to reduce the time taken for early diagnosis and subsequent warning.

☐ ☐ Establishing procedures and methods of coordination with the Health Department, other local authorities/departments and NGOs to ensure that adequate prevention and preparedness measures have been taken to prevent and / or minimise the probable outbreak of epidemics.

☐ ☐ Identification of areas prone to certain epidemics and assessment of requirements to control

and ultimately eradicate the epidemic.

- ☐ ☐ Identification of appropriate locations and setting up of site operation camps for combating epidemics.

- ☐ ☐ Listing and identification of vehicles to be requisitioned for transport of injured animals.

- ☐ ☐ Vaccination of the animals and identification of campsites in the probable areas.

- ☐ ☐ Promotion of animal insurance.

- ☐ ☐ Tagging of animals

- ☐ ☐ Arrangement of standby generators for veterinary hospitals.

- ☐ ☐ Provision in each hospital for receiving large number of livestock at a time.

- ☐ ☐ Training of community members in carcasses disposal.

- ☐ ☐ **Preparedness activities before disaster seasons**

- ☐ ☐ Stock piling of water, fodder and animal feed.

- ☐ ☐ Pre-arrangements for tie-up with fodder supply units.

- ☐ ☐ Stock-piling of surgical packets.

- ☐ ☐ Construction of mounds for safe shelter of animals.

- ☐ ☐ Identification of various water sources to be used by animals in case of prolonged hot and dry spells.

- ☐ ☐ Training of volunteers & creation of local units for carcass disposal.

- ☐ ☐ Municipalities / Gram Panchayats to be given responsibility for removing animals likely to become health hazards.

- ☐ ☐ **Response Activities:**

- ☐ ☐ Control of animal diseases, treatment of injured animals, Protection of lost cattle.

- ☐ ☐ Supply of medicines and fodder to affected areas.

- ☐ ☐ Ensure adequate availability of personnel and mobile team.

- ☐ ☐ Disposal of carcasses ensuring proper sanitation to avoid outbreak of epidemics.

- ☐ ☐ Establishment of public information centre with a means of communication, to assist in providing an organized source of information.

- ☐ ☐ Mobilizing community participation for carcass disposal.

- ☐ ☐ **Recovery Activities:**

- ☐ ☐ Assess losses of animals assets and needs of persons and communities.

- ☐ ☐ Play a facilitating role for early approval of soft loans for buying animals and ensuring insurance coverage and disaster proof housing or alternative shelters/ mounds for animals for future emergencies.

- ☐ ☐ Establishment of animal disease surveillance system.

3. Water Supplies and Sanitation (GWSSB)

- ☐ ☐ **Prevention Activities:**

- ☐ ☐ Provision of safe water to all habitats.

- ☐ ☐ Clearance of drains and sewerage systems, particularly in the urban areas.

- ☐ ☐ Assess preparedness level.

- ☐ ☐ Annual assessment of danger levels & wide publicity of those levels.

- ☐ ☐ Identify flood prone rivers and areas and activate flood monitoring mechanisms.

- ☐ ☐ Provide water level gauge at critical points along the rivers, dams and tanks.

- ☐ ☐ Identify and maintain of materials/tool kits required for emergency response.

- ☐ ☐ Stock-pile of sand bags and other necessary items for breach closure at the Panchayat level.

- ☐ ☐ **Preparedness Activities for disaster seasons**

- ☐ ☐ Prior arrangement of water tankers and other means of distribution and storage of water.

- ☐ ☐ Prior arrangement of stand-by generators.

- ☐ ☐ Adequate prior arrangements to provide water and halogen tablets at identified sites to be used as relief camps or in areas with high probability to be affected by natural calamities.

- ☐ ☐ Raising of tube-well platforms, improvement in sanitation structures and other infrastructural measures to ensure least damages during future disasters.
- ☐ ☐ Riser pipes to be given to villagers.
- ☐ ☐ **Response Activities:**
- ☐ ☐ Disinfections and continuous monitoring of water bodies.
- ☐ ☐ Ensuring provision of water to hospitals and other vital installations.
- ☐ ☐ Provision to acquire tankers and establish other temporary means of distributing water on an emergency basis.
- ☐ ☐ Arrangement and distribution of emergency tool kits for equipments required for dismantling and assembling tube wells, etc.
- ☐ ☐ Carrying out emergency repairs of damaged water supply systems.
- ☐ ☐ Disinfection of hand pumps to be done by the communities through prior awareness activities & supply of inputs.
- ☐ ☐ Monitoring flood situation.
- ☐ ☐ Dissemination of flood warning.
- ☐ ☐ Ensure accurate dissemination of warning messages to GPs & Taluka with details of flow.
- ☐ ☐ Monitoring and protection of irrigation infrastructures.
- ☐ ☐ Inspection of bunds of dams, irrigation channels, bridges, culverts, control gates and overflow channels.
- ☐ ☐ Inspection and repair of pumps, generator, motor equipments, station buildings.
- ☐ ☐ Community mobilisation in breach closure

- ☐ ☐ **Recovery Activities:**
- ☐ ☐ Strengthening of infrastructure.
- ☐ ☐ Sharing of experiences and lessons learnt.
- ☐ ☐ Training to staff, Review and documentation.
- ☐ ☐ Development of checklists and contingency plans.
- ☐ ☐ Strengthening of infrastructure and human resources.
- ☐ ☐ Review and documentation.
- ☐ ☐ Sharing of experiences and lessons learnt.
- ☐ ☐ Training of staff.
- ☐ ☐ Development of checklists and contingency plans.

4. Police:

- ☐ ☐ **Prevention Activities:**
- ☐ ☐ Keep the force in general and the RAF in particular fighting fit for search, rescue, evacuation and other emergency operations at all times through regular drills.
- ☐ ☐ Procurement and deployment of modern emergency equipments while modernizing existing infrastructure and equipments for disaster response along with regular training and drills for effective handling of these equipments.
- ☐ ☐ Focus on better training and equipments for RAF for all types of disasters.
- ☐ ☐ Rotation of members of GSDRAF so that the force remains fighting fit.
- ☐ ☐ Ensure that all communication equipments including wireless are regularly functioning and deployment of extra wireless units in vulnerable pockets.
- ☐ ☐ Ensure inter changeability of VHF communication sets of police and GSDMA supplied units, if required.
- ☐ ☐ Keeping close contact with the District Administration & Emergency Officer.
- ☐ ☐ Superintendent of Police be made Vice Chairperson of District Natural Calamity Committee.
- ☐ ☐ Involvement of the local army units in response planning activities and during the preparation of the contingency plans, ensure logistics & other support to armed forces during emergencies.

□□ Response Plan:

- Security arrangements for relief materials in transit and in camps etc.
- Senior police officers to be deployed in control rooms at State & district levels during L 1 level deployment onwards.
- Deploy personnel to guard vulnerable embankments and at other risk points.
- Arrangement for the safety.
- Coordinate search, rescue and evacuation operations in coordination with the administration
- Emergency traffic management.
- Maintenance of law and order in the affected areas.
- Assist administration in taking necessary action against hoarders, black marketers etc.

5. Civil Defence

□□ Prevention Activities

- Organize training programmes on first-aid, search, rescue and evacuation.
- Preparation and implementation of first aid, search and rescue service plans for major public events in the State.
- Remain fit and prepared through regular drills and exercises at all times.

□□ Response Activities

- Act as Support agency for provision of first aid, search and rescue services to other emergency service agencies and the public.
- Act as support agency for movement of relief.
- Triage of casualties and provision of first aid and treatment.
- Work in co-ordination with medical assistance team.
- Help the Police for traffic management and law and order.

6. Fire Services:

□□ Prevention Activities:

- Develop relevant legislations and regulations to enhance adoption of fire safety measures.
- Modernization of fire-fighting equipments and strengthening infrastructure.
- Identification of pockets, industry, etc. which highly susceptible to fire accidents or areas, events which might lead to fires, building collapse, etc. and educate people to adopt safety measures. Conduct training and drills to ensure higher level of prevention and preparedness.
- Building awareness in use of various fire protection and preventive systems.
- Training the communities to handle fire emergencies more effectively.
- VHF network for fire services linked with revenue & police networks.
- Training of masons & engineers in fireproof techniques.
- Making clearance of building plans by fire services mandatory.

□□ Response Activities:

- Rescue of persons trapped in burning, collapsed or damaged buildings, damaged vehicles, including motor vehicles, trains and aircrafts, industries, boilers, trenches & tunnels.
- Control of fires and minimizing damages due to explosions.
- Control of dangerous or hazardous situations such as oil, gas and hazardous materials spill.
- Protection of property and the environment from fire damage.
- Support to other agencies in the response to emergencies.
- Investigation into the causes of fire and assist in damage assessment.

7. Civil Supplies:

□□ Preventive Activities

- Construction and maintenance of storage godowns at strategic locations.

- ☐ ☐ Stock piling of food and essential commodities in anticipation of disaster.
- ☐ ☐ Take appropriate preservative methods to ensure that food and other relief stock are not damaged during storage, especially precautions against moisture, rodents and fungus infestation.
- ☐ ☐ **Response Activities**
 - ☐ ☐ Management of procurement
 - ☐ ☐ Management of material movement
 - ☐ ☐ Inventory management
- ☐ ☐ **Recovery Activities**
 - ☐ ☐ Conversion of stored, unutilised relief stocks automatically into other schemes like Food for Work. Wherever, it is not done leading to damage of stock, it should be viewed seriously.

8. Public Works/ Rural Development Departments

- ☐ ☐ **Prevention Activities :**
 - ☐ ☐ Keep a list of earth moving and clearing vehicles / equipments (available with Govt. Departments, PSUs, and private contractors, etc.) and formulate a plan to mobilise those at the earliest.
 - ☐ ☐ Inspection and emergency repair of roads/ bridges, public utilities and buildings.
- ☐ ☐ **Response Activities**
 - ☐ ☐ Clearing of roads and establish connectivity. Restore roads, bridges and where necessary make alternate arrangements to open the roads to traffic at the earliest.
 - ☐ ☐ Mobilisation of community assistance for clearing blocked roads.
 - ☐ ☐ Facilitate movement of heavy vehicles carrying equipments and materials.
 - ☐ ☐ Identification and notification of alternative routes to strategic locations.
 - ☐ ☐ Filling of ditches, disposal of debris, and cutting of uprooted trees along the road.
 - ☐ ☐ Arrangement of emergency tool kit for every section at the divisional levels for activities like clearance (power saws), debris clearance (fork lifter) and other tools for repair and maintenance of all disaster response equipments.
- ☐ ☐ **Recovery Activities:**
 - ☐ ☐ Strengthening and restoration of infrastructure with an objective to eliminate the factor(s) which caused the damage.
 - ☐ ☐ Sharing of experiences and lessons learnt.
 - ☐ ☐ Training to staff, Review and documentation.
 - ☐ ☐ Development of checklists and contingency plans.

9. Energy:GEB

- ☐ ☐ **Prevention Activities:**
 - ☐ ☐ Identification of materials/tool kits required for emergency response.
 - ☐ ☐ Ensure and educate the minimum safety standards to be adopted for electrical installation and equipments and organise training of electricians accordingly.
 - ☐ ☐ Develop and administer regulations to ensure safety of electrical accessories and electrical installations.
 - ☐ ☐ Train and have a contingency plan to ensure early electricity supply to essential services

during emergencies and restoration of electric supply at an early date.

- ☐ ☐ Develop and administer code of practice for power line clearance to avoid electrocution due to broken / fallen wires.

- ☐ ☐ Strengthen high-tension cable towers to withstand high wind speed, flooding and earthquake, modernise electric installation, strengthen electric distribution system to ensure minimum damages during natural calamities.

- ☐ ☐ Conduct public/industry awareness campaigns to prevent electric accidents during normal times and during and after a natural disaster.

- ☐ ☐ **Response Activities:**

- ☐ ☐ Disconnect electricity after receipt of warning.

- ☐ ☐ Attend sites of electrical accidents and assist in undertaking damage assessment.

- ☐ ☐ Stand-by arrangements to ensure temporary electricity supply.

- ☐ ☐ Prior planning & necessary arrangements for tapping private power plants like those belonging to ICCL, NALCO, RSP during emergencies to ensure uninterrupted power supply to the Secretariat, SRC, GSDMA, Police Headquarters, All India Radio, Doordarshan, hospitals, medical colleges, Collectorate Control Rooms and other vital emergency response agencies. v Inspection and repair of high tension lines /substations/transformers/poles etc.

- ☐ ☐ Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems.

- ☐ ☐ Restore electricity to the affected area as quickly as possible.

- ☐ ☐ Replace / restore of damaged poles/ salvaging of conductors and insulators.

10. Fisheries

- ☐ ☐ **Prevention Activities**

- ☐ ☐ Registration of boats and fishermen.

- ☐ ☐ Building community awareness on weather phenomena and warning system especially on Do's and Don'ts on receipt of weather related warnings.

- ☐ ☐ Assist in providing life saving items like life jackets, hand radios, etc.

- ☐ ☐ Certifying the usability of all boats and notifying their carrying capacities.

- ☐ ☐ Capacity building of traditional fishermen and improvisation of traditional boats which can be used during emergencies.

- ☐ ☐ Train up young fishermen in search & rescue operation and hire their services during emergency.

- ☐ ☐ **Response Activities**

- ☐ ☐ Ensure warning dissemination to fishing communities living in vulnerable pockets.

- ☐ ☐ Responsible for mobilising boats during emergencies and for payment of wages to boatmen hired during emergencies.

- ☐ ☐ Support in mobilisation and additional deployment of boats during emergencies.

- ☐ ☐ Assess the losses of fisheries and aquaculture assets and the needs of persons and communities affected by emergency.

- ☐ ☐ **Recovery Activities**

- ☐ ☐ Provide compensations and advice to affected individuals, community.

11. Forest Department

- ☐ ☐ **Prevention activities**

- ☐ ☐ Promotion of shelter belt plantation.

- ☐ ☐ Publishing for public knowledge details of forest cover, use of land under the forest department, the rate of depletion and its causes.

- ☐ ☐ Keep saws (both power and manual) in working conditions.
- ☐ ☐ Provision of seedling to the community and encouraging plantation activities, promoting nurseries for providing seedlings in case of destruction of trees during natural disasters.

12. Transport Department:

☐ ☐ **Prevention Activities**

- ☐ ☐ Listing of vehicles which can be used for emergency operation.
- ☐ ☐ Safety accreditation, enforcement and compliance.
- ☐ ☐ Ensuring vehicles follow accepted safety standards.
- ☐ ☐ Build awareness on road safety and traffic rules through awareness campaign, use of different IEC strategies and training to school children.
- ☐ ☐ Ensure proper enforcement of safety regulations Response Activities.
- ☐ ☐ Requisition vehicles, trucks, and other means of transport to help in the emergency operations.
- ☐ ☐ Participate in post impact assessment of emergency situation.
- ☐ ☐ Support in search, rescue and first aid.
- ☐ ☐ Cooperate and appropriation of relief materials.

☐ ☐ **Recovery Activities**

- ☐ ☐ Provision of personal support services e.g. Counselling.
- ☐ ☐ Repair/restoration of infrastructure e.g. roads, bridges, public amenities.
- ☐ ☐ Supporting the GPs in development of storage and in playing a key role and in the coordination of management and distribution of relief and rehabilitation materials.
- ☐ ☐ The G.P. members to be trained to act as an effective interface between the community, NGOs, and other developmental organisations.
- ☐ ☐ Provide training so that the elected representatives can act as effective supportive agencies for reconstruction and recovery activities.

13. Panchayati Raj

☐ ☐ **Preventive Activities**

- ☐ ☐ Develop prevention/mitigation strategies for risk reduction at community level.
- ☐ ☐ Training of elected representatives on various aspects of disaster management.
- ☐ ☐ Public awareness on various aspects of disaster management.
- ☐ ☐ Organise mock drills.
- ☐ ☐ Promote and support community-based disaster management plans.
- ☐ ☐ Support strengthening response mechanisms at the G.P. level (e.g., better communication, local storage, search & rescue equipments, etc.).
- ☐ ☐ Clean drainage channels, trimming of branches before cyclone season.
- ☐ ☐ Ensure alternative routes/means of communication for movement of relief materials and personnel to marooned areas or areas likely to be marooned.
- ☐ ☐ Assist all the government departments to plan and prioritise prevention and preparedness activities while ensuring active community participation.

☐ ☐ **Response Activities**

- ☐ ☐ Train up the G.P. Members and Support for timely and appropriate delivery of warning to the community.
- ☐ ☐ Clearance of blocked drains and roads, including tree removal in the villages.
- ☐ ☐ Construct alternative temporary roads to restore communication to the villages.
- ☐ ☐ PRIs to be a part of the damage survey and relief distribution teams to ensure popular participation.
- ☐ ☐ Operationalise emergency relief centres and emergency shelter.

- ☐ ☐ Sanitation, drinking water and medical aid arrangements.
- ☐ ☐ IEC activities for greater awareness regarding the role of trees and forests for protection during emergencies and also to minimise environmental impact which results owing to deforestation like climate change, soil erosion, etc.
- ☐ ☐ Increasing involvement of the community, NGOs and CBOs in plantation, protection and other forest protection, rejuvenation and restoration activities.
- ☐ ☐ Plan for reducing the incidence, and minimise the impact of forest fire.

☐ ☐ **Response Activities :**

- ☐ ☐ Assist in road clearance.
- ☐ ☐ Provision of tree cutting equipments.
- ☐ ☐ Units for tree cutting and disposal to be put under the control of GSDMA, SRC, Collector during L1.
- ☐ ☐ Provision of building materials such as bamboos etc for construction of shelters.

☐ ☐ **Recovery Activities :**

- ☐ ☐ Take up plantation to make good the damage caused to tree cover.

14. Information & Public Relations Department

☐ ☐ **Prevention Activities**

- ☐ ☐ Creation of public awareness regarding various types of disasters through media campaigns.
- ☐ ☐ Dissemination of information to public and others concerned regarding doís and doníts of various disasters.
- ☐ ☐ Regular liaisoning with the media.

☐ ☐ **Response Activities**

- ☐ ☐ Setting up of a control room to provide authentic information to public regarding impending emergencies.
- ☐ ☐ Daily press briefings at fixed times at district level to provide official version.
- ☐ ☐ Media report & feedback to field officials on a daily basis from L1 onwards.
- ☐ ☐ Keep the public informed about the latest emergency situation (area affected, lives lost, etc).
- ☐ ☐ Keep the public informed about various post-disaster assistances and recovery programmes.

16. Revenue Department

- ☐ ☐ Co-ordination with Govt. of Gujarat Secretariat and Officers of Govt. of India
- ☐ ☐ Overall control & supervision
- ☐ ☐ Damage assessment, finalisation of reports and declaration of L1/L2 disasters
- ☐ ☐ Mobilisation of finance

17. Home Department

- ☐ ☐ Requisition, deployment and providing necessary logistic support to the armed forces.
- ☐ ☐ Provide maps for air dropping, etc.

18. Gujarat Disaster Rapid Action Force

☐ ☐ **Response**

- ☐ ☐ To be trained and equipped as an elite force within the Police Department and have the capacity to immediately respond to any emergency.

- Unit to be equipped with life saving, search & rescue equipments, medical supplies, security Arrangements, communication facilities and emergency rations and be self-sufficient.
- Trained in latest techniques of search, rescue and communication in collaboration with International agencies.
- **Co-opt doctors into the team.**

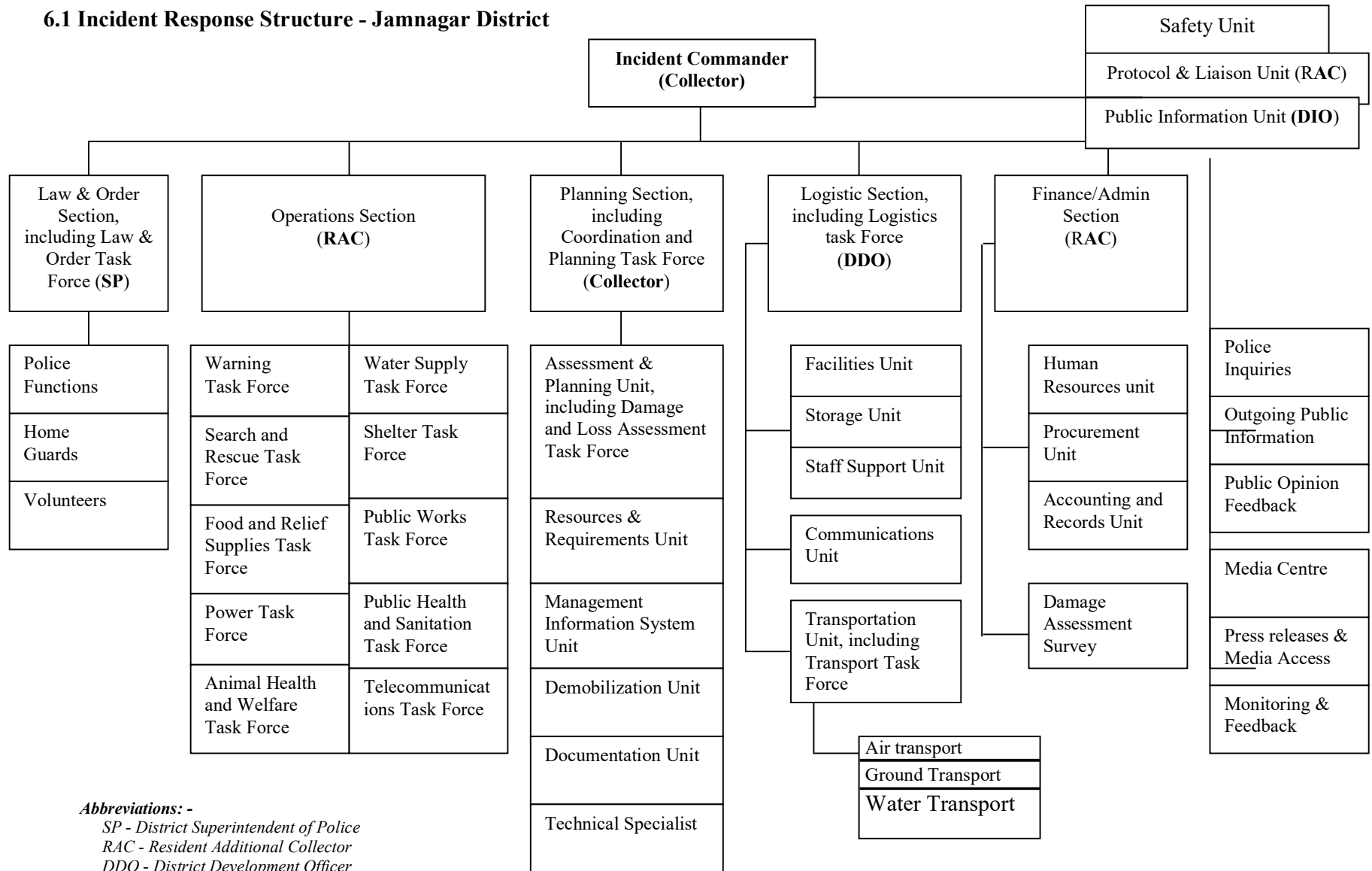
Disaster Response and District Incident Command System

The response to disasters in the district will be organized according to the Incident Command System as adapted to conditions in Gujarat State (ICS/GS). The argument for the ICS is that its fundamental elements –unity of command, clarity of objectives and efficient resource use are common to the effective response to any disaster.

In Jamnagar district, the multi-hazard response plan focused on sector specific action plans unlike the department specific planning approach in the previous plan documents. The disaster response is led by the **District Emergency Operation Center (DEOC)** under the command and control of the District Collector.

The organizational structure of the Incident command system of Jamnagar district is given in the next page.

6.1 Incident Response Structure - Jamnagar District



IRS-Basic Functions

The basic functional descriptions for key elements in the district Incident command System are described below. Not all these functions need to be filled (activated) in every disaster. But the ensemble of these functions represents all the key tasks which need to be accomplished in a well planned manner and executed in effective and cost efficient disaster response effort.

I. Incident Command: responsible for overall management of an incident based on clearly stated mandate from higher authority and based on focused objectives responding to the immediate impact of the incident.

The Incident command is led by an Incident Commander, who can be assisted by a Dy. Incident Commander. In each incident will have as many as many commanders and other staff as there are shifts in the incident operation. Shifts will normally not exceed 12 hours at a time and should be standardized to 8 hours each as soon as possible after the start of the incident.

II. Command Staff Units

Safety unit:

Responsible for ensuring the safe accomplishment of all activities undertaken in response to the incident. This task is accomplished through developing incident specific safety guidance documents, reviewing and advising on the safety of plans and monitoring actual operations to ensure safety of personnel and survivors

Protocol and Liaison unit:

Responsible for all official visits as well as liaison between the incident command and organizations providing personnel or material support being used to manage the incident. The first point of contact for NGOs and others coming to the disaster as well as responsible for managing coordination meetings (some of which may actually be held by taskforces or sections).

Public Information Unit:

Responsible for all media and public information tasks related to the incident. To accomplish its task, the unit can have the following sub units:

- **public inquiries:** to handle non media requests for information
- **outgoing public information:** to handle public information dissemination
- **Public opinion feedback:** to collect information from the public (incident survivors and the non-affected)
- **Media center:** to provide a single point of contact for all media involved in the incident.
- **Press release and media access:** produce all releases and provide a single point of contact to arrange media access to the incident.
- **Monitoring and Feedback:** to monitor media reports and provide feedback to the incident management on coverage of the incident and to also take corrective measures and issue contradictions if required.

III. Law and Order Section

Responsible for assuring the execution of all laws and maintenance of order in the area affected by the incident. The law and order section incorporates law and order taskforce which may be created to deal with a disaster.

Police functions: as determined by the normal mandate for and special duties assigned to the police service

Home guard: as determined by the normal mandate for and special duties assigned to the home guard

Volunteers: supporting police and home guards in non-enforcement tasks, such as patrolling, monitoring and evacuations

IV. Operation Section

Responsible for assuring specific operations according to objectives and plans to address the immediate impacts of the incident. Taskforces under the operation section will deal with specific functional tasks, such as search and rescue, the provision of water or shelter. The composition and size of these taskforces depends on the nature of the incident.

The District administration of Jamnagar has identified 16 expected task forces for key response operation functions that are described below. Additional taskforces can be added under the operations section as needed by the circumstances of a disaster. Each Taskforce is led by one organization and supported by other organizations.

Emergency Taskforce	Operation	Functions
1. Coordination and Planning		Coordinate early warning, Response & Recovery Operations
2. Administration and Protocol		Support Disaster Operations by efficiently completing the paper work and other Administrative tasks needed to ensure effective and timely relief assistance
3. Warning		Collection and dissemination of warnings of potential disasters
4. Law and Order		Assure the execution of all laws and maintenance of order in the area affected by the incident.
5. Search and Rescue (including Evacuation)		Provide human and material resources needed to support local evacuation, search and rescue efforts.
6. Public Works		Provide the personnel and resources needed to support local efforts to reestablish normally operating infrastructure.
7. Water		Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.
8. Food and Relief Supplies		Assure the provision of basic food and other relief needs in the affected communities.
9. Power		Provide the resources to reestablish normal power supplies and systems in affected communities.

10. Public Health and sanitation (including First aid and all medical care)	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
11. Animal Health and Welfare	Provision of health and other care to animals affected by a disaster.
12. Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations
13. Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.
14. Survey (Damage Assessment)	Collect and analyse data on the impact of disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.
15. Telecommunications	Coordinate and assure operation of all communication systems (e.g.; Radio, TV, Telephones, and Wireless) required to support early warning or post disaster operations.
16. Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the disaster.

The specific response roles and responsibilities of the taskforces indicated above is that these roles and responsibilities will be executed and coordinated through the ICS/GS system. For example, in flood, search & rescue would come under the Operations section, Transport would come under the Logistics Section and Public Information under the Public Information Unit.

V. Planning Section

Responsible for collecting and analyzing information and developing plans to address the objectives set to address the incident. The overall work of the planning section will include efforts undertaken by any planning and coordination taskforce which is established as part of the response to a disaster. Units under the section include:

1. Assessment and planning
2. Resources and Requirements
3. Management information system
4. documentation
5. Demobilization and
6. Technical specialists

VI. Logistic section

Responsible for all task and functions related to provision of material and other resources needed for operations and the physical and material support and operation of the incident management team. This section includes transportation taskforce established to support disaster operations. Logistics tasks are through the following units:

1. storage and supply
2. Facilities
3. staff support
4. communications
5. transportation (include ground, air water):

VII. Finance and Administration

Responsible for managing all financial and administrative tasks related to incident field operations. These tasks may, but would not usually include disbursement of financial aid to those affected by an incident. The task of this section are accomplished through following units: 1. Human resources; 2. procurement; and 3. accounting and records

6.2 Cross-Task Force Action Matrix

(Gray areas indicate where cooperation between task forces was noted as needed during action plan development.)

Task Force	Warning	Law & Order	SAR & Evacuation	Public Works	Water	Food & Relief Supplies	Power	Health	Animal Health	Shelter	Logistics	Damage Assessment	Tele-communications	Media
Coordination & Planning														
Warning														
Law & Order														
SAR/Evacuation														
Public Works														
Water														
Food & Relief Supplies														
Power														
Health														
Animal Health														
Shelter														
Logistics														
Damage Assessment														
Telecommunications														

6.3 TASK FORCE, SUPPORTING ORGANIZATIONS VIS-A VIS IRS/GS SECTION MATRIX

A) The COMPOSITION of the TASKFORCES is given in the table below:

S. No.	Task Force	Taskforce Leader	Supporting members / Organizations	ICS/GS Section / Unit
1.	Planning and Coordination	Collector	DDO, SP, Commissioner JMC, RAC and Mamlatdar	Planning
2.	Administration & Protocol	RAC	DDO, SP, Commissioner JMC, RAC and Mamlatdar	Finance & Admin.
3	Damage Assessment/Survey	RAC	DIC, Dy. DDO, Ex. Engr., R&B, DAO, Fisheries	Planning
4	Warning	RAC	RAC, Dy. Mamlatdar, Control Room, District Information Officer (DIO)	Operation
5	Communications	RAC	Dy. Mamlatdars, Mobile Operators, TV, Radio, Port Office GMB, Police, Forests	Logistics
6	Media	District Information Officer	Information Department, Print, Media, TV, Journalists, NGOs	Public Information
7	Logistics	DDO	RTO, DSO, FPS, Private & Public sector, Municipal water supply board, Mamlatdar, Dist. Supply Mamlatdar	Logistics
8	Law & Order	DSP	Dy. SP, Home Guards Commandant, NGOs, Para-military and Armed Forces	Law & Order
9	Search & Rescue	Dy. Collector Civil Defence	Mamlatdar, TDO, Police, Executive Engr., JMC Fire Brigade, RTO, State Transport, Health Deptt.	Operation
10	Public Works	Ex. Engr. R&B (State)	Irrigation, Ex. Engr., Panchayat, NGOs, Water Supply Board, Municipalities, Home Guards, Police	Operation
11	Shelter	Dist. Primary Education Officer	School Principal, Teachers, Health, PHC, State Transport, Water Supply, RTO, Mamlatdar, TDO.	Operation

12	Water Supply	Ex. Engr. GWSDB / Ex. Engr. Water Works JMC	Dy. Ex. Engr., Talati, Mamlatdar, TDO, Health, Dy. Engr. JMC	Operation
13	Food & Relief Supplies	Dist. Supply Officer	FPS, PDS, Mamlatdar, NGO, RTO, State Transport, Municipality, DRDA, Police, Home guard	Logistics
14	Power	Supt. Engr. GEB	Ex. Engr., Dy. Engr. Technical, GEB, Transport	Operation
15	Public Health & sanitation	Chief district health Officer (CDHO)	Supt. GG Hospital, JMC PHCs, CHCS, Municipality, Red Cross, Fire Brigade JMC, Civil Defence, R&B, NGOs, Doctors, TDO, Mamlatdar	Operation
16	Animal Health & Welfare	Dy. Director Animal Husbandry	Veterinary Inspector, NGOs	Operations

6.4 DISTRICT INCIDENT RESPONSE STRUCTURE-KEY OFFICERS

Taskforce	Taskforce Operation Room/Contact Number	Taskforce leader/Contact Number	TASKFORCE-Alternate LEADER /Contact Number
Incident Commander - District Collector 02882555869 99784 06210 Alternate Incident Commander- Resident Addl. District Collector 2550284-9978405210			
1. Warning and Communications	RAC Office	RAC 02882550284/9978405210	-
2. Law & Order	Police Control Room (CR)	DSP 99784 05639 0288- 2554203	Dy. SP/ 0288 2550317 8200798984
3. Search & Rescue	Fire Brigade CR	Chief fire Officer 2672208/2550340/ M-98795 31101 or Deputy Collector (CivilDefense) 2882540371	Dy. Municipal Commissioner, JMC/
4. Public Works	R&B-CR	Ex. Engr, R&B/ 0288 2550362, 9426464610	
5. Shelter	Edu. Office-CR	District Prim. Edu. Officer/ 0288 2550286/87/88	
6. Water Supply	GWSSB-CR	Ex. Engr. GWSSB/ 0288 2554225,2677279	Ex.Engr. Waterworks, JMC
7. Food & Relief supplies	DSO-CR &DDO office	District Supply Officer 0288 2553897	
8. Public Health & Sanitation	District Health Centre,	CDHO 0288 2671097	
9. Power	GEB-CR	Supt. Engr. GEB/ 0288 2541843 (O) 2550301	
10. Logistics	DDO office	DDO (O) 2553901 (F) 2552394	Dy. DDO 2672466
11. Animal Health & Welfare	A & H Office	Dy. Director, A&H/ 0288 2678424	
12. Damage Assessment/Survey	RAC office	Resident Addl. Collector/ 0288 2550284 9978405210	
13. Media/public Information	Information Dept. CR	District Info Officer/ 0288 2679234	Dy. DIO 2679234
14. Planning and coordination	Collector's office	Collector / 02882555869 9978406210	RAC 9978405210
15.Finance/Administration/protocol	RAC office	RAC / 0288 2550284 9978405210	DEOC 2553404

***Note:** for municipal areas, the Chief fire Officer is the taskforce leader of the Search & Rescue. While a Deputy collector should be appointed as taskforce leader for search and Rescue operation in non-municipal areas.*

6.5 Emergency Operation Centers/Control Rooms

- **District Level Control Room (DCR)**

The District Control Room is located at District Collector's Office. It is also the central point for information gathering, processing and decision making more specifically to combat the disaster. Most of the strategic decisions are taken in this control room with regard to the management of disaster based on the information gathered and processed. The Incident Commander takes charge at the District Control Room and commands the emergency operations as per the Incident Command System organizational chart.

All the task force leaders shall take position in the District Control Room along with Incident Commander to enable one point coordination for decision-making process.

- **Task Force Operation Room (TFOR)**

Individual Task Force function shall activate & operate their respective control rooms in their office manned by a competent person who is proficient in communication and technically capable of coordinating with Taluka Level Control Room and District Control Room and mobilize requisite resources to the disaster site.

- **Taluka Level Control Room (TLCR)**

The Taluka Level Control Room shall be located at the Office of Tahasildar. The Liaison Officers of the respective Talukas shall take charge of the Control Room. The respective Liaison Officers shall coordinate between the task group members working at disaster sites and TFCR for mobilization of resources and dissemination of instructions received from TFCR/DCR.

- **Facilities at District Control Room**

The District Control Room shall be equipped with but not limited to the following items:

- Telephones
- Facsimile:
- Handheld Radios and Base Stations
- Satellite Telephone
- One PC with e-mail, Internet and web site facilities
- Marker board - 2 Nos. with adequate markers
- Conference table with Chairs(16)
- A copy of Disaster Management Plan
- Drawings showing safe assembly points
- Other relevant documents, if any

- **Facilities at Task Force Operation Rooms (TFOR)**

The following facilities are maintained inside TFCR:

- Telephones
- Facsimile
- Satellite Phone (no immediately)- it is desirable.
- Hand held Radios/Base Stations
- Marker board (1)
- A copy each of Disaster Management Plan and Task Force Plan
- Other relevant documents, if any

- **Facilities at Taluka Level Control Rooms (TLCR)**

The following facilities are maintained inside TFCR:

- Telephones
- Facsimile
- Satellite Phone (desirable)
- Hand held Radios/Base Stations
- Marker board (1)
- A copy each of Disaster Management Plan and Taluka Level Plan
- Other relevant documents, if any

Responsibility of up keeping and maintenance of all the above items / facilities in the respective Control rooms is given as below.

DCR : District Collector or any person nominated

TFCR : Respective Task Force Leader

TLCR : Respective Taluka Liaison Officer

The above responsible Depts./ personnel shall carryout periodic inspection of such facilities in their respective control rooms at the frequency set by them and maintain records on the same.

6.6 Emergency Communication Systems

Communication system is very crucial for effective control of any disaster. The communication philosophy adopted by Disaster Management team during the disaster is given as below:

In the event of collapse of any communication facility / Communication infra-structure as a cascading effect/consequence of disaster, Telecommunication Task Force Leader shall ensure immediate restoration of such facility or infrastructure to ensure uninterrupted communication for effective disaster management operations.

Synthesized Radio Communication

All the Control Rooms are equipped with Radio base stations and all the task force leaders and their teams are provided with hand held radio sets. The different user groups are operating at different frequency channels allotted to them for ease in communication in respective groups. The table below shows the allotted frequency channel for individual Task Force. All the sets are programmed for different groups' frequencies to facilitate horizontal communication among the different task groups.

S. No.	Task Force / Functional Area	Channel #
1.	DCR	1
2.	Law & Order & its TFOR	2
3.	Search & Rescue & its TFOR	3
4.	Public Works & its TFOR	4
5.	Shelter & its TFOR	5
6.	Water Supply & its TFOR	6
7.	Food & Social Service & its TFOR	7
8.	Power & its TFOR	8
9.	Public Health & Sanitation & its TFOR	9
10.	Logistics & its TFOR	10
11.	Animal Health & Welfare & its TFOR	11
12.	Relief Supplies & its TFOR	12
13.	Communication & its TFOR	13
14.	Survey & its TFOR	14
15	Taluka Level Control Room (TLCR)	15

At present, "Hand held radio sets" are with the District Magistrate, DDO, DSP, fire Brigade and Forest department. If possible, Health Personnel may be given these sets later.

Telephones

Telephones are provided at all the Control Rooms.

Alternate Communication System

There could be a situation when all the communication facilities and systems may come to halt due to collapse of communication facilities/infrastructures. In the event of such a failure, till the facility/infrastructure is restored made functional, following alternate systems shall be used based on the seriousness of the situation:

Satellite Communication System

Satellite communication shall be activated once all the communication systems fail. This facility is installed at all the control rooms. The Telecommunication Task Force Leader shall ensure that this facility is resumed on all such occasions.

Messengers

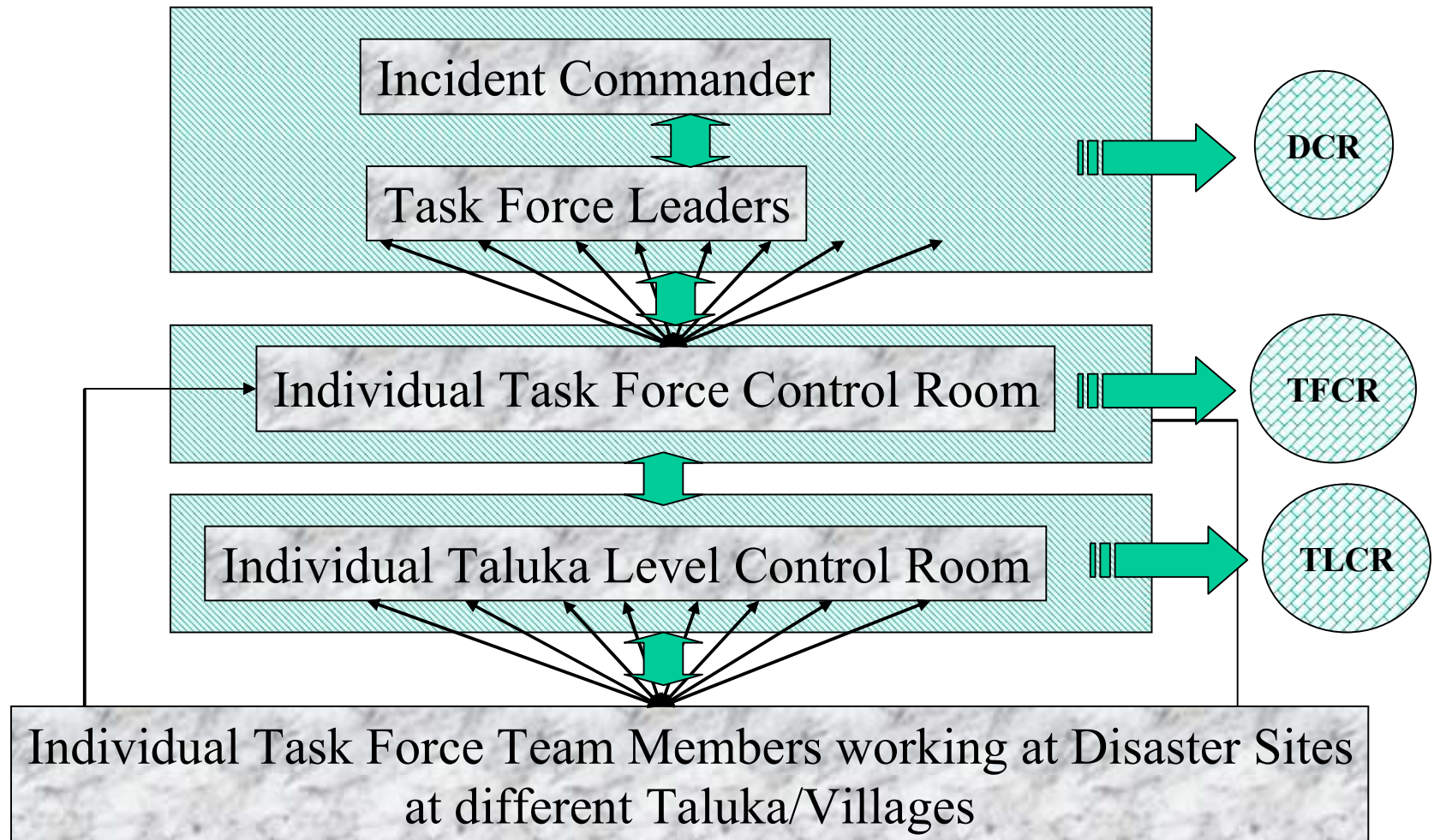
- Use of messengers as a last resort to carry the hand written messages to persons concerned in dealing with the disaster.
- A dedicated vehicle shall be made available by the Transport Task Force Leader upon request.

Right use of Communication facility

- The sense of urgency that every one experiences during disaster may lead to a chaotic situation if communication systems are not properly used.
- Communication shall be brief and simple.
- Telephones/ Hot Lines shall be used wherever possible to avoid congestion of Radio communication.
- All task force members shall communicate only through their allotted frequency channel to avoid congestion in the particular channel.

Personnel who use Radios should be acquainted with the operation of the equipment, various channels, code words, length of speech, etc.

Communication Flow Chart during Disaster Management



6.6.1 Roles and Responsibilities of Taskforces

The actual plans and SOPs developed by prime and supporting organizations for each disaster may result in a variation in the actual composition of each taskforce.

Once activated, these lead and supporting organizations create taskforces to accomplish the task as directed by the incident commander and appropriate section or unit leader. In addition, each taskforce lead organization will provide a report detailing activities undertaken and lessons learned during any disaster response operations. This report will be in addition to any purpose – specific reporting during the operation.

The tables below describe the taskforce action plans are intended to identify key actions:

- Before a disaster
- At the time of warning
- As the disaster occurs and
- In periods from:
 - 12 to 48 hours
 - 48 to 72 hours
 - 72 hours and beyond after a disaster

The action plans serve as quick reference guide to individual task force members, the coordination and planning taskforce and Authorities at the state level; as to what specific taskforces expect to be doing at specific stages before and after a disaster. This information will improve coordination within and between taskforces and with authorities outside Jamnagar district.

To facilitate coordination of actions between task forces an cross taskforce action matrix (fig-3.2) also included. This matrix can be used by

- Individual taskforces to identify actions by other taskforces in which they are involved
- The coordination and planning taskforce as an aid in coordinating activities across the response to a disaster.

Incident response System

6.6.1. TASKFORCE ACTION PLANS

6.6.1.1 Coordination and Planning: Coordinate early warning, response and recovery operations.

Task Force Leader: Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish a disaster management structure to the village level. (DDMC)	Links to State level and establishment of ICS structure.	On-going
Develop disaster plans at all levels down to the village level. (DDMC)		On-going
Hold regular meetings on disaster management including government, NGOs and private sectors. (DDMC)		Quarterly.
Continual training, including public awareness. (DDMS and Media Task Force).	Involvement of GSDMA and UNDP project.	On-going.
Check warning, communications and other systems (DDMC), including the use of drills.		On-going.
Warning		
Hold Crisis Management Committee (Collector)	Communications between Districts and with State Control Room.	On receipt of warning.
Mobilize task forces at all levels (District, Taluka, village depending on disaster) (CMC, Telecommunications, Media Task Forces)	Communications systems and procedures.	As decided by CMC.
Disseminate Information (CMC, Media Task Force)		As decided.
Mobilize resources to be positioned near vulnerable points depending on type of disaster.	Telecommunications systems, plans.	As decided.
Establish alternate communications system (Telecommunications Task Force)		As decided.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Disaster		
Start Search, Rescue and Evacuation activities. (CMC)	SAR Task Force operational.	Immediately
Begin Collecting Information on extent of damage and areas affected. (CMC)	Assessment teams have communications and transport.	Started in 4 hours.
Start plan development and provide instructions on where Task Forces should go and what they should do. (CMC, Collector)	Information on damage and areas affected.	Started in 4 hours.
Mobilize outside resources (CMC)	Information on damage and needs.	Started in 5 hours.
Provide Public Information (CMC, Media Task Force).		should be started in 6 hours).

12 Hours		
Begin regular reporting on actions taken and status by Task Forces. (Task Forces)	Operating communications system.	Started at 12 hours.
Reassess damage information, resources, needs and problem areas/activities. (CMC)		Started at 12 hours.
Begin rotation of staff (CMC)		Start at 12 hours.
Establish regular liaison with State Control Room.	Working communications systems.	Start at 12 hours.
Shift focus of efforts to relief. (CMC)		Open
Restore key infrastructure (CMC through Public Works and other Task Forces)		Before 48 hours.
48 hours		
Continue review and reassessment of operations (CMC)	Information on operations.	
Conduct broad damage assessment (CMC and Damage Assessment Task Force)		
Establish Temporary Rehabilitation Plan (CMC)		
Begin demobilization based on situation. (CMC)		
Focus on creating a sense of normalcy. (CMC)		Before 72 hours.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
72 hours		
Start Rehabilitation activities. (CMC)	Plan	
Conduct detailed survey of damage and needs. (CMC and Damage Assessment Task Force)		
Begin regular reporting on operations.	Information on operations.	As early as possible.
Restore all public and private sector services. (CMC)		As early as possible.
Lessons Learned meeting. (CMC and others)		After 2 weeks.
Final Report/Case Study (CMC)		After activities completed.

6.6.1.2 Warning: Collection and dissemination of warnings of potential disasters.
Task Force Leader: Resident District Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Verify communication and warning systems are functioning - drills		Every 15 days
Have warning messages prepared in advance.		
Warning		
Receive and dispatch warnings. (Task Force)	Coordinate with Telecommunications Task Force	As received.
Verify warnings received and understood. (Task Force)		Within 1-2 hours of dispatch.
Independently confirm warnings if possible (Task Force)		As time allows.

6.6.1.3 Law and Order: Assure the execution of all laws and maintenance of order in the area affected by the incident.

Task Force Leader: District Superintendent of Police

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Evaluate expected disaster needs verses normal resources. (Task Force)		Completed in 8 days.
Estimate personnel and resources needed for disasters. (Task Force)	Based on standard for number of security personnel per population depending on severity of disaster.	Completed in one week.
Planning and coordination with Revenue Dept. (Task Force)		
Conduct drills, including public awareness rising. (Task Force)	Includes participation of Media Task Force	Every 45 days.
Warning		
Verify communications system. (Wireless Inspector)		1-2 hours of warning.
Alert police and other Task Force members. (Superintendent of Police)		1-2 hours of warning.
Implement duty distribution SOP for personnel and other resources. (Superintendent of Police)		1-2 hours of warning.
Develop preliminary estimate of requirements to support other Task Forces. (Superintendent of Police)		1-2 hours of warning.
Disaster		
Get orders on deploying personnel from Control Room. (Superintendent of Police)	Operating communications system.	Immediately
Determine status of staff and facilities. (Superintendent of Police)	Operating communications system.	1-2 hours of disaster.
Deploy additional staff. (Superintendent of Police)	Transport available.	2-3 hours of disaster.
Monitor resources. (Superintendent of Police)		1 hour of disaster
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Establish VVIP unit. (Superintendent of Police)		Immediately.

Request additional resources, if needed. (Superintendent of Police)	Operating communications system.	4 hours of disaster.
12 hours		
Institute regular reporting. (Task Force)	Operating communications systems.	At start of period.
Begin staff rotation. (Task Force)		At start of period.
Address crowd control problems. (Task Force)		As needed.
Implement anti-looting/anti-theft SOP. (Task Force)		As needed.
Establish rumor control. (Task Force)	Involves Collector, Media Task Force, NGOs, and local eminent persons.	As needed.
Provide information to public, e.g., road status. (Task Force)	Involves Control Room, Media Task Force, and Deputy Magistrate.	As needed.
48 hours		
Implement a Force Management Plan (increase, reduction, redeployment, of forces). (Superintendent of Police)		From start of period.
Plan for return to normal ((Superintendent of Police, Task Force, Control Room)		From 72 hours after the disaster.
Conduct Lessons Learned Session (Task Force with input from other parties.)		1 week after the disaster.
Final Report		2 weeks after the disaster.

6.6.1.4 Search and Rescue (including evacuation): Provide human and material resources to support local evacuation, search and rescue efforts.

Task Force Leader: Chief Fire Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Risk assessment and vulnerability mapping. (Task Force)		Before warning.
Develop inventory of personnel and material resources. (Task Force)		Before warning.
Training. (Task Force)	Input and support from GSDMA, UNDP project.	Before warning.
Establish public education program. (Task Force)	Media Task Force	
Establish adequate communications system. (Task Force)	Additional equipment required.	
Drills. (Task Force).		Before warning.
Establish transport arrangements for likely SAR operations. (Task Force)	With Logistics Task Force.	Before warning.
Develop Rescue SOP. (Task Force)		Before warning.
Warning		
Mobilize Task Force and SAR teams. (Task Force).		On warning.
Verify equipment is ready. (Task Force).		On team activation.
Confirm transport is ready. (Task Force)	Logistics Task Force.	On warning.
Undertake precautionary evacuation. (Task Force)	Logistics and Shelter Task Forces	As directed.
Re-deploy teams and resources, if safe. (Task Force)	Logistics Task Force	Based on conditions.
Start public awareness patrols. (Task Force)	Media, Law and Order and Logistics Task Forces.	As required.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe

Disaster		
Assure safety of staff.		Immediately.
Restore own communications. (Task Force)		Immediately.
Dispatch rescue/evacuation teams based on assessments. (Task Force)	Input from Control Room.	Immediately.
Call for additional resources if needed. (Task Force)	Communications systems in operation.	3-4 hours of disaster.
Provide reports on operations. (Task Force)		Starting at 3-4 hours.
Begin handling of deceased per SOP. (Task Force)	Various Revenue officers and Police involved.	Starting at 3-4 hours.
12 Hours		
Begin staff rotation system. (Task Force).		Starter at 12 hours.
Begin specialized rescue (may begin earlier). (Task Force)	May require outside resources, coordination with Logistics Task Force.	Started at 12 hours.
Begin debris removal in cooperation with Public Works Task Force.	Focus on critical infrastructure. Liaison with Control Room.	Start at 12 hours.
Secure additional resources (e.g., fuel, personnel) for continued operations. (Task Force).		Start at 12 hours.
48 hours		
Demolish/Stabilize damaged buildings in cooperation with Public Works Task Force.	Logistics Task Force, workers, equipment.	Starting at 48 hours.
Demobilization, reconditioning, repair and replace equipment and other resources. (Task Force)		Based on nature of disaster.
Remain on stand-by for additional operations, particularly related to safety of recovery work. (Task Force).		As needed.
72 hours		
Lessons Learned meeting. (Task Force and others)		After 2 weeks.
Final Report. (Task Force)		After major activities completed.

6.6.1.5. Public Works: Provide the personnel and resources needed to support local efforts to re-establish normally operating infrastructure.

Task Force Leader: Executive Engineer, Roads and Buildings

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Inventory of personnel, equipment and status of infrastructure. (Task force)	Link to UNDP project data based development.	One week before warning.
Identify critical infrastructure. (Task Force)	Need to define what critical infrastructure is.	Before warning.
Identify alternate transport routes and publish map. (Task Force)		Before warning.
Plan for prioritized post-disaster inspection of infrastructure. (Task Force)		
Establish and maintain a resources and staffing plan. (Task Force)		
Plan to provide sanitation and other facilities for shelters. (Task Force)		
Warning		
Establish Control Room. (Task Force)		No later than 6 hours from warning.
Action and (Who Should Take It)		
Mobilize Task Force and personnel.	Requires communications.	No later than 6 hours from warning.
Liaise with District Control Room. (Task Force)		No later than 6 hours from warning.
Verify status and availability of equipment and re-deploy if appropriate and safe. (Task Force)	Coordination with Logistics Task Force and Control Room.	24 hours from warning.
Review plans. (Task Force)		No later than 6 hours from warning.
Disaster		
Begin damage assessment and inspections. (Task Force)	Coordination with Damage Assessment Task Force.	Within 12 hours of disaster.
Develop operations plan and communicate to Control Room.		Within 12 hours of disaster.
Mobilize and dispatch teams based on priorities. Teams will (1) repair, (2) replace, (3) Build temporary structures (e.g., rest facilities, shelters).	Coordination with Logistics, Water, Power Task Forces and Control Room.	Within 12 hours of disaster.

Collaborate with other Task Forces.		Continuous.
12 Hours		
Begin staff rotation system and manpower planning. (Task Force).		Starter at 12 hours.
Mobilize additional resources based on expected duration of operations. (Task Force).	Coordination with Logistics Task Force, Contractors. May need additional funding.	Started at 12 hours.
Assure safety. (Task Force)		Start at 12 hours.
Establish security arrangements. (Task Force)	Law and Order Task Force.	Start at 12 hours.
Provide public information on roads, access and infrastructure. (Media Task Force)	Coordination with Control Room	Start at 12 hours.
48 hours		
Start detailed survey. (Task Force)	In cooperation with Damage Assessment Task Force.	Starting at 48 hours.
Begin reporting on operations (Task Force)		Starting at 3 days.
Reconditioning, repair and replace equipment and other resources. (Task Force)		Based on nature of disaster.
Plan and start demobilization. (Task Force)		Starting at 3 days.
72 hours		
Develop long term restoration plan and start activities. (Task Force)		From 72 hours.
Lessons Learned meeting. (Task Force and others)		After 2 weeks.
Final Report. (Task Force)		After major activities completed.

6.6.1.6. Water Supply: Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.

Task Force Leader: Executive Engineer, Gujarat Water Supply Board

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish water availability, capacities, reliabilities and potability. (Task Force)	Standard of 20 liters of drinking water per person per day.	3 months before warning.
Plan for alternate water delivery and storage (Task Force)	May need tankers, tanks, generator set.	3 months before warning.
Secure new and additional equipment. (Task Force)	Requires funding.	
Secure extra stocks of chemicals, expendable supplies and equipment. (Task Force)	May require additional funding.	3 months before warning.
Open Water Control Room in Monsoon. (Task Force)		Done.
Warning		
Establish staff rotation and shift system. (Task Force)		No later than 24 hours from warning.
Provide public awareness on use of water. (Task Force)	Media Task Force.	No later than 24 hours from warning.
Provide instructions to government and private sectors on protection of water supplies. (Task Force)		No later than 24 hours from warning.
Mobilize Task Force members.		24 hours from warning.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Mobilize additional personnel and vehicles. (Logistics Task Force)	May be difficult to locate additional personnel locally. Recourse to outside or contractor sources may be required.	24 hours from warning.
Coordinate activities with Power and other Task Forces.	Involves District Control Room.	24 hours from warning.
Verify water source status and protection. (Task Force).		No later than 24 hours from warning.
Disaster		
Plan and prioritize supply of water to users. (Task Force)	Requires information on needs, damage and demand.	Completed by 24 hours into disaster.
Assess status and damage to water systems. (Task Force)	Coordination with Damage	Completed by 24 hours

	Assessment Task Force.	into disaster.
Mobilize water tankers. (Task Force)	Coordination with Logistics Task Force and Control Room.	Started by 24 hours into disaster.
Repair/restore water systems, based on plan. (Task Force)	Coordination with Power and Logistics Task Forces.	Started by 24 hours into disaster.
Assure supply point/distribution security. (Law and Order Task Force)		Started as soon as distributions begin.
Coordinate distribution of water and storage and provision of information on safe water use. (Task Force).	Coordination with Media Task Force and Control Room	Started by 24 hours into disaster.
12 Hours		
Establish temporary water systems. (Task Force)		Up to 72 hours from disaster.
Move toward permanent water supply system. (Task Force)		After 72 hours.
Complete long term recovery plan and needs. (Task Force)		After 72 hours.
Begin reporting and documentation. (Task Force)		From 48 hours.
Begin demobilization. (Task Force)	Coordinated with Control Room.	From 48 hours.
Lessons Learned meeting. (Task Force and others)		After 2 weeks.
Final Report. (Task Force)		After major activities completed.

6.6.1.7. Food and Relief Supplies: Assure the provision of basic food and other relief needs in the affected communities.

Task Force Leader: District Supply Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish procedures and standards. (Task Force)	Need standards.	On-going.
Maintain two months stock of essential supplies. (Task Force)		Done.
Develop transportation plan. (Task Force)	In cooperation with Logistics Task Force.	Completed in 8 days.
Develop list of NGOs. (Task Force)		Done.
Plan staffing for disaster. (Task Force)		Done.
Identify locations, which can be isolated and increase stock as needed. (Task Force)		On-going.
Identify food preparation locations. (Task Force)		Done.
Action and (Who Should Take It)		
Warning		
Pass on warning. (Task Force)		Within 12 hours of receipt of warning.
Alert NGOs to prepare food. (Task Force)	Contact with NGOs.	Within 12 hours of receipt of warning.
Verify stock levels and make distribution plan. (Task Force)	Possible cooperation with Logistics Task Force.	Within 48 hours of receipt of warning.
Alert transport contractors to prepare for transport. (Task Force)	Coordinate with Logistics Task Force.	Within 5 hours of receipt of warning.
Mobilize staff. (Task Force)		Within 6 hours of receipt of warning.
Disaster		
Receive and respond to instructions from Control Room. (Task Force)		As received.
Monitor conditions of stocks and facilities. (Task Force)	Need for communications.	
Develop distribution plan. (Task Force)	Need information on needs and locations.	As requested by Control Room.
Order food packets and provide supplies as needed. (Task Force)	Coordination with Logistics Task Force.	Per distribution plan.
Establish relief supplies reception centers. (Task Force)	Coordinate with Control Room and	As required.

	Logistics Task Force.	
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Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
12 Hours		
Start distribution operations. (Task Force)	In coordination with Logistics and Shelter Task Forces.	At beginning of period.
Formalize reporting, communications and monitoring. (Task Force)		Completed by 48 hours.
Start staff rotation system. (Task Force)		At beginning of period.
Begin mobilizing and managing additional supplies.	Coordination with Logistics and, Control Room.	Underway in 48 hours.
Establish security for all sites. (Law and Order Task Force)		At beginning of period.
Begin public announcement of distribution plan and standards. (Media Task Force)		Underway in 48 hours.
48 Hours		
Shift to normal operations. (Task Force)		Within 1 week.
Reconcile receipts and distribution records. (Task Force)		Within 30 days.
Continue providing relief to special areas/populations. (Task Force)		For 15 days from the disaster
72 Hours		
Restore Public Distribution System. (Task Force)		From 1 week after the disaster.
Lessons Learned meeting.		Within 14 days

6.6.1.8. Power: Provide resources to re-establish normal power supplies and systems in affected communities

Task Force Leader: Superintending Engineer, Gujarat Electricity Board

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster and Warning Phases		
Develop inventory of current status of power system and resources. (Gujarat Electricity Board – GEB)		
Establish minimum stock levels and procure necessary additional stocks. (GEB)		
Conduct monthly meetings. (GEB)		On-going
Develop contact lists. (GEB)		
Conduct informal hazard and risk assessment. (GEB)		Completed.
Develop disaster plan. (GEB)		
Disaster		
Assess impact according to SOP. (GEB)	Coordinate with Control Room and Damage Assessment Task Force.	
Prioritize response actions. (GEB)	Need to establish priorities.	
Collect more information. (GEB)		
Mobilize additional resources. (GEB)	Coordination with Control Room and other Task Forces.	
Check for unforeseen contingencies.		
12 Hours		
Revise plans based on feedback and assessments. (GEB)		Continuous
Monitor status of actions. (GEB)		Continuous
Begin staff rotation plan. (GEB)		At beginning of period.
Disseminate public information. (Media Task Force)		At beginning of period.
Secure support for staff (food, lodging) from NGOs. (GEB)		
Assure security as needed. (Law and Order Task Force)	Coordinate with Control Room.	
Establish constant communications on needs, requirements and resources with Control Room and GEB/HQ.		
48 Hours		
Look for improvements in efforts. (GEB)		
Reinforce central coordination. (GEB)		

Conduct regular coordination meetings with other actors. (GEB)		
Begin formal documentation of efforts. (GEB)		
72 Hours		
Review shift plan for safety. (GEB)		
Plan for return to normal, including additional security if needed. (GEB)	Involvement of Law and Order Task Force.	

6.6.1.9. Public Health and Sanitation (including first aid and all medical care): Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.

Task Force Leader: Chief District Health Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop inventory of personnel, resources and facilities. (Task Force)		1 week.
Training. (Task Force)	Coordination with GSDMA.	6 months.
Establish Control Room.		Completed.
Prepare for specific diseases by season (e.g., monsoon)		Completed.
Establish Epidemiological Reporting System (ERS). (Task Force)		Completed.
Identify disease vulnerable areas. (CDHO)		Completed.
Improve public awareness. (Media Task Force)		
Warning		
Send out warning to health facilities. (Task Force)		As received.
Mobilize health teams to possible disaster areas. (Task Force)	In coordination with Control Room.	As needed.
Activate Task Force for whole district. (DHO)		On warning.
Disaster		
Begin first aid efforts. (Task Force)		Within 1 hour of disaster.
Establish status of health care system. (Task Force)	Requires communications.	Within 6 hours of disaster.
Begin referral of injured to upper-level facilities. (Task Force)		Within 1 hour of disaster.
Implement SOP for management of deceased. (Task Force)	Involves cooperation with Law and Order and SAR Task Force.	Within 1 hour of disaster.
Coordinate efforts with Control Room and other Task Forces.		Within 2-3 hours of disaster.
12 Hours		
Begin to call in outside resources. (Task Force)	Involves Telecommunications and Logistics Task Forces and Control Room.	Within 3 hours.
Establish temporary medical facilities where needed. (Task Force)	Coordination with Public Works, Power, Water, and Law and Order Task Forces.	Within 24 hours.

Expand surveillance of health status. (Task Force)		Within 24 hours.
Establish shift system for staff. (Task Force)		At beginning of period.
Visit and review health status in shelters. (Task Force)		Within 24 hours.
Develop health care system recovery plan. (Task Force)	In coordination with Control Room.	2-3 hours.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
48 Hours		
Establish formal health care system reporting. (Task Force)		At beginning of period.
Start solid waste and vector control management SOP. (Task Force)		At beginning of period.
Start waste water management SOP. (Task Force)		At beginning of period.
Focus health status surveillance on children 0 to 5 years.		Implements in one week.
Establish public awareness and IEC efforts. (Task Force and Media Task Force)		At beginning of period.
72 Hours		
Develop demobilization plan.		By beginning of period.
Lessons Learned meeting.		Within 14 days of disaster.
Final Report		Within 14 days of disaster.

6.6.1.10. Animal Health and Welfare: Provision of health and other care to animals affected by a disaster.

Task Force Leader: Deputy Director, Veterinary and Animal Husbandry

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Update animal list. List of staff & training for disposal of carcass. (Task Force)		Done.
Stock medical supplies and vaccines. (Task Force)		Done
Warning		
Alert staff (by phone). (Task Force)		As warnings received.
Distribute supplies to vulnerable areas. (Task Force)		During warning period.
Contact Control Room. (Task Force)		As required.
Disaster		
Remove and destroy carcasses. (Task Force)	Need fuel and logistics.	As soon as possible.
Treat injured animals. (Task Force)		As soon as possible.
Issue certification of death. (Task Force)	For insurance purposes.	Within 48 hours.
Call in staff from other districts as needed. (Task Force)		As needed.
Assist local authorities in survey of damage and reconciliation of records.		As required.
48 Hours and Beyond		
Assist local authorities in providing fodder as needed.		As required.
Collect feedback. (Task Force)		
Final Report. (Task Force)		In 15 days.

6.6.1.11. Shelter: Provide materials and supplies to assure temporary shelter for disaster-affected populations.

Task Force Leader: District Primary Education Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop shelter operating procedures. (Task Force)		
Develop inventory of shelters (location, capacity,). (Task Force)	UNDP project inventory.	
Provide information to other Task Forces on location of shelters. (Task Force)	Logistics, Water, Power, SAR, Food/Relief Supplies Task Forces and Control Room	
Training for shelter managers. (Task Force)	Need training module.	
Warning		
Mobilize shelter managers. (Task Force)		Within 6 hours of warning.
Review shelter locations for operating status. (Task Force)	Communications needed.	Within 6 hours of warning.
Open shelters as instructed.	Coordination with Control Room.	Within 6 hours of warning.
Mobilize additional resources for shelters and camps. (Task Force)	Cooperation with Logistics, Food and Relief Supplies, Water and Power Task Forces.	Within 6 hours of warning.
Provide public announcements on locations and status of shelters. (Media Task Force)		Within 6 hours of warning.
Disaster		
Beginning logging-in of occupants. (Shelter managers).		Immediately.
Report on status of shelters. (Task Force)	To Control Room.	As needed.
Plan for prioritization of shelter use. (Task Force)	Coordination with evacuation operations and Control Room.	Immediately.
Coordinate with other Task Forces on water, power, food, health, security. (Task Forces)		Immediately.
Provide support and assistance to occupants. (Task Force)	Liaise with Animal Task Force on management of animal and with Health Task Force on health care.	
12 Hours		
Continue operations. (Task Force)		Continuously
Monitor shelter status and movement of people. (Task Force)		Continuously
Mobilize additional resources. (Task Force)	Coordinate with Control Room and	Continuous.

	Logistics Task Force.	
48 Hours and Beyond		
Begin Demobilization as appropriate. (Task Force)		
Begin reconditioning/repairs to shelters. (Task Force)	In cooperation with Public Works Task Force.	As needed.
Lessons Learned session. (Task Force)	Involvement of other Task Forces and evacuees.	14 days after completion of operations.
Final Report. (Task Force)		1 month after completion of activities.

6.6.1.12. Logistics: Provide air, water and land transport for evacuation and for the storage and delivery of relief supplies in coordination with other Task Forces and competent authorities.

Task Force Leader: District Development Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Conduct resource inventory (air/land/water transport and storage; inside and outside district.). (Task Force)		1 month.
Establish deployment requirements, procedures and alternate options. (Task Force)		1 month.
Conduct drills. (Task Force)		1 month.
Coordinate with other Task Forces.	Work through Control Room.	As needed.
Warning		
Alert and mobilize Task Force members. (Task Force)		Within 1 hour of receiving warning.
Mobilize transport and other resources for action on short notice depending on disaster expected. (Task Force)	Coordination with Control Room	Within 2-3 hours of warning.
Liaise with Control Room and SAR, Shelter and Food/Relief Supplies Task Forces.		Within 1 hour of receiving warning.
Review plan and determine if outside resources are needed. (Task Force)		Within 6 hours of receiving warning.
Plan for logistics based depending on nature of disaster. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	As needed.
Disaster		
Take action based on instruction from Control Room. (Task Force)		Within 2 hours of receiving warning.
Action and (Who Should Take It)	Requirements or Conditions to	Timeframe

	be met for the action can occur.	
Continually review requirements and resources. (Task Force)		Continuous.
Develop operations plan. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	Within 2 hours of receiving warning.
Strengthen liaison with Control Room and key Task Forces. (Task Force)		Within 2 hours of receiving warning.
Verify quality of service. (Task Force)	Requires set standard of service and information on operations.	Daily.
12 Hours		
Respond to increased demand for logistics. (Task Force)		Continuous.
Begin rotation of staff. (Task Force)		At start of period.
Establish logistics bases as needed. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	Continuous.
Review plans and communicate with other Task Forces. (Task Force)		Continuous.
Begin regular reporting and documentation. (Task Force)		At start of period.
48 Hours		
Reassess needs and requirements. (Task Force)		Continuous.
Begin demobilization as appropriate. (Task Force)		
72 Hours		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies in meeting.	Within 14 days of disaster.
Final Report		Within 14 days of disaster.

6.6.1.13. Damage Assessment and Survey: Collect and analyze data on the impact of the disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.

Task Force Leader: Resident Additional Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish assessment procedures and forms. (Task Force)	Collaboration with GSDMA.	
Compile baseline data. (Task Force)	Collaboration with UNDP project.	
Establish assessment groups and teams. (Task Force)		
Develop an assessment coordination plan. (Coordination and Planning Task Force)		
Develop a communications plan. (Task Force)	In cooperation with Telecommunications Task Force.	
Warning		
Mobilize Task Force. (Task Force)		Within 6 hours of warning.
Review Plan. (Task Force)		Within 6 hours of warning.
Consider pre-disaster impact assessment. (Task Force)	Based on expected nature of disaster.	Within 6 hours of warning.
Active village-level assessment teams. (Task Force)		Within 6 hours of warning.
Disaster		
Consider safety of assessment teams. (Task Force)		Immediately.
Start planning for assessment. (Task Force)		As initial impact information is available.
Begin initial assessment procedures. (Task Force)		When conditions allow.
Communicate assessment plans to Control Room. (Task Force)		Once initial plan is developed.

12 Hours		
Publicly disseminate assessment plans and reports. (Media Task Force)		As available.
Initiate continual up-dating of assessment information. (Task Force)	Coordinate with Coordination and Planning Task Force.	
Initiate continual up-dating of assessment plans. (Task Force)	Coordinate with Coordination and Planning Task Force.	
Coordinate with other Task Forces. (Task Force)		
Begin staff rotation and secure more staff as needed.		At beginning of period.
48 Hours		
Prepare detailed damage, losses, needs assessment and long term recovery plans. (Task Force)	Coordinate with other Task Forces.	3-5 days after disaster.
Coordination of requirements, plans and activities.	Working through Control Room and Coordination and Planning Task Force.	Continuous.
72 Hours		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies in meeting.	Within 14 days of disaster.

6.6.1.14. Telecommunications: Coordinate and assure operation of all communications systems (e.g., radio, TV, phones, wireless) required to support early warning or post-disaster operations.

Task Force Leader: Resident Additional Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop telecommunications inventory and SOPs. (Task Force)	Telecommunications training.	
Coordinate with other Task Forces. (Task Force)		
Identify sites of vulnerable system components (e.g., switches). (Task Force)		
Ensure redundancy in communications systems. (Task Force)	May require close liaison with private sector providers.	
Training in communication skills and methods. (Task Force)		
Warning		
Verify communication systems are working. (Task Force)		Within 24 hours of warning.
Mobilize Task Force.		Within 24 hours of warning.
Repair down systems and establish alternate communications systems. (Task Force)	Coordinate with Control Room.	Within 24 hours of warning.
Mobilize resources. (Task Force)		Within 24 hours of warning.
Facilitate telecom demands of other Task Force members. (Task Force)		
Disaster		
Check status of communications systems. (Task Force)		In 2-3 hours.
Identify damage to systems. (Task Force)		First information available in 2-3 hours.
Contact Control Room and other Task Forces on telecom needs. (Task Force)		In 2-3 hours.
Start repairs. (Task Force)		In 2 hours.
12 Hours		
Mobilize outside resources (may start earlier). (Task Force)		Continuous.
Complete plans for repairs and re-establishment of systems. (Task Force)	Coordinate with Control Room.	Continuous.
Liaise with Control Room and other Task Forces.		
Start shift system for staff. (Task Force)		At beginning of period.
48 Hours and Beyond		

Continue to assist other Task Forces. (Task Force)		
Continue repair work. (Task Force)		
Begin demobilization. (Task Force)		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies in meeting.	Within 14 days of disaster.
Final Report. (Task Force)	Involve other Task Forces.	Within one months of end of operations.

Media & information Management:
Taskforce Leader: District Information Officer

Note: As per the above format the Media taskforce of the district will prepare its taskforce action plan.

➤ **Activation of the Plan**

The District Disaster Response structure is activated on warning or occurrence of a disaster. Task Forces are activated on a specific request of the District Collector or according to pre-determined SOPs, as appropriate for the nature of the hazard or disaster. Activation can be:

- In anticipation of a District level disaster, or
- Occur in response to a specific event or problem in the district.

On activation, coordination of warning and response efforts will operate from the District Control Room and Information Centre (DCIC). The DCIC operations plan and SOPs are provided in Annexure 3.5.1

To activate a task force, the Collector or designated Incident Commander will issue an activation order. This order will indicate:

- The nature of needs to be addressed
- The type of assistance to be provided
- The time limit within which assistance is needed
- The District or other contacts for the provision of the assistance
- Other Task Forces with which coordination should take place, and
- Financial resources available for task force operations.

Special powers are conferred on Incident Controller during disasters. The Principle organization leading each task force is responsible for alerting the appropriate authority when use of these special powers is required to accomplish warning, relief or recovery objectives given to a task force.

6.5.1.15.2 End of Emergency

The end of emergency shall be declared through an ALL CLEAR siren/message. The Incident Controller in consultation with the IRS GROUP leaders shall declare the same once the situation is totally controlled and normalcy is restored.

6.5.1.15.3 Training and Rehearsals

For effective implementation of this, regular training and mock drills involving all key members need to be carried out. This will further enhance better understanding of individual's role and responsibilities in emergency response besides improving the overall coordinated efforts.

The main objectives of training plan are:

- Familiarizing key personnel involved in the plan with their equipment, the overall plans and their roles.
- Ensuring efficacy of emergency response mechanisms/resources.
- Reviewing the total plan, including communications and logistics, so that updating, modifying and training activities can be improved.

6.5.1.15.4 Team Drills

These rehearsals are conducted at regular intervals at least once in a year by individual task force team in order to improve the resource planning, coordination and application of resources. The responsibility of conducting such drills at specified frequency lies with the respective Task Force Leader.

6.5.1.15.5 Full- Scale Mock Drills

The ability of the emergency management team to perform a set of critical tasks under simulated conditions for different hazards are validated by conducting a full scale mock drill once in a year. This includes but not limited to management initiatives, response activities, direction, and control, mobilization of resources, communications, mitigation and post incident activities of all concerned. This is a field mock drill on a large scale involving all the task forces

After completion of every team drills and/or Full Scale mock drills, a debriefing meeting shall be arranged in which proceedings of the mock drills are discussed highlighting weak areas/shortfalls for effecting improvement in the plan.

Humanitarian Relief and Assistance

Response defines provision for assistance/ intervention during and after emergency. Response plan includes clear Incident Command System (ICS) operated through emergency operation centres (EOCs) with effective 3C (Command, Control and Communication) mechanism. ICS covers early warning, search and rescue, humanitarian assistance, medical response, relief, temporary shelter, water and sanitation, law and order, animal care, public grievance, recovery and rehabilitation.

Specific Task Forces should be formed for Food distribution, drinking water management, medicine and health related facility, clothes distribution and other essential needs.

Helpline

Establish Information/ reception centres and setting up telephone helpline numbers for public utility. True information must be released by media to the concerned person and in case of rescue activity public can call on help line number. In that point of view help line must be activated at DEOC

Arrangement of VIP Visit: -

It is important to immediately inform VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumours and chaos during the disaster. Visits by VIPs can lift the morale of those affected by the disaster as well as those who are involved in the response. Care should be taken that VIP visits do not interrupt rescue and life saving work. Security of VIPs will be additional responsibility of local police and Special Forces. It would be desirable to restrict media coverage of such visits, in which case the police will liaise with the government press officer to keep their number to minimum.

Chapter-7

Recovery Measures

Recovery is defined as decisions and actions taken after a disaster with a view to “restoring or improving life and assets of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Recovery and reconstruction (R&R) or comprehensive rehabilitation is the last step in cycle of disaster management. In addition, this is the phase of new cycle, where the opportunity to reconstruction and rehabilitation should be utilised for building a better and more safe and resilient society.

Strategies for restoring physical infrastructure and lifeline services may be:

General Policy Guideline

Build Back Better:

This ensures greater resilience, preparedness; and minimum loss in an event of future disaster.

Participatory Planning:

Infrastructure improvement measures need to be balanced with, or at least be in line with, the social and cultural needs and preferences of beneficiaries

Coordination:

A plan of recovery will help better coordination between various development agencies.

Damage Assessment and Needs Assessment shall be the basis of recovery planning

Various Sectors for recovery process may be

- Essential Services- Power, Water, Communication, Transport, Sanitation, Health
- Infrastructural: Housing, Public Building and Roads
- Livelihood: Employment , Agriculture, Cottage Industry, Shops and Establishments

Basic services such as power, water supply, sanitation, wastewater disposal etc. should be restored in shortest possible time. Alternate arrangement of water supply, temporary sanitation facilities can be sought with help of special agencies.

Special arrangements for provision of essential services should be ensured. It can include creating temporary infrastructure for storage and distribution of water supply, running tankers, power supply and sanitation facilities

- **Detail Damage Assessment and loss assessment and Short term/Long term recovery**

Restoration of Essential Services and Infrastructure

Following tables are to be filled after an event of disaster

Power

Item/Services	No. of unit damaged	No of villages affected	Population affected	Recovery measures	Implementing agency	Tentative Duration (Months)	Budget
Feeder							
Transformers							
HT Lines							
LT Lines							
Electric Poles							

To be planned after initial damage assessment by departments

Health

	PHC (village name)	CHC	Sub Centre	Drug Store	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
No of buildings damaged								
No of health centres inaccessible								
Refrigeration and other vital equipment for storage								
Drugs and medicines perished	(Location and qty)							
No of Ambulance damaged								

To be planned after initial damage assessment by departments

Social

People in need of immediate rehabilitation including psychosocial support (due to disaster)

Village	Men	Women	Children	Total	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget

Water Supply

Type	Village	No. of unit affected	Faliya/ Population affected	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Well							
Borewells							
Pond							
Water Supply Disrupted							
Contamination							
ESR damaged							
GLR Damaged							
Sump damaged							
Pipe lines damaged							
Standpost damaged							
Cattle trough damaged							
Handpump							

Road and Transport

Road damage	Location	Severity	Km	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Panchayat							
State Roads							
National Highway							
Nagar Palika							
	Village/ Ward	Population	Alternate road/route	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Road Cut off							
Rail Connectivity							

Communication

Type	Office/Tower Damaged	Villages affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Landline connectivity	(No. of unit and location)					
Mobile connectivity						
Wireless Tower						
Radio						

Food Supply

List of village affected by disruption in food supply

Type	No. of godown damage	Type of grains perished (Ton)	Qty of grain perished (Ton)	Qty of grain at risk (Ton)	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Civil Supply								
APMC								
Other								

Housing

Partial Damage		Fully Damaged / Collapsed		Recovery Measures	Prog / Scheme	Implementing Agency	Tentative Duration (Months)	Budget
Kucha	Pucca	Kucha	Pucca					

Public Utilities

Public Buildings	Partial damage (No. of units)	Fully Damaged/ Collapsed (No. of Unit)	Recovery Measures	Prog/ Scheme	Implementing Agency	Tentative Duration (Months)	Budget
Panchayat							
Educational Buildings							
Anganwadi							
Hospitals							
Office Buildings							
Market							
Police station							
Community Halls/ Function plots							

**Restoration of Livelihood
Provisioning of Employment**

Occupational category	No. of workers	Implementing Agency	Tentative Duration (Months)	Budget
Skilled labourers				
Unskilled and , Agricultural labourers				
Small and marginal farmers				
Construction workers				
Salt pan workers				
Fisher folk				
Weavers				
Other artisans				

Land Improvement

Land erosion / siltation (Hectare)	HHs affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget

Agricultural

Crop failure (Hectare)	HHs affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget

Non farm livelihood

Cottage Industry	Extent of damage/disruption		Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
	Tools and equipment (Specify no. and type)	Goods and material (Specify type and qty)				
Handloom						
Pottery						
Food Processing						
Diamond sorting etc						
Printing/ Dying						
Other						

Shops and establishment

Extent of damage/disruption			Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Building (No. and location)	Tools and equipments (Specify no. and type)	Goods and materials (Specify type and qty)				

Short term recovery Programme

➤ Long term recovery programme

Disaster recovery typically occurs in phases, with initial efforts dedicated to helping those affected meet immediate needs for housing, food and water. As homes and businesses are repaired, people return to work and communities continue with cleanup and rebuilding efforts. Many government agencies, voluntary organizations, and the private sector cooperate to provide assistance and support.

Some individuals, families and communities that are especially hard hit by a disaster may need more time and specialized assistance to recover, and a more formalized structure to support them. Specialized assistance may be needed to address unique needs that are not satisfied by routine disaster assistance programs. It may also be required for very complex restoration or rebuilding challenges. Community recovery addresses these ongoing needs by taking a holistic, long-term view of critical recovery needs, and coordinating the mobilization of resources at the, and community levels.

Oftentimes, committees, task forces or other means of collaboration are formed with the goals of developing specific plans for Community recovery, identifying and addressing unmet or specialized needs of individuals and families, locating funding sources, and providing coordination of the many sources of help that may be available to assist. Some collaboration focuses on the community level and relies on the expertise of community planning and economic development professionals. Other collaborations focus on individual and family recovery and are coordinated by social service and volunteer groups. All such efforts hope to lay the groundwork for wise decisions about the appropriate use of resources and rebuilding efforts.

Under the National Response Framework, Emergency Support Function (ESF) #14 Community Recovery coordinates the resources of federal departments and agencies to support the long-term recovery of States and communities, and to reduce or eliminate risk from future incidents. While consideration of long-term recovery is imbedded in the routine administration of the disaster assistance and mitigation programs. Some incidents, due to the severity of the impacts and the complexity of the recovery, will require considerable interagency coordination and technical support.

ESF #14 efforts are driven by State/local priorities, focusing on permanent restoration of infrastructure, housing, and the local economy. When activated, ESF #14 provides the coordination mechanisms for the Federal government to:

- Assess the social and economic consequences in the impacted area and coordinate Federal efforts to address Community recovery issues resulting from an Incident of National Significance;
- Advise on the Community recovery implications of response activities, the transition from response to recovery in field operations, and facilitate recovery decision-making across ESFs;

- Work with State, local, and tribal governments; NGOs; and private-sector organizations to conduct comprehensive market disruption and loss analysis and develop a forward looking market-based comprehensive long-term recovery plan for the affected community;
- Identify appropriate Federal programs and agencies to support implementation of the Community recovery plan, ensure coordination, and identify gaps in resources available;
- Avoid duplication of assistance, coordinate to the extent possible program application processes and planning requirements to streamline assistance, and identify and coordinate resolution of policy and program issues; and
- Determine/identify responsibilities for recovery activities, and provide a vehicle to maintain continuity in program delivery among Federal departments and agencies, and with State, local, and tribal governments and other involved parties, to ensure follow-through of recovery and hazard mitigation efforts.

Grievances Redressal System

Grievance redressal is important aspect in the context of providing need based assistance to affected communities with transparency and accountability. It is also ensures the protection of their rights and entitlements for disaster response services.

Grievance Redressal System

No.	Key Person/ Establishment	Contact No	Address
1	DEOC/ RAC	0288-2553404	District Emergency Operation centre
2	DDO	0288-2553901	District Panchayat
3	Police	0288-2554203	S.P.Office,Jamnagar

Chapter-8

Financial Arrangement

To ensure the long-term sustenance and permanency of the organisation funds would be generated and deployed on an ongoing basis. There are different ways to raise the fund in the State as described below

State Disaster Response Fund

To carry out Emergency Response & Relief activities after any disaster the State Disaster Response Fund is made available to Commissioner of Relief, Revenue Department under which the Central Government will share 75% and the Govt. of Gujarat has to share 25% as per the recommendation of 13th Finance Commission.

State Budget

The Authority, submit to the State Government for approval a budget in the prescribed form for the next financial year, showing the estimated receipts and expenditure, and the sums which would be required from the State Government during that financial year. As per the provisions of The Gujarat State Disaster Management Act, 2003 the Authority may accept grants, subventions, donations and gifts from the Central or State Government or a local authority or any individual or body, whether incorporated or not.

Partnerships

There are projects/schemes in which funding can be done by a public sector authority and a private party in partnership (also called on PPP mode funding). In this State Govt. along with Private organizations and with Central Govt. share their part.

Centrally Sponsored scheme

Name	Purpose	Finance Arrangements	Activities that can be take under scheme	Nodal Agency
NDRF (NCCF)	Relief Assistance	100% Central Govt	Cash and kind relief	Revenue Department
SDRF (CRF)	Relief Assistance	75% Centre, 25% State	Cash and kind relief	Revenue Department
Planning Commission (13 Finance commission) Year 2011-15	Capacity Building	100% Centre	Trainings Awareness Generation IEC material Mockdrills	Revenue Department

District Planning Fund

For preparedness, mitigation, capacity building and recovery fund can be raised from MP or MLA grant as received for developmental work .also from departmentally arrangement.

Disaster Insurance/Risk Transfer / Risk Distribution

Risk transfer or risk distribution refers to compensation cover against loss of life or assets in case of any disaster event. Insurance and reinsurance mechanisms and products against natural and manmade disasters have rapidly evolved in last decade. According to UNISDR, “Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally, where governments, insurers, multi-lateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and re-insurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings. Linkages with government insurance schemes like Rashtriya Swasthya Bima Yojana, Aam Admi Bima Yojana can be extensively taken up for risk transfer. Linkages can be done for teaching staff and children with existing insurance schemes. Livestock insurance can also be taken up through animal husbandry department. Coverage of crop insurance should be increased specifically for small and marginal farmers. Weather/rainfall insurance can also be explored

With various existing schemes. (DDMC should draw up their own risk transfer/distribution framework and action plan in this regard)

Chapter-9

Heat Waves Action Plan

Climate change is leading to an increase in average temperatures and increased possibilities of severe heat waves. Extreme heat can lead to dangerous, even deadly, health consequences, including heat stress and heatstroke. The District of Jamnagar had a major heat wave in May 2009, in Ahmedabad 2010 heat wave was a wakeup call that intergovernmental agency action, preparedness, and community outreach WA needed to save lives.

- ***Building Public Awareness and Community Outreach*** to communicate the risks of heat waves and implement practices to prevent heat-related deaths and illnesses. Disseminating public messages on how to protect people against extreme heat through media outlets and informational materials such as pamphlets and advertisements on heat stress prevention. New efforts being launched as part of this year's Plan include the use of modern media such as SMS, text messages, email, radio and mobile applications such as WhatsApp. Special efforts will be made to reach vulnerable populations through inter-personal communication as well as other outreach methods.
- ***Initiating an Early Warning System and Inter-Agency Coordination*** to alert residents of Predicted high and extreme temperatures. The DDMC has created formal communication channels to alert governmental agencies, the Met Centre, health officials and hospitals, emergency Responders, local community groups, and media outlets of forecasted extreme temperatures.
- ***Capacity Building among Health Care Professionals*** to recognize and respond to heat-related illnesses, particularly during extreme heat events. Such trainings focus on primary medical officers and other paramedical staff, and community health staff so they can effectively prevent and manage heat-related cases so as to reduce mortality and morbidity.
- ***Reducing Heat Exposure and Promoting Adaptive Measures*** by launching new efforts Including mapping of high-risk areas of the city, increasing outreach and communication on Prevention methods, access to potable drinking water and cooling spaces during extreme heat Days. Collaboration with non-governmental organizations is also identified as a means to expand Outreach and communication with the city's most at-risk communities.

How the HAP is organized and implemented:

As the lead agency, the Health Department has the overarching responsibility for the coordination of heat wave related health activities. This includes monitoring forecasts and sending heat health alerts and disseminating public health messages to local departments and community service providers, as well as working with the AMC press office to increase media around preparedness. The Plan serves to focus attention on those individuals, who are most at risk during heat waves, Including slum communities, outdoor workers, elderly and children. The Plan also focuses on Individuals and organizations, such as Urban Health Centres (UHCs) and link workers, who Frequently work with at-risk populations and can provide early diagnosis of heat-related illnesses and preliminary treatment.

iii Individuals, community groups, and the media are also essential in fighting the effects of extreme Heat. Individuals can take specific preventative steps to protect themselves, their families,

and their Communities from harmful heat waves including learning about early signs of heat exhaustion, Limiting heavy work during extreme heat, drinking water, staying out of the sun; wearing light Clothing, checking on neighbors, and informing their fellow community members about how to keep cool and protect themselves from heat. The media is vital in spreading the word about the harm heat poses to health, and protecting people against dangerous heat waves. The media plays an essential awareness-building role by sharing news about health threats, and increases public protection by running ads and providing local resources information.

PURPOSE

This Heat Action Plan aims to provide a framework for the implementation, coordination, and Evaluation of extreme heat response activities in Jamnagar that reduce the negative health impacts of extreme heat. The Plan's primary objective is to alert those populations most at risk of heat-related illness that extreme heat conditions either exist or are imminent, and to take appropriate precautions.

Color Signals for Heat Alert

The AMC will issue heat alerts, based on thresholds determined by the AMC, as an additional means of communication by using the following color signal system

YELLOW ALERT Hot Day Advisory 41.1°C – 43°C

ORANGE ALERT Heat Alert Day 43.1°C – 44.9°C

RED ALERT Extreme Heat Alert Day $\geq 45^{\circ}\text{C}$

YELLOW ALERT	HOT DAY ADVISORY	41.1° C – 43° C
ORANGE ALERT	HEAT ALERT DAY	43.1° C - 44.9° C
RED ALERT	EXTREME HEAT DAY	>45° C

Heat Waves Definition

Heat wave: Heat-wave is a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim human life. Heat-wave is defined as the condition where maximum temperature at a grid point is 3°C or more than the normal temperature, consecutively for 3 days or more. World Meteorological Organization defines a heat wave as five or more consecutive days during which the daily maximum temperature exceeds the average maximum temperature by five degrees Celsius. If the maximum temperature of any place continues to be more than 45° C consecutively for two days, it is called a heat wave condition.

Awareness Generation: -

FOR CREATING AWARENESS GENERATION WE CAN PUBLISHED FOLLOWING POSTER AMONG COMMUNITY OR PRESS OUT VIA PRINT AND ELECTRONIC MEDIA



હીટ એલર્ટ

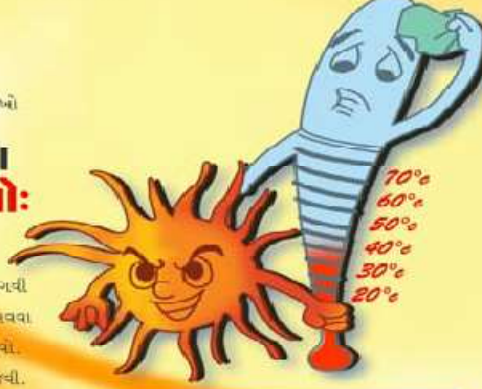
ગરમીથી તમે કેવી રીતે બચશો



- ❖ પાણી, છાશ અથવા અન્ય પ્રવાહી પીવો (ઠંડા પીણા નહિ)
- ❖ તડકામાં ન રહો
- ❖ સળવાર રંગના કપડાં પહેરો
- ❖ ઠંડક વાળુ કોઈ સ્થળ શોધી કાઢો
- ❖ મિત્રો અને કુટુંબીજનોની સંભાળ રાખો

ધ્યાન આપવા લાયક લક્ષણો:

- ❖ ગરમીની અળાઈઓ કે તાવ
- ❖ ખુબ પરસેવો થવો અને અસહિત લાગવી
- ❖ માથામાં દુખાવો થવો અને ઊંખસ આવવા
- ❖ ગરમી હોવા છતાં પણ પરસેવો ન થવો.
- ❖ ચામડી લાલ, સૂકી અને ગરમ થઈ જવી.
- ❖ સ્નાયુઓમાં દુખાવો અને અસહિત.
- ❖ ઊંખડા અને ઉંઠદી થવી.



પાણી વધુ પીવો

બાળકો, વૃદ્ધો અને ગર્ભવતી સ્ત્રીઓ માટે વધુ જોખમી

ઈમરજન્સીમાં ૧૦૮ પર ફોન કરો



INDIAN
INSTITUTE OF
PUBLIC HEALTH
GANDHINAGAR

Maintenance of Plan
Annual Plan Maintenance

DDMC shall compile its learning and proposed new mechanisms for improvement of the capacity to deal with disasters.

Schedule for updation of plan

Every year as a part of pre monsoon DDMC will update plan in the month of May-June and also revise in the month of October-November every year.

Major Learning based on experience of last disasters and mock drills (on planning/implementation/compliance)	Revisions adopted/proposed	Remarks
Flood	May-June	Due to highly flash flood affected area
Chemical disaster	Jan, Feb	Due to MAH unit
Tsunami	June, Oct	Due to coastal belt
Cyclone	May-June and Oct.Nov.	Due to Coastline

D DMP Status of the current year

Action	Completed	In Progress	Pending
Talukas Plans	6	0	0

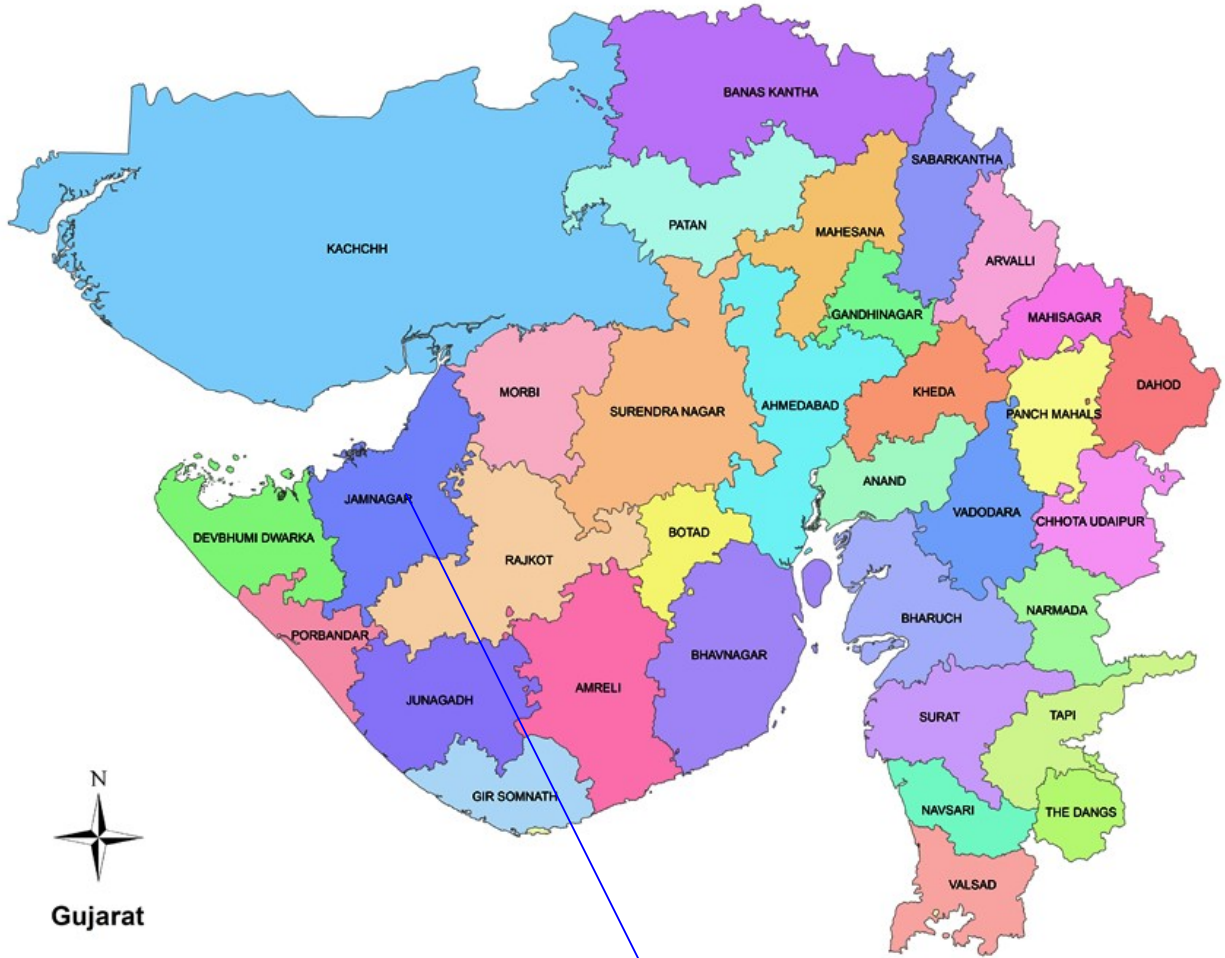
Prepared By : - DDMC Members, Jamnagar

Certified/ Approved By : - **Collector, Jamnagar**

A n n e x u r e

Annexure –A Map-

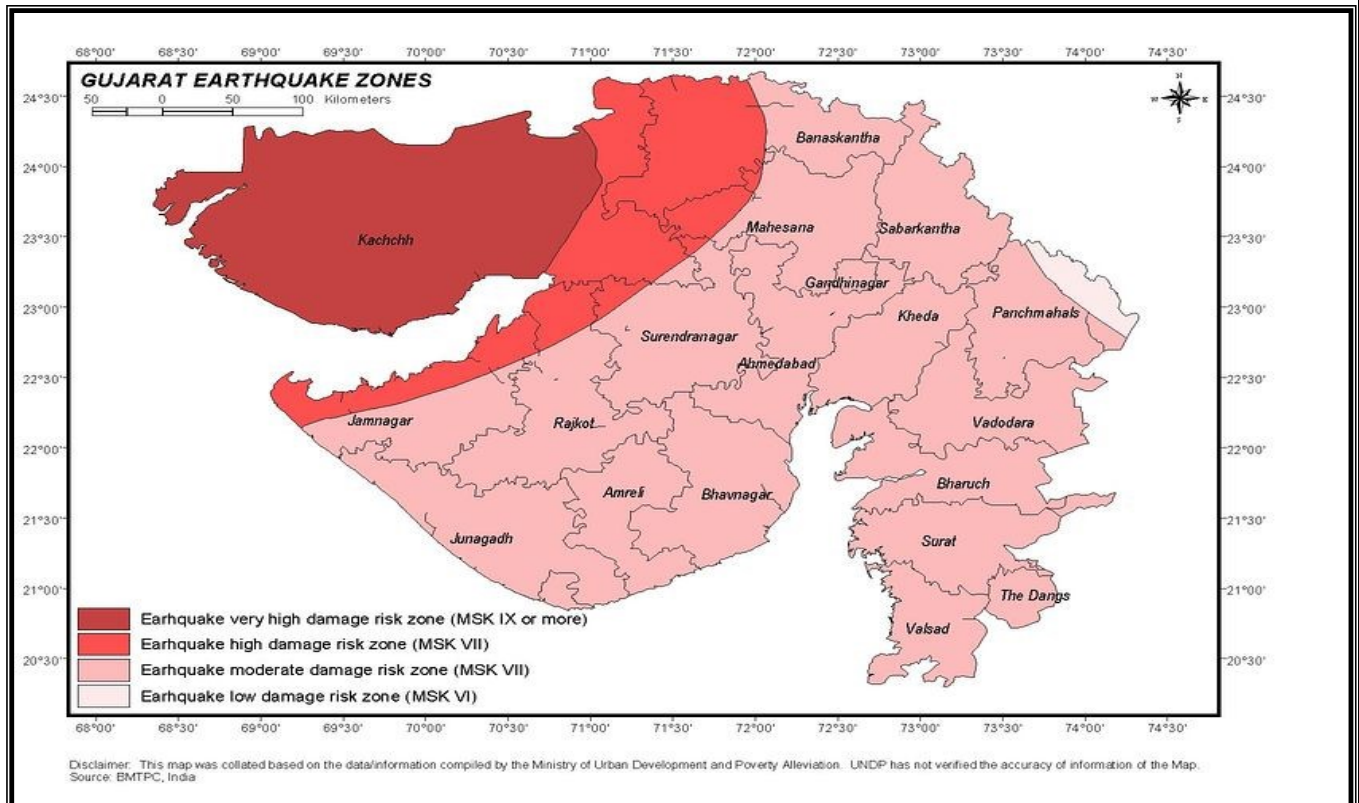
Gujarat Map



- સમજૂતી
- ▲ જિલ્લાનું મુખ્યમથક
 - તાલુકાનું મુખ્યમથક
 - જિલ્લાની હદ
 - તાલુકાની હદ
 - જામનગર
 - દેવભૂમિ દ્વારકા

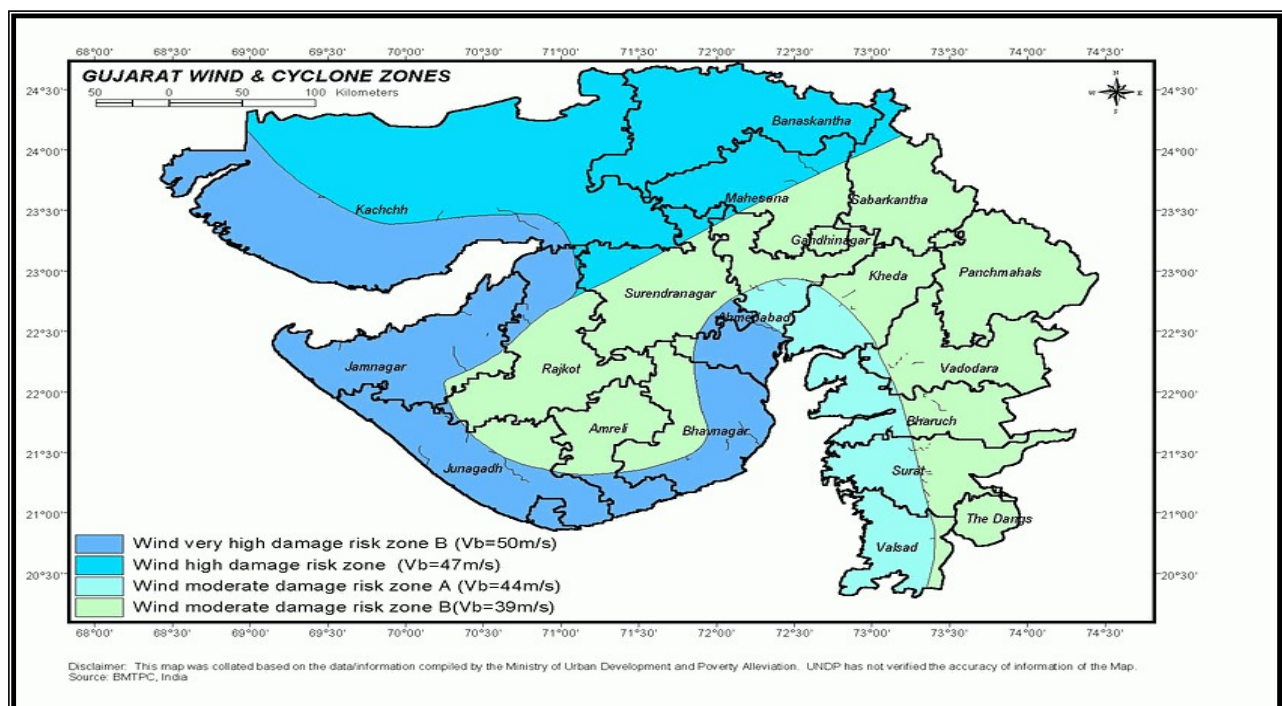


આ નકશો સ્કેલમાં નથી.
2

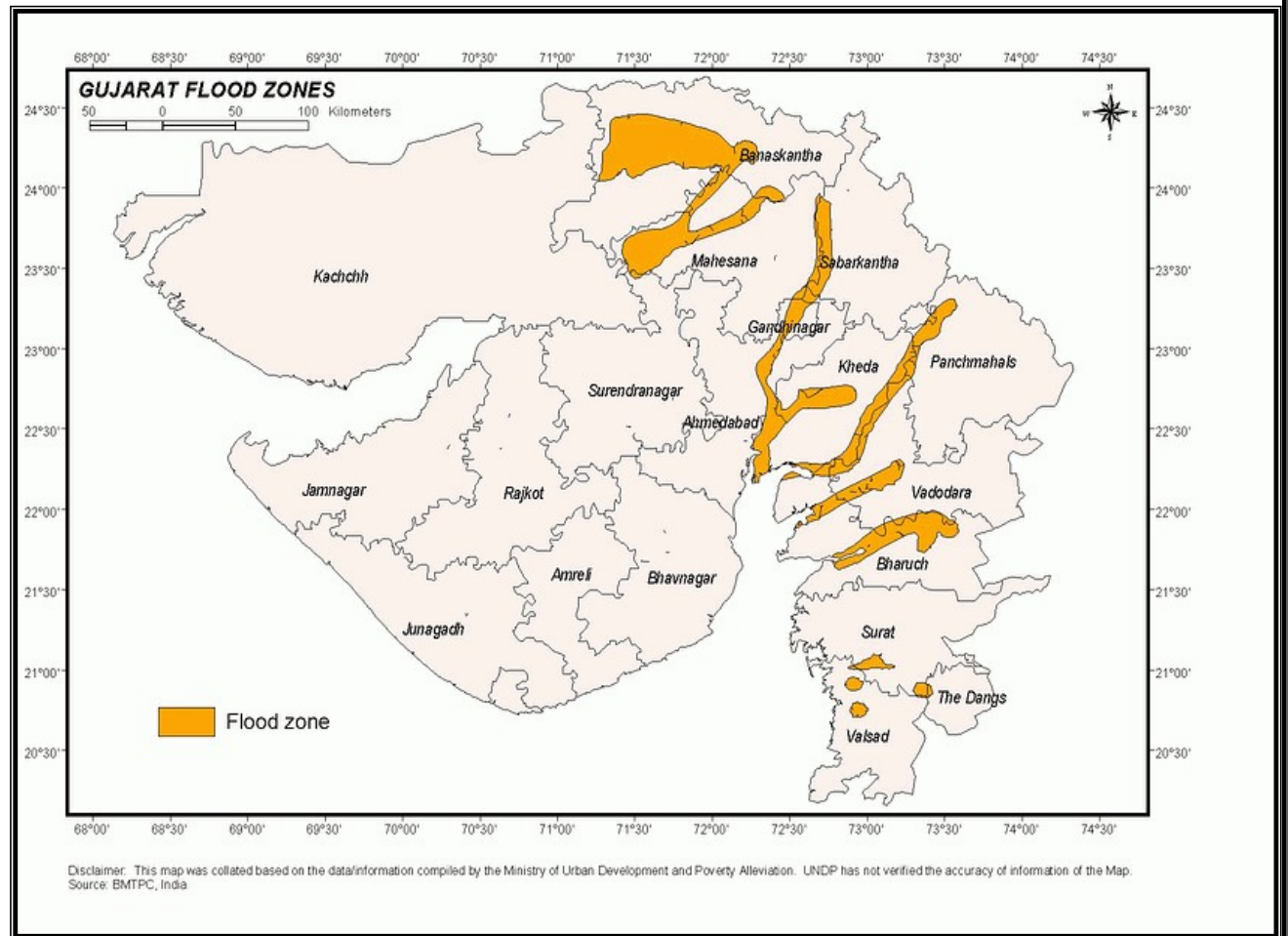


(Earthquake Hazard Map)

(Cyclone Hazard Prone Map)



Flood Hazard Prone Map



Annexure-B
Rainfall Detail for Jamnagar District from 2010 to 2020

Sr	Taluka	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	Jamnagar	2064	680	380	1473	367	322	380	624	405	1234	1187
2	Kalavad	897	509	311	801	481	569	647	690	469	1140	1507
3	Lalpur	1937	807	402	887	297	368	766	607	351	886	1632
4	Dhrol	702	973	390	744	408	441	1207	524	153	1138	1205
5	Jodiya	1065	764	250	769	762	722	538	919	170	1337	1359
6	Jamjodpur	1318	896	340	1208	555	569	852	677	502	1228	1778
	Total Rainfall of District	7983	4629	2073	5882	2870	2991	4390	4041	2050	6963	8668
Average years		1330	771	345	980	478	498	731	673	341	1160	1445

Annexure-C

Detail of Dam site and affected villages

Sr. No.	Name of Dam	Sr. No	Affected villages		Population	Distance from Dam KM
			Name	Taluka		
1	Sasoi K.P. Chauchan 6355307334 288-6540701	1	Dodhiya	Jamnagar	1389	5.00
		2	Balambhadi		497	6.00
		3	Gaduka		447	5.50
		4	Shapar		1921	17.00
		5	Aamra		4141	9.00
		6	Vasai		1818	17.00
		7	Sarmat		1718	18.00
		8	Bed		6260	20.00
		9	Pipli	Lalpur	1571	1.50
		10	Kanachhikri		706	2.80
		11	Dera Chhikri		529	1.50
2	Panna K.P. Chauchan 6355307334	12	Navagam	Jamnagar	1615	2.50
		13	KanaChhikri		706	3.00
		14	Dera Chhikri		529	3.50
		15	Shapar		1921	9.00
		16	Amra		4141	8.50
		17	Vasai		1818	14.00
		18	Sarmat		1718	17.00
		19	Bed		6260	11.00
3	Fulzar-2 N.V. Gagiya 9825887191 02895-261147	20	Jashapar	Lalpur	1376	3.50
		21	Khatia Beraja		285	14.50
		22	Nana Lakhiya		5465	12.50
		23	Mota Lakhiya		992	12.00
		24	Modpar		3193	2.00
		25	Zankhar		2602	20.00
4	Rangmati N.V. Gagiya 9825887191 02882910150	26	Changa	Jamnagar	1531	1.00
		27	Chela		5696	4.00
		28	Dared		1141	13.00
		29	Jamnagar		584190	20.00
		30	Nava Nagna		3351	20.50
		31	Juna Nagna		2737	20.00
		32	Nawagam Ghed		39500	22.50
5	Rupavati R.S. Nakum 9265262588 02895291027	33	Lalpu r	Lalpur	10163	2.00
6	Und-1 P.M.Bhojani		Tamchan	Jamnagar	722	11.50
			Ravani		2042	8.00

	A.E. 9687630436 9624040510 02882887236		Khijadia	Dhrol		
			Khambhalida		1846	15.00
			Dhrangada		1714	16.00
			Sanosara		612	13.50
			Virani Khijdia		493	6.00
			Rojiya		1258	9.00
			Jalia Devani		803	4.00
			Mansar		1920	4.80
			Hamapar		1667	4.50
			Soyal		1797	18.00
			Nathu Vadla		1581	14.00
			Mavapar		582	16.00
			Vankiya		2312	16.00
			Lakhtar	Jodiya	1603	19.00
7	Fulzar-1 D.R.Jadeja AME 8866168292 9687630423		Khandhera	Kalawad	1061	6.00
			Nagpur		746	3.00
			Golaniya		465	0.80
			Vodisang		1950	8.30
8	Sapda R.K Parmar 9924404702		Sapda	Jamnagar	888	1.50
			Moda		1173	4.50
			Gangajala		231	4.00
			Aliyabada		6111	4.00
			Shekhpatt		2327	3.50
			Khimrana		4667	5.00
			Dhunvav		5278	18.00
			Khijadiya		2560	5.50
			Navabandar		3285	26.00
9	Vijarakhi J.K. Chaudhary 9925220848		Vijarakhi	Jamnagar	1670	0.50
			Thavriya		2285	1.50
			Khimrana		4667	3.50
			Dhunvav		5278	12.00
			Khijadiya		2560	3.00
			Nava Bandar		3285	20.00
10	Vodisang D.R. Jadeja 6587630423		Dhudsiya	Jamnagar	2595	1.00
			Dhutarpur		3049	5.00
			Sumri		281	8.00
11	Kankavati R.K Parmar 9924404702 2821424		Falla	Jamnagar	3565	1.00
			Beraja	Jodia	1091	3.00
			Baradi		296	4.00
			Hadiyana		5398	11.00
12	Daiminsar J.B. Rathod 9737657697		Satapar	Jamjodhpur	4227	0.30

13	Ruparel R.B. Nandaniya 9662921123 02882910360		Pasaya	Jamnagar	1200	0.50
			Beraja		1500	2.50
14	Und-2 A.R.KANJARIYA M.E. 9978121105 02897- 294537		Majoth	Dhrol	2000	0.20
			Anada	Jodia	1500	2.50
			Kunnad		2000	6.00
			Bhadra		2500	2.50
			Badanpar		2400	7.50
			Jodia		10000	8.00
15	Fulzar Kotada Bavisi A.N.KANJARIYA A.M.E. 7016551995		Kotda Bavisi	Jamjodhpur	2000	1.50
			Gingani		4500	4.50
			Sidsar		4500	7.50
16	Aji-4 M.E. C.D.RATHOD 9913944339 02893293234		Balambha	Jodia	5237	10.00
			Ranjitpar		368	16.00
			Jirapar		239	9.00
			Morana		462	2.00
			Tarana		1172	0.50
			Madhapar		1032	3.50
			Shampar		1145	4.50
			Jamsar		789	19.00
			Manamora		704	14.00
			Bhimkata		1102	13.00
17	Und-3 D.R.JADEJA M.E. 9687630423		Rajasthali	Kalawad	900	0.70
			Dhedh		500	1.50
			Khijadia			
			Jashapar		1800	5.00
			Bhayu		300	9.00
			Khakhria			
			Bava		1500	9.50
			Khakharia			
18	Fofal-2 J.K.CHAUDHARI M.E. 9925220848		Gunda	Kalawad	1050	1.50
			Makha karod		1540	5.00
			Kal meghda		1370	7.00
			Ambardi		1640	11.00
19	Venu(Vanala) J.K.CHAUDHARI M.E. 9978750136		Molan	Jamjodhpur	1061	4.00
			Kadbal		1553	5.00
			Kotada bavisi		781	9.00
			Gingani		3635	14.00
			Sidsar		2454	16.00
20	Balambhadi		Kalawad	Kalawad	24858	4.00

	L.J.PARAMAR M.E. 7874171227 7984573423		Jashapar		2025	5.00
			Bava Khakhria		1216	8.00
			Virvav		706	9.00
			Jivapar		807	12.00
			Satiya		1125	14.00
			Sortha		919	15.00
			Nagazar		404	17.00
21	Ranjitsagar DAM Site 9409319601		Dadiya	Jamnagar	4000	0.50
			Navu Mokhana		500	1.00
			Junu Mokhana		2000	2.00
			Khimaliya		5000	5.00
			Morkanda		7000	8.00
			Pataria Charanvas		200	3.50
22	Umiyasagar M.E. K.R.Pansara 9537133826		Sidsar	Jamjodhpur	-	0.50
23	DEMI-III K.M.Dhoriyani AAE 9099047958		Koyli	Jodiya	-	0.25
			Dhulkot			6.10
			Amran			10.60
			Bela			15.10
			Mavnugam			10.50
			Sampar			20.80
			Jinjuda			17.10

Important Contact Numbers in flood situation

Sr. No.	Officers details	Phone/Address
1	Shri N.H. Kapdi Focal Officer flood Saurashtra and Superitendent Enigineer Rajkot Irrigation Department, Rajkot	0281-2440485(O) 0281-2472604(Fax) 0281-2476093(P) 9427312601(M)
2	Rajkot flood Control room	0281-2443205 0281-2453501(F)
3	Smt. K.H. Mehta, Sub-focal officer, Flood, Jamnagar nad Executive Engineer Jamnagar Irrigation Department, Jamnagar	0288-2670688(O) 0288-2678106(Fax) 0288-2559322(P) 9925016735 (M)
4	Shri H.S. Parmar Executive Engineer, Irrigation Panchayat, Jamnagar	0288-2671404(F) 0288-2671404(O) 9712647641(M)

Annexure: -D

Contact Detail

Control Rooms- Contact Numbers

On receipt of information about the incident, all Task force leaders shall report immediately to the collector in the district EOC. The coordinator of each taskforce shall send communication to their members to report immediately in their respective control rooms. Taluka liaison Officers shall report to Mamlatdars in their respective Taluka control rooms.

Sr. No	EOCs/ Control rooms	Contact Numbers
1	State EOC – Gandhinagar	079-23251900/23251902
2	Relief Commissioner	(079) 2351509 ® 23251591 9978407281
3	Director of Relief	(079) 23251611 ® 23234364 9978406087
4	Additional CEO, GSDMA	(079) 23259220 ®23259275 (M) 9909973692
5	Jamnagar District EOC	0288-2553404, F-2541485, 1077
6	TASKFORCE Operation Room	
	1. Warning and Communications (RAC) (0288) (O) 2550284	0288-2553404/2541485,0288-1077
	2. Law & Order DSP M.9978405071	02882554203 / 02882556382
	3. Search & Rescue CFO (M) 9879531101/2672208	02882540371 / 02882674758 9879531101
	4. Public Works R&B (M) 9426464610	02882555778 / 02882550362
	5.Shelter-DEO/DPEO M-9909970206	0288-2676532, 02882550286/2553321
	6. Water Supply GWSSB M 9978407184	02882554225 / 02882677279
	7. Food & Relief supplies DSO -7567022435	02882553897 7567022435
	8. Public Health & Sanitation M 9925046770	02882670382 / 02882671097
	9. Power (PGVCL Eng) M 9925209912	02882550301 / 02882641843
	10. Logistics DDO (M) 9978406235	02882550282 / 02882553901
	11. Animal Health & Welfare-Dy.Director Animal	02882678424 / 9879623739
	12. Damage assessment/Survey DDO	02882550284 / 9978405210
	13. Media/public Information,Dy.Dire.Information	02882679234 / 9913615298
	14. Planning and coordination (Collector)	02882555869 / 9978406210
	15. Finance/ Administration/ protocol-RAC	02882550284 / 9978405210
7	Taluka EOCs	
	1. Jamnagar	0288-2678704 / 2674575
	2. Jodiya	02893-222021
	3. Dhrol	02897-222001
	4. Kalavad	02894-222002
	5. Lalpur	02895-272222
	6. Jamjodhpur	02898-220036

Annexure-E
List of senior officers at various departments

1. Revenue Department: -

Designation	Office No.	Mobile No.	Resident No.	Fax No.
Collector & DM	02882555869	9978406210	2554059	2555899
RAC & ADM	2550284	9978405210	-	2555899
Asst. Collector & SDM-Jamnagar Rural	2552130	9978405182	--	--
Dy. Collector Election	2663681	9825252548	-	-
Dy. Collector & SDM Dhrol	02897222311	7567009545	-	-
DSO	2553897	7567022435	--	2553897
SDM-Jam-city	2552130	9978405342	--	--
Dy. Collector & SDM Lalpur	02895272711	7567009628	-	-
District Planning Officer	2550248	9825729645	-	2550247
District Project Officer- Disaster Managment	--	8319460485	--	--
Mamlatdar-City	2553404	9427224745	--	2541485
PRO	2557601	9824848818		2555899
Mamlatdar-Election	--	9408814454	--	--
Mamlatdar-Disaster	2553404	9824401067	--	2541485
Mamlatdar-Protocol	--	7405736130	--	--

2. Municipal Corporation: - (0288)

Designation	Office No.	Mobile No.	Resident No.	Fax No.
Commissioner	2552321	7567038888	2554059	2554454
Dy. Commissioner	2550231	9510018599	--	2554454
AMC	2550231	7990162473	--	2554454
EDP manager	2550231	9879114962	--	2554454
C.F.O.	2550231	9879531101	--	2554454
Medical Officer	2550231	8238006510	--	2554454

Medical Officer	2550231	9998968728	--	2554454
City engineer and Flood Control Officer	2550231	8320577044	-	2554454
Dy.Engineer-WW	2550231	9925046474	-	2554454
ATPO	2550231	9925027183	-	-
I/C PRO	2550231	9824037985	-	2554454

3. District Panchayat: -

Designation	Office No.	Mobile No.	Resident No.	Fax No.
DDO	2553901	9978406235	2552402	2552394
Director-DRDA	2753289	9978982383	--	2753289
Dy.DDO- Dev.& Rev.	2554203	9374111262	-	2552394
Dy.DDO-Panchayat	2670486	9558805228	--	2552394
I/C CDHO	2676968	7567880025	--	2671097
DPEO	2553321	9909970206	--	2552394
Ex. engineer-Irrigation Panchayat	2670688	9574075716	--	2552394
Dy.Director Animal Husbandry	2678424	9825880915	--	2552394
District Agriculture officer	2556119	9427708661	--	2552394
Ex. engineer-R & B Panchayat		8238555526	--	

4. Police Department: -

Sr. No.	Name	Designation	Office No.	Mobile No.	Resident No.	Fax No.
1	Shri Deepan Bhadran	S.P.	2554203	9978406292	2555868	2556382
2	Shri Nitesh Pandey	A.S.P. City	2552940	9978408191	--	--
3	Shri M.B.Solanki	Dy.S.P. Head Quarter	2550317	9978408189	--	2556382
4	Shri Kunal Desai	Dy.S.P. Rural	2551822	9978408190	-	--
5	Shri V.K.Upadhyay	Dy.Controller-Civil Defence	2540371	9979399977	--	2550318
6	Shri Suresh Bhindi	District H.G. Commandant	2553862	9824867090	--	--

5. Other Important Contact: -

Sr.	Name	Designation	Office No.	Mobile No.	Fax No.
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No.					
1	Shri S.R.Katarmal	I/C Ex.Engi.R&B State	2550362	9426946944	2556382
2	Shri C.K.Patel	S.E.-PGVCL	2550301	9925209912	2551917
3	Shri Chaudhri	I/C RTO , Transport office	2550360	9426494614	2672100
4	Shri Raju Jani	Dy. Director- Information Department	2679234	9825765599	2551267
5	Shri H.V.Gosai	District Agriculture Officer	2550286	9427708661	--
6	Shri S.N.Dadhaniya	Dy. Director [Agriculture] , Agriculture department	2551137	9909500600	263525
7	Shri C.B.Zala	Ex. Eng. GWSSB- Gujarat Water Supply and sewerage Board	2677279	9978407184	--
8	Ms.Bhartiben Tank	Asst. Director - Fisheries Department	2567882	9427736551	2564904
9	Shri J.V.Isharani	Depo Manager S.T.	2676904	6359918548	
10	Shri Kunjan kumar ravat	Asst. Director - Industrial Safety & Health	2678206	9662021546	2678206
11	Shri B.M.Makvana	I/C Regional Officer , GPCB	2753540	9825622089	2753540
12	Shri Sursinh Dodiya	District Education Office	2553321	9909970206	2541145
13	Shri K.B.Chhaiya	Circuit House-Jamnagar	2550237	9558888838	--
14	Cap.neeraj hirmani	I/C Port Officer-GMB	2711805	9998057507	--
15	Dr. Nandini Desai	Deen-Medical Collegel		9824292029	2553157
16	Dr.Tiwari	Supritendent-GGH	2554629	7984779399	-
17	Shri Prajapati	Dy.Eng.R & B (Electrical) State		9722564395	

TDO and Municipality

Sr No	Taluka Panchayat			ULB		
	Name of Taluka	Taluka Panchayat	Contact detail	Name of ULB	Chairman/Mayor-Municipality/ Nagar Panchayat/ NAC	Contact detail
1	Jamnagar	TDO	02882678188	Jamnagar	Mayor	02882554596
2	Dhrol	TDO	02897222004	Dhrol	Chief Officer	02897223772
3	Kalavad	TDO	02894222001	Kalavad	Chief Officer	02894222059
4	Jodia	TDO	02893222042	Jamjodhpur	Chief Officer	02898233214
5	Lalpur	TDO	02895272226	Sikka	Chief Officer	02882344045
6	Jamjodhpur	TDO	02898222002			

Mamlatdar and TDO Mobile No.

Sr.No.	Taluka	Mamlatdar	TDO
1	Jamnagar City	9426227943	--
2	Jamnagar Rural	7567002946	8460180270
3	Jodiya	7567003034	9712552329
4	Dhrol	7567002912	9909645337
5	Kalawad	7567002884	9427240250
6	Lalpur	7567002832	9510822055
7	Jamjodhpur	7567002866	8460865422

Annexure: -F

➤ **Industries Resources**

❖ FIRE FIGHTING FACILITIES AT MAH UNITS

Sr. No.	Name	Phone1	Phone2	Fire Tenders	Water (m3)	Fire E Suits	Fire P Suits	Water Hoses
1	GSFC Ltd. – Sikka Unit	0288 2432200	2344100	2		-	1	20
2	RIL / SEZ / RPTL - Motikhavdi	0288 2310000	2312157	12 +1Resq	156000	1	2	800
3	TCL - Mithapur	02892 665247	223207	2	Sea water	0	1	12
4	Essar Oils Ltd. Vadinar	02833 661444	Fax 241414	1	60000	0	1	72

❖ RESOURCES AVAILABLE AT FIRE STATIONS-MAH unit

Sr. No.	Name	Phone	Manpower	Number of Fire Tenders	Ambulance	Fire Suits	SCBA
1	GSFC Ltd. – Sikka Unit	0288 2432200	12	2	1	2	4
2	RIL /SEZ / RPTL - Motikhavdi	0288 2310000	28	12+ 1resque	4	2	120
3	TCL - Mithapur	02892 665247	8	2	1	1	6
4	Essar Oils Ltd. Vadinar	02833 661444	8	5	3	2	65

❖ MEDICAL FACILITIES AT MAH UNITS

Sr No	Name	Phone1	Amb. Van	OHC 5bed	First aid boxes	Stret- chers	Availability of		Details of other facilities/equipment
							Dr.	Nurses	
1	GSFC Ltd. Sikka Unit	0288 2432200 2344100	1	Y	2	2	Y	Y	Oxy. Cyl Set - 1 Stethoscope - 1, Baloon type respirator - 1, Self care kit - 1, Blood pres. measuring equipment - 1
2	Tata Chem. Ltd.Mithapur	02892 665247	2	Y	4	4	Y	Y	Oxy. Cyl Set - 1, SBS Sets - 3, Stethoscope - 1, Baloon type respirator - 1, Peak flow meter - 1, Self care kit - 1, Blood pres. measuring equipment - 1 Comp.Blood Test Lab.
3	Reliance Ind.Ltd. /SEZ / RPTL Padana – meghpar.	0288 2319922 2310000	1	Y	3	1	Y	Y	Oxy. Cyl Set - 1, SBS Sets - 3, Stethoscope - 1, Baloon type respirator - 1, Peak flow meter - 1, Self care kit - 1, Blood pres. measuring equipment - 1
4	Essar Oils Ltd.	02833 661444	3	Y	50	10	Y	Y	Oxy. Cyl Set - 1 Stethoscope - 1, Baloon type respirator - 1, Self care kit - 1, Blood pres. measuring equipment - 1

❖ PERSONAL PROTECTIVE EQUIPMENT AVAILABLE AT MAH UNITS

Sr No	Name	Phone No	SCB A	Canister Masks	Full Body PVC Suit	Air line BA	Chem. Splash suit	Emergency Kit	Water Gel
1	GSFC Ltd. Sikka Unit	0288 2432200 2344100	20	25	15	15	2	-	4
2	RIL / SEZ / RPTL Motikhavdi	0288 2310000 2319922	120	200	50	4	2	1	4
3	TCL Mithapur	02892 665247	6	50	4	4	4	4	-
4	Essar Oils Ltd. Vadinar	02833 661444	65	20	2	5	2	-	2

❖ AVAILABILITY OF SPECIAL RESCUE EQUIPMENT

Sr No	Name of the Unit	Equipment Details	Type	Quantity	Max. Boom Length (m)	Min Radius in m	Capacity in MT
1	GSFC- Sikka Unit	Tata P & H	Crawler crane with lattice boom	1	18	3.67	10
		Fork Lift	Godrej	1	-	-	3
2	RIL / SEZ / RPTL- Motikhavdi	DAMAG AC 265	Tyre mounted Telescopic hyd Crane.	1			
		Tata P & H	Crawler crane with lattice boom.	1			
		Hydra Crane	Truck mounted	1			
		Groove Crane	crane.	1			
		Coles Crane	Industrial model crane.	1			
		Beaver	Kirloskar wheel	1			
		Swaraj Mazda	mounted crane.	1			
		Tractor trolley	Trailer trolley crane	5			
		Fork Lifts	Crane				

			Crane				
3	TCL – Mithapur	Cranes	Mobile cranes TAC-	10	10	3	10
		P&H Omega	20 & Esc	2	42/24	4	40/35
		Crane	Tyremounted hyd.	12			
		Tippers	Cranes	6			
		Trucks		2			
		Jeeps					
4	Essar Oils Ltd. Vadinar	Hydra Crane	Truck mounted	3	10	3	10
		Groove Crane	crane	2	10	4	20
			Industrial model crane				

Sr No	Name	Location	Phone No.	Beds	Burn Ward	Chemical Poisoning Treatment Facility	Ambula.
1	G.G.Hospital	P.N.Marg, Jamnagar.	0288 2554629	1394	20	Yes	05
2	T.B.Hospital		0288 2676483	100	--	--	02
3	Dist. T.B.Centre		0288 2678977				
4	City Dispensary		0288 2678386				
5	Esis Hospital		0288 2562168	50	--	Yes	01
6	Samrpan Hospital	Kanbhalia High Way, Jamnagar.	0288 2712728	80		Yes	02
7	Oswal Hospital		0288 2566833	91	01	Yes	01
8	Anandabava Kidney Hospital		0288 2770966	25			01
9	Rangoonwala Hospital		0288 2673562				
10	Gulab Kunvarba		0288 2676521				
11	Rotary Club		0288 2552426				01
12	Jatin Sarvjanic Tabibi Rahat Mandal		0288 2678385				
13	Kabir Ashram		0288 2558049				
14	Saifee Metarnity Home		0288 2677894				
15	Khijda Mandir Trust		0288 2551353				
16	Bhagvanji Karamshi Cheritebal Trust		0288 2671885				

Annexure: - G

DETAILS OF CHEMICALS PROPERTIES, FIRE FIGHTING AGENTS, ANTIDOTES, FIRST AID & MEDICAL TREATMENT

Sr No	Name Of Chemical	Hazard Characteristics	Fire Fighting Agent	Antidote / First Aid / Medical Treatment
1	Acetic Acid	Corrosive	Carbon Dioxide, Dry Chemical Powder, Water Spray and Alcohol Resistant Foam	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. If heartbeats are absent, give external Cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open and obtain medical treatment urgently.
2	Ammonia	Flammable, Toxic	Stop flow of gas, use water spray to cool fire exposed containers. Exposed fire fighter must wear positive pressure self-contained breathing-apparatus and full protective clothing.	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. Inhalation of steam or vinegar vapour is recommended. If substance has gone in eyes, wash with plenty of water for 15 minutes To relieve restlessness, ingestion morphine 15mg to relieve Dyspnoea, Oxygen inhalation.
3	Ammonium Carbonate	Corrosive	Non-flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open.
4	Ammonium Nitrate (Melt)	-	Use plenty of water to cool fire exposed containers. Exposed fire fighter must wear positive pressure self-contained breathing apparatus and full protective clothing. Container may explode in fire.	In case of burns due to hot Ammonium Nitrate solution, part should be flushed with large quantity of water and treated according to usual burns.
5.	Carbon Dioxide	Asphyxiant	Non-flammable	It is simple asphyxiant and can cause oxygen deficiency in confined space / non ventilated areas. Respiratory protection is required.
6.	Carbon Monoxide	Flammable, Toxic	Carbon monoxide, dry chemical powder, wear self contained breathing apparatus. Let fire burn, shut off gas	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If hearts beats are absent, give external cardiac compression. Do not use mouth to mouth ventilation. Administer 100% oxygen till carboxyhemoglobin level is measured. Cerebral

			while using the chemicals.	edema and convulsions must be controlled. Ethylene blue must not be injected.
7.	Chlorine	Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give external cardiac compression. In case of eye exposure, wash with copious amount of water for 15 minutes, keeping eyelids apart
8.	Coal	Flamm-able	Dry chemical powder, water supply	Incomplete combustion may produce CO1, sulphur dioxide, hence respiratory protection may be required to fight the fire.
9.	Formic Acid	Flamm-able, Corrosive	Carbon dioxide, dry chemical powder, water spray and alcohol resistant, foam all purpose foam.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If hearts beats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open and obtain medical treatment urgently.
10.	Fuel Oil	Flamm-able	Carbon dioxide, dry chemical powder, foam	Remove the contaminated clothes. Wash the affected parts of skin with plenty of soap and water and seek medical advice immediately for inhalation of vapors / fumes.
11.	High Speed Diesel	Flamm-able	Dry chemical powder, foam	- do -
12.	Hydro-chloric Acid	Corrosive	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give artificial respiration. Do not give alkaline substances or carbonate preparation. Skin should be treated with 5% Trietanol amine. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open and obtain medical treatment urgently.
13.	Hydrogen	Flamm-able, Explosive	Dry chemical powder, halon. Let fire burn under control. Stop flow of gas.	It is simple asphyxiant and can cause oxygen deficiency in confined space / non ventilated areas. Move victim to the fresh air and apply resuscitation methods.
14.	Hydrogen Iodide	Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If hearts beats are absent, give external cardiac compression. Incase of eye exposure, wash with copious amount of water for 15 minutes, keeping eyelids apart.
15	Hydrogen Sulphide	Flamm-able, Toxic	Carbon dioxide, dry chemical powder. Wear self-contained breathing apparatus. Alcohol	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Patient with significant exposure, should be hospitalized for 72 hours of medical observation for delayed pulmonary edema. The respiratory

			resistant foam is also advisable to be used to stop fire.	centre may be stimulated by injection of LOBGIN and nika thamide. Vitamin C may be injected intravenously. In case of eye exposure, it should be treated with boric acid solution.
16	Iodine	Toxic	Use water spray or carbon dioxide. Do not use foam or dry chemical. Wear full protective clothing and self contained breathing apparatus for fire fighting.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heart beats are absent, give external cardiac compression. Patient with significant exposure should be hospitalized for 72 hours of medical observation. Consider administration of multiple metered doses of topical steroid hormone or 30 mg/kg of methyl prednisolone IV.
17.	LPG	Flammable, Explosive	Carbon dioxide, dry chemical powder, water spray	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance has gone in eyes, wash with plenty of water for 15 minutes holding eyes open.
18.	Methane	Flammable, Explosive	Carbon dioxide, dry chemical powder. Shut off gas.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance has gone in eyes wash with plenty of water.
19.	Methanol	Flammable, Toxic	Carbon dioxide, dry chemical powder, water spray and alcohol resistant foam.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Never administer anything by mouth if a victim is losing consciousness. Do not induce vomiting. Do not use mouth to mouth respiration. Massive alkalization in life saving and eye saving measures. Give small quantity of Ethyl alcohol every 4 hourly. If substance has gone in eyes, wash with plenty of water for 15 minutes holding eyes open.
20.	Methyl Acetate	Flammable, Toxic	Carbon dioxide, dry chemical powder and alcohol resistant foam. Water may be ineffective.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance heart beats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes holding eyes open and obtain medical treatment urgently.
21	Methyl Formate	Flammable, Toxic	Carbon dioxide, dry chemical powder, water spray and alcohol resistant foam.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance heart beats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes holding eyes open and obtain medical treatment urgently.
22	Methyl Iodide	Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance heartbeats are absent, give external cardiac compression. Do not use mouth to mouth ventilation. Keep under medical surveillance for 48 hours. Consider

				administration of multiple metered doses of topical steroid by inhalation and or upto 30 mg / kg of methyl prednisolone. In case of eye, contact immediately, refer to ophthalmologist.
23	Mono Ethylene Glycol	Flammable, Toxic	Carbon dioxide, dry chemical powder and alcohol resistant foam.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heartbeats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water.
24	Naphtha	Flammable	Foam dry chemical powder, carbon dioxide. Apply water fog from as far distance as possible.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. The decision of whether to induce vomiting or not should be made by an attending physician. If heartbeats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water.
25	Natural Gas	Flammable	Stop flow of gas. Dry chemical powder, carbon dioxide.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open.
26	Nitric Acid	Corrosive, Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. Do not induce vomiting. If heartbeats are absent, give external Cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open and obtain medical treatment urgently.
27	Nitric Oxide	Corrosive, Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Do not allow to walk. Fatal symptoms may be delayed upto 48 hours even though victim may seem normal after exposure. If heartbeats are absent, give external cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes holding eyes open and obtain medical treatment urgently. Methemoglobinemia due to no resolve in hours with oxygen therapy.
28	Nitrogen	Asphyxiant	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heartbeats are absent, give external cardiac compression. Treat for frostbite with lukewarm water.
29	Oxygen	-	Non flammable	Inhalation of 100 % oxygen can cause nausea, dizziness, irritation of lungs, pulmonary edema, pneumonia and collapse. Liquid oxygen will cause frostbite.
30	Nitrogen Dioxide	Corrosive, Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Enforce complete rest for 24 to 48 hours. In case of

				high exposure keep patient under medical observation for atleast 72 hours. Some individuals who had symptoms of acute exposure with or without edema, develop in immune reaction 10 days or 6 weeks after exposure. Symptoms include severe cough, cyanbosis (tuning blue) fever hypoxemia and X ray may show fire scattered nodes in the lungs are vulnerable to virus.
31	Pottasium Hydroxide	Corrosive Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If substance heart beats are absent, give external cardiac compression. Incase of eye contact immediately refer for ophthomological opinion. Treat skin burns conventionally.
32	Potta-ssium Methoxide	Flamm-able, Toxic	Only dry chemical powder is allowed to be used. In reacts with water and CO2.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Never administer anything by mouth if a victim is losing consciousness. Do not induce vomiting. Do not use mouth to mouth respiration. Backing soda in glass of water should be given.
33	Propionic Acide	Flamm-able, Toxic, Corrosive	Foam, dry chemical powder, carbon dioxide. Apply waster fog from as far distance as possible.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heart beats are absent, give external cardiac compression. Incase of eye contact flush with plenty of water for about 15 minutes. Remove wet clothe and wash affected area with water & soap.
34	Rhodium Triodide	-	Non flammable	Remove the victim to fresh air. Material cause irritation of nose, throat and respiratory tract. Repeated exposure to skin can cause allergic sensitization. Incase of eye contact, flush with plenty of water for 15 minutes.
35	Sodium Hydroxide	Corrosive, Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Incase of eye contact flush with plenty of water for about 15 minutes. Remove wet clothe and wash affected area with water & soap.
36	Sulphur Dioxide	Corrosive, Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If hearts beats are absent, give external cardia compression. Atropic rhinitis and phayngitis may be treated by inhalation of 5% solution of sodium chloride, followed by inhalation of 5% solution of sodium chloride, followed by inhalation of vitamin A. Incase of of eye contact, flush with 2% sodium bicarbonate solution, drops of 2 to 3 % phedrine should be instilled in the nose.

37	Sulphuric Acid	Corrosive, Toxic	Non flammable, react with water to form large amount of heat and corrosive fumes. Do not use water to existing fire in the nearby area.	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. In case eye contact flush with plenty of water for 15 minutes. Remove wet clothes and wash affected area with plenty of water.
38	Trichloro Ethylene	Flamm-able, Toxic	Carbon dioxide, dry chemical powder, water spray and alcohol resistant foam.	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. Do not induce vomiting. If heart beats are absent, give external Cardiac compression. If substance has gone in eyes, wash with plenty of water for 15 minutes, holding eyes open and obtain medical treatment urgently.
39	Ortho Dichloro Benzene	Flame-able, Toxic	Foam dry chemical powder, carbon dioxide. Apply water fog from as far distance as possible.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. In case of eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
40	Trichloro Acetyl Chloride	Corrosive, Toxic	Foam dry chemical powder, carbon dioxide.	It is very corrosive liquid. Exposure will produce tears in the eyes and severe chemical burns. Move the person to fresh air. If not breathing, perform artificial respiration. If required, give oxygen. Wash the affected skin thoroughly with soap and water. Flush and irrigate eyes with copious quantity of water for at least 15 minutes. Do not induce vomiting.
41	Acrylo-nitrile	Flamm-able, Toxic	Carbon dioxide, dry chemical powder	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If the unconscious, crush an amyl nitrile ampule in a cloth and hold it under the nose for 15 seconds in every minute. Do not interrupt artificial respiration during this process.
42	Copper Comp-ounds	-	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heart beats are absent, give external cardiac compression. If substance has gone in eyes wash with plenty of water for about 15 minutes, holding eyes open and obtain medical treatment urgently.
43	Aniline	Flamm-able, Toxic	Foam, dry chemical powder, carbon dioxide	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. Aniline is very toxic, if splashed on skin. It passes through the skin, causing methemoglobinemia. Antidotes is methylene blue. In case of eye contact flush with plenty of water for 15 minutes. Remove wet clothes and wash affected area with plenty of water.

44	<i>Benzene</i>	Flamm-able, Toxic	Foam, dry chemical powder, carbon dioxide	Remove the victim to fresh air. If there is a difficulty in breathing, give Oxygen. Benzene is very toxic or if splashed on skin. Cronic exposure may lead to leukemia. Incase of eye contact flush with plenty of water for 15 minutes. Remove wet clothes and wash affected area with plenty of water.
45	Nitro- benzene	Flamm-able, Toxic	Foam, dry chemical powder, carbon dioxide	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. NB is very toxic if splashed on skin. It passes through the skin causing methamoglobinemia. Antidote is methylene blue. Incase of eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
46	<i>Phosgene</i>	Corrosive Toxic	Non flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Phosgenen is very toxic incase of inhalation. It has very low TLV – 0.1 ppm. Keep the person under observation for 72 hours for possibility of delayed effect. Incase of eye contact, flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
47	Toluene	Flamm-able, Toxic	Foam, dry chemical powder, carbon dioxide	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Toluene is very toxic if splashed on skin. Incase of eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
48	Di Nitro Toluenen	Flammable, Explosive	Use plenty of water to cool fire exposed containers. Exposed fire fighter must wear positive self contained breathing apparatus. Foam and dry chemical powder and carbon dioxide can be used.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Di Nitro Toluene is very toxic if splashed on skin. Incase of `eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
49.	Metaol-uene Di Amine	Flamm-able, Toxic	Foam dry chemical powder, carbon dioxide. Apply water fog from as far distance as possible.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Metaoluene Di Amine is toxic, if splashed on skin. Incase of eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
50	Toluene Di Isocyanate	Corrosive, Toxic	Dry chemical powder, carbon dioxide. Do not	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen.

			apply water as it reacts violently with water at elevated temperature.	Toluenen Di Isocynate is very toxic if inhaled.. In cause pulmonary edema. TLV of TDI vapour is ver low i.e. 0.0005 ppm. If splashed on skin, incauses sensitization of skin tissue. Incase of eye contact, flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with plenty of water.
51	Methyl Iodine	Toxic	Non Flammable	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heart beats are absent, give external cardiac compression. Do not use mouth to mouth ventilation. Keep under medical surveillance for 48 hours. Consider administration of multiple metered doses of topical stercoid aerosol by inhalation and or upto 30 mg / kg of methyl prednisolone. Incase of eye, contact immediately, refer to ophthalmologist.
52	Chloro Sulphonic Acid	A poison to irritant, corrosive	Use DCP, foam if exposes to fire.	Remove victim to fresh air. If there is a difficulty breathing, give oxygen. Do not induce vomiting. Obtain medical treatment urgently.
53	Carbon Di Sulphide	Flamm-able, Explosive	Use DCP, CO2	Remove victim to fresh air. If there is a difficulty breathing, give oxygen. Do not induce vomiting. Obtain medical treatment urgently.
54	Etyhlene Oxide	Flamm-able, Carci-nogen	Use DCP	Remove victim to fresh air. If there is a difficulty breathing, give oxygen. Do not induce vomiting. Obtain medical treatment urgently.
55	Acephate Anilo-phose Ethion Phorate Quinal-phos	Non flamm-able	Use DCP, foam if exposed to fire.	Atropine sulphate in dose 2 – 4 mg for adult, 2 pam 1000 – 2000 mg / im.
56	Alachor Carbenda-zim Thiophanate – M	Non flamm-able	Use DCP, foam is exposed to fire	Inject 1 gm of Eralidioxime chloride IV. Do not induce vomiting if the injected poison is principally a hydrocarbon solvent.
57	Mancozeb Thiram	Non flamm-able	Use DCP, foam is exposed to fire	Low toxicity, no specific treatment.
58	Allethrin Cyperm-ethrin Fevalrate	<i>Toxic</i>	Use DCP, foam is exposed to fire	The treatment is symptomatic.
59	Alumi-nium Phosphate	Non flamm-able	Use DCP, foam is exposed to fire	Injection copper sulphate 0.25 gm.
60	Isopro-turon	Non flamm-able	Use DCP, foam is exposed to fire	Supportive treatment.

61	Hexa- conazole Propi- conazole	Non flamm- able	Use DCP, foam is exposed to fire	There is no specific antidotes and treats the victim symptomatically.
62	<i>Propane</i>	Flamm-able, Explosive	DCP, Water	First aid.
63	<i>Butadine</i>	Flamm-able, Explosive	DCP, Water	First aid.
64	<i>Propylene</i>	Flamm-able, Explosive	DCP, Water	First aid.
65	Styrene Monomer	Flamm-able	DCP, Foam compound	-
66	Phosphoric Acid	<i>Corrosive</i>	-	Skin Contact: - Wash with clean water. Apply dry sterile dressing. Eye Contact: Through wash with clean water, apply denominated (novelized) drop (0.4%). Inhalation: Administer O ₂ , Give him fresh drink water. Ingestion: Milk of magnesia, fresh egg, administer him oxygen.

Annexure: H
List of people who trained in Flood and Rescue Training

Sr No.	Name	Designation	Office Address	Contact	
				Office	Resident
1	J. M. Kansagra	P.T. Teacher	Shri Secondary School, Vasantpur Jamjodhpur	---	9427220356
2	R. R. Mojpara	P.T. Teacher	Shri Gunatit Vidhya Mandir, Bhadara	02893 226770	---
3	J. U. Jadeja	P.T. Teacher	Shri Chandrasinhji High School, Dhrol	02897 226445	9925303804
4	M. P. Chauhan	P.T. Teacher	Shri Digvijaysinhji, New Govt.High School Jamnagar	0288 2671738	0288 2559955
5	S. B. Aeknaam	P.T. Teacher	Shri Satya Sai Vidhyalay, Jamnagar	0288 2678722	98249 51434
6	P. M. Kanani	P.T. Teacher	Shri Amar Sarvjanik Vidhyalay, Hapa	---	9879496348
7	A. A. Patel	P.T. Teacher	Shri Jiburi Vidhyalay, Aliabada	0288 2882248	0288 2564828
8	K. K. Bhalodia	Volunteer	Nagarpalika, Jam Jodhpur	02898 220040	028982 21117
9	H. N. Khimsurya	Volunteer	NYKS, Jamnagar	0288 2884455	0288 2567462
10	P. R. Patel	Volunteer	NYKS, Jamnagar	0288 2884455	98982 4455
11	B. G. Dhacha	Volunteer	NYKS, Jamnagar	0288 2884455	---
12	D. T. Gohil	Volunteer	NYKS, Jamnagar	0288 2884455	0288 2661231
13	Damjibhai Ramjibhai	Sanitation	Nagarpalika, Kalavad	02894 222059	---
14	Chamanbhai Ramjibhai	Sanitation	Nagarpalika, Kalavad	02894 222059	---
15	R. P. Chavada	Attendant	M.P.Shah Medical College, Jamnagar	0288 2553515	---
16	Saileshbharthi Devubharthi	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	98987 6738
17	Kishan Bhikhabhai	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	94262 9091
18	Bhurji Nanji	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	---
19	Vijaydan Lakhansinh	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	94272 5451
20	Arshi Virabhai	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	9879457158
21	Jayesh Ratilal	Aa. Police Constable	Superintendent of Police, Jamnagar	0288 2676870	
22	Ratabhai Bhagabhai	Aa. Police	Superintendent of	0288 2676870	98986 79767

		Constable	Police, Jamnagar		
23	Imran A.Bukhari	Volunteer	Amran-Jodiya	--	9712577721
24	GulammohmadS.Saiyad	//	Amran-Jodiya	--	9033415982
25	Padhiyar Rasiklal Chamnalal	Grammitra	Pithad-Jodiya	--	9978776309
26	Hamsaben Jadav	Field worker	Dudhai-Jodia	--	9978205754
27	Dayaben Dhragiya	Volunteer	Jodia	--	9275012379
28	Asifbhai A.	Volunteer	Jodia	--	8460609156
29	Haji Amad	Volunteer	Jodia	--	9909082031
30	Lakha Karsan Dangar	Volunteer	Tarana-Jodia	--	9913036374
31	Hitesh Dungar Bokhani	Volunteer	Tarana-Jodia	--	9904615088
32	Dharmesh Devdanbhai	Volunteer	Tarana-Jodia	--	9978776222
33	Anand Bhogayta	Volunteer	Jodia	--	8128166440
34	Harsh Joshi	Volunteer	Jodia	--	8128166551
35	Hiren Jivani	Volunteer	Jodia	--	8537133593
36	Dharmesh Haribhai Chauhan	Volunteer	Meghpar	--	9904221134
37	Rahul chauhan	Volunteer	Jodia	--	9737853075
38	Ajuj Ayub	Volunteer	Jodia	--	9904198235
39	Mahesh Sanosara	Volunteer	Amran-Jodia`	--	9721263927
40	Padhiyar RasikLal	Volunteer	--	--	--
41	Kartik B.Vara	Homeguard	Jamnagar	--	9824401819
42	Mukund B.Dudhrejiya	Homeguard	Jamnagar	--	9979931744
43	Rahul C.Gondaliya	Homeguard	Jamnagar	--	9428986963
44	Viral R.Gondaliya	Homeguard	Jamnagar	--	9737254054
45	Parag R.Jethva	Homeguard	Jamnagar	--	7874123224
46	Mohit S.Mehta	Homeguard	Jamnagar	--	9723342433
47	Abdul A.Manek	Homeguard	Jamnagar	--	9276850404
48	Omkarsinh J.Zala	Homeguard	Jamnagar	--	9925585079
49	Ashish J.Vara	Homeguard	Jamnagar	--	9099576402
50	Ilesh V.Kher	FAES	Jamnagar	--	9879515966
51	Avnish v.Kher	FAES	Jamnagar	--	9879612259
52	Jayvirsinh B.Rana	FAES	Jamnagar	--	9979002906
53	Ranjitsinh B.Padariya	FAES	Jamnagar	--	9537352386
54	Anvar H.Gajan	FAES	Jamnagar	--	9978366656
55	Chabhadia Keval	NSS	Latipur-Dhrol	-	8866469990
56	Mendpara Nitin	NSS	Latipur-Dhrol	--	9725387118
57	Gohil Bharat K.	NSS	Medi-Kalawad	--	7623098909
58	Makwana Haresh K.	NSS	Dhutarpar-Jamnagar	--	9712629969
59	Thakar Balkrishna D.	NSS	Bajrangpur-Jamnagar	--	8469935111
60	Rathod Jaydip R.	NSS	Dhutarpur-Jamnagar	--	9687022344
61	Pumbhdiya Hardik J.	NSS	Medi-Jamnagar	--	9408275425
62	Madhani Divyesh R.	NSS	Dhutarpur-Jamnagar	--	8758720930
63	Madhani Nikunj R.	NSS	Dhutarpur-Jamnagar	--	9638989313
64	Dhrangiya Bharat B.	NSS	Kalawad	--	8128801918
65	Bathwar Vishal J.	NSS	Devpur-Kalawad	--	8980429416
66	Vaghela Baldev M.	NSS	Pipliya-Kalawad	---	8238588839
67	Vaghelka Navin R.	NSS	Jivapar-Kalawad	--	9016257650
68	Jadeja Parakrimsinh J.	NSS	Mulila-Kalawad	--	9879367730

69	Jadeja Ravirajsinh B.	NSS	Mulila-Kalawad	--	9537825492
70	Jadeja Ravindrasinh P.	NSS	Sanala-Kalawad	--	9712068908
71	Kanjariya Jaydeep B.	NSS	Nathuvadla-Dhrol	--	9099542523
72	Jadeja Ruturajsinh R.	NSS	Mulila-Kalawad	--	9537051085
73	Bhatasan Sagar R.	NSS	Nathuvadla-Dhrol	--	7698992036
74	Vadesha Hardik T	NSS	Latipur-Dhrol	--	8980731676
75	Shingala Gaurav M.	NSS	Latipur-Dhrol	--	9998111382
76	Pipariya Atul K.	NSS	Bhadra-Jodia	--	9624451186
77	Andani Ravi B.	NSS	Latipur-Dhrol	--	7567672275
78	Rabadiya Vivie B.	NSS	Latipur-Dhrol	--	9898367665
79	Dhamsaniya Kaushik B.	NSS	Falla-Dhrol	--	9824353251
80	Tarpada Jaydeep J.	NSS	Latipur-Dhrol	--	8905989260
81	Parmar Sharad H.	NSS	Jayva-Dhrol	--	9913039096
82	Sarsavdiya Ajay S.	NSS	Sumri-Jamnagar	--	9824796461
83	Nakum Jayendra A.	NSS	Shekhpat-Jamnagar	--	8347260281

Annexure: -I
List of Govt. people who passed the Exam of HAM Radio

Sr No	Regi.No	Class	Name	Office	Resi. Address	DoB	Other qualification	Remarks
1	61	3	Sunil K. Thakar Steno English	Collector Office Saru Section road Jamnagar	4/5 Patel Colony, Road No.2, Jamnagar Ph.02882753835 M-9825372296	15/03/61	B.Com	

List of Civilian who passed the Exam of HAM Radio

Sr. No.	Regi. No	Name	Resi. Address	DoB	Other qualification	Remarks
1	4	Chandresh M. Mamtara	Abil-Gulal, Solarium Road, Jamnagar Ph.02882540085	08/08/71	D.Pharm B.Pharm	Licence NA
2	32	Dr. Urvish K. Joshi	Medical Campus, G.G. Hospital, Jamnagar	22/08/81	M.B.B.S. M.D.	
3	57	Chandani P. Patel	“Ushadip” Panchavati Gaushala, Opp. Happy Home Pro. Store, Jamnagar	16/01/86	B.Sc.	
4	Licen No. 32395	N.P.Mehta	“MATRUCHHAYA” ,Rajgor street- Jamnagar M-9824228256	6/11/75	S.Y.B.com	

Annexure: -G

D D M C - N G O MEMBER JAMNAGAR			
S.N.		ADDRESS WITH PHONE NO.	TYPE OF ACTIVITES
1	Rameshbhai Dattani Secretary Lohana Mahajan Samaj	Lohana Samaj, Nr. Pancheswar Tower, Jamnagar (O) 2564483, Mo.9824802122	Social Work Community Development
2	Bipendrasinh Jadeja Chamber of Commerce & Nodal Officer, Disaster Pannel	Chamber of Commerce Rajkot Road, Jamnagar. (O) 2550250 @ 2559798 Mo.9824812512	Social Activities
3	Manojbhai Amblani Trustee Anandabava Sansathan	Anda Bava Charitable Trust Limda Line. Jamnagar (O)0288-2678829 (M). 98244 51718	Social Activities
4	Lakhabhai Keshwala President	Factory Owners Association, GIDC, Shankar Tekari, Udhyog nagar, Plot no. 287/272. Jamnagar. (M).9328115508, 2560002/2561991, Phase-1	Facatary Owners Association
5	Kanubhai Karangiya Builders Association Jamnagar	Satya Apartment, Block No 4/5, Ground Floor, Joggers Park, C/O K.K.Builder	9825211244
6	Geetaben Dave Ladies Chamber of Commerce	Arrow vill Apartment, Block no. 401, near GMB office, Saru Section Road, Jamnagar (M).9824804252, Ph.(R) 2720030	Social Activities
7	Pravinbhai Chotai Chairman Commercial Co-operative Bank	Grain Market. Jamnagar. (M).93281 16854	Social Activities
8	President Chamber of Commerce	Grain Market Jamnagar. (1) 9824023331	Food Packet & Relief Support During Disaster.
9	Nileshbhai Toliya- Joint M.D. Ramnikbhai shah- Chairman 9898073007	Navanagar Co-operative Bank, Opp.Joli Banglow. Jamnagar. M. 98242 12209	Shri Hindocha- 9427444284
10	Mahendra Sonaiya Eng. Association	112-113, Taheriya Complex, 1st, Floor, Opp. Anupam Cinema, Jamnagar. 01 (o) 2670896, 2533040, Fax:2675220, (M).98242 12561	Social Activities

11	Bharat G. Bhogayata Media Representative	14, Shiv, Tenaments, Rameshwar Nagar, Road no.-2, Jamnagar- 361008 (M)9824246758	Social Activities

List of Other NGO

Sr. No.	Name of Representative	Name of NGO and Phone No.	Type of activity
1	Navinbhai Shashtri	PRANAMI (Khijda Temple) , Jamnagar 0288 2672829	Social Activity
2	Mehta-9998993535	Swaminarayan Sampraday, Jamnagar	Social Activity
3	Mahendrabhai	Lions club, Jamnagar , Ph.2711333/2553648/2712777	Social Activity
4	Bipinbhai Vagh	Rotary Club, Jamnagar 9824228122	Social Activity
5	Hiraben Tanna	Kasturba Mahila Vikas Gruh, Jamnagar 0288- 2751728	Social Activity
6	Dharmashibhai Samani	Kabir Ashram, Jamnagar	Social Activity
7	Gangdasbhai Kachhiya	Patel Samaj, Jamnagar	--
8	Natubhai Vithalbhai	Indian Red cross society, Jamnagar, 9428074741	Health Activity
9	Lions club Main Madhav Plaza-433- Jamnagar	Anilbhai Mehta- 9898072086	Social Activity

Annexure: -K

Inventory: -

- Resources in Jamnagar at District level

SR. NO.	OFFICE /DEPARTMENT	PH.NO.	RESOURCE INVENTORY
1.	GUJRAT "JAL BHAVAN"	0288-2677279	TANKARS-1
2.	SAMARPAN GENERAL HOSPITAL	0288-2712728	1 SEARCH LIGHT
			GENERATOR-1
			BLANKETS-100
			EXTANSION LADDER-1
			ABC TYPE-7
			STRETCHER-5S
			Medical STRETCHERS-3
			OXY.CIL-20
			MOB.VAN-1
			CHIPPING HAMER-1
			F.A.Kit
			C.T. Scan-1
			MRI-1
			ECG Portable-5
			Medical van-2
			Chlorine tablet-100
3	GSRTC	0288-2570858	Diesel Tank- 40000 Liter
4	ADISH	0288-2678206	DCP Type-2 Kg.
5	GSECL-Sikka	0288-2344033	Ambulance-2
			Fire Exi.-240
			B.A.Set-9
			Fire fighter-3
			Life jacket-4
			Life bouya-4
			Portable fire pump-3
			Trailer Fire Pump-1
			Trolley mounted DCP-4
			Emergency Light-2
6	GWSSB	0288-2677279	Water Tanker
7	Asst.Commi.Commercial tax	0288-2550294	DCP type-5 kg.
8	R&B	0288-2550362	Dumper-11
			Truck-2
			Water Tanker-2
9	DCF	0288-2553026	Generator set-1
			Jeep-2
10	GG Hospital	0288-2554629	TATA sumo-2
			Matador/Blood bank-2
			Swaraj Mazda-1

			Nursing Vehicles-1
			Ambulance-1
			Stretcher-50
			CT Scan-1
			Portable oxygen Cylinder-1.5 B Type
			Potable Ventilator-1
			Ventilator-3
			Ambulance van-7
			General Physician-23
			Trauma Spl.-8
			Surgeon-20
			Anti Snake Venon-1000
11	Fisheries Department	0288-2564904	VHF Sets-1
12	Irrigation	0288-2670688	Valkie Talkie
			Generator
13	Police department	0288-2454203	Tent-35
			Ropes-20
			Torch-5
			VHF Sets-130
			Walkie Talkie-70
			Rescue Team-6 Person
			Aska Emergency Light-18
14	Ex.Engr.Panchayat	0288-2670286	Dumper-6
			Truck-2
			Water Tanker-5
15	Civil Defense	0288-2555869	Jack -14
			Chain-1
			Sledge Hammer-37
			Hand Saw-31
			VHF Sets-3
			siren-11
			Wooden kit box-14
			Red Flags-44
			Blue Flags-18
			Fiber Roap 200 ft.10
			Fiber Roaps 100ft.7
			Wure Roap-51
			Rescue Van-1
			Ambulance Van-1
			Search and Rescue Team-1 20
			Member for Collapsed
			Search and Rescue team for
			flood-5 Person
16	Municipal corporation Jamnagar Nodal Officer-Shri Kumbharana- Dy.M.C.	0288-2672208/ 2550340	Bold Cutter-1
			Chain Saw Diamond-1
			Cutter Hydloic-2
			Cutter batery-1

			Spreader-Hydraulik-1
			Jack-1
			Sledge Hammer-5
			Smoke blower-2
			Inflatable light tower-7
			light mask-1
			Search light-3
			Electric generator-2
			Buldozer Wheel Chain-1
			Search and Rescue team-1
			Diving Suit-2
			Under Water B.A. Sets-2
			Life bouy-35
			Life Jacket-35
			Roap Launcher-1
			Inflatable Boat 12 person-1
			Fiber Boat 12 Person-2
			Fire Suit-3
			Clothing Chemical Protective{ABC} 1
			Breathing Appretus self contained -5
			Breathing Appretus compressor-1
			Pump Floating-1
			Extention Ladder-8
			Foam Type-1
			DCP Type-1
			Fire Tender-5
			Foam Tender-2
			Rescue Tender-2
17	R&B Panchayat	0288-2670286	Water Tanker-5
			Dumper-6
18	GPCB	0288-2540741	PH Meter-1
	Nodal officer- Dy.Envirement Engineer		Divers Team
19	GMB	0288-2712307	Rescue Team-12 Person
			De watering Pump-1
			DG sets-3
			Life jacket-12
			Crane-1
			Plat cutting mashine-1
			Water Tanker-1
			Boat-5 Private sector
20	GSRTC	0288-2570451	Crain-1
	Nodal officer	Shri A.D.Jethva	Ambulance-1

Annexure: - L

❖ Resources allocated by GSDMA to Collector Office/Mamlatdar Office

Sr. No.	Taluka	Life Bouy	Life Jacket	Rope (200 Ft.)	Rope (100 Ft.)	D.G.Set	Remarks
1	Jamnagar City	25	25	4	8	1	-
2	Jamnagar Rural	35	35	4	8	1	-
3	Dhrol	10	10	2	4	1	-
4	Jodiya	35	35	2	4	1	-
5	Lalpur	10	10	2	4	1	-
6	Kalawad	10	10	2	4	1	-
7	Jamjodhpur	10	10	2	4	1	-
8	SDM Jamnagar	-	-	-	-	1	-
9	Collecot Office-DEOC	-	-	-	-	-	2 Emergency light
Total		135	135	18	36	8	2

Resources Allocated at Municipality

Sr. No.	Municipality	Water Bauser	Fire tender	Inflatable Boat	Fire Bullet	Remarks
1	Sikka	--	1	2	-	-
2	Dhrol	1	1	2	-	-
3	Kalavad	1	1	2	-	-
4	Jamjodhpur	1	1	2	-	-

Equipments allotted by GSDMA Gandhinagar for the District EOCs under the GoI-UNDP DRM Programme

No.	List of Equipment for Emergency Operation Center	Quantity
1	Mobile Phone Nokia – 3120	1 Not working
2	Handset Held Walkie Talkie (No. Two)	2
3	AO-170LSD - Dell Optipex 170E Small Desktop PCs	1
4	Diesel Generating Set with Accessories	1
5	Satellite Phone	1
6	Computer	2
7	U.P.S.	1
8	Projector	1
9	Camera	1
10	Emergency portable light	2

Annexure-M

Taluka wise CHC, PHC

Sr. No.	Taluka	Name of CHCs	Name of PHCs	No.of SHC
1	Jamnagar	Sikka	Lakhabaval,MotiBanugar,Vasai, Dhutarpar, Jam Vanthali, Aliyabada, Dared,Falla	32
2	Lalpur	Lalpur	Dabasang, Padana, PipartodaBhangor, Mota Khadba,Modpar	48
3	Jamjodhpur	Jamjodhpur	Samana,Jamvali,Vansajaliya, Ghunada,Sheth Vadala,Dhrafa,Paradava	28
4	Kalavad	Kalavad	Nikava, Navagam, Kharedi, Bhalsan Beraja,Mota Panch Devda, Mota Vadala	31
5	Dhrol	Dhrol	Latipur, Jalia Devani, Laiyara	38
6	Jodiya	Jodiya	Balamba, Hadiyana, Amaran	

Resources at Health department

Bed Strength, Dist - Jamnagar, Year : 2021

Sr.No.	Institution	Bed Strength				
		Available			Extensible	Total
		AC	Non AC	Total		
1	PHC	0	180	180	200	380
2	CHC	0	305	305	110	415
3	SDH					
4	DH	11	139	150	50	200
5	Medical College	35	1250	1285	0	1285
6	NGOs					
7	Private Hospital	--	--	--	--	--
	Essar	4	0	4	0	4 (No Admission only observation)
	Reliance	20	0	20	10	30
8	Community Hall					
9	School	0	0	0	20000	20000

Human Resources, Dist - Jamnagar, Year : 2021

No	Cadre	Institution							
		PHC	CHC	SDH	DH	Private Hospital Essar	Private Hospital Reliance	Medical College	Education Dept.
1	Specialist Doctors	Nil	1		7	--	5	194	
2	Medical Officer	22	22		5	3	10	6	
3	AYUSH	22	2		0	--	--	-	
4	BPNA Staff	28	58		0	4	8	-	
5	Supervisors	29	0		0	--	--	-	
	(FHS/MPHS/SI/MS etc)	34/35/0/0	0		0	--	--	-	
6	FHW	255	0		0	--	6	-	
7	MPW	41	0		0	--	--	-	
8	Pharmacist	41	6		3	1	1	10	
9	Lab Technician	21	9		3	1	2	5	
10	ASHA	725	0		0	--	--	-	
11	Anganwadi Worker	1532	0		0	--	--	-	
12	Volunteers	Nil	1		0	--	--	-	
13	Other (if any pls specify)	Nil	11		0	--	4	-	
Total		2785	110		18	14	36	215	

Equipment at Department

No	Name of Equipment	Medical College	District Hospital	SDH	CHC	PHC	Private Hospital Essar	Private Hospital Reliance
1	Ventilator	34	2		4	0	--	2
2	O ₂ Cylinder	140	13		33		2	15
3	Enchotrachal tube	1500	0		15	0	--	10
4	Laryngoscope	100	3		15	0	1	5
5	Defibrication	22	1		3	0	2	2
6	Refrigerator	40	4		14	80	2	5
7	Lagrange Mask Airway	--	0		7	0	--	2
8	Ambu Bag	100	1		19		2	5
9	PPE (Personnel Prevention Examination) Kit.	--	0		3	0	--	--

10	Pulse Oximeter	30	3		8	0	1	2
11	ECG Machine	15	3		9	0	2	2
12	Endotrachal tube	1500	0		17	0	10	--
13	Straturas	--	0		11		3	2
14	Vehicle Chair	--	0		12	0	1	2
15	Pulse Monitor	25	1		5	0	--	2
16	Cervical Coller	--	1		0	0	1	1
17	Long Spring Board	--	0		0	0	1	1
18	N – 95 Masks	--	0		1	50	--	--
19	Autoanalyser	3	2		3	0	--	1
20	X – ray Machine	11	3		11	0	--	1
21	Generator	2	1		12	22	--	1
22	Other (if any pls specify)	-	0		3		--	--

Annexure-N

Health Department Rapid Response Teams

Team No : - 1

S.No	Name of Officer / Employee	Department Name	Mobile Number
1	Dr. Manish Khokhar	Medicine (Team incharge)	8128882085
2	Dr. Smit Panara	Surgery	9428669300
3	-----	Orthopedic	-----
4	Neeraj Goswami	Staff nurs	9427246646
5	Vishal L Wala	Driver	7990237858
6	Anoop Singh Chauhan	Servent	8141539402

Team No : - 2

S.No	Name of Officer / Employee	Department Name	Mobile Number
1	Dr. Yagnik Chotala	Medicine (Team incharge)	9925564861
2	Dr. Kevin Ajudiya	Surgery	9974232422
3	-----	Orthopedic	-----
4	Subhash Patel	Staff nurs	9408526800
5	Madhur K Gopyani	Driver	9904949517
6	Hien Ojha	Servent	9687124175

Team No : - 3

S.No	Name of Officer / Employee	Department Name	Mobile Number
1	Dr. Mehul Kaliya	Medicine (Team incharge)	9727732012
2	Dr. Ravi Sudani	Surgery	7014152483
3	-----	Orthopedic	-----
4	Anand Dave	Staff nurs	7984652033
5	Mahesh K Parmar	Driver	9904324485
6	Bhagwan G Solanki	Servent	7096565930

Team No : - 4

S.No	Name of Officer / Employee	Department Name	Mobile Number
1	Dr. Sneha Vadvana	Medicine (Team incharge)	9824451705
2	Dr. Sunny Prajapati	Surgery	8866557956
3	-----	Orthopedic	-----
4	Pankaj Padhda	Staff nurs	9879332081
5	Nareash Parmar	Driver	9574431013
6	Paresh Thapa	Servent	9879739143

Team No : - 5

S.No	Name of Officer / Employee	Department Name	Mobile Number
1	Dr. Hasmukh Ansari	Medicine (Team incharge)	9601291950
2	Dr. Pinal Pipaniya	Surgery	7014152483
3	-----	Orthopedic	-----
4	Bakul M Pamecha	Staff nurs	9824299369
5	L.R. Wala	Driver	9879744894
6	Bharat Chudasama	Servent	8141415916

Annexure-O
Taluka Wise Swimmer list

No.	Swimmer Name	Village / City	Adress	Mo. No.	Working place	Taluka/ Remarks
1	Kasam valimamad jam	Dhrol	Akhai fani, Dhrol	0	NA	Dhrol
2	Salimbhai Kakal	Dhrol	Gaytrinagar, Dhrol	0	NA	Dhrol
3	NA	NA	NA	0	NA	Dhrol
4	Mahebbubhai Langha	Dhrol	Padhdhari Geat, Dhrol	0	NA	Dhrol
5	Viram Rukha Varu	Dhrol	Men Bajar, Bharvad Street, Dhrol	0	NA	Dhrol
6	Jasha dhana Varu	Dhrol	Bharvad Street, Dhrol	0	NA	Dhrol
7	D.N.Vadhera	Dhrol	Chandan vas, Dhrol	0	NA	Dhrol
8	Rafiqsa B. Shahamdar	Dhrol	Langha Street, Dhrol	0	NA	Dhrol
9	RAMESHBHAI NANJIBHAI KHANT	Jamjodhpur	JAMJODOHPUR	0	JAMJODHPUR	Jamjodhpur
10	MAHENDRABHAI HARIBHAI KADIVAR	Jamjodhpur	JAMJODOHPUR	0	JAMJODOHPUR	Jamjodhpur
11	CHNDRAKANT GOPALDASJI KANJIYA	Jamjodhpur	JAMJODHPUR	0	JAMJODHPUR	Jamjodhpur
12	DINESHBHAI MAGANBHAI BAROKI	Jamjodhpur	JAMJODHPUR	2898220149	JAMJODHPUR	Jamjodhpur
13	MOHANBHAI DUDABHAI BHALODIA	Jamjodhpur	JAMJODHPUR	2898221117	UMIYA ENGINEERING JAMJODHPUR	Jamjodhpur
14	ANILBHAI JAMANBHAI BAKORI	Jamjodhpur	JAMJODHPUR	0	JAMJODHPUR	Jamjodhpur
15	BHARATBHAI GOVINDBHAI BAKORI	Jamjodhpur	JAMJODHPUR	2898222638	UMA PAN, LIMDA CHOCK, JAMJODHPUR	Jamjodhpur
16	RANCHOD BAVANJI KODI	Gingni	GINGNI, JAMJODHPUR	2898	GINGNI, Jamjodhpur	Jamjodhpur
17	RAMJIBHAI CHAGANBHAI MAKAVANA	Sidsar	SIDSAR, JAMJODHPUR	2898274754	UMIYA MANDIR, SIDSAR	Jamjodhpur
18	ATULBHAI NARSHIBHAI MANAVADRIYA	Sidsar	SIDSAR JAMJODHPUR	2898274449	SIDSAR, JAMJODHPUR	Jamjodhpur
19	KANTILAL KURJIBHAI AMRUTIYA	Sidsar	SIDSAR, JAMJODHPUR	0289827475 1 (P.P.)	SIDSAR	Jamjodhpur

20	ANAVAR AUB SANGAR	Sikka	SIKKA	0	SIKKA	Jamnagar
21	HARUN AMAD BHOLIM	Sikka	SIKKA	0	SIKKA	Jamnagar
22	ABBAS ABDUL SUBHNIYA	Sikka	SIKKA	8758730899	SIKKA	Jamnagar
23	JUNAS DAUD BAROYA	Sikka	SIKKA	7600438823	SIKKA	Jamnagar
24	SALEMAMD AADAM GAJAN	Sikka	SIKKA	7567165208	SIKKA	Jamnagar
25	RAJAK H. GANGHAR	Sikka	SIKKA	0	SIKKA	Jamnagar
26	AAMD SULEMAN SUBHANIYA	Sikka	SIKKA	8460805655	SIKKA	Jamnagar
27	RAJAK S.SHAGHAR	Sikka	SIKKA	0	SIKKA	Jamnagar
28	ALI ISMAIL HUNDADA	Sikka	SIKKA	0	SIKKA	Jamnagar
29	JAFAR I.GHODIYVARA	Sikka	SIKKA	2344341	SIKKA	Jamnagar
30	IBRAHIM H. MUSHANI	Sikka	SIKKA	0	SIKKA	Jamnagar
31	jusub husen sodha	Bedi	NA	0	NA	Jamnagar
32	osman husian sodha	Bedi	NA	0	NA	Jamnagar
33	KARIM SIDIK KARECHA	Bed	NA	0	on port	Jamnagar
34	ismail K. KHUGHDA	Bed	NA	0	on port	Jamnagar
35	DAUAD A. GHADH	Bed	NA	7567172628	NA	Jamnagar
36	ADAM HUDADA	Bed	NA	0	on port	Jamnagar
37	KASAM BAROYA	Bed	NA	0	on port	Jamnagar
38	ADAM SUMBHANIYA	Bed	NA	0	on port	Jamnagar
39	KASAM SIDIK BHAGAD	Bed	NA	0	on port	Jamnagar
40	KASM SIDIK BHAGAD	Bed	NA	0	on port	Jamnagar
41	ABU J.KERECHA	Bed	NA	0	on port	Jamnagar
42	HUSAIN SIDIK SUBHNIYA	Bed	NA	9913223025	on port	Jamnagar
43	JUSAB MUSA SUBHANIYA	Bed	NA	9913565580	on port	Jamnagar
44	Shri Janibhai	Jamnagar	Bed Area,Jamnagar	9375814437	on port	Jamnagar
45	Haroon Patel	Jodiya	Motavas Jodiya	2893222492	Jodiya	Jodiya
46	M. H. Noormamad	Jodiya	Motavas Jodiya	0	Jodiya	Jodiya
47	Ali Haji	Jodiya	Motavas Jodiya	0	Jodiya	Jodiya
48	Kasu Daud	Jodiya	Nana Jodiya	NA	Jodiya	Jodiya
49	Ishaq Husain Sher	Jodiya	MOto Vas	0	Jodiya	Jodiya
50	Hasam Ismail	Jodiya	Pathashala Jodiya	2893222404	Jodiya	Jodiya
51	Samir Abdula	Jodiya	Motovas Jodiya	0	Jodiya	Jodiya
52	Habib Suleman Saicha	Jodiya	Moto Vas	0	Jodiya	Jodiya
53	Oshman Bavala Saich	Jodiya	Moto Vas	NA	Jodiya	Jodiya
54	Kasam Daud Ladak	Jodiya	Motovas	0	Jodiya	Jodiya
55	Mamad Suleman Patel	Jodiya	Nano Vas	0	Jodiya	Jodiya
56	Doud Sumar Chavada	Jodiya	Nano Vas	2893287208	Jodiya	Jodiya

57	Daud Husain Sana	Jodiya	Nano Vas	0	Jodiya	Jodiya
58	Umar Mamad Sama	Jodiya	Nano Vas	0	Jodiya	Jodiya
59	Husain Suleman Cher	Jodiya	Nano Vas	0	Jodiya	Jodiya
60	jakub Mamd Rao	Jodiya	Nano Vas	0	Jodiya	Jodiya
61	Isha Husain Sana	Jodiya	Nano Vas	2893252407	Jodiya	Jodiya
62	haji kasam	Jodiya	Nano Vas	0	Jodiya	Jodiya
63	Jogi Girish J.	Jodiya	Path Shala	2879322404	Jodiya	Jodiya
64	Iqbal Daud Shipai	Jodiya	Balambha	2893285274	Jodiya	Jodiya
65	Aamad Sidik Juneja	Jodiya	Balambha	2893287208	Jodiya	Jodiya
66	Jusab Harun	Jodiya	Zinzuda	0	Jodiya	Jodiya
67	Kara Husain Sandhi	Jodiya	Zinzuda	0	Jodiya	Jodiya
68	Daud Hasam Jam	Jodiya	Zinzuda	0	Joiya	Jodiya
69	Chatur Deva Koli	Jodiya	Zinzuda	0	Jodiya	Jodiya
70	Jima Haji Sumariya	Jodiya	Balachadi	2893286225	Balachadi	Jodiya
71	Akbar Harun Abbas	Jodiya	Balachadi	0	Balachadi	Jodiya
72	Harun Allarakha Chamadia	Jodiya	Balachadi	0	Balachadi	Jodiya
73	Sabbir Sidik Radha	Jodiya	Balachadi	0	Balachadi	Jodiya
74	Mubarak Sidik Radha	Jodiya	Balachadi	0	Balachadi	Jodiya
75	Anwar Sidik Radha	Jodiya	Balachadi	0	Balachadi	Jodiya
76	Anawar Sidik Sumariya	Jodiya	Balachadi	0	Balachadi	Jodiya
77	Kasam Bachu Gajan	Jodiya	Aambla	0	Aambla	Jodiya
78	Mamad Bachu Gajan	Jodiya	Aambla	0	Aambla	Jodiya
79	Hanif Dost Mamd. Ghavada	Jodiya	Aambla	0	Aambla	Jodiya
80	Kasam Sidik Sampar	Jodiya	Aambla	0	Aambla	Jodiya
81	Satar Hasam Ghavada	Jodiya	Aambla	0	Aambla	Jodiya
82	Abbas Ishmail Gajjan	Jodiya	Aambla	0	Aambla	Jodiya
83	Mamad Husain Sanghar	Jodiya	Aambla	0	Aambla	Jodiya
84	Kara Bachu Ghavada	Jodiya	Aambla	0	Aambla	Jodiya
85	Allarakha Daud Ghavada	Jodiya	Aambla	0	Aambla	Jodiya
86	Satar Hasam Gajana	Jodiya	Aambla	0	Aambla	Jodiya
87	Kalavad	NEAR GEETA MILL, KALAVAD	222044	NA	NA	Kalawad
88	KARSANBHAI DEVJIBHAI PANSURIYA	Kalavad	NEAR GEETA MILL, KALVAD	222044	NA	Kalawad
89	GAGJIBHAI KANABHAI	Kalavad	KUMBHNATHPARA, KALAVAD	(o) 222059	NA	Kalawad
90	D.R.Vaghela	Kalavad	Ambedkar Nagar, kalavad	0	NA	Kalawad
91	S.A.Raval	Kalavad	Kailash Nagar, kalavad	222828	NA	Kalawad
92	I.P.Jadeja	Kalavad	kumbhnathpara, kalavad	0	NA	Kalawad
93	D.K.Maivad	Kalavad	kumbhnathpara, kalavad.	0	NA	Kalawad

94	F.M.Bhatti	Kalavad	kumbhnathpara,kalavad	0	NA	Kalawad
95	N.M.Goswami	Kalavad	kumbhnathpara,kalavad	224184	NA	Kalawad
96	B.N.Gamara	Kalavad	Bharvad pa,baripase,kalvad	0	NA	Kalawad
97	JAGUBHAI MULJIBHAI DHIMMAR	Kadod	AT:KADOD	0	NA	Lalpur
98	SHRI RAMESHBHAI HIRABHAI BHANDARI	Pelad Buhari	PELAD BUHARI. TA-VALOD	0	PELAD BUHARI	Lalpur
99	M.P.Damor	Meghraj	Meghraj	0	Meghraj	Lalpur
100	NATHABHAI R BARIYA	Bhamariya	IN THE VILLAGE	9909620489	NA	Lalpur
101	NATHABHAI R BARIYA	Bhamariya	IN THE VILLAGE	9909620489	NA	Lalpur
102	NATHABHAI R BARIYA	Bhamariya	IN THE VILLAGE	9909620489	NA	Lalpur
103	NATHABHAI R BARIYA	Bhamariya	IN THE VILLAGE	9909620489	NA	Lalpur
104	KANAJIBHAI VASHRAM	Ranmalpur	RANMALPUR	0	RANMALPUR	Lalpur
105	PRAKASHBHAI BHUPAT	Nava Amrapar	NAVA AMRAPAR	0	NA	Lalpur
106	JATUBHA CHANDUBHA	Dighadiya	DIGHADIYA	0	NA	Lalpur
107	HASMUKHBHAI DEVABHAI	Khod	KHOD	0	NA	Lalpur

Annexure-P

Civil Defense siren at various location in District

Sr. No.	Location	Adress
Jamnagar City Siren Tower List By CD		
1	On Railway Station	Jamnagar City
2	Bedigram	Jamnagar City
3	Khambhaliya Gate	Jamnagar City
4	Fire & Emergency services	Jamnagar City
5	Gulab Nagar School	Jamnagar City
6	GEB Sat Rasta Office	Jamnagar City
7	Gandhigram Office	Jamnagar City
8	Vora Hajiro	Jamnagar City
9	New Bharat Mill	Jamnagar City
10	Digvijay Plot No,45, High school	Jamnagar City
11	Udhyog Nagar Police Choki	Jamnagar City
12	Dhanvantary	Jamnagar City
13	Singach Gram Panchayat Office	Singach-Ta-Lalpur
14	Zankhar Gram Panchayat Office	Zankhar, Ta-Lalpur

Annexure-Q
List of Coastal Villages























List of Coastal Villages			
Sr.No.	Name of Taluka	Name of village	Population
1	Jodiya	Kothariya	743
2		Manamora	553
3		Bhimkata	849
4		Jamsar	642
5		Khiri	554
6		Balachadi	1518
7		Jodia	12286
8		Badanpar jodia	2148
9	Jamnagar	Khijadiya	2560
10		Mungni	5500
11		Gangava	837
12		Bed	7272
13		Vasai	1818
14		Dhinchda	2790
15		Sachana	4558
16		Sarmat	1891
17		Digvijaygram	9530
18		Khara Beraja	1000
19		Nava Nagna	4369
20		Gordhanpar	400
21	Lalpur	Singach	3899
22		Zankhar	724
Total		22	66541

Other villages-10 KM area

Other villages 10 km area			
Sr.No.	Taluka	Village	Remarks
1	Jadiya	Limbuda	-
2		Kunnad	-
3		Ranjitpar	-
4	Jamnagar	Sikka	-
5		Nani Khavdi	-
6		Moti Khavdi	-
7		Rasul nagar	-
8		Sapar	-
9		Ravalsar	-
10		Bedi	-
11		Dhunvav	-
12		Jambuda	-
13		Rampar	-
14	Lalpur	Jogvad	-
15		Meghpar	-
16		Khatiya Beraja	-
17		Padana	-
Total		17	-

Annexure-R

Port signal

PORT STORM WARNING SIGNAL NO.	DAY SIGNAL	NIGHT SIGNAL	MEANING
1			DISTANT CAUTIONARY (There is a region of squally weather in which a storm may be forming.)
2			DISTANT WARNING (A storm has formed.)
3			LOCAL CAUTIONARY (The port is threatened by squally weather.)
4			LOCAL WARNING (The port is threatened by a storm but it does not appear that the danger is as yet sufficiently great to justify extreme measures of precaution.)
5			DANGER (The port will experience severe weather from a cyclone expected to move keeping the port to the left of its track.)
6			DANGER (The port will experience severe weather from a cyclone expected to move keeping the port to the right of its track.)
7			DANGER (The port will experience severe weather from a cyclone expected to move over or close to the port.)
8			GREAT DANGER (The port will experience severe weather from a severe cyclone expected to move keeping the port to the left of its track.)
9			GREAT DANGER (The port will experience severe weather from a severe cyclone expected to move keeping the port to the right of its track.)
10			GREAT DANGER (The port will experience severe weather from a severe cyclone expected to move over or close to the port.)
11			FAILURE OF COMMUNICATIONS (Communications with the Meteorological Warning center have broken down and the local officer considers that there is danger of bad weather.)

Annexure-S

List of APDAMITRA-

Sr. No.	Name Of APDA mitra	Mo. No.
1	Barad Krishnaben Savdasbhai	9925185609
2	Babariya Tamnnaben Rajeshbhai	8264534367
3	Makwana Dipmala Virjibhai	9537664917
4	Varagiya Ravinaben Pravinbhai	8511777225
5	Aslam Hanifbhai Dodhiya	9913392414
6	Valji Arjanbhai Katodiya	9712625659
7	Jadeja Rajvirsinh Indrajitsinh	8849294266
8	Dhaneja Mehul Mansukhbhai	7016609318
9	Gosai Chirag Rameshgori	7574051770
10	Sarasiya Dinesh Vsrambhai	9737462343
11	Gojiya Nirav Hardasbhai	9265431380
12	Manek Harin Mahmadbhai	8460911197
13	Solanki Rakesh Hardasbhai	9725318375
14	Makwana Dipak Rudabhai	9099385350
15	Varaniya Ketan Tejabhai	9978173654
16	Visani Mayur Mahendrabhai	9979210476
17	Varagiya Anil Najabhai	9909390661
18	Saiyad Harfan Sirajbhai	8849145491
19	Jadeja Yashpalsinh Lakhubha	8160982822
20	Methaniya Kishor Kamabhai	7573935203
21	Vala Rupsinh Navalsinh	7202842279
22	Jatiya Sagar Hematbhai	9426015483
23	Dharaviya Kalpesh Damjibhai	8511938779
24	Dharaviya Bharat Hiralal	8140406277
25	Jadav Kishor Danabhai	9662801647
26	Mobhera Rameshbhai Chanabhai	9979292473
27	Khimsuriya Dilip Mangabhai	9537654074
28	Khimsuriya Hitesh Badhabhai	8347149814
29	Chavda Subhash Haribhai	9979909819
30	Vansiya Raj Hardasbhai	9033914599
31	Sagar Parthsinh Vanrajsinh	9825243016
32	Sumaniya Ranjitbhai P.	7359914885
33	Thaisam Sahil M.	9552157285
34	Mahemud Musa kamosa	7405904840
35	Skekh Jafar Abdulbhai	8200885201
36	Saiyad Salman Raja H.	7046423211
37	Ghodadra Rohit M.	8140348778
38	Gujarati Anandbhai Kishorbhai	9913954257
39	Mogal Rizvan Junasbhai	8980893208

40	Taiyam Ali Hasan	9512646170
41	Gadhar Vakas Iqbal	8320572957
42	Arju Rajeshbhai Rathod-Jamjodhpur	9913224204
43	Karishma Kishorbhai Parmar-Jamjodhpur	9624357456
44	Divyarajsinh Narubha Jadeja- Jamnagar city	8141437501
45	Aslam Hanifbhai Dodhiya- Bhavabhi Khijadiya-Kalavad	9913392414
46	Ashwin Babunhai Gondaliya-Makeanisansar-Kalavad	9429272760
47	Sikandara Rehman Sanji, Nana Vadara- Kalavad	9924675476
48	Birju Pravinbhai Kanakhara, Jamnagar city	9277552299
49	Saleman Karimbhai Rauma-Chandigadh-Lalpur	6353130679
50	Mubarak Visabhai Rauma-Chandigadh-Lalpur	6353339212
51	Abbasbhai Visabhai Rauma-Chandigadh-Lalpur	6353308990
52	Yunisbhai amadbhai Rauma, Chandigadh-Lalpur	9773359460
53	Shaileshbhai Jesabhai Ramani-Latipur-Dhrol	9727659137
54	Kanti Odhavbhai Ramani- Latipur-Dhrol	7567157421
55	Bhavesb Narsinh Vadoliya- Latipur-Dhrol	9998513572
56	Kirit Jaysukhbhai Ramanuj- Latipur-Dhrol	9898345282

Annexure-T

List of 108 Ambulance services in Jamnagar district

Contact Person: - Shri Bipin Bhetariya-8238088815

Sr. No.	Taluka	Place	Location/Ambulance
1	Jamnagar	Jamnagar city	Ranjit Sagar Road-1
			Janta Fatak-1
			Ranjit Nagar-1
			GIDC Dared-1
		Sikka	1
		Aliyabada	1
2	Jodiya	Jodiya	1
3	Dhrol	Dhrol	1
4	Jamjodhpur	Jamjodhpur	1
5	Kalavad	Kalavad	1
6	Lalpur	Lalpur	1
Total			13

Annexure-U

Blood Bank Information, Dist. Jamnagar

Sr. No	Name of Blood Bank	Address	Contact No.	Remarks
1	Jamnagar Voluntary Blood Bank	First Floor Shankutal Apartment Hawaii Chowk - Jamnagar, Shankutal Apartment, Khambhalia Gate, JAMNAGAR - 361001,	0288-2673339	
2	Saraswati Voluntary Blood Bank	Near Dr. Shukla's Hospital Summer, Club Road, Jamnagar, Gujarat 361005	097730 31306	
3	samved voluntary blood bank & research center-jamnagar	1st floor, 'SATVA' opposit us pizza , 6-patel colony,bedy port road,, jamnager, Jamnagar, Gujarat 361008	095376 10108	
4	G. G. Hospital Blood Bank	M. P. Shah Medical College And Guru Govindsinh Hospital, Jamnagar, Gujarat - 361008	0288-2550240	

Annexure-V

Civil Defence Data

Sr.No.	Warden Name	Designation	Adress	Contact No.
1	Kamlesh B.Pandya	Chief Warden	9/2,Bhagvati Apartment, Panchvati, Jamnagar	9824510942
2	G.B.Jadeja	Chief Warden	Nalanda Society, Block No. 24, Jamnagar	
3	Keshvi a.Ghetiya	Divi.Warden	Bh-Sodha School, Jawahar Society, Jamnagar	9227774173
4	Dr.Raxaben Davda	Divi.Warden	8-Patel Colony, Road-3-4, Jamnagar	9727573737
5	H.J.Borisagar	Dy.Divi.Warden	Chitrkut, New aram colony-Jamnagar	9428668019
6	S.B.Nanavati	Post Warden	Patel Colony-Street-6, Jamnagar	-
7	A.K.Metar	Dy.Divi.Warden	Ghanchivad-Jamnagar	9904587858
8	Paresj Chauhan	Warden	Jamno dhero, Darbargadh, Jamnagar	
9	Piyush Vora	Warden	City Point, Town hall, Jamnagar	
10	R.V.Ganana	Warden	45-Janta Society, Nr.Radhika Classes	
11	Hasan A.Bhanderi	Warden	Nr.Panch Hatdi-Jamnagar	
12	Jignesh H.Maheta	Warden	Sinhvai street, Haveli Road	
13	Smt.Kalpnaben patel	Warden	10/4, Patel Colony	
14	K.V.Joshi	Warden	Nr.Pancheshwar Tower	
15	Vinubhai Tanna	Warden	Chitrkut, Khodiya Colony	
16	Vinubhai Chotai	Warden	City Point,Nr.Townhall	
17	K.D.Gojiya	Warden	D-118,Opp- Ishwar Palace	
18	Mustak Y.Parmar	Warden	Patnivad	
19	Shankar J.Chauhan	Wardeb	Kabirnagar, Opp-Dental College	
20	Hardik B.Upadhyay	Warden	2/7, Janta Society, Ganesh Krupa	
21	Rahul H.Ajmeriya	Warden	Opp-Railway Station, Indra Society	
22	Bharat L.Kateshiya	Warden	Shyamnagar, Radar road	9304633892
23	Kalpesh P.Shah	Warden	Paras, Vanda Fali	
24	Makwana Rasiklal G.	Warden	Govt.Quarter, Pradarshan Ground C-9	
25	Chavda Vijay K.	Warden	Nagnathgate, Indravijay, Street No.3	
26	Sarvaiya Ravi H.	Warden	Navagam Ghed, Indira Society	

27	Rathod Rushi B.	Warden	Anand Society Navagam Ghed	
28	Chauhan Mukesh M.	Warden	Navagam Ghed,Bh-Sidhnath School	
29	Dhokiya Sunil P.	Warden	Momaikrupa, Shaktinagar	
30	Dave Mitesh V.	Warden	Opp-Central Bank, Gor no Delo	
31	Rathod Hitesh R.	Warden	Bh-Subhash Market, Korivad	
32	Gorecha Mohit B.	Warden	Pancheshwar Tower, Vanda Fali	
33	Vaghasiya Himanshu H.	Warden	Opp-Navanagar High School	
34	Jayrani Anil Vasudev	Warden	Nr.Subhash Market, Bhoivado	
35	Ms.Sonia Nihlani	Warden	Medical Campus-e-60	
36	Gojiya Ranmal R.	Warden	Nalanda Hostel,Kailashnagar	
37	Islaniya Rakesh D.	Warden	New patel Colony, Kabirpata Road	
38	Chavda Naga K.	Warden	Nalanda Hostel,Kailashnagar	
39	Bhatt Ashish P.	Warden	Kailashnagar,	
40	Sodha Virendrasinh	Warden	Police HQ.Saru section Road	
41	Kande Rahul	Warden	Navagam Ghed,Satnam Dairy	
42	Mandviya Ashokbhai	Warden	58-Digvijay plot street no.7	
43	Ms.Parmar Upma	Warden	Gulabnagar mihan nagar block no.80	
44	Gohil Pruthvi	Warden	Opp-Income tax office-Manek centre	
45	Kum.Ladva Rina	Warden	Patel colony Street no.10	
46	Kum.Bhatti hemangi N.	Warden	Om Tenament No.5-ambaji Chawk	
47	Maheriya Krunal R.	Warden	4 Krishnapark Society-Airfor Agriculture	
48	Kum.Patel Nadini B.	Warden	6-Patel Vcolony-Rangmati apartment	
49	Ajmeriya Rahul H.	Warden	Bh-Railway station, Indra society	
50	Kum.Gosai Gagruti	Warden	45-1, sidhdhi vinay park sadhna colony	
51	Dabhi Jayendra Shivabha	Warden	49-Digvijay Plot, Shankar Tekri	
52	Kum.Bhadra Shital	Warden	Ranjit nagar F/18/640	9974867432
53	Gori Vijay Devjibhai	Warden	58-Digvijay Plot, Bhinushali Para Sant Kru	

54	Joshi Mukesdh Jentilal	Warden	Krushnagar street no. 2, opp-Rasha Krushna temple	
55	Boliya Iqbal A.	Warden	Khoja gate, Titodivadi	
56	Chavda Vijay K.	Warden	Nagnath gatem Nr indravijay bapu, street no.3	9727275439
57	Saha Kamlesh P.	Warden	Nr.Paras Hanbai Masjid, Vandafali	
58	Jadeja Rajendrasinh Surubha	Warden	Punit nagar,.Momai nagar	9979036359
59	Makwana Rasiklal	Warden	Matru Ashish, Street no.3, Bh-TB Hospital	
60	Joshi Jayprakash A.	Warden	4 Patel Colonu-Pushpanjali	
61	Pitroda Hiren	Warden	Air force road,Mayur nagar	
62	Sarvaiya Ravji H.	Warden	Indira society-Street no.4, navagam ghaed	
63	Chauhan Mukesh M.	Warden	Bh-Juna railway station, Navagam ghed	
64	Rathod Rushi B.	Warden	Anand society, Block no.18/29	9328812980
65	Sodha Pradyumansinh G.	Warden	Railway Colony-HAPA	
66	Chavda Pradyumansinh S.	Warden	Ramesahwar nagar , KP shah vadi, Shanti park society, 23A	
67	Sodha Navin Pravinchandra	Warden	Sadhna Colony-Block no.105,	9924090063
68	Chudasama Akram	Warden	Lal khan madina Masjid pase	
69	Bhatt Harsh V.,.	Warden	Kabir Ashram Road, new patel colony	
70	Rathod Hiren B.	Warden	Gandhinagar, Shankar tekri, sidhnath colony	9328706717
71	Yadav Vishal K.	Warden	Gandhinagar, Shankar tekri, sidhnath colony	9824622559
72	Jadeja Dharmendrasinh	Warden	Ranjit Nagar, new Hudko J14/1631	9324632893
73	Takodra Nikhil B.	Warden	Digvijay plot 46, id masjid same subhash para	
74	Gori Rajesh Devjibhai	Warden	58-Digvijay Plot, Bhanushalipara	
75	Chavda Indrajitsinh N.,.	Warden	Bh-Khodiya colony, Ashapura Society	
76	Jadeja Hitendrasinh	Warden	Khodiya Colony-Jai mataji krupa	

77	Dhupa Bharat	Warden	Bh-Andhshram- Manoj Pan centre	
78	Gojiya Riten Ramsin	Warden	Mayur society, satyam colony same	
79	Dhokiya Sunil P.	Warden	Momai Krupa shaktinagar -1 Khodiyar colony	
80	Ramavat Jayesh R.	Warden	Gokul nagar, bh-Adarsh Provisiopl store	
81	Talpara Jagdish G.	Warden	Gkun nagar road, Shyam nagar street no.22	
82	Bariya Ilesh M.	Warden	Khambhaliya naka, Dwarka puri Road	
83	Bhatt Hiren R.	Warden	Rambaug Bhatiya mahajan vadi, Dwarka puri Road	9228142051
84	Jadeja Bhupatsinh	Warden	National High School, Khambhaliya gate near	
85	Dave Nitesh V.	Warden	Opp-Centrla bank, Luharsar Road	
86	Makrani Iqbal K.	Warden	Khoja nake, Shekhavat Ali pir shah ni dargah	
87	Holi Shehnaj A.	Warden	Bhavsar Chaklo, Galeriya Streret No.1	9376572720
88	Kamani shehnaj	Warden	Khoja nake, Nr.Nagori hospital	
89	M.Vasim Arshid	Warden	Nr.Jambudi masjid,	9737876898
90	Juneja Rizvan A.,.	Warden	Mulla medi road, Nr.K.K.Bakery	9737664783
91	Liya Sharad M.	Warden	Bardhan Chawk , Bedi fali, Bh-Jumma masjid	
92	Dhandha Jitendra	Warden	Bardhan Chawk, LKindi bajar	
93	Gori Sahil S.	Warden	Nr.Ratanbai Masjid, Langhava street	9274020208
94	Rathod Hitesh r.	Warden	Bh-Subhash Market, Dhunvav gate kolivad	
95	Jayrani anil v.	Warden	Subhash market, malla no delo, bhoivado	
96	Parmar amit Nanjibhai	Warden	Kabir Ashram, new patel colony	
97	Jadeja Mayur B.	Warden	Grain market 3 Gate, nr. Vaniya vando	
98	Gorecha Mohit B.	Warden	Pancheshwar Road , Vanda fali street no.2	9723738780
99	Vaghariya Himanshu	Warden	Opp-Navanagar school, Harji vagh delo	9723688558
100	Hathiya Kanji h.	Warden	Nagnath gate, maheshwari vas	9998995518
101	Goswami	Warden	Nr.Jalaram Provision	

	Harihargiri		store, Gulabnagar road	
102	Parmar Hiren	Warden	Opp-Gulabnagar, Narayan nagar	
103	Makwana Sanjay R.	Warden	Potri Gali 3 Gate opp-	
104	Bhatti Harshad A.	Warden	Patel Colony, Shantinagar opp-mahadev mandir	9924030658
105	Doshi Ratnakar B.	Warden	Patel Colony Stret no2 Bh-Vikas gruh	
106	Dharaviya Mahesh L.	Warden	Khodiyar Colony-Raj chamber-Nr.Aram vadi	
107	Singdiya Kalpesh	Warden	Woolen mill area aerodrome	
108	Jadeja Sanjaysinh r.	Warden	Patel Colony street no.10 CCDC Flat 23	
109	Purohit Hardik J.	Warden	Kuntamani-1, Sardar patel socity saru section road	
110	Teraiya Himanshu Pravin	Warden	Khodiyar Colony, Raj chamber Nilkamal Society-1	
111	Chavda Mukesh Khimjibhai	Warden	Bedesvar Road, Dhararnagar-1, Vaishali Nagar, 8,	9879236007
112	Pathan Firoj A.	Warden	Nr.Prabhu Oil Mill, Bedeshwar	
113	Vala Chirag B.	Warden	Opp-Anpurna Temple, Machharnagar	9879756161
114	Parmar Nilesh K	Warden	Nr.Sanjay Oil mill, bedeshwar	8000858281
115	Jadeja Pradipsinh	Warden	Bh-Machharnagar, Punitnagar street no.2	9904956062
116	Gondliya Prakash V.	Warden	Bedeshwar Road, Ramnagar,	
117	Jadeja Indrajitsinh	Warden	Navagam Ghed, nr- Panchayat office, Bapunagar	9428075714
118	Gosai Hina R.	Warden	45-F, Sidhdhi Vinayak Park, Sadhna	
119	Boricha amit	Warden	Gandhinagar, Shankar Tekri, sidhrth colony- Street no.9	9924267402
120	Gosai Urmila R.	Warden	45-F, Sidhdhi Vinayak Park, Sadhna	
121	Maheta Mayur N.	Warden	Chandi bajar	
122	Sondarva Lalji K.	Warden	Agricul;ture, airforce road, indra colony	
123	Rathod Harish M.	Warden	Gandhinagar, Momai nagar	

124	Sodha PratiksinhB.	Warden	Gandhinagar, Momai nagar	9824736518
125	Joshi Chirag P.	Warden	Rajput para Street no.3 Chirag house limda line	
126	Punjani Kashyap	Warden	Rajput para Street no.3 Chirag house limda line	
127	Patel Milan M.	Warden	Nr.Saty Narayan Temple, soni street	
128	Bhagde Nikunj N.	Warden	Lohana Bording Pancheshwar tower road	
129	Samya Ankit S.	Warden	24 Digvijay plot, Bh-Jolly Bunglow	
130	Devani Mukesh H.	Warden	64-Digvijay plot Bh-Jolly Bunglow	
131	Nanda Bhavesh V.	Warden	54 Digvijay Plot	
132	Kavat alkesh G.	Warden	58 Digvijay plot, Bh-kachhi mahajan vadi	
133	Nirmal Naitik P.	Warden	Hathi Colony,Street no.2, Mahalaxmi Apartment	
134	Dand Chetan N.	Warden	F-6/498, Ranjitnagar	
135	Parmar Mustak Y.	Warden	Patnivad,Nr-Patnimatam	
136	Upadhyay Ridhddhiben B.	Warden	27,Janta society, opp-Jekurben Kanya vidhyalay	
137	Chauhan Shankar J.	Warden	Kabirnagar,opp-Dental college, Navagam	
138	Upadhyay Pritiben P.	Warden	27,Janta society, opp-Jekurben Kanya vidhyalay	
139	Parmar Hitesh l.	Warden	Devubha Chawk, Opp-Vyas delo	9428725968
140	Joshi Krunal J.	Warden	Narayannagar,opp-Gulabnagar	

Annexure-W

Details about MAH unit in Jamnagar

Sr. No.	Name Of Factory	Adress of Factory
1	Reliance Indutreis Ltd.	Moti Khavdi-Jamnagar
2	Sikka Port and Terminal-RIL	Nani Khavdi- Jamnagar
3	Reliance Industries Ltd.(SEZ)	Meghpar/Padana, Ta-Lalpur, Jamnagar
4	Bharat Oman refineries Ltd.	Singach Char Rasta, Singach, Ta-Lalpur-Jamnagar
5	Gujarat State Fertiliser Co.	Sikka Unit, Motikhavdi-Jamnagar
6	Gujarat State Fertiliser Co. (Sikka Shore Terminal)	Sikka Unit, Motikhavdi-Jamnagar

Annexure-X

Do's and Don'ts

Dos and don'ts of various disasters

Cyclone Safety:

A cyclone is a storm accompanied by high-speed whistling and howling winds. It brings torrential rains.

Where does a cyclone come from?

A cyclonic storm develops over tropical oceans like the Indian Ocean and Bay of Bengal and the Arabian Sea. Its strong winds blow at great speed, which can be more than 118 kilometers per hour.

What are the visible signs of a cyclone?

When a cyclonic storm approaches, the skies begin to darken accompanied by lightning and thunder and a continuous downpour of rain.

How does a cyclone affect us?

- A cyclone causes heavy floods.
- It uproots electricity supply and telecommunication lines. Power supply shuts down and telephones stop functioning.
- Road and rail movements come to halt because floods damage rail tracks and breach roads. Rail movements are also disrupted because of communication failure.
- The inclement weather conditions also disrupt Air services. Seaports stop work due to high winds, heavy rains and poor visibility. Sometimes ships overturn or are washed ashore. The high-speed winds bend and pluck out trees and plants.
- A cyclone tears away wall sidings and blows off roofs of houses.
- Houses collapse and people are rendered homeless. In villages kacha houses get blown away. The speeding winds cause loose metal and wooden sheets to fly turning them to potential killers. Broken glass pieces can cause serious injuries.
- The floodwaters can take time to recede.
- The floodwaters can turn the fields salty.
- Bridges, dams and embankments suffer serious damages.
- Floods wash away human beings and animals and make water unfit for drinking. There can be outbreak of diseases like Cholera, Jaundice or Viral fever due to intake of impure water. Water gets contaminated because of floating corpses of animals and human beings and mixing of sewage stored food supplies, gets damaged.

Which areas are exposed to a cyclone in Gujarat?

In Gujarat, the Saurashtra-Kachchh region experiences a cyclone. The port towns of Veraval, Porbandar, Jamnagar, Dwarka, Okha, Kandla and Bhavnagar and other minor port towns suffer most.

Does a cyclone follow a particular path?

It is often difficult to predict where a cyclone will strike. When it starts moving from oceans (in Gujarat it is Arabian Sea) towards the land area, a cyclone can change track and hit areas other than those anticipated earlier.

Has any early warning system been evolved for the occurrence of a cyclone?

Yes. In India, the Indian Meteorological Department has developed a four-stage warning system for a cyclone.

How does the system operate?

This warning is about the possibility of a cyclone when a low pressure depression develops in oceans. For Gujarat, the development of such a depression in the Arabian Sea is indicative of a cyclone attack.

- **The Alert stage**

This warning is given 48 hours prior to the time when a cyclone is expected to hit the land.

- **The Warning stage**

This is the stage when a cyclone gets formed. The warning is given 24 hours before the anticipated time of arrival of a cyclone.

- **Cyclone arrival**

This warning is issued 12 hours before a cyclone is due to hit the land. The warning gives information about cyclone and will continue until the winds subside. In sea ports, danger signal are hoisted about the impending cyclone.

From where can people access cyclone storm warnings?

Warnings about storms, their intensity and the likely path they may take are regularly broadcasted by radio and television network continuously until the storm passes over.

What to do before and during a cyclone.

- Have your dwellings checked before a cyclone season starts and carry out whatever repairs that are needed.
- Talk to children and explain about cyclones without scaring them.
- Create storm awareness by discussing effects of a cyclonic storm with family members so that everyone knows what one can and should do in an emergency. This helps to remove fear and anxiety and prepares everyone to respond to emergencies quickly.
- Keep your valuables and documents in containers, which cannot be damaged by water.
- Keep information about your blood group.

- Keep lanterns filled with kerosene, torches and spare batteries. These must be kept in secure places and handy.
- Make plans for people who are either sick, suffer from disabilities, aged and children.
- Store up at least seven-day stock of essential food articles, medicines and water supply.
- Keep blankets & clothes ready for making beds. Also keep cotton bandages and several copies of photographs of family members in case they are needed for identification purposes after the storm.
- Store some wooden boards so that they can be used to cover windows.
- Keep trees and shrubs trimmed. Remove damaged and decayed parts of trees to make them resist wind and reduce the potential for damage. Cut weak branches and make winds blow through.
- All doors, windows and openings should be secured.
- Continue to listen to warning bulletins and keep in touch with local officials. Keep radio sets in working condition. Battery powered radio sets are desirable.
- Evacuate people to places of safety when advised.
- Take steps to protect your assets.
- Store extra drinking water in covered vessels.
- Remain calm.

What one should not do during a Cyclone attack?

- During the storm do not venture out unless advised to evacuate.
- If you have a vehicle and wish to move out of your house, leave early before the onset of a cyclone. It is often best to stay at home
- Avoid remaining on the top floor of dwellings. Stay close to the ground.

Earthquake safety:

- Tell the facts about earthquake to your family members
- Construct new buildings with earthquake resistant method and strengthen the old buildings
- Insure your house and family members
- Take the training for first aid and fire fighting
- Do not keep cots near the glass window
- Do not keep heavy and fragile things in the selves
- Do don't hang photo frames, mirrors, or glasses up your bed
- Keep your important documents, some cash and necessary articles ready in a bag
- Get your house insured before the earthquake
- Identify special skills of neighbor (medical, technical) so that it can be utilized in emergency

During Earthquake

- Do not panic.
- If already inside, then stay indoors! Get under a heavy desk or table and hold to it.
- If fire breaks out, drop on the floor and crawl towards the exist
- If you are out doors during the quake, keep away from buildings, trees and electricity lines. Walk towards open places, in a calm and composed manner.
- If you are driving, quickly but carefully move your car as far out of traffic as possible and stop. Do not stop on or under a bridge or overpass or under trees, light posts, power lines, or signs. Stay inside the car until shaking stops
- If you are in a school, get under a desk or table and hold on

After the Earthquake

- Do not be afraid of the aftershocks
- Listen to radio-TV and other media for Government Announcement
- Check for injuries to yourself and those around you. Take first aid where you can
- Extinguish fire, if any
- Examine walls, floors, doors, staircases and windows to make sure that the building is not in danger of collapsing
- Do not enter into the unsafe or risky houses or buildings
- Inspect for Gas leaks-If you smell gas or hear blowing or hissing noises, open a window and quickly leave the building. Don't light your kitchen stove if you suspect a gas leak.
- Do not keep telephone lines busy unnecessarily
- Switch off electric lines

Fire safety:

Do's

- Buy Fireworks from the licensed shop.
- Keep fireworks in a closed box
- Store crackers away from source of fire or inflammation
- Follow all safety precautions issued with the fire works
- Go to open spaces like playgrounds, fields
- Light them at arm's length using a taper.
- Stand back while lighting the crackers
- Discard used fireworks in a bucket of water
- Keep buckets of water and blankets ready, in case a firebreaks out.
- Wear thick cotton clothes for maximum safety from fire.
- If clothes catch fire, Stop, Drop and Roll
- In case of uncontrolled fire wrap the victim in a blanket, till it stop.

- In case of burns splash tap water (not ice water), the process may be repeated till the burning sensation reduces.
- If fingers or toes are burned, separate them with dry, sterile, non-adhesive dressings.
- Make sure the burn victim is breathing, if breathing has stopped or if the victim's airway is blocked then open the airway and if necessary begin rescue breathing.
- Elevate the burned area and protect it from pressure and friction.
- Cover the area of the burn with a moist sterile bandage, of clean cloth (do not use blanket or towel for healing burns).
- Consult the doctor as soon as possible for the proper medication
- Consult an ophthalmologist immediately in case of eye injuries.
- Do contact at the Fire Brigade (Tel.No. 101), for getting the details of the doctors on duty during the festival.

Don'ts

- Don't burn crackers in crowded, congested places, narrow lanes or inside the house.
- Don't let children burst crackers unaccompanied by an adult
- Don't put fireworks in your pocket or throw them
- Don't cover crackers with tin containers or glass bottles for extra sound effect
- Don't dare to examine sunbursts crackers...leave it!! Light a new cracker
- Don't show the Dare-devilry of lighting crackers on own hands.
- Don't use fireworks inside a vehicle
- Avoid long loose clothes, as they are fast in catching fire
- Don't remove burnt clothing (unless it comes off easily), but do ensure that the victim is not still in contact with smoldering materials.
- Don't apply adhesive dressing on the burnt area.
- Don't break the burst blister

Flood Safety:

Do's and Don'ts after flood

- There is a possibility of spread of water borne diseases after flood, and hence medical treatment should be taken immediately.
- Do not enter deep, unknown waters.
- Do not go near the riverbank even after the floodwater has receded.
- Sprinkle medicines in the stagnant dirty water.
- Inspect your house for any cracks or other damage. Check all the walls, floor, ceiling, doors and windows, so that any chance of house falling down can be known and you can be aware about the immediate danger.
- If the floodwater has entered the house or has surrounded the house, then it is advisable not to enter such house.

- Keep listening to weather forecast on radio and television. Move to your residence only when instructed by the competent authority. It is not safe to believe that the problems have ended after the flood water have receded
- Inform the competent authority/officer for restoration of the necessary connections like gas, electricity, telephone, drainage, etc.
- Beware of the various insects or poisonous snakes that may have been dragged inside the house along with the floodwater.
- Destroy the food commodities that have been affected by floodwater.
- Check properly all the electric circuits, floor level furnace, boilers, gas cylinders, or electric equipments like motor pump etc. Check whether any inflammable or explosive item has not entered along with the floodwater.
- Switch off the main electric supply, if any damage is noticed to the electric equipments.
- If you find any breakage in the drainage system stop using latrines and do not use tap water.
- Do not use polluted water.
- Sewerage system should be checked and any damage should be repaired immediately so as to curtail spread of diseases.
- Empty the water clogged in the basement slowly with help of water pump so that damage to infrastructure can be minimized
- Check gas leakage which can be known by smell of gas or by hearing the sound of leakage; immediately open all windows and leave the house.
- Boil drinking water before usage and drink chlorinated water.
- Eat safe food.
- Rescue work should be undertaken immediately after flood situation as per the instruction. Do not follow any shortcut for rescue work.
- Do not try to leave the safe shelter to go back home until the local officials declare normalcy after flood and instruction to return home are not given.

Tsunami:

The phenomenon Tsunami is a series of traveling ocean waves of extremely long length generated primarily by earthquakes occurring below or near the ocean floor:

Following safety measures needs to be learnt before, during and after the occurrence of tsunami:

Before

- Be familiar with the tsunami warning signals. People living along the coast should consider an earthquake or a sizable ground rumbling as a warning signal. A noticeable rapid rise or fall in coastal waters is also a sign that a tsunami is approaching.
- Make sure all family members know how to respond to a tsunami. Make evacuation plans. Pick an inland location that is elevated.

- After an earthquake or other natural disaster, roads in and out of the vicinity may be blocked, so pick more than one evacuation route.
- Teach family members how and when to turn off gas, electricity, and water
- Children should be taught in advance about the evacuation plans
- Prepare emergency kit beforehand. The emergency kit should contain Flashlight and extra batteries, battery-operated radio and extra batteries, First aid kit
- Emergency food and water, Essential medicines etc

During

- Listen to a radio or television to get the latest emergency information, and be ready to evacuate if asked to do so.
- If you hear a tsunami warning, move at once to higher ground and stay there until local authorities say it is safe to return home.
- Move in an orderly, calm and safe manner to the evacuation site
- Stay away from the beach. Never go down to the beach to watch a tsunami come in.
- If you can see the wave you are too close to escape it.
- Return home only after authorities advise it is safe to do so.

After

- Stay tuned to a battery-operated radio for the latest emergency information.
- Help injured or trapped persons.
- Stay out of damaged buildings. Return home only when authorities say it is safe.
- Enter your home with caution. Use a flashlight/torch when entering damaged buildings. Check for electrical shorts and live wires. Do not use appliances or lights until an electrician has checked the electrical system.
- Open windows and doors to help dry the building.
- Shovel mud while it is still moist to give walls and floors an opportunity to dry.
- Check food supplies and test drinking water.
- Fresh food that has come in contact with flood waters may be contaminated and should be thrown out.

Annexure-Y

General terminology used in weather Forecast bulletins

Specification for description of rainfall:

INTENSITY OF RAINFALL		હિન્દી / ગુજરાતી
VERY LIGHT	0.1 TO 2.4 MM	બહુત હલ્કી વર્ષા / બહુજ ઓછુ વરસાદ
LIGHT	2.5 - 15.5 MM	હલ્કી વર્ષા / ઓછો વરસાદ
MODERATE	15.6 - 64.4 MM	મધ્યમ વર્ષા / મધ્યમ વરસાદ
HEAVY	64.5 - 115.5 MM	ભારી વર્ષા / ભારે વરસાદ
VERY HEAVY	115.6 - 204.4 MM	બહુત ભારી વર્ષા / ખૂબ ભારે વરસાદ
EXTREMELY HEAVY	≥ 204.5 MM	અત્યધિક ભારી વર્ષા / અત્યંત ભારે વરસાદ
EXCEPTIONALLY HEAVY	WHEN THE AMOUNT IS A VALUE NEAR ABOUT THE HIGHEST RECORDED RAINFALL AT OR NEAR THE STATION FOR THE MONTH OR SEASON. HOWEVER, THIS TERM WILL BE USED ONLY WHEN THE ACTUAL RAINFALL AMOUNT EXCEEDS 12 CM	અસાધારણ ભારી વર્ષા / અસામાન્ય ભારે વરસાદ

PROBABILITY OF OCCURENCE (%)	હિન્દી	ગુજરાતી
UNLIKELY	સંભાવના નહીં	શક્યતા નથી.
LIKELY	સંભાવિત	શક્યતા છે.
VERY LIKELY	અધિક સંભાવના	વધારે શક્યતા છે.
MOST LIKELY	અત્યાધિક સંભાવના	અત્યાધિક શક્યતા છે.

WARNING COLOUR CODES	હિન્દી	ગુજરાતી
WARNING (TAKE ACTION)	ચેતાવની	ચેતાવણી
ALERT (BE PREPARED)	સતર્ક રહેં	સતર્ક રહો
WATCH (BE UPDATED)	નિગરાની રખેં	ધ્યાન આપો
NO WARNING (NO ACTION)	કોઈ ચેતાવની નહીં	કોઈ ચેતાવણી નથી

Terminology for rainfall distribution:

OLD TERMINOLOGY	NEW TERMINOLOGY WITH EFFECT FROM APRIL-1998	SPATIAL DISTRIBUTION
ALMOST ALL PLACES	ALMOST ALL PLACES	ABOVE 75%
AT MANY PLACES	AT MANY PLACES	51% TO 75%
AT A FEW PLACES	AT A FEW PLACES	26% to 50%
AT ONE OR TWO PLACES	ISOLATED	01% TO 25%

Important weather forecast website:

1. www.imd.gov.in
2. www.imdahm.gov.in
3. www.accuweather.com
4. www.skymetweather.com
5. www.weather.gov
6. www.noaa.gov
7. worldweather.wmo.int
8. www.usno.navy.mil
9. www.windy.com
10. www.earth.nullschool.net
11. www.rsmcnewdelhi.imd.gov.in

Criteria for classification of Cyclonic disturbances over the North Indian Ocean

Sr.	Type of disturbance	Associated maximum sustained wind (MSW)
1	Low Pressure Area	Not exceeding 17 knots (<31 kmph)
2	Depression	17 to 27 knots (31-49 kmph)
3	Deep Depression	28 to 33 knots (50-61 kmph)
4	Cyclonic Storm	34 to 47 knots (62-88 kmph)
5	Severe Cyclonic Storm	48 to 63 knots (89-117 kmph)
6	Very Severe Cyclonic Storm	64 to 119 knots (118-221 kmph)
7	Super Cyclonic Storm	120 knots and above (≥222 kmph)

Note: 1 Knot is equal to 1.852 km.

List of Abbreviation

AIDS	Acquired Immune Deficiency Syndrome
APMC	Agricultural Produce Market Committee
AE	Assistant Engineer
AH	Animal Husbandry
ATI	Administrative Training Institute
ATS	Anti Terrorist Squad
ATVT	Apno Taluko Vibrant Taluko
BPL	Below Poverty Line
BRC	Block Resource Centre
CBO	Community Based Organization
CDHO	Chief District Health Officer
CDPO	Child Development Project Officer
CHC	Community Health Center
CRC	Community Resource Centre
CRF	Calamity Relief Fund
CSO	Civil Society Organization
DCMG	District Crisis Management Group
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DDO	District Development Officer
DEOC	District Emergency Operation Centre
DGVCL	Dakshin Gujarat Vij Company Limited
DISH	Directorate of Industrial Safety and Health
DM	Disaster Management
DPO	District Project Officer
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DSO	District Sports Officer
DSP	Deputy Superintendent of Police
Dy. Eng.	Deputy Engineer
Dy SP	Deputy Superintendent of Police
EMRI	Emergency Management & Research Institute
ESR	Elevated Surface Reservoir
EWS	Early Warning System
Ex. Eng.	Executive Engineer
FCI	Food Corporation of India
FPS	Fair Price Shop
FWP	Food for Work Program
GDCR	General Development Control Regulation
GEB	Gujarat Electricity Board
GIDM	Gujarat Institute of Disaster Management
GLR	Ground Level Reservoir
GMB	Gujarat Maritime Board

Gol	Government of India
GPs	Gram Pranchayats
GSDMA	Gujarat State Disaster Management Authority
GWSSB	Gujarat Water Supply and Sewerage Board
HFA	Hyogo Framework for Action
HHs	Households
HPC	High Powered Committee
HQ	Head Quarter
HRVC	Hazard, Risk, Vulnerability and Capacity
IAY	Indira Aawas Yojana
IMA	Indian Medical Association
ICS	Incident Commander
ICS	Incident Command System
IDNDR	International Decade for Natural Disaster Reduction
IEC	Information Education Communication
IMD	Indian Meteorological Department
ISDR	International Strategy for Disaster Reduction
ISR	Institute for Seismic Research
ITI	Industrial Training Institute
IWMP	Integrated Watershed Management Program
LCMG	Local Crisis Management Group
LO	Liaison Officer
MAH	Major Accident Hazard
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHA	Ministry of Home Affairs
MLA	Member of Legislative Assembly
Mm	Mili Meter
MP	Member of Parliament
NAPCC	National Action Plan on Climate Change
NCC	National Cadets Corps
NCCF	National Calamity Contingency Fund
NDM	National Disaster Management
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NDRF	National Disaster Response Force
NEC	National Executive Committee
NFSM	National Food Security Mission
NGO	Non Government Organization
NIDM	National Institute of Disaster Management
NRDWP	National Rural Drinking Water Program
NRHM	National Rural Health Mission
NSS	National Service Scheme
NYK	National Yuva Kendra
PCPIR	Petroleum Chemical and Petrochemical Special Investment Region
PDS	Public Distribution System
PHC	Primary Health Center
PI	Police Inspector

PMGY	Pradhan Mantri Gramodyan Yojna
PRIs	Panchayati Raj Institutions
R & R	Recovery & Reconstruction
R&B	Roads & Buildings
RTO	Regional Transport Office
SC	Scheduled Caste
SDM	Sub District Magistrate
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Fund
SDRN	State Disaster Response Network
SE	Superintending Engineer
SEOC	State Emergency Operation Centre
SFO	Sub Focal Officer
SEZ	Special Economic Zone
SHGs	Self Help Groups
SMC	School Management Committee
SMS	Short Message Service
SOP	Standard Operating Procedure
SRPF	State Reserve Police Force
SRT	Special Response Team
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribe
S& R	Search and Rescue
Supt. Eng.	Superintendent Engineer
SWO	Social Welfare Officer
TDMA	Taluka Disaster Management Authority
TDMC	Taluka Disaster Management Committee
TDMP	Taluka Disaster Management Plan
TDO	Taluka Development Officer
TEOC	Taluka Emergency Operation Centre
THO	Taluka Health Officer
TNA	Training Needs Assessment
TSC	Total Sanitation Campaign
TSO	Taluka Supply Officer
ULB	Urban Local Body
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate Change
VDMP	Village Disaster Management Plan
VIPs	Very Important Persons
VVIPs	Very Very Important Persons
WASMO	Water and Sanitation Management Organization