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Surat District Disaster Management Authority

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Preface

Establishment of the Disaster Management Authority and the Disaster Management Act has created a new direction about disaster management in the country by creating a scientific structure of it. It has always been learning something from being able to face natural and man-made disasters coming in Gujarat in functional form.

It is necessary to have timely and constructive planning to reduce the impact of disaster. The Gujarat State Disaster Management Authority in Surat district has implemented the Disaster Risk Management program. Under which, preparation of plans at various, first aid, search & rescue, housing construction, alert and communication skills, etc. have been undertaken by the Disaster Management Cell in the district in order to increase public awareness and their capacity building.

Emergency Operation Center at Surat and additional minor vehicles provided by the state government can be useful for immediate response at the time of disaster. The complete information of district, resources, resource inventory that are integrated in this district disaster management plan will be useful to the administration for responding at the time of disaster. This plan will be helpful and give guidance on district level for information regarding disaster. As a result, the damage caused by disaster can be properly reduced or removed.

In order to prepare the plan, timely information is taken; thanks to the active efforts of the District executives and Disaster Management Committee Authorities, Surat for cooperation.

For the purpose of checking the proposed district disaster response plan and making the plan more effective, yearly two times mock drills are conducted. Also, the plan is updated periodically. This integrated booklet will be useful to all affiliates and your cooperation and suggestions are welcome to provide more efficient services.



**Shree Aayush Oak (IAS)
Collector & District Magistrate
Surat**

CHECK LIST

Given below is the general list of important actions / items required in a Disaster. Please check out the items pertaining to your area / function.

- District Collector is the chief custodian of this plan document and also ensure that this plan document is reviewed and updated regularly.
- The Collector shall submit a copy of district disaster management plan and of any amendment thereto to the GSDMA and the state Relief Commissioner as well.
- Each govt. department shall prepare a disaster management plan for the district and Collector shall ensure that such plans are integrated into the district disaster management plan.
- The departmental heads of the district shall ensure that all employees have gone through this document and aware of their roles and responsibilities.
- Each department shall identify a disaster coordinator who will be responsible to coordinate with different taskforces.
- Each taskforce leader shall ensure, their SOPs are prepared and all the members have gone through the Plan/SOPs and clear about their roles and responsibilities.
- During your absence/leave period, please keep key members informed.
- Make sure that you have identified an Alternate Member from your department who would function in your place in case of emergency.
- Each taskforce shall identify a Communication Coordinator from the taskforce members.
- Make sure, the facilities available at District Control Room (DCR) and Taluka control rooms are intact and are in good condition.
- Check that all Communication facilities like Telephones, Cell Phones, Radios, Base Stations etc. under your control are in good operating condition and fully charged.
- Ensure that you have the latest revised list of Emergency Contact Numbers and addresses.
- Ensure availability and operability of all resources under your control and at identified resource locations in neighboring districts for quick mobilization to emergency site.
- Maintain the records of area-wise population, shelter centers in your area for effective emergency evacuation.
- Check that the updated list of blood donors is available.
- Ensure adequate inventory of critical equipment/spares/medicines is available
- Make sure that all Fire Protection systems, rescue equipment, PPEs and other emergency equipment are in good state of repair.

List of Abbreviations

ICS:	INCIDENT COMAND SYSTEM
EOC:	EMERGENCY OPERATION CENTER
DCR:	DISTRICT CONTROL ROOM
TCR:	TASKFORCE CONTROL ROOM
TLCR:	TALUKA LEVEL CONTROL ROOM
DC:	DISTRICT COLLECTOR
RAC:	RESIDENT ADDITIONAL COLLECTOR
RDC:	RESIDENT DISTRICT COLLECTOR
DDO:	DISTRICT DEVELOPMENT OFFICER
DSP:	DISTRICT SUPERINTENDENT OF POLICE
MC:	MUNICIPAL COMMISSIONER
SDM:	SUB DIVISIONAL MAGISTRATE
TDO:	TALUKA DEVELOPMENT OFFICER
SMC:	SURAT MUNICIPAL CORPORATION
ULB:	URBAN LOCAL BODIES
NAC:	NOTIFIED AREA COUNCIL
NCC:	NATIONAL CADET CROPS
NGOs:	NON GOVERNMENTAL ORGANISATIONS
CD:	CIVIL DEFENCE
GSDMA:	GUJARAT STATE DISASTER MANAGEMENT AUTHORITY
SOP:	STANDARD OPERATING PROCEDURE

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1 Introduction

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.

A disaster is an event triggered by natural manmade causes that lead to sudden disruption of normalcy causing widespread damage to life and property. The High Power Committee of Government of India has identified 30 major and minor disasters, which frequently occurs in our country. It is now a recognised fact that while natural disasters is primarily due to imbalance in the nature but losses due to them on account of human feelings. Human sufferings and misery from a large number of natural disasters can be minimised by taking timely action, preventing mechanisms and undertaking capital works of long and medium terms.

In India, 199 districts have been identified to be multi – hazard prone. At the district level, the district administration is the focal point to manage any disaster or eventuality. It is therefore, imperative to equip and train the district disaster management committee and disaster management team headed by the District Collector/ Magistrate/ Deputy Commissioner.

The district administration is also required to prepare a District Disaster Management Plan based upon the type of disasters likely to affect the district. The actual day –to day function of administering preparedness, response, and mitigation is the responsibility of the District Collector/ Magistrate/ Deputy Commissioner along with the DDMC and the DDMTs.

The previous disaster management plans of the Surat district are mainly disaster specific contingency plans. Those plans reveal following facts:

- i) Plan document is too voluminous to be easily understood by users.
- ii) The command and control of relief efforts is not optimal
- iii) Integration of response is not effective
- iv) The mitigation, prevention and preparedness aspects are not addressed.

Secondly, separate plans for each disaster has produced multiple documents with considerable duplication, which would work against potential users reading and knowing any of the plans.

Recognizing the fact that most tasks and actions before and following a disaster are common at the district level, the **Surat** district administration has used a **multi-disaster approach** (all disasters covered by one plan) while developing disaster management plan for the district.

1.1 Aims and Objectives

- To determine the risk and vulnerabilities associated with various hazards.
- To identify the hazardous areas and to create appropriate strategies to address the issues in these areas
- To develop appropriate strategies for effective prevention and mitigation of disasters
- To build the capacity of people working in the field of disaster management
- To aware the citizens
- To define and assign roles and responsibilities to various stakeholders associated with disaster management for pre disaster and post disaster phases.
- To develop and maintain arrangements for accessing resources, equipment, supplies and funding in preparation for disasters
- To defines the risks and Vulnerabilities of the citizens of the district to different disasters.
- To Identifies the private and public sector parties with prime and supporting responsibilities to reduce or negate these vulnerabilities
- To Mainstreaming disaster management concerns into the developmental planning process
- To Defines actions to be taken by these parties to avoid or mitigate the impact of possible disasters in the district

1.2 Evolution of the plan

Gujarat Act No. 20 of 2003, THE GUJARAT STATE DISASTER MANAGEMENT ACT, 2003 states mandatory provision of the Disaster Manageent plan as per the following clause & sections

Clause 15 of Chapter VI

1. The authority shall develop or cause to be developed guidelines for the preparation of disaster managements plans and strategies and keep them update and shall assist such departments of Government, local authorities and person, as may be specified by the authority in preparation of plans and strategies and coordinate them
2. The plan preparing authority while preparing the plan under subsection (1) shall make suitable provisions in the plan after considering the following namely:
 - (a) The types of disaster that may occur and their possible effects;
 - (b) The communities and property at risk;
 - (c) Provision for appropriate prevention and mitigation strategies;
 - (d) Inability to deal with disasters and promote capacity building;
 - (e) The integration of strategies for prevention of disaster and mitigation of its effects with development plans, programme and such other activities in the State;
 - (f) Provision for assessment of the nature and magnitude of the effects of a disaster;
 - (g) Contingency plans including plans for relief, rehabilitation and reconstruction in the event of a disaster, providing for-
 - (i) Allocation of responsibilities to the various stakeholders and coordination in carrying out their responsibilities;
 - (ii) Procurement of essential goods and providing essential services;
 - (iii) Establishment of strategic communication links;
 - (iv) Dissemination of information; and
 - (v) Other matters as may be provided for in the regulations.

(h) Any other matter required by the Authority.

(3) The Authority shall prepare, or cause to be prepared, and maintained a master plan for the State/District

1.3 How to use the plan

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. The approach taken is that plans and SOPs should be limited to the minimum information need to respond to a specific disaster or undertake a disaster related task. Steps to address disaster specific requirements can be covered in procedures related to actions. This approach does require that task forces develop disaster specific procedures where appropriate.

In other words, this plan is intended for use by persons who are technically competent in the tasks or responsibilities set out in each plan. The SOPs are intended to be used by persons who are unfamiliar with disaster management topics but are intended to be task specific and not as replacements for full plans.

1.4 Authority for the plan

Gujarat state Disaster Management Authority shall be primarily responsible for promoting an integrated and coordinated system of disaster management including prevention or mitigation of disaster by the State, local authorities, stake holders and communities, The Authority shall- act as the central planning, coordinating and monitoring body for disaster management and post-disaster reconstruction, rehabilitation, evaluation, and assessment. Assist the State Government in formulation of policy relating to emergency relief notwithstanding that the implementation of emergency relief shall be the responsibility of the Revenue Department and other departments of the Government. Inform the State Government and departments of Government on progress and problems in disaster management. Promote general education and awareness on disaster management, emergency planning and response and matters incidental thereto. The State Government, the Collector, concerned officers of the State Government and the local authorities in the State shall give such assistance and support to the Authority in performing its functions as may be required by the Authority.

At the district level, District Collector is responsible for responding any disaster situation in consultation with other line departments at district HQ are responsible to deal with all phases of disaster management within district

1.5 Stakeholders and their responsibilities

At the district level, District Collector is responsible for responding any disaster situation in consultation with other line departments at district HQ are responsible to deal with all phases of disaster management within district.

Technical institutions, NGOs, Local authority, private sector, Community groups, volunteer agencies and citizens.

According to Disaster Management Act-2003 Stakeholders and their responsibilities are:

District Collector:

During the period, an area is an affected area the Collector may issue directions to the officers of the departments of the Government and the local authority in the affected area, to provide emergency relief in accordance with the disaster management plans.

The District Collector may-

1. Make arrangements for release and use of available resources
2. Control and restrict traffic to, from and within the area affected by a disaster
3. Control and restrict the entry into, movement within and departure from any disaster area or part of it
4. Remove debris
5. Conduct search and rescue operations
6. Make arrangements for the disposal of the unclaimed dead body, by appropriate means
7. Provide alternative shelter
8. Provide food, medicines and other essentials
9. Require experts and consultants in the matters relevant to the disaster to provide relief under his direction and supervision
10. To take possession and make use of any property, vehicles, equipment, buildings and means of communication on such terms and conditions as may be prescribe
11. Procure exclusive or preferential use of amenities as and when required
12. Construct temporary bridges or other structures
13. Demolish unsafe structures which may endanger the public
14. Coordinate with non-governmental organizations and ensure that such entities carry out their activities in an equitable manner
15. Disseminate information to the public to deal with the disaster
16. Direct and compel evacuation, of all or part of the population from any affected area for the purpose of preservation of life and for such evacuation, and for such evacuation use such force as may be necessary
17. authorize any person, to make any entry into any place, to open or cause to be opened, any door, gate or other barrier, if he considers such an action is necessary for preservation of life and property, if the owner or occupier is absent, or being present, refuses to open such door, gate or barrier

The Collector may exercise the powers contained in subsection (2) to the extent only that this is necessary for the purpose of -

- (a) Assisting and protecting the community
- (b) Providing relief to the community
- (c) Preventing or combating disruption
- (d) Dealing with the destructive and other effects of the disaster

The Collector may issue such directions to any person or government agency and take such other steps, as may be necessary to curtail the escalation of the disaster or to alleviate, contain or minimize the effects of disaster.

1.6 Roles and responsibilities

The Collector

- Facilitate and, coordinate with, local Government bodies to ensure that pre and post - disaster management activities in the district are carried out.
- Assist community training, awareness programmers and the installation of emergency facilities with the support of local administration, non-governmental organizations, and the private sector.
- Take appropriate actions to smoothen the response and relief activities to minimize the effect of disaster.
- Recommend CoR and State Government for declaration of disaster.

Local Authority

- Provide assistance to GSDMA, COR and Collector in disaster management activities.
- Ensure training of its officers and employees and maintenance of resources so as to be readily available for use in the event of a disaster.
- Ensure that all construction projects under it conform to the standards and specifications lay down.
- Each department of the Government in a district shall prepare a disaster management plan for the district. Carry out relief, rehabilitation and reconstruction activities in the affected area within its jurisdiction.

Private Sector

- The private sector should ensure their active participation in the pre-disaster activities in alignment with the overall plan developed by the GSDMA or the Collector.
- They should also adhere to the relevant building codes and other specifications, as may be stipulated by relevant local authorities.

Community Groups and Voluntary agencies

- Local community groups and voluntary agencies including NGOs should actively assist in prevention and mitigation activities under the overall direction and supervision of the GSDMA or the Collector.
- They should actively participate in all training activities as may be organized and should familiarize themselves with their role in disaster management

Citizens

It is a duty of every citizen to assist the Collector or such other person entrusted with or engaged in disaster management whenever his aid is demanded generally for the purpose of disaster management.

1.7 Scope of the Plan

The District Disaster Management and Response Plan for Surat District have been prepared for its operation 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.

1.8 Approach to Disaster Management

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

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 Revenue Department and GSDMA.

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.

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 overall approach to disaster management is based on six elements;

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

Based 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.

1.9 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.

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.

1.10 Plan review and updation

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.

Plan maintenance is a dynamic process of updating the plan on a periodic basis. The backbone of maintaining the plan is carrying out mock drills and updating the plan based on the lesson learnt as an outcome of the mock exercise, which consists of identifying the gaps and putting in place a system to fill the same. The District Disaster Management Plan shall be reviewed and updated regularly by 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
- Drills and Rehearsals
- Recommendations from all line Depts. in their Report

- Lessons learnt from any disaster event in other district and state
- Directions from National Disaster Management Authority, GSDMA, Government of Gujarat, Revenue Department etc.

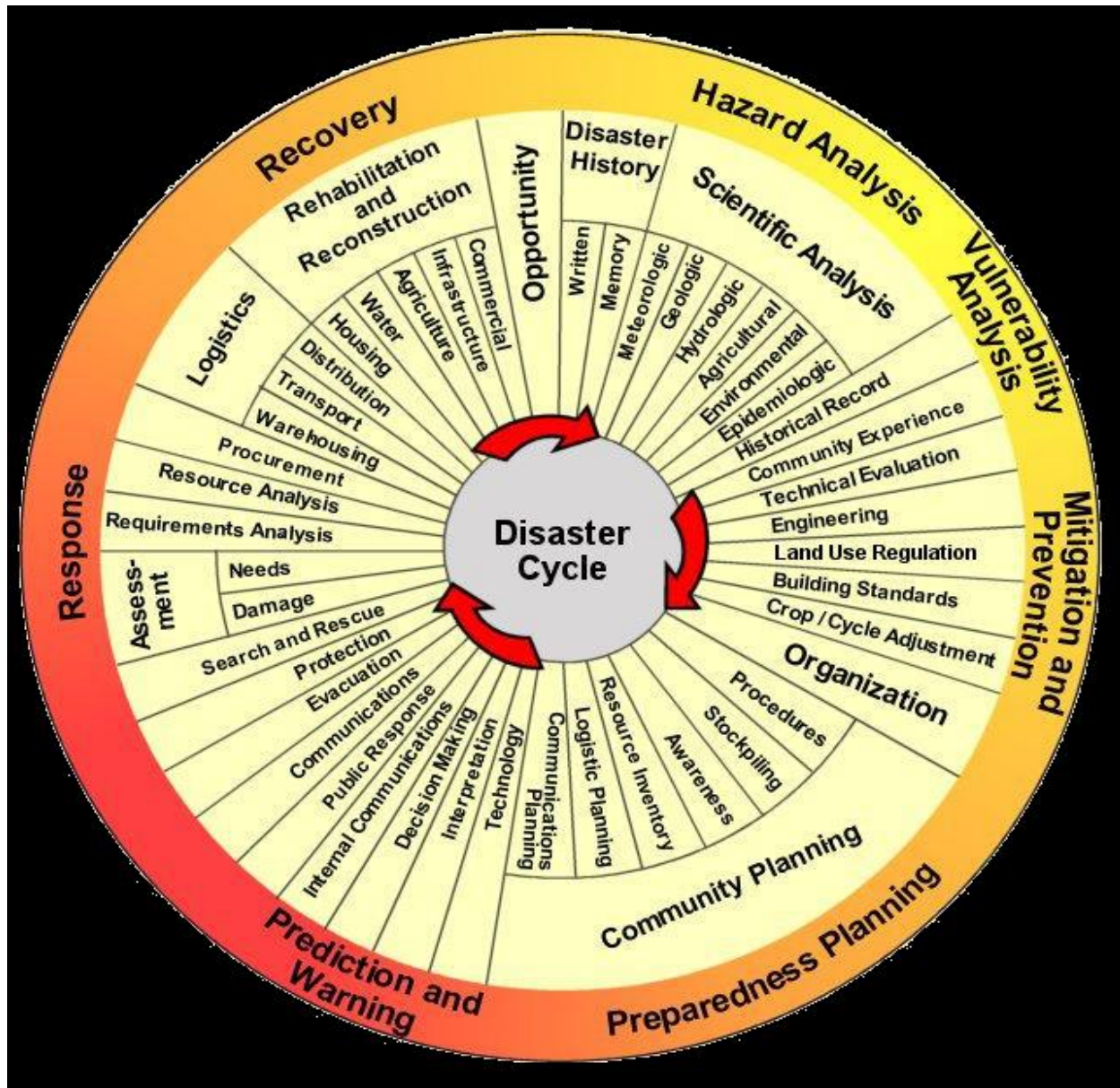


Figure 1-1 Disaster management cycle

2 Hazard Vulnerability and Risk Assessment

For the assessment of disasters an inclusive analysis by Hazard, Vulnerability and Risk assessment is to be done.

2.1 Risk and Vulnerability Ranking- Analysis

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

Table 2-1 Matrix of past disasters

Disaster	Year	Magnitude /extent	Talukas & no. of villages affected	Life & cattle loss	Damage to property	Economic losses
Earthquake	2001	-	-	-	-	-
Cyclone	2021	Severe	10	1 Human 11 Animal	-	-
Flood	2006 2013	Heavy rain		-	-	-
Heat wave	--	--	--	--	--	--
Cold wave	--	--	--	--	--	--
Industrial disaster	2013	--	IOCL Hazira Choryasi taluka	--	--	--
Epidemic	2020 2021 2022	-	All	Life Loss	--	--

- Surat District is in Seismic zone III so the 2001 Earthquake has not caused much devastating effect, but as it has many coastal areas so the vulnerability from Tsunami or Cyclone is of considerable amount.

2.2 Hazard Risk Vulnerability Assessment (HRVA)

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 with latest experiences.

To 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.

Probability

Table 2-2Probability assignment

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 50 to 100 year period

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.

Impact Ratings

Table 2-3 Impact rating

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.

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.

Vulnerability" Ranking

Table 2-4 Vulnerability Ranking

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.

Table 2-5 Vulnerability analysis table

Hazard	Probability	Impact	Vulnerability Rating (Probability times Impact)	Specific Locations and populations of concern
Earthquake (resulting in damage)	3	5	light-9	Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Umarpada, Kamrej, Choryasi, Olpad, Surat City
High Wind (Cyclone)	1	3	Light- 9	Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Umarpada, Kamrej, Choryasi, Olpad, Surat City
Sea Surge (Cyclone)	-	-	-	Olpad, Choryasi, Surat City
Flood				Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Kamrej, Choryasi, Olpad Surat City

Industrial Accident	2	1	Low-2	Olpad Choryasi, Mandvi (KAPS Plant)
Drought	2	2	Low-4	
Heat wave	3	2	Low-6	Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Umarpada, Kamrej, Choryasi, Olpad, Surat City
Cold wave				
Landslides Mudflows	1	1	Low-1	
Dam Failure	1	1	Low-1	Ukai
Mine fires/collapse	2	1	Low-2	
Road/rail/air accident	5	3	High-25	Bardoli, Palsana, Mandvi, Mangrol, , Kamrej, Choryasi, Olpad, Surat City
Oil spill & Road (marine)	2	5	Low-2	Choryasi
Boat sinking	-	-	-	-
Building collapse	1	2	Low-2	All Taluka
Communal Disease (epidemics)	1	1	Low-1	
Food poisoning	1	1	Low-1	Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Umarpada, Kamrej, Choryasi, Olpad, Surat City
Animal disease (epidemics)	1	1	Low-1	Bardoli, Mahuva, Palsana, Mandvi, Mangrol, Umarpada, Kamrej, Choryasi, Olpad
Terrorism (consequences)	-	-	-	-
Critical Infrastructure Failure (e.g. extended power outage)	1	3	Low-3	Ukai Dam
Civil Unrest	1	1	Low-1	
WAR	-	-	-	-
Tsunami	-	-	-	-
Nuclear Emergency	5	5	16 high	Bardoli Mandvi (101 Villages)

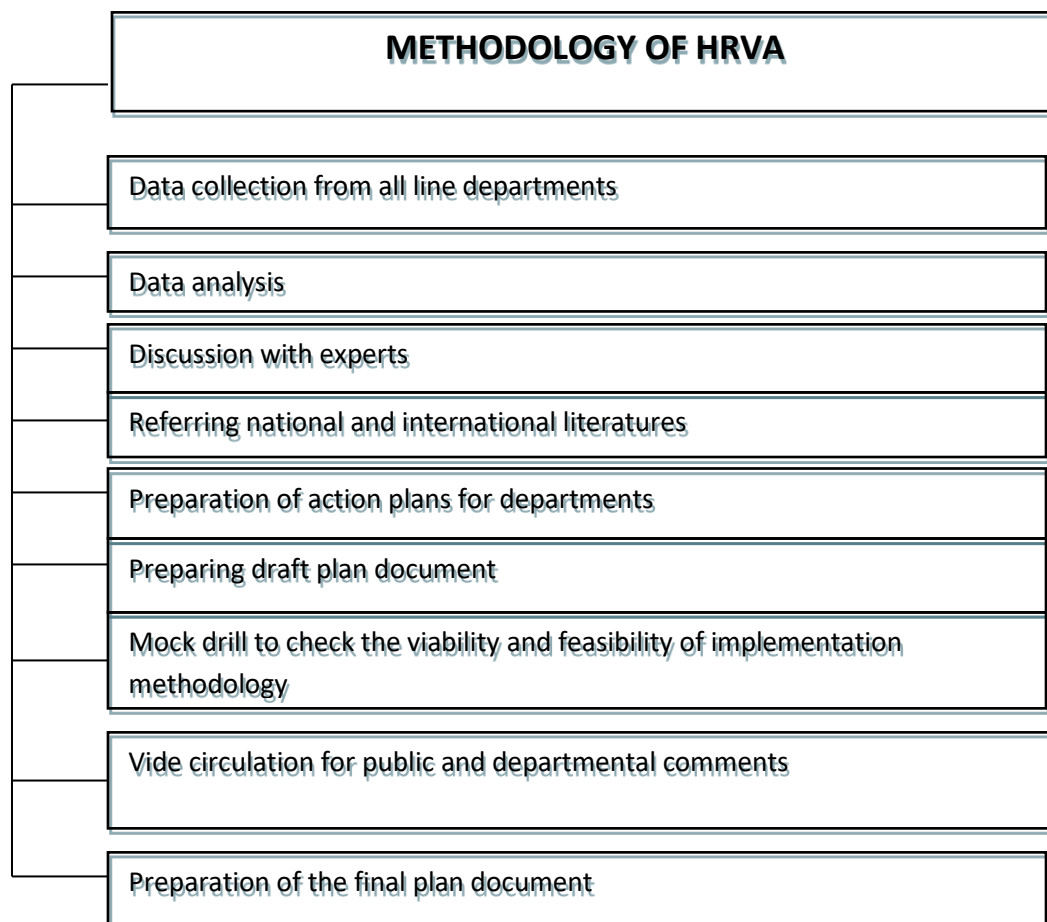
Assess the probability-or "livelihood" of each hazard by reaching a consensus on probability and then assign each hazard a "Probability Level," as indicated in the following table. Enter the score for each hazard in the probability column of the table in.

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.

Tool and methodology used for HRVA



2.3 List of hazards with probability (frequency and magnitude) to be addressed in this plan

Table 2-6 Probability of occurrence of disaster

Probability of Occurrence of disaster												
Type of Hazard	Time period											
	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Earthquake												
Cyclone												
Flood												
Tsunami												
Fire												
Nuclear Emergency												

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 “Phenomena 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.

2.4 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-III 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. 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

Flood is a major disaster in Surat District. There are many small and big rivers in Surat District like, Tapi, Purna, Mindhola, Ambika, kim , etc. Ukai Dam is situated in Surat District and due to the heavy rainfall in catchment area of Ukai Dam Site leads to released high amount of water and which affects the Many Villages of surat District and tapi District as well.

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 planmanagement 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 apotential for coastal or river flooding. In geologically younger river valleys, in mountains, andfoothills 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 floodwaters
- 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.

As Surat district's border is directly connected to sea shore so the effects possibilities of Cyclone emerged from Arabian Sea in Surat district is more.

4. Industries & Chemical Hazards:

Choryasi taluka is highly vulnerable for Industries & Chemical Hazards because of Hazira Notied Area and MAH units under the area. As per the district offsite plan, it affects the 11 villages the detail is mention below.

Sr. No	Name of Vllage	Population	Sr. No	Name of Vllage	Population
1	Limla	5675	7	Dumas	7266
2	Mora	7416	8	Sunvali	2573
3	Kawas	2215	9	Rajgari	1009
4	Bhatpor	2327	10	Damka	4039
5	Ichchapor	5144	11	Bhatlai	1303
6	Vanta	472			

Cities pandesara, Udhana, Limbayat & athwa zone is vulnerable for chemical disaster. In pandesara, Udhna the powerlooms, Dying-Printing Mills & Embroidery factories creates the chemical disaster. Some of them storage the chemical which created the chemical disaster probability. Athwa & Rander zone is near the Hazira Notifies Area, & also near having Magdalla port. Resident near the area vulnerable for chemical & Industrial Hazard. The detail of affected villages and evacuation centers which is linked from Offsite Plan Surat-2010.

Gas pipelines, Chemical plants & industrial units in olpad taluka. The cyanide chemical company which produce potassium cyanide, Potassium pharos cyanide, Sodium cyanide, Sodium Pharos cyanide & other chemicals, If any hazard occurs in the company the processing chemical ammonia gas & other dangerous gases creates the disaster in nearby area.

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. Landslides, 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.

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 will reduce the time taken for diagnosis and subsequent warning.
- Establishing procedures and methods of coordination between Health Departments and local authorities.

7. Drought:

Of all the natural disasters, drought can have the greatest impact and affect the largest number of people. Drought invariably have 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.

Surat District is Gaining annual average rainfall which is evading the situation of drought, so the vulnerability from the drought is less and in even in such kind of situation the availability of resources may about to combat the situation.

8. Nuclear Power Radiation:

Mandvi taluka have a Kakrapar Atomic Power Station. Atomic radiation creates the disaster. The KAPS have prepared their confidential disaster plan. Any emergency in KAPS, the focal officer is Station Director. As per KAPS plan, in Surat district 82 villages of Mandvi and 19 villages of Bardoli taluka are affected. List of villages falling under Emergency Planning Zone (EPZ) is shown below.

Mandvi Taluka				Bardoli Taluka				
Wareth	Kevadi	Tarasadabar	Nandapur	Kalamkuwa	Ladkuva	Salaiya	Balda	Orgam
Badtal	Ambapor	Jakhla	Kasal	Zari Dadhwada	Choramba	Tarsada Khurd	Wanskui	Bamani
Sathvav	Karanjvan	Birma	Rupen	Jetpur	Kakrapar	Umarkhadi	Bhensudala	Haripura
Makanzar	Rajwad (M)	Uskedkhurda	Kakadava	Rakshakhadi	Batkhai	Gamtalao Khurd	Nanibhatalv	Uchhrel
Lakhgam	Wankla	Godawadi	Valargadh	Nanicher	Dadhwada	Regama	Madhi	Samthan
Katkuva	Beddha	Un	Moritha	Ratania	Sarkui	Gordha	Surali	Miyawadi
Fulwadi	Pipalwada	Umarsadi	Amba	Sadadi	Balaltirtha	Kimdungra	Rajvad	Kadod

Kharda	Amalchuni	Kamlapor	Titoi	Jamankuva	Magtara	Dadakui	Masad	Singod
Maldha	Chandpur	Kosadi	Kalbel	Amalsadi	Mahudi	Gamtalav Bujgranj	Nasura	Junwani
Visdalia	Haripura	Kharoli	Unteva	Pardi	Moticher	Godsamba	Wadhvania	
Junvana	Karuda	Mandvi	Khodamba	Karvali	Kherdpur			
Tarapur	Gangapur Harsad	Vaghnera	Ghantoli	Bori	Puna			

3 Institutional Arrangements

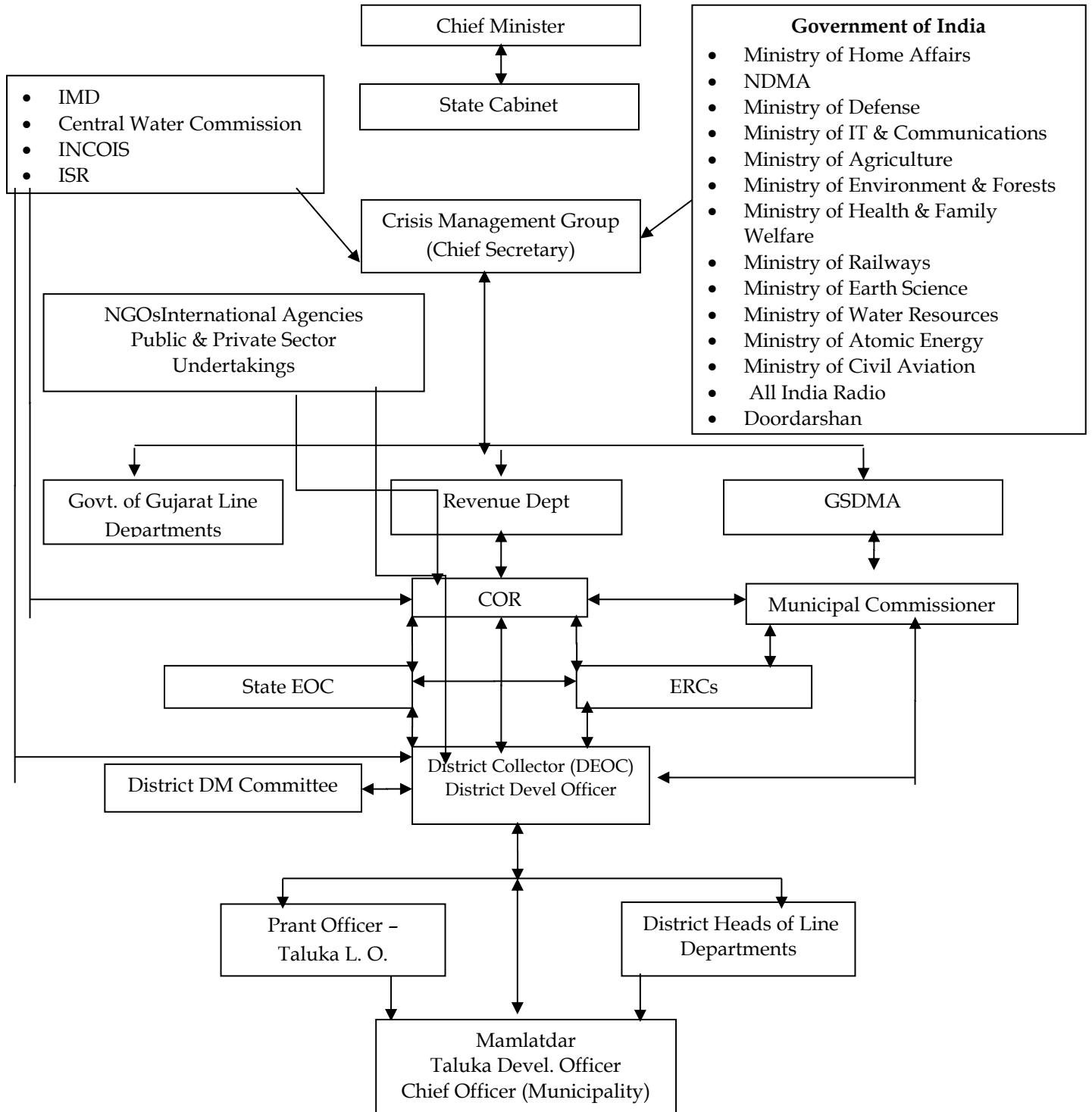
The plan incorporate multi level institutional as well as response planning mechanism at district level.

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 GSDMA, 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.

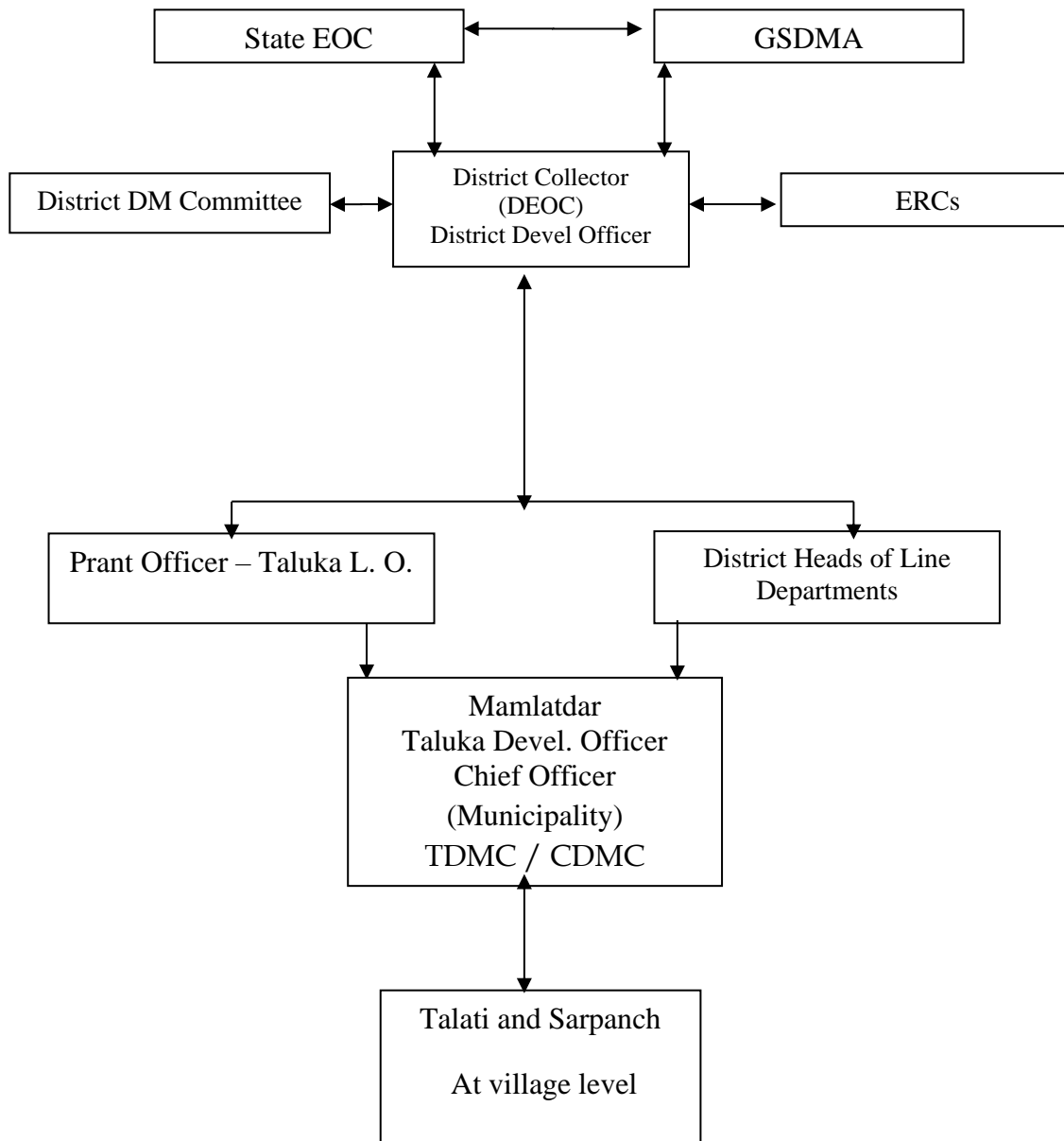
The Revenue Department of the State is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever it occurs. The State EOC, ERCs and other control rooms at the State level as well as district control rooms should be activated with full strength. The State Government may publish a notification in the official gazette, declaring such area to be disaster-affected area under GSDMA Act (Section 32 (2) (a)).

Under this State Disaster Management Plan, all disaster specific mechanisms would come under a single umbrella allowing for attending to all kinds of disasters. The existing arrangements therefore will be strengthened by defining this administrative arrangement. This arrangement proposes Chief Secretary as the head supported by the Relief Commissioner through the branch arrangements at the Emergency Operations Centres (EOC), both at State level and at the district levels. There is a formal Incident Response System in the State. The GSDMA Act 2003 empowers Commissioner of Relief to be the Incident Commander in the State and District Collector in the respective districts.

3.1 D.M. Organizational Structure In The State



3.2 D.M. Organizational Structure In The District



3.3 District Disaster Management Committee

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 ne club at district level committee.

Sr. No.	Designation	Position in DCMG
1	Collector/ District Magistrate	Chairmen
2	District Development officer	Member
3	District Superintend Police	Member
4	District Additional Collector	Member
5	District Supply Officer	Member
6	Exe. Engineer-R&B State	Member
7	Exe. Engineer-R&B Panchayat	Member
8	Exe. Engineer-R&B State Irrigation	Member
9	Superintending Engineer- PGVCL	Member
10	District Home guard commandant	Member
11	Superintendent Civil Hospital	Member
12	Port Officer-KPT	Member
13	District forest Officer (west)	Member
14	District forest Officer (east)	Member
15	Dy. Director-Information Department	Member
16	District Municipality Officer	Member
17	Regional Officer-GPCB	Member
18	District Agriculture Officer	Member
19	All S D M	Member
20	Regional Transport officer	Member
21	Divisional Controller-State transport	Member
22	Dy. Controller –Civil Defense	Member
23	District Education Officer	Member
24	District Primary Education officer	Member
25	NGO Member	Member
26	Media Person	Member

3.4 Incident Response System in the Surat District

1. Disaster Response and District Incident Command System

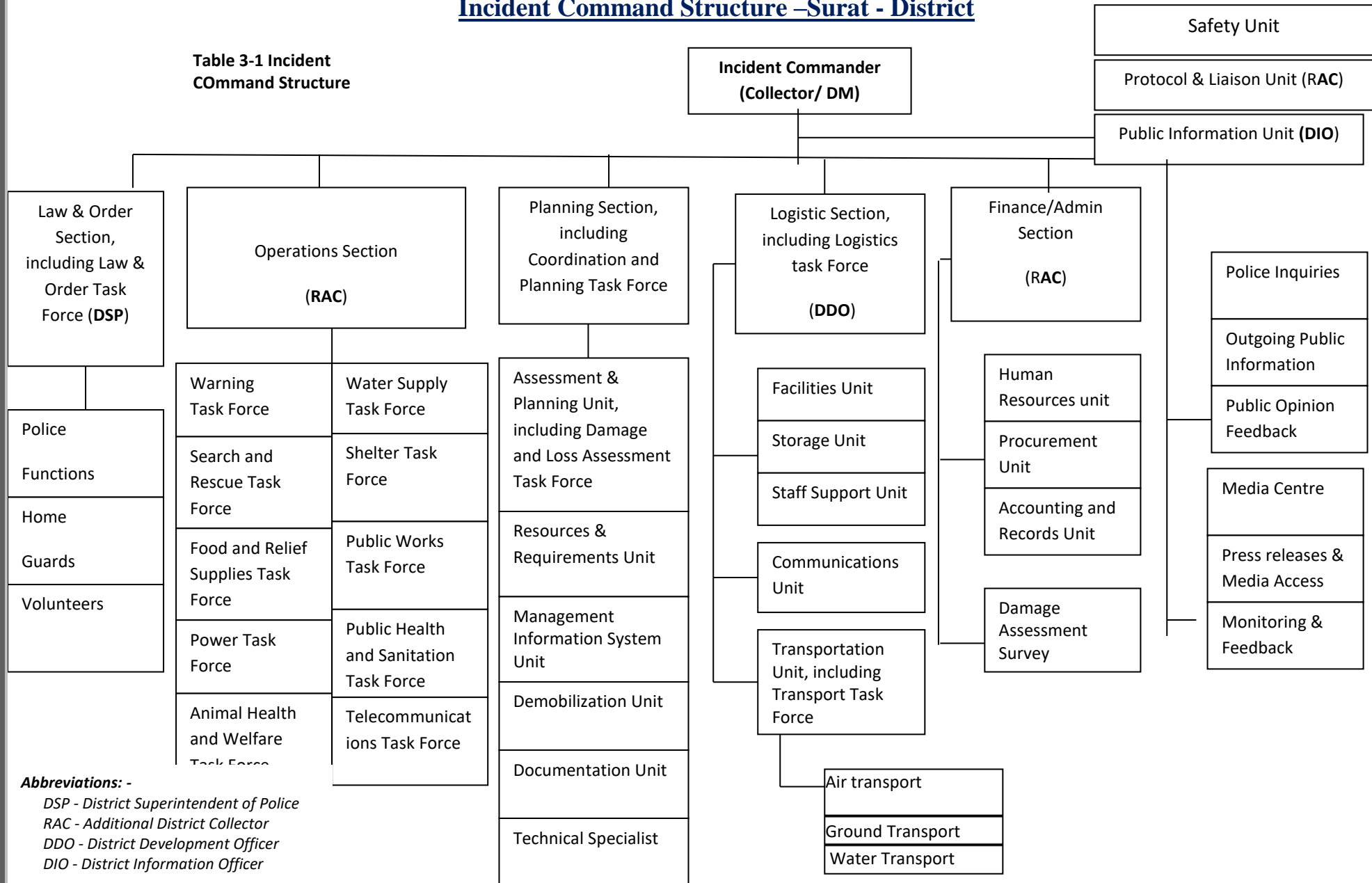
The response to disasters in the district will be organized according to the Incident Command System as adopted to conditions in Gujarat State (ICS/GS). The argument for the ICS is that its fundamental elements –unity of command, clarity of objectives and efficient resource use are common to the effective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

In Surat 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 (EOC)** under the command and control of the District Collector.

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

Incident Command Structure –Surat - District

**Table 3-1 Incident
Command Structure**



3.4.1 ICS-Basic Functions

The basic functional descriptions for key elements in the district Incident command System is describe below. Not all these functions need to be filled (activated) in every disaster. However, the ensemble of these functions represents all the key tasks, which need to be accomplishes in a well-planned manner and execute in effective and cost efficient disaster response effort.

I. Incident Commander :

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.

An Incident Commander, who can be assistby a Dy. Incident Commander, leads the Incident command. 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

A) Safety unit:

Responsible for ensuring the safe accomplishment of all activities undertaken in response to the incident. This task is accomplishes 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.

B) 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).

C) 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 task force that 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 Surat 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 Operation Taskforce Functions

Table 3-2 Emergency operation taskforce functions

Sr. No.	Emergency Operation Taskforce	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 analysis 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, 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 execute 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 include 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
3. Accounting and records

3.5 Cross-Task Force Action Matrix

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

Table 3-3 Cross-Task Force Action Matrix

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														
S & R/Evacuation														
Public Works														
Water														
Food & Relief Supplies														
Power														
Health														
Animal Health														
Shelter														
Logistics														
Damage Assessment														
Telecommunications														

The composition of the taskforces is given in the table below:

Table 3-4 Task force, supporting organizations vis-a vis ICS/GS section matrix

S. No.	Task Force	Taskforce Leader	Supporting members / Organizations	ICS/GS Section / Unit
1.	Planning and Coordination	Collector/ DM	DDO, DSP, RAC, SDM and Mamlatdar	Planning
2.	Administration & Protocol	RAC	DDO, DSP, RAC and Mamlatdar	Finance & Administration
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. Mamlatdar, 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 Defense	Mamlatdar, TDO, Police, Executive Engr., 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	Dy. Ex. Engr., Talati, Mamlatdar, TDO, Health, Dy. Engr.	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. Hospital, PHCs, CHCS, Municipality, Fire Brigade, CivilDefense, R&B, NGOs, Doctors, TDO, Mamlatdar	Operation
16	Animal Health & Welfare	Dy. Director Animal Husbandry	Veterinary Inspector, NGOs	Operations

DISTRICT INCIDENT COMMAND STRUCTURE-KEY OFFICERS

Incident Commander -District Collector: - 9978406222

Alternate Incident Commander- Resident Additional Collector: -9978405220

Sr. No.	Taskforce	Taskforce Operation Room/Contact Number	Taskforce leader/Contact Number	TASKFORCE-Alternate LEADER /Contact Number
1	Warning and Communications	RAC Office	RAC	Mam. Disaster Management 026-2663200 F-0261-2664800
2	Law & Order	Police Control Room (CR)	DSP:-	Dy. SP/
3	Search & Rescue	Dy. Collector Chief Fire Officer	Chief fire Officer	Chief Officer
4	Public Works	R&B-CR	Ex. Engr, R&B/	Dy. Engr.
5	Shelter	Education . Office-CR	District Primary Edu. Officer/	Dy. District Primary Edu. Officer
6	Water Supply	GWSDB-CR	Ex. Engr. GWSDB/	Ex. Engr. Water orks, /
7	Food & Relief supplies	DSO-CR &DDO office	District Supply Officer/	Dy. DDO office
8	Public Health & Sanitation	District Health Centre,	CDHO/	Add. CDHO
9	Power	GEB-CR	Supt. Engr. GEB/	Ex. Egg. GEB
10	Logistics	DDO office	DDO	Dy. DDO/
11	Animal Health & Welfare	A & H Office	Dy. Director, A&H/	Ass. Director A&H
12	Damage Assessment/Survey	RAC office	RAC	Mam. Disaster Management
13	Media/public Information	Information Dept. CR	District Info Officer/	Dy. DIO/
14	Planning and coordination	Collector's office	Collector/	RAC
15	Finance/ Administration/ Protocol	RAC office	RAC	Mam. Disaster Management

***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.*

3.6 EOC setup and facilities available with the location

District Emergency Operation Centers/Control Rooms (DEOC)

- **District Control Room (DCR) / District Emergency Operation Centers (DEOC)**

The District Control Room is located near Collector office District Surat. 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 co-ordination for decision-making process.

- **Facilities at District Emergency Operation Centers**

The District Control Room equipped with to the following items in Table:

Sr. No.	Item/ Facility	Unit/ Number of item
1	Telephones	3
2	Handheld Radios and Base Stations	0
3	Satellite Telephone	3
4	PC with GSWAN Internet facilities	3
5	Marker board -	1
6	Conference table	1
7	A copy of Disaster Management Plan	2
8	Drawings showing Disaster information	--
9	Other relevant documents of district information	--
10	Chairs	20
11	Fax machine	--
12	Printer	4

- **Taluka Emergency Operation Centers (TEOC)**

The Taluka Emergency Operation Centers are located at the Office of Mamlatdar. The Liaison Officers of the respective Talukas shall take charge of the Control Room at the time of any incident without any orders. The respective Liaison Officers shall coordinate between the task group members working at disaster sites and TFOR for mobilization of resources and dissemination of instructions received from TFOR/DEOC.

- **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.

- **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 (DEOC) : District Collector or any person nominated

TFCR : Respective Task Force Leader

TLCR (TEOC) : 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.

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 infrastructure 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 programme for different groups' frequencies to facilitate horizontal communication among the different task groups.

Sr. 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 and Fax Machine had provided at DEOC and all TEOC Control Rooms.

3.7 Alternate EOC available and its location

In case of any emergency when the main district Emergency Operation Centre may collapse, the control room of any Taluka might be used as the Alternative Control room. It is also the central point for information gathering, processing and decision making more specifically to combat the disaster but when such kind of situation where DEOC will collapse so alternate EOC will started at Collector office.

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.

3.8 Public and private emergency service facilities available in the district

Surat district has One fire station in surat Mun,Corporation and Three Fire stations in Respective three nagarpalika.(bardoli, mandvi and Tarsadi nagarpalika) These emergency services are fully equipped with various equipmentand trained personal which are use in search and rescue operation during disaster situation.

3.9 Forecasting and warning agencies

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. The details of agencies competent enough for issuing warning or alert pertaining to various types of disasters are given below;

Sr. No.	Disaster	Agencies
1	Earthquakes	IMD, ISR
2	Floods	IMD, Irrigation Department
3	Cyclones	IMD
4	Tsunami	IMD, ISR, INCOIS
5	Drought	Agriculture Department
6	Epidemics	Health & Family Welfare Department
7	Industrial & Chemical Accidents	Industry, Labor& Employment Department, DISH
8	Fire	Fire & Emergency Services

4 Prevention and Mitigation Measures

4.1 Prevention measures in development plans and programmers

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.

Mitigation, preparedness and prevention 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. 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.

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.

4.2 Hazard wise structural and non- structural mitigation measures

Hazard: Flood

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

Table 4-1 Structural Mitigation Measures for Flood

Probable Mitigation Measures	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Desilting and deepening of water channel (khans)	Irrigation and Rural Development, GLDC	Departmental program & MGNREGS,	Regularly
Construction of embankments/ protection wall	Rural Development, Forest	Departmental program & MGNREGS, watershed	Regularly
Repair of embankments/ protection wall	Rural Development, R&B department	Departmental program & MGNREGS	Regularly
Repair and maintenance of Flood Channels, canals, natural drainage, storm water lines	Irrigation department Concern Municipality	Departmental or special plan	Regularly
Construction of Safe Shelters (new construction through Indira Awas, Sardar Awas and Ambedkar Awas)	Collector and R&B District Panchayat		Regularly
Protection wall and mangroves and vegetative cover against sea level intrusion and land erosion	Forest and Rural development department GEC	Department schemes, MGNREGS, IWMP	Regularly
Desalting of water bodies like river and ponds	Irrigation DDORural Development	MGNREGA and Land Development	2014-15

Non-Structural Mitigation Measures for Flood

(Identified works of concerned Departments)

Table 4-2 Non-Structural Mitigation Measures for Flood

Non-Structural measures	Implementing Departments	Convergence with agency/program	Time Frame
Safety audit of existing and proposed housing stock in risk prone areas	DDO, Rural development	IAY, Sardar Awas and other rural housing schemes	Regularly
Promotion of Traditional, local and innovative practices like bamboo/plastic bottle rafts etc, clean city green city	DDMC, TDMC, CDMC, SHGs and youth groups, NGOs Volunteers	Training and capacity building plan for disaster management At all level	Regularly
Capacity building of volunteers and technicians	DDMC, TDMC, CDMC	Training and capacity building plan for disaster management	Regularly
Awareness generation on health and safety of livestock	veterinary officer, rural development	Departmental Scheme	Regularly

Hazard: Cyclone

Structural Mitigation Measures for Cyclone

Table 4-3 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		Forest department, Port Authority, DIC, TDO, Rural development department, GEC	Departmental schemes, MGNREGA	
Identification and repair/ retrofitting of houses and buildings unsafe for cyclone		R & B (District Panchayat)	Departmental Scheme	Regularly

Non-Structural Mitigation Measures for Cyclone
Table 4-4 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		DDMC, TDMC	District administration Line department	Regularly
Training and awareness generation for use of safety jackets/rings/buoys/rope etc for fisher folks		DDMC, TDMC, VDMC, CDMC	TDMP, VDMC	
Enforcing strict compliance to coastal regulation zone and awareness regarding hazard		Department of Environment & Forest Dept. Fishing GEC	Integrated Coastal Zone Management CRZ Regulation	
Registration of fishing boats		Fisheries Department	CRZ Regulation	
Regulate and issue orders for poor quality hoardings/buildings or any other objects		R & B Department		

Hazard: Earthquake

Structural Mitigation Measures for Earthquake
Table 4-5 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	Earthquake prone 5 Taluka under zone 3	R & B (State and Panchayat), DDO, Rural department	TP Plan and all development plan	Regularly
Retrofitting of unsafe rural houses	In district	DDMC, DDO, R & B State and panchayat	Rural housing schemes and departmental programs	Regularly
Identifying and safely dismantling unsafe structures		R & B department	Development plan	Regularly
Issue permission for Earthquake registrant house		Area Development Authority	TP plan	Regularly

Non Structural Mitigation Measures for Earthquake
Table 4-6 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	under zone 3	R & B (State and Panchayat) DDMC, TDMC, CDMC	DRM, DRR, special training programme	Regularly
Registration of trained and certified mason		R & B (State and Panchayat), DDMC	--	Regularly
Strict enforcement of guideline pertaining to seismic safety for government rural housing, urban development structure		DDO, DDMC, CDMC, TDMC, VDMC	Rural housing schemes	Regularly
Mock-drills for Schools, Hospitals and , Public Buildings and trainings for mason, engineers and architects		DDMC, Schools	DRM, Nssp, DRR DM regulation	Regularly

Hazard: Drought

Structural Mitigation Measures for Drought
Table 4-7 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		Forest, Rural Development, Panchayat	Departmental Scheme, MGNREGA	Regularly
Rain Water Harvesting storage tanks at household level and public buildings		GWSSB, (WASMO), Rural Development	MGNREGA, Swajaldhara	Regularly
Structures for water harvesting and recharging like wells, ponds, check dams, farm ponds, etc		DDO, Rural development, irrigation department	MGNREGA , Watershed program, departmental schemes	Regularly
Development of fodder plots/banks		DDMC, Forest department , animal husbandry department	Development plan	Regularly
Repair and maintenance, desilting of water sources, check dams, hand pumps etc.		Irrigation, Rural Development	MGNREGA, Watershed	Regularly

Non-Structural Mitigation Measures for Drought
Table 4-8 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		Rural Development	MGNREGS	Regularly
Farmer education to practice drought resistant crops and efficient water use		Agriculture & horticulture department	Departmental schemes	Regularly
Set up control mechanism for regulated water use (ponds, small dams, check dams) on the early onset.		Panchayats		Regularly

Hazard : Industrial (Chemical)

Industrial (Chemical) Structural Measures
(in coordination with LCG, DCG district and state level authorities)
Table 4-9 Industrial (Chemical) Structural Measures

Structural measures	Activities	Implementing Departments	Convergence with agency/ program	Time Frame
Monitoring impact of industries on NRM (land, water and air)	Data collection of impact on natural resources (ground water monitoring wells, air quality test, etc)	DDMC, DCG GPCB	Environment protection act	Regular intervention
Safety assessment	Carry out structural safety inspection/audit	DISH, DCG (Asst. Director. Industrial safety and health)	Industrial act	Regular intervention
Protection wall	Build protection wall for minimize risk of disaster	Industrial unit	Industrial act	Regular intervention

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

Table 4-10 Industrial (Chemical) Non-Structural Measures

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

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.

Hazard: Tsunami

Structural Mitigation Measures for Tsunami

Table 4-11 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	No coastal area	Rural Development	Departmental programs , MGNREGA	Long term planning
Contraction Sea water brake structure		R & B State and panchayat	Departmental programs , MGNREGA	Long term planning

Non-Structural Mitigation Measures for Tsunami

Table 4-12 Non-Structural Mitigation Measures for Tsunami

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/program	Time frame
Provisions of Coastal Regulation Zone to be effectively implemented	Coastal Area	Department of Environment & Forest GEC	ICZMP	Long term planning
Capacity building of task forces in coastal villages		TDMC, DDMC, CDMC, VDMC,	DRM,	Periodically
Awareness activity in prone/ vulnerable area		DDMC , TDMC, CDMC, VDMC	DRM	Regularly

4.3 Special projects proposed and ongoing programmers for preventing the disasters

1. Disaster Risk Management Programme (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.

2. Gujarat Initiative School Safety Programme-I

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. 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.

3. National Cyclone Risk Mitigation Project (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. Under NCRMP project various activity will carry out like Construction of cyclone shelter for selected area.

As Surat district is vulnerable to Cyclone so projects like cyclone shelter, EWDS VSAT & siren installation are ongoing in Surat District.

4.4 Structural: Structural Mitigation Measures

- a. Retrofitting of Buildings:** Surat district come in Zone III in Earthquake. In Tapi region maximum buildings are engineered or, having good 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 be damage 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 building by-laws and the Seismic Code must be enforce by the municipal, Area Development Authority and Panchayat bodies.

4.5 Non-structural

Land use planning: Damage to a building depends primarily upon the soil conditions and topology of the area. Surat district comes under Moderate risk zone in terms of earthquake (Zone 3)

Training and awareness programmers: 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 public.

Mitigation strategies

The mitigation strategy for Surat district involves the following elements:

- Further growth of human settlements in the low-lying areas should be check 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 making applicable for new engineered & non-engineered constructions, and should be strictly enforce 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 rising 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.

4.6 Special Projects for Vulnerable Groups

Development Schemes:

MGNREGA:

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.

Awash Yojanas :

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.

4.6.1.1 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.

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 show to all government primary schools through the satellite network.

5 Preparedness Measures

5.1 Formation of Persons and trainings

5.1.1 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 Designation of trained S&R Team member

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).

- 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 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 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 based on 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 mentioned:

- 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

5.1.2 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 assessing 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 color 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 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.

5.2 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 26 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. 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.

5.3 Training, capacity building and other proactive measures Training:

Table No. 5.3
Table 5-1 Training

Sr. No.	Task / Activity	Responsibility
1	Training to civil defense personal in various aspect of disaster management	Home Department
2	Training to home Guards personal in various aspect of disaster management including search and rescue	Dy. Controller Civil Defense District Home Guards Commandant
3	Training to NCC and NSS personal in various aspect of disaster management	Education Department NCC 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, CDMC 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, R & B

Awareness

Table 5-2 Awareness activities

Task	Activity	Responsibility
Information, education And communication	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, Rally, - Planning and Design - Execution and Dissemination	Information Dept Education Dept All line dept Dist. Collectors Chief officer Other Dist. Authorities

5.4 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 Incident Action Plan (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

5.5 Checking and certification of logistics, equipments and stores

Surat district has various types of logistics and equipment. It should be check and certified by concern officer periodically. Disaster Management cell is regularly monitoring this

activity and got certification of this equipment. (Detail information of Equipment is given in Annexure)

5.6 Operational check-up of Warning System

Warning system are checking periodically like, Satellite phone, Hot Line, Telephone connection, GSWAN connectivity etc, In Pre- monsoon meeting also give direction for checking warning system like, port signals.

5.7 Operational check-up for Emergency Operation Centre

Operational checkup of Emergency Operation Centre are carry out month wise and check out all facility and equipment in DEOC.

5.8 NGOs and other stakeholders coordination – identify their strengths and allocation of responsibilities in area/sector/duty/activities –

Activate NGO coordination cell

NGO and Voluntary group are doing very important activity and response during disaster. DDMA also organized capacity-building programmers, awareness programmers on Disaster Management for NGO and Voluntary group. 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. (Information of NGO and Voluntary group refer Annexure)

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 conduct with the help of Print Media, Electronic media, folk media authority can create awareness among community.

5.9 Seasonal preparedness for Seasonal Disaster like Flood and Cyclone

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 firesuppression 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 adjustors,

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.

5.10 SDRN/IDRN data updation

State disaster Resource network and India Disaster Resource Network is a crucial databases 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 Visualize does not require any GIS software. The GIS visualize contains multi layered options depicting roads-highways, taluka, district boundaries, rivers, ports, airways, etc. SDRN and IDRN updation are regularly base work and it is updation.

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. 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.

The IDRN inventory of Surat District is combined with Tapi District's inventory so for the access of Tapi District's IDRN data they need to access Surat District's Portal on IDRN

5.11 Community Warning System, Education, Preparedness

DRM Programme:

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 form 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, CapacityBuilding 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 inGujarat. Under the DRM Programme

For the Prepared level specific plan following process will followed.

District Level Process

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

Taluka level process

1. Orientation cum sensitize Taluka level officers and PRI members.
2. Formation of Taluka Disaster Management Committee
3. Capacity building of government officials
4. Development of the TDMP
5. Use of IEC material and media sources for create awareness at taluka level
6. TDMP update on SDRN

City-ULB level process

1. Orientation of City level officers, elected members & leaders.
2. Formation of CDMP
3. Capacity building of municipal official and concerned organizations at city level
4. Development of the CDMP.
5. Use of IEC material for create awareness at city level
6. CDMP updation on SDRN

Village Level Process

1. Formation Cluster within 10 to 12 village and conduct cluster meetings over 10-12 villages
2. Organize Gramsabha in each village
3. Undertake PRA exercise at village level for hazard, vulnerability assessment and resource analysis
4. Facilitate the formation of the Village Disaster Management Committee (VDMC)
5. Conduct training programs for DMT and DMC Members and volunteers
6. Awareness campaigns on risk reduction mechanisms, Risk Transfer- insurance, disaster resistant construction

7. Developed Village Disaster Management Plan (VDMP)
8. Conduct mock drills for test the VDMP
9. Update VDMP twice in a year (by VDMC)

Surat 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 stakeholders 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.

Prevention 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 Kutch 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 vulnerabilities.

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. Base on the interim assessment of risk and vulnerabilities, the Kutch 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)

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 programmers and schemes:

The State Planning Department will prepare a report on the government sponsored programmers, 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.

5.12 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

Table 5-3 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 ↓ Villages	IMD ↓ Collector ↓ Mamlatdar /TDO ↓ Villages
Responsible Agency for warning dissemination	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC
Trained personnel	Yes	Yes	No	No

and operators available (Y/N)			(Team to be formed and trained)	(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) VDMC			
Measures required to improve timeliness and outreach (For example, voice enabled SMS)	Contact of communities in remote locations (fisher folk, saltpan workers, Maldharis etc)			

During and Post Disaster Advisory Action Plan

Table 5-4 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)					

5.13 Procurement various Resource

Provide logistical support to government and agencies for procurement of relief goods, transportation, Tents, blankets, tarpaulins, equipment etc, and monitoring illegal price escalations, stocking etc. during crisis. DDMA and other local authority should do procurement of such resource and If they have such resource so keep them in ready to use in disaster situation.

5.14 Protocol and arrangement for VIP Visit

It is important that immediately inform VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumors 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.

5.15 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. Media 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 create which is made operational during emergencies. Both print and electronic media areregularly brief 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).

5.16 Documentation

Documentation is very important activity in disaster management. DDMA also appoint duty for Documentation to the information department. Documentation should be in good manner. It can be in summary and detail form. It should be reliable and authenticate.

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 activate with full strength and begun active for search and rescue according disaster.

6.1 Response flow chart

Response flow chart on next page

6.2 District CMG meeting

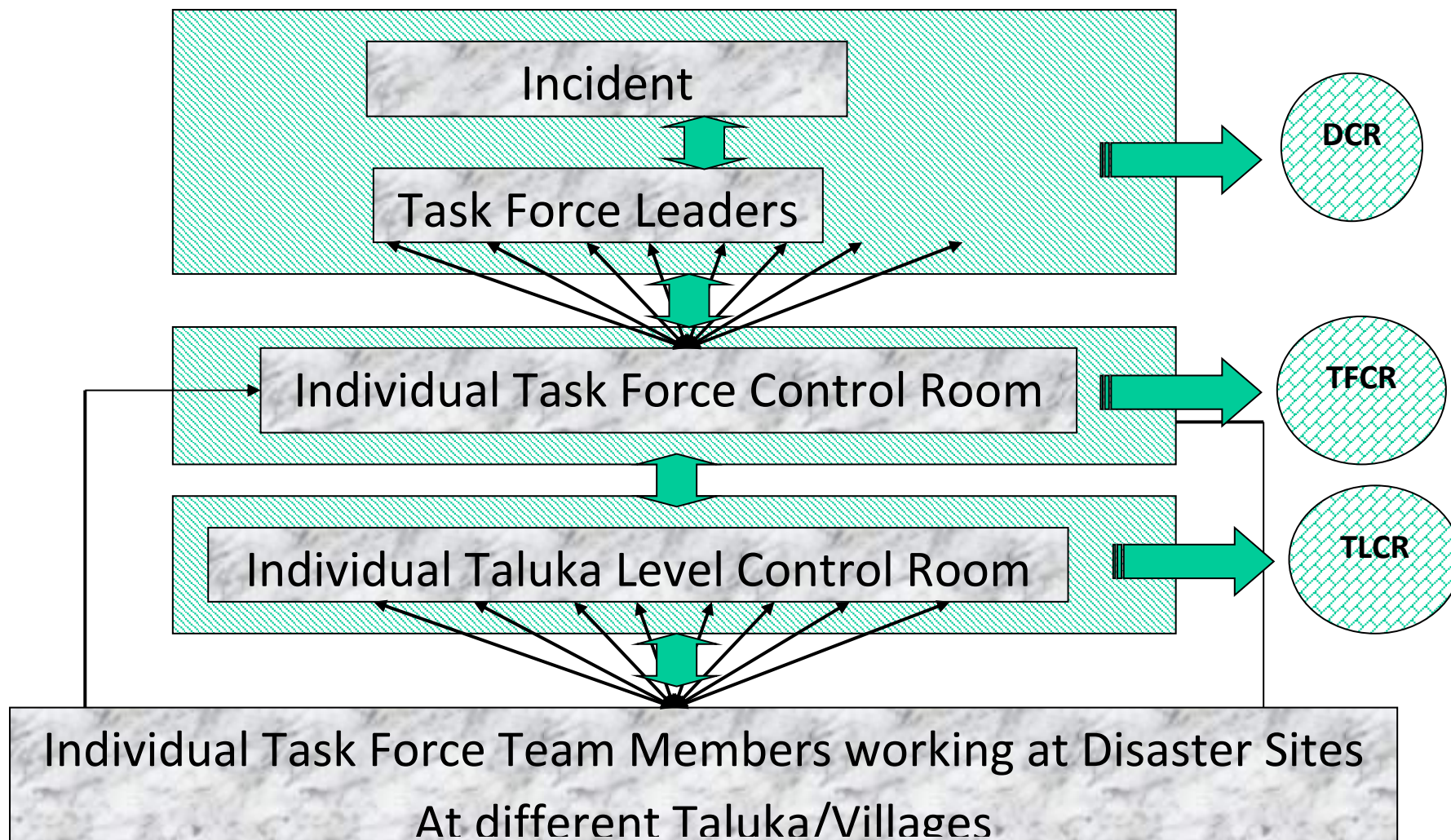
At the District level, the District Crisis Management Group (DCG) is an apex body to deal with major chemical accidents, disaster and to provide expert guidance for handling them. DCG has a strength of 34 members which includes District Collector, SDM and Dy. Collector, DDO, Dy. Director – Industrial 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. DCGs as well as LCG.meeting will meet periodically twice in a year.

6.3 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 a Level 1 Disaster the Local Control room will be activate, in case of a Level 2 disaster DEOC will be activated along inform with the SEOC.

Response flow chart and Communication Flow Chart during Disaster Management



6.4 Warning, alert and warning dissemination

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. The details of agencies competent enough for issuing warning or alert pertaining to various types of disasters are given below:

Sr. No.	Disaster	Agencies
1	Earthquakes	IMD/ISR
2	Floods	Meteorological Department, Irrigation
3	Tsunamis	IMD/ISR/INCOIS
4	Cyclones	IMD
5	Epidemics	Public Health Department
6	Road Accidents	Police
7	Industrial and Chemical Accidents	DISH, Police, Collector
8	Drought	Agriculture, Scarcity department
9	Fire	Fire Brigade, Police, Collector
10	Rail Accident	Railways, Police, Collector
11	Air Accident	Police, Collector, Airlines
12	Ammunition Depot-Fire	Army, Police, Collector.

1. Cyclone/flood forecasting is generally the responsibility of the Indian Meteorological Department (IMD). IMD is the nodal agency for providing cyclone-warning services. IMD's INSAT satellite based Cyclone Warning Dissemination System (CWDS) is one of the best currently in use in India to communicate cyclone warnings from IMD to community and important officials in areas likely to be affected directly and quickly. There are 19 CWDS stations in Gujarat.

2. After getting information from IMD, warning dissemination is a responsibility of State Government (COR). The COR under the Revenue Department is responsible for disseminating cyclone warnings to the public and Line Departments.

3. On receiving an initial warning, the office of the COR disseminates the warning to all Line Departments, the District administration and DG Police. Warning messages are transmitted through wireless to all districts and Talukas. District Collectors are provided with satellite phones and a Ham radio to maintain effective communication, even if terrestrial and cell-phone communication fails.

4. The state EOC and control rooms of the other line departments at the State level as well as district level also get the warnings. The control rooms are activated on receiving the warnings.

6.5 Resource Mobilization

Any disaster happens in district so resources are very important for response disaster. Resource mobilization is one of most important crucial activity. As mention above about IDRN and SDRN portal are have information regarding which kind of resource are available and

location of its. IDRN and SDRN should use for resource mobilization. DDMC, TDMC, CDMC and VDMC should be update regularly.

6.6 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;

6.7 Emergency Response Functions

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 Kutch has identified 16 expected task forces for key response operation functions that are describe 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 supporter by other organizations.

Emergency Operation Taskforce Functions

Table 6-1Emergency Operation Taskforce Functions

Sr. No.	Emergency Operation Taskforce	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	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 analysis 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, 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 execute 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.

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 DRMP

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.
- Encourage promotion of agro service outlets/enterprise for common facilities, seed and agro input store and crop insurance.

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
- b. Collection, laboratory testing and analysis of viruses to ensure their control and eradication

- c. Pre-positioning of seeds and other agro inputs in strategic points so that stocks are readily available to replace damage caused by natural calamities.
- d. 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.
- e. 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

1. Arrange for early payment of compensation and crop insurance dues.
2. Facilitate provision of seeds and other agro inputs.
3. Promotion of drought and flood tolerant seed varieties
4. 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.
6. Establishment of a larger network of soil and water testing laboratories
7. Establishment of pests and disease monitoring system
8. Training in alternative cropping techniques, mixed cropping and other agricultural practices which will minimize crop losses during future disasters

Health Department

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 feedback 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 hospital

- 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 site
 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

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 Centers with network of para-professionals 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 minimize 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 Pranchayats 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

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 used as relief camps or in areas with high probability to be affected by natural calamities.
- Rising 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 mobilization 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.

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.

Civil Defense:

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.

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.

Civil Supplies:

Preventive Activities

- Construction and maintenance of storage goods storage 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, unutilized 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.

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 mobilize 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
- Mobilization 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.

Energy: DGVCL

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, modernize 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, Collector Control Rooms and other vital emergency response agencies.

- 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.

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 mobilizing boats during emergencies and for payment of wages to boatmen hired during emergencies.
- Support in mobilization 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.

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

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. Counseling.
- 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 organizations.
- Provide training so that the elected representatives can act as effective supportive agencies for reconstruction and recovery activities.

Panchayati Raj Institutions:

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
- Organize 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 priorities 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.
- Operation emergency relief centers 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 minimize 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 minimize 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, Collectorduring Level 1.
- 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.

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 do's and don'ts of various disasters
- Regular Liasoning 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 Level 1 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 programmers.

Revenue Department

- Co-ordination with Govt. of Gujarat Secretariat and Officers of Govt. of India
- Overall control & supervision
- Damage assessment, finalization of reports and declaration of Level 1/Level 2 disasters
- Mobilization of finance

Home Department:

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

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

6.8 Reporting

Media & information Management:

6.8.1 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 activate 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 areproviding in Annexure.

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 give to a task force.

End of Emergency

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

6.9 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 centers (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 centers and setting up telephone helpline numbers for public utility. True information must be release 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 activate at DEOC

6.10 Arrangement of VIP Visit

It is important that immediately inform to VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumors 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.

6.11 Responsibility Matrix should be evolve for each response measures

with period and responsibility matrix for major stakeholders should

be given in annexure

Responsibility matrix for response functions

TASKFORCE ACTION PLANS

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. (DDMA and Media Task Force)	Involvement of GSDMA	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
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

Warning:

Collection and dissemination of warnings of potential disasters

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		
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.

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 raising. (Task Force)	Includes participation of Media Task Force	Every 45 days

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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
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

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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

Search and Rescue (including evacuation):

Provide human and material resources to support local evacuation, search and rescue efforts.

Task Force Leader: Deputy Commander (Civil Defense) /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 from GSDMA and NDMA	Before warning
Establish public education program. (Task Force)	Media Task Force	Ongoing
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
Action and (Who Should Take It)	Requirements or Conditions to be	Timeframe

	met for the action can occur.	
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
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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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.

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 is critical infrastructure.	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)		
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Establish Control Room. (Task Force)		No later than 6 hours from warning
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)		Start 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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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

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 portability. (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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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.
Mobilize additional personnel and vehicles. (Logistics Task Force)	May be difficult to locate additional personnel locally. Recourse to	24 hours from warning.

	outside or contractor sources may be required.	
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 Assessment Task Force.	Completed by 24 hours 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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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

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)	Requirements or Conditions to be met for the action can occur.	Timeframe
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 Logistics Task Force.	As required.
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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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

Electric Power Supply:

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.	
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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.	
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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. (CDHO)		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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe

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.
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.

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.

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)	SDRN updating, project inventory.	On going
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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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 Logistics Task Force.	Continuous.
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.

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 be met for the action can occur.	Timeframe
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.

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 and COR.	
Compile baseline data. (Task Force)	Collaboration with GSDMA 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.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe

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.

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.	
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
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	Within 14 days of disaster.
Final Report. (Task Force)	Involve other Task Forces.	Within one month of end of operations.

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 utilized for building a better and more safe and resilient society.

Strategies for restoring physical infrastructure and lifeline services may be:

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.

7.1 Damage Loss Assessment

Restoration of Essential Services and Infrastructure Following tables are to be filled after an event of disaster

Power

Item/ Services	No. of unit damage d	No of villages affecte d	Populat ion affected	Recover y measure s	Implement ing agency	Tentativ e Duration (Months)	Budge t
Feeder							
Transformers							
HT Lines							
LT Lines							
Electric Poles							

Note: To be planned after initial damage assessment by departments

Health

Item/ Services	PHC (village name)	CHC	Sub Centre	Drug Store	Recover y Measure s	Implementi ng agency	Tentativ e Duration (Months)	Budge t
No of buildings damaged								
No of health centres inaccessibl e								
Refrigerati on and other vital equipment for storage								
Drugs and medicines perished	(Locatio n and qty)							
No of Ambulance damaged								

Note: 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							
Bore wells							
Pond							
Water Supply Disrupted							
Contamination							
ESR damaged							
GLR Damaged							
Sump damaged							
Pipe lines damaged							
Stand post damaged							
Cattle trough damaged							
Hand pump							

Road and Transport

Road damage	Location	Severity	Km	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Panchayat							
State Roads							
National Highway							
Nagar Palika							

Item/ services	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								
APM C								
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							
Aanganwadi							
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 laborers				
Unskilled and Agricultural laborers				
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

Nonfarm 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)				

7.2 Long-term recovery program

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

Grievance Redressed System

No.	Key Person/ Establishment	Contact No	Address
1	DEOC/ RAC	0261-2663200	Collector Office-District Emergency Operation centre
2	DDO	0261-2422160	District Panchayat
3	Police	0261- 2651831/32/33	S.P.Office, Surat

Matrix form of Sort term and long-term recovery programme

Disaster recovery has three distinct but interrelated meanings. First, it is a goal that involves the restoration of normal community activities that were disrupted by disaster impacts –in most people’s minds, exactly as they were before the disaster struck. Second, it is a phase in the emergency management cycle that begins with stabilization of the disaster conditions (the end of the emergency response phase) and ends when the community has returned to its normal routines. Third, it is a process by which the community achieves the goal normal life.

7.3: SHORT TERM AND LONG TERM RECOVERY TIME TABLE

Recovery and Reconstruction

Activity/Action	Estimate of Duration	Estimate of Duration
Period	Short-Term	Long-Term
Warning	Hours to a few days	
Response/Operations	Ongoing	Ongoing
Emergency	1-15 days	1-60 days
Preparation of damage assessment	1-4 days	4-8 days
Disaster declaration (state or federal)	1-10 days	0-30 days
Federal/State mitigation Strategy	1-15 days	15-30 days
Recovery	7-150 days	150-365 days
Temporary building moratorium	<=30 days	<=60 days
Letter of intent to submit HM Grant	<=60 days	<=60 days
Short-term reconstruction	<= 1 year	200-365 days
State mitigation	<= 180 days	365 days
HMGP proposal	70-200 days	200-365 days
Long-term reconstruction	100 days to 5 years	5 to 10 years

8 Financial Arrangement

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

8.1 State Disaster Response Fund

To carry out Emergency Response & Relief activities after any disaster the State Disaster Response Fund is making 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.

8.2 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.

8.3 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.

8.4 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.

8.5 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 Mock drills	Revenue Department
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8.6 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)

9 Maintenance of Plan

9.1 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 revise in the month of October-November every year

Plan Maintenance is a dynamic process of updating pal on a periodic basis. It is based on learning and from the last disaster (As per under Mention)and mockdrill exercise.

Major Learning based on experience of last disasters and mock drills (on planning/implementation/compliance)	Revisions adopted/proposed	Remarks
Flood	May-June	Highly affected area of the district
Chemical disaster	Jan, Feb	Due to MAH unit (Under Factory act-1947)
Tsunami	June, Oct	Due to coastal belt
Cyclone	May-June and Oct.Nov.	Due to Coastline

Prepared By DDMC Members, Surat

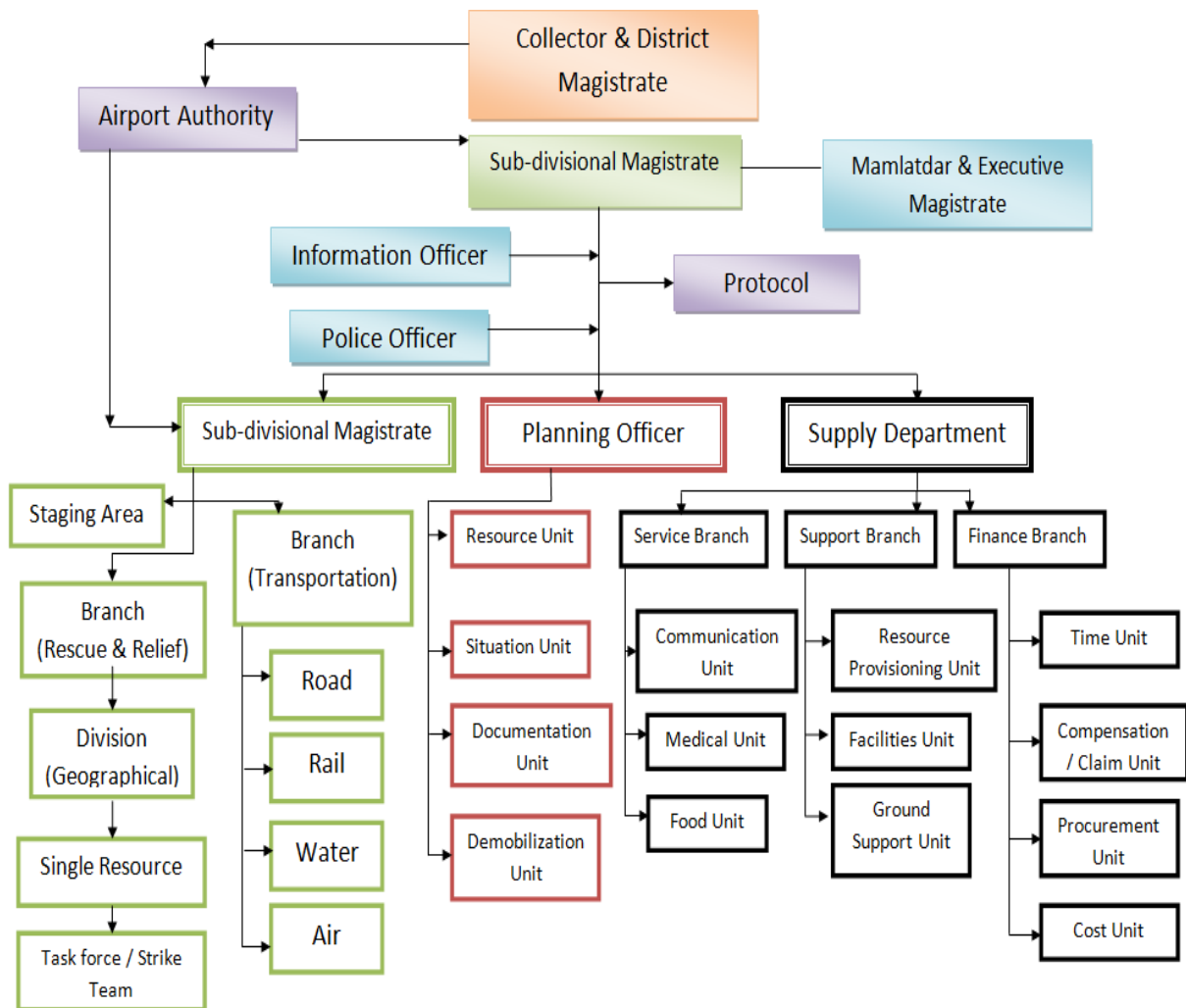
Certified/ Approved By _____ Collector Surat

10 Emergency Contact Details

Sr. No.	Sub No.	Sr.	EOCs/ Control rooms	Contact Numbers
1			State EOC	079-23251914 079-23251900 079-23251900 Dy.Col. 079-23251907 Mam.
2			Relief Commissioner	9978406109 (M) 23251509
3			Director of Relief	9978406087 (M) 23251612
4.			CEO,GSDMA	9978405600 (M) 23259502
			Jt. CEO, GSDMA	9978407003 (M) 23259451
5			SURAT District EOC	0261- 2663200 (fax-2664800)
6			TASKFORCE Operation Room	
	6.1		Warning and Communications	9978405220
	6.2		Law & Order	0261-2463976 0261-2463978
	6.3		Search & Rescue	2414195/962423751 101, 102, 972434508
	6.4		Public Works	R&B-1 02612474162 9824107339 R&B-2 02612471097
	6.5		Shelter	0261-2667007
	6.6		Water Supply	0261-2782088
	6.7		Food & Relief supplies	0261-2465114, 8758401001
	6.8		Public Health & Sanitation	0261-2425751,2425751-55
	6.9		Power	0261-2804491/99
	6.10		Logistics	2422160-2425751-55
	6.11		Animal Health & Welfare	0261-2425751
	6.12		Damage assessment/Survey	0261-2472211,2463819 9978405220
	6.13		Media/public Information	0261-2465541,2474423
	6.14		Planning and coordination	0261-2472471, 2471121
	6.15		Finance/ Administration/ protocol	0261-2472211,2463819 9978405220
	6.16		madadnish niyamakshree matstoudhyog	0261 2463946 9879335412
	6.17		Transport and migration management	9426560574
7			Taluka EOC/ERC/Control Room	
	7.1		TEOC Umarpada	02629-253392
	7.2		TEOC Olpad	02621-222444
	7.3		TEOC Kamrej	02621-202578

	7.4	TEOC Chauryashi	0261-2663800
	7.5	TEOC Palsana	02622-264228
	7.6	TEOC Bardoli	02622-220024
	7.7	TEOC Mahuwa	0265-255721
	7.8	TEOC Mangrol	02629-220227
	7.9	TEOC Mandvi	02623-221023
	7.10	Surat City Control Room	2414195/96 2451756

11 District Level Response Structure (IRS)



12 Disaster Specific Action Plan

12.1 Flood Action Plan

Surat district is situated on the banks of the Arabian Sea. After that water is synchronized to the Gulf of Khambhat. Geographically, Surat is located in the west of the Dakden peninsula and the west is Kharland area. Sahayadri's direct slope is found in the lower part of the district, which is safe. The main nallahs of Surat district are found in the Tapi, Kim, Mindhola, and Ambika river. Length of Tapi river is approximately 725 km. The main branches of the Tapi river are Purna, Vagur, Girer Bori, Anar, Panjar, Gumar and Gomai. The last 51 km of the river is under the influence of the sea. On Tapi river, there are two major dams Kakrapar Weir and Ukai Dam built.

In the monsoon season, there is heavy rainfall recorded in Surat district over time. In the study of meteorological data, due to heavy winds of Tapi river water, the rainfall in the catchment area of Tapi river is likely to cause heavy flood even in low rainfall. Due to heavy rainfall, it is also flooded.

General Terminology Used in Weather Bulletins

(A) Intensity of Rainfall Terminology Used

Sr. No.	Rain in mm”(24 hrs)	Terminology
1	0.1.mm to 2.4 mm”	Very light rain
2	2.5 mm to 7.5 mm”	Light rain
3	7.6 mm to 34.9 mm”	Light to Moderate rain
4	35.0 mm to 64.9 mm”	Moderate rain
5	65.0 mm to 124.9mm”	Heavy rain
6	Exceeding 125 mm”	Very Heavy rain

(B) Special distribution of weather phenomenon

Sr. No.	Percentage Area Covered	Terminology Used
1	1 to 25	Isolated
2	26 to 50	Few Places
3	51 to 75	Many Places
4	76 to 100	At most Places

(C) Emergency Situation

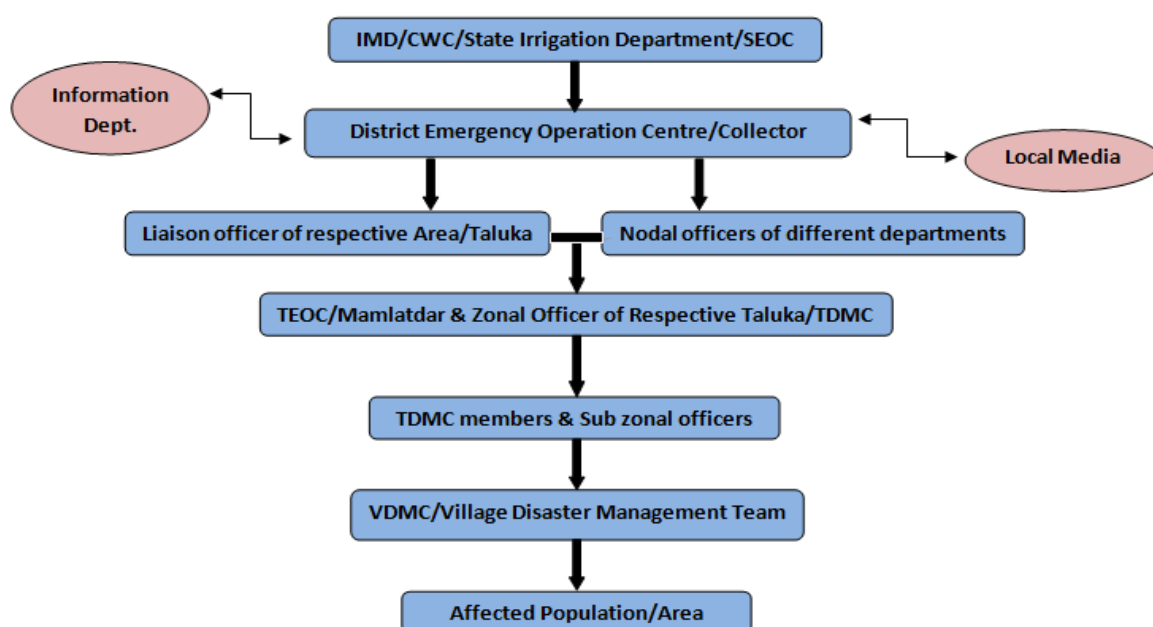
1. When water level is rising above the danger of H.F.L
2. When intensity of rainfall is above 65 mm /hr

3. When breaches are anticipated and may lead to disaster.
4. When water levels are rising alarmingly.

(D) Evacuation

Sr. No.	Signal	Activity
1	White Signal	Alert condition
2	Blue Signal	Ready for Evacuation
3	Red Signal	Immediate Evacuation

12.1.1 Early Warning & Communication Flow

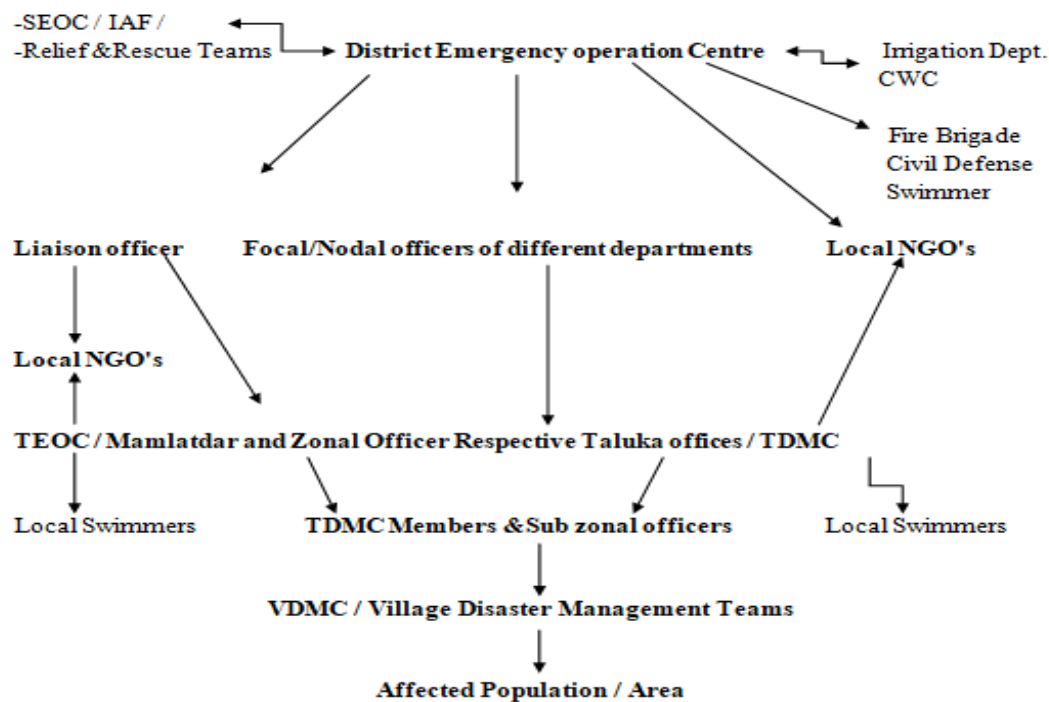


12.1.2 Response

- ❖ As disaster declares the response managed and monitored through DEOC,
- ❖ All the concerned DDMC members along with the Liaison officers and response group members are intimated to respond to the situation as described in the below chart.
- ❖ As per the impact of disaster it will manage through DEOC / TEOC and if needed support of State or Central departments will be requested to deal with the situation.
- ❖ DM Plan of Irrigation Department, Flood memorandum, TDMP, CDMP and other DM Plan will be referred as an when it is required to respond in case of floods.
- ❖ The list of trained swimmers is incorporated with Annexures.
- ❖ Equipments for flood rescue like boats Life rings, Life buoys, Dewatering pumps etc. details are incorporated in Annexures.

- ❖ Database of SDRN and IDRN (Manually and Electronic) will be referred for flood response.

12.1.3 Response Chart



12.1.4 Details of Tapi Basin

Sr No	Name of Gauge Station	Danger Level)		Warning Level	
		In Meter	In Feet	In Meter	In Feet
1	Ukai	105.15	345.00	103.32	339.00
2	Kakrapar	53.66	176.05	53.15	174.33
3	Surat Nehru Bridge	9.50	31.16	8.50	27.88

12.1.5 Danger levels of different rivers

Sr. No.	Name Of River	Danger Level (in m)
1.	Ambika (Sonavadi)	9.45
2.	Mindhola (Bardoli Bridge)	10.10
3.	Kim (Moti Naroli)	13
4.	Purna (Veravala)	7

12.1.6 List of Dams at Surat District and their Danger Level

Sr. No.	Name Of Dam	Danger Level
1.	Ukai Dam	345.00 (Feet)
2.	Kakrapar Dam	176.00 (Feet)
3.	Aamli Dam	115.80 (Meters)
4.	Laakhi Dam	74.10 (Meters)
5.	Hop Pool	9.50 (Meters)
6.	Cause Way	6.00 (Meters)
7.	Hathnur Dam	213.00 (Meters)

12.1.7 List of villages likely to be affected by following rivers

Sr. No.	River	Taluka	Affected Villages	Population
1	Tapi	Olpad	Pinjarat	5173
			Tena	1119
			Barbodhan	2496
			Tunda	595
			Dabhaari	535
			Aadmor	1076
			Lawaachha	2218
			Bhandut	1191
			Kudiyana	1740
		Bardoli	Kadod	13398
			Haripura	1714
			Waaghecha Kadod	897
		Choryasi	Kawas	6500
			Limla	3683

			Malgama	960
			Bharthana Kosad	7171
			Bhensaan	2195
			Bhatha	5122
			Bhatpor	3449
			Ichchhapor	12097
			Saniya Hemad	3964
			Kumbhariya	5850
			Saroli	3268
		Kamrej	Kamrej	11329
			Bhairav	1004
			Derod	1666
			Kholwad	10687
			Kathor	13258
			Choryasi	1143
			Aamboli	4186
			Ghala	4713
			Karjan	2529
			Dhoran Pardi	2803
			Navipardi	3961
			Kholeswar	1474
			Dungra	2744
			Dhatwa	1382
			Machhi	462

			Timba	2418
			Antroli	1088
			Tharoli	186
			Velanja	2804
			Abrama	3041
			Bhada	1842
			Walak	1644
			Laskana	8452
			Aakhakhol	541
			Jiyor	204
			Shaampura	3560
			Dethli	267
2	Mindhola	Palsana	Kanaav	1609
			Malekpor	2531
			Amalsadi	1610
			Maakhinga	874
			Vanjhodiya	1176
		Bardoli	Madhi	7650
			Surali	9286
			Karchaka	1033
			Ten	6251
		Choryasi	Saamrod	1060
Kachholi	2149			

			Lajpor	7920
			Popda	1017
			Kapthela	3312
3	Kim	Mangrol	Luwara	2322
			Kantwa	2246
			Wansoli	839
			Sava	774
			Velachha	2138
			Kathwada	1040
			Hathoda	3735
			Mota Borsara	1871
			Walesa	568
			Moti Naroli	1060
			Palod	2558
			Kothwa	1478
			Shenthi	791
			Panetha	584
			Siyalaj	1711
			Kosadi	3328
			Simodara	1676
			Vadoli	732
			Aasarma	941
			Ranakpor	1004

			Limbada	2434
			Mangrol	5354
			Aamandera	900
			Gijram	1814
			Aankdod	1355
		Olpad	Kadrama	1695
			Umrachhi	991
			Vadoli	1862
			Kim	18638
			Kimamali	1067
			Kathodara	3628
			Anita	1110
			Bolav	1223
4	Bhukhi	Mangrol	Vaankal	5629
5	Purna	Mahuva	Mahuva	5775
			Ranat	1209
			Ondach	2728
			Amroli	539
			Shekhpur	4689
			Vadiya	1372
			Miyapur	1220
			Budhleshwar	664

			Kavitha	1201
			Sewasan	270
			Aamchak	1423
		Bardoli	Chhitra	603
			Kharad	81
6	Ambika	Mahuva	Valvada	5233
			Haladwa	3242
			Mahuvariya	5567
			Umraa	5641
			Vaheval	7595
			Kaankariya	1332
7	Sena Creek (Khadi)	Olpad	Gothan	3035
			Umraa	2233
			Delad	4028
			Sayan	15324
			Saadhiyer	3207
			Achharan	1025
			Gola	832
			Olpad	15898
			Haathisa	597
8		Olpad	Siwaan	2134

Low Lying Areas	Vaswaari	949
	Atodara	1755
	Karmala	957
	Kosam	1412
	Sonsak	1128
	Balkas	846
	Saroli	1946
	Kudsad	9407
	Dihen	2636
	Ariyana	1419
	Kunkani	856
	Obhala	430
	Kaachhab	385
	Bhaadol	1373
	Takrama	1687
	Maadhar	607
	Morthan	948

12.1.8 Kim river analysis

For the long time Kim river issue is getting a bigger to tackle with especially in monsoon. Therefore, below analysis is done to come-up with quick solution during any adverse situation.

These are some data from previous year. This shows how does level of Kim river affects following villages. The rainfall of the date 02/08/2019 was recorded as 269 mm in Mangrol and 91 mm in Umarpada. That shown effect on Kim river as follows.

Table 2 Kim river analysis

Sr.	Date	Rain of 24 hrs in mm	Max. Level of Kim River (in m)	Evacuation	
				Village	Number
1	03/08/2019	Mangrol-278mm Umarpada-416mm	12 m	Mangrol Taluka Kathvada Kunvarda Sava Kothva	194 104 26 27
2	04/08/2019	Mangrol-451mm Umarpada-587mm	12.65 m	Olpad Taluka Kathodara Mangrol Taluka Sethi Kosadi Simodara Pansara Hathoda Limbada Kunvarda Mota Borsara Ranakpor Moti Naroli Panetha	178 80 35 257 495 33 148 48 106 225 29 103
3	05/08/2019	Mangrol- 00 mm Umarpada-23 mm	14 m	Olpad Taluka Kim Bolaav Umrachhi Vadoli Kimamali	360 400 120 80 12
4	06/08/2019	Mangrol-03mm Umarpada-06mm	12 m	Olpad Taluka Umrachhi	500

As the consequences of rising water level there were also some incidents of transportation failure as follows.

There was an incident of road closure from Vadoli to Kim in Olpad Taluka on the date of 04/08/2019.

Bombay-Baroda railway line was also affected due to rising water level. Railway line was closed on 4th August evening due to bank slip and was again closed due to water level reached danger level on most of the bridges on Kim river.

Umarpada and Mangrol are in the catchment area of the Kim river. It is estimated that it reaches to the Kim river in around 6 hours. Thus, it can be concluded that heavy rainfall in short time that occurs in these two talukas affects majorly the level of Kim river.

Necessary precautions need to be taken as soon as heavy rainfall is recorded in these two talukas.

12.2 Industrial/Chemical Action Plan

Manufacture, storage and use of hazardous substances pose a serious risk to industry, people in the neighbourhood and the environment. Accidental release of hazardous chemicals, which are flammable, explosive or toxic, may lead to emergencies. Depending upon the nature of the substance and magnitude of the release, emergency could either be confined within the industry (On-site Emergency) or could transgress the boundary of the industry and affect the public in the neighbourhood in which case it would be an Off-site Emergency. The Off-site emergency Plan is a document detailing how emergencies relating to a possible major accident involving a hazardous chemical in an industry, which may have ramifications outside the boundary walls of that industry will be dealt with.

Under the chairmanship of DM & Collector the response will be managed and monitored from DEOC and Off site control room, department wise response mechanism and response structure lie with Offsite emergency plan prepared by Director Industrial Health and Safety and will be referred the same at the time of chemical disasters which includes industrial fire, oil spill etc.

Response Activities

- ❖ As Chemical disaster declares the response will be managed and monitored through DEOC / OCR
- ❖ All concerned DCG members with Liaison officers and response group members are intimated to respond to the situation as described in the below chart.
- ❖ As per the impact of disaster it will manage through DEOC / OCR / TEOC and if needed support of State or Central departments will be requested to deal with the situation.
- ❖ Offsite Emergency Plan, TDMP, CDMP and other Industries DM Plan will be referred as and when required to respond in case of chemical disaster.
- ❖ The list of Expert persons, indicative list of medicines and equipments, trained first responders for Search; Rescue & Medicare etc. are available with offsite emergency plan.
- ❖ Database of SDRN and IDRN (Manually and Electronic) will be referred if needed in response.

12.3 Earthquake Action Plan

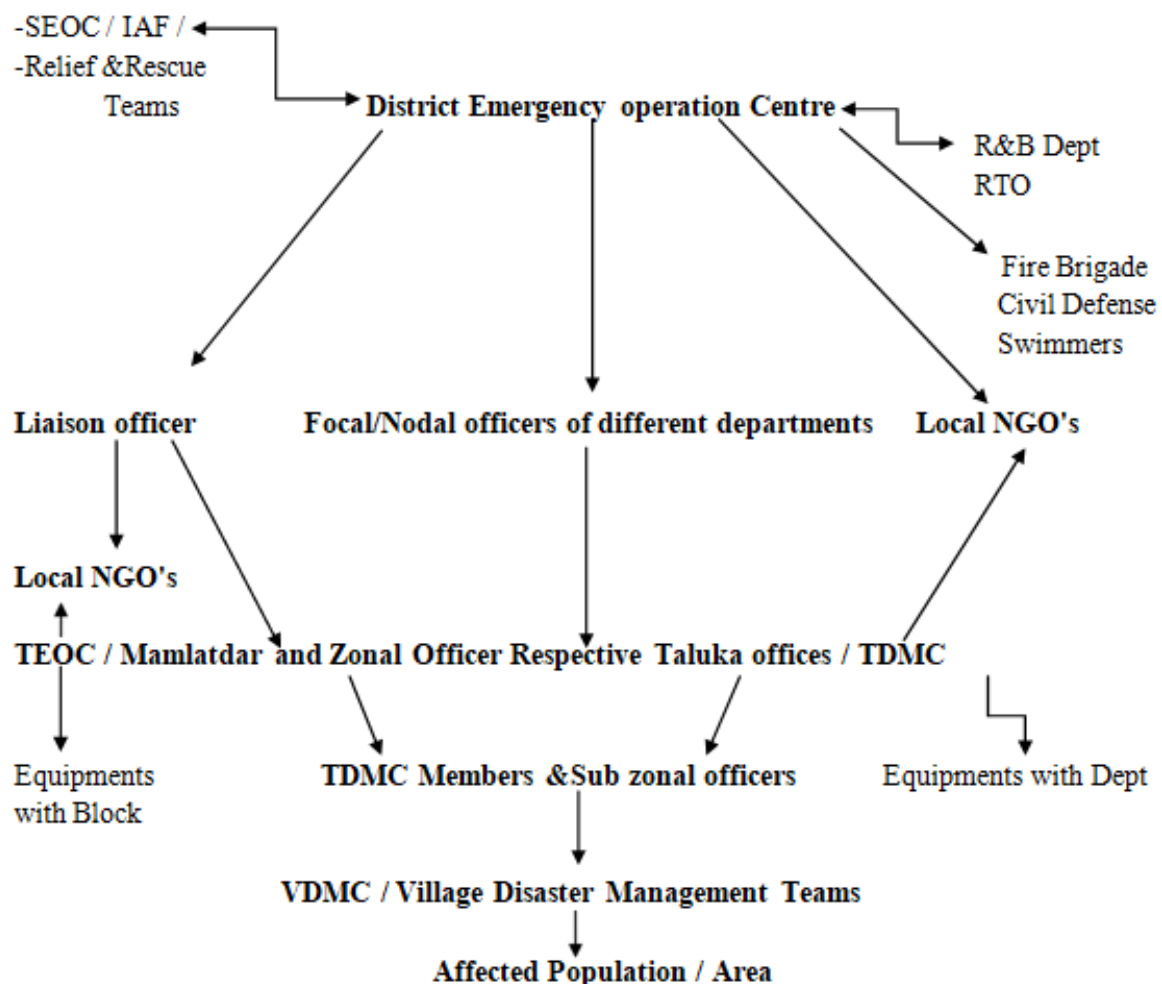
According to the Bureau of Indian Standards, the town falls under seismic zone-III, in a scale of I to V (in order of increasing vulnerability to earthquakes).

The response mechanism would be the same as describes with the general response mechanism chapter, here the focus will be on well-populated areas in particular city areas and the District disaster response group.

- ❖ As disaster declares the response managed and monitored through DEOC.
- ❖ All concerned DDMC members with Liaison officers and response group members are intimated to respond the situation as described in the below chart.
- ❖ As per the impact of disaster it will manage through DEOC / TEOC and if needed support of State or Central departments will be requested to deal with the situation.
- ❖ Departmental DM Plan of all concerned departments, TDMP, CDMP and other DM Plan will be referred as an when it is required to respond in case of Earth quake.
- ❖ Database of SDRN and IDRN (Manually and Electronic) will be referred for flood response.

ZONES	MAGNITUDE
Zone - V	Greater than 7
Zone - IV	Greater than 5, Less than or equal to 7
Zone - III	Greater than 4, Less than or equal to 5
Zone - II	Greater than 3, Less than or equal to 4
Zone - I	Less than 3

12.3.1 Response Chart



Temporary Shelter

- ❖ For temporary shifting of affected persons, temporary shelter is used during the effect of earth quake.
- ❖ In city area, in case of devastating earth quake the temporary shelters available with DEOC (Tarpaulin sheet with iron blades) can be used, tents with forest and other department and caterers can also be used as temporary shelter.
- ❖ None damaged / safe government establishments can also be used as per the directions of chairperson.

12.4 Cyclone Action Plan

Surat district has a coastal length of 83.00 km. There are 26 villages in this marine area. Surat district has experienced heavy rains over a period of time. But there was no effect of hurricanes in the near future. Based on the historical record, there was a major storm in 1782. And a large number of human casualties were casualties. The Tapi bat sank in the hurricane at that time,

resulting in the death of 2000 people who died on the bat and lost in the sea. Another hurricane struck Surat in 1800 and 1872. The impact of hurricanes is low in Surat. But precautions are necessary.

All the talukas of the district with major wards of the city are the possible site which can be affected during the heavy wind flow. Majorly the flood action plan will be referred at the time of cyclone.

Table 12-3 Expected damage of cyclone at different speeds

Sr no.	Speed (mph)	Expected Damage
1	60-90	Breaking down of branches of tree & damage to katchcha house
2	90-120	Tree may fall, Pakka house may get damaged, some communication & transportation maybe disturbed
3	>120	Big trees may fall down, houses may set severe by damaged , communication/transport stops , the glasses of doors & windows of house might get broken etc.

12.5 Oil Spills Action Plan

State level action plan / department specific action plan / Industries specific action plan will be referred at the time of the above stated Disasters. The response mechanism would be the same as describes with the general response mechanism chapter.

- ❖ As disaster declares the response managed and monitored through DEOC.
- ❖ All concerned DDMC members with Liaison officers and response group members are intimated to respond the situation.
- ❖ As per the impact of disaster it will manage through DEOC / TEOC and if needed support of State or Central departments will be requested to deal with the situation.
- ❖ Database of SDRN and IDRN (Manually and Electronic) will be referred for response.

12.6 Tsunami Action Plan

The possibility of the above stated disaster is very less with respect to Surat District, but if the effect of it is felt by the nearby district / state, will accordingly respond as per the State directions.

12.7 Heat Wave Action Plan

The seasons of Surat district is broadly divided into summer, winter and monsoon with fluctuation in temperature. Due to proximity to sea, it is predominately humid and hot and represents as sub-humid of tropical climate. Summer months (March, April, and May) are

relatively hot with temperatures ranging from 37.78 to 44.44°C. The maximum humidity is around 80%. Winters are not very cold and the climate is pleasant during the monsoon.

Criteria for Heat Wave

(As defined by Indian Meteorological Department)

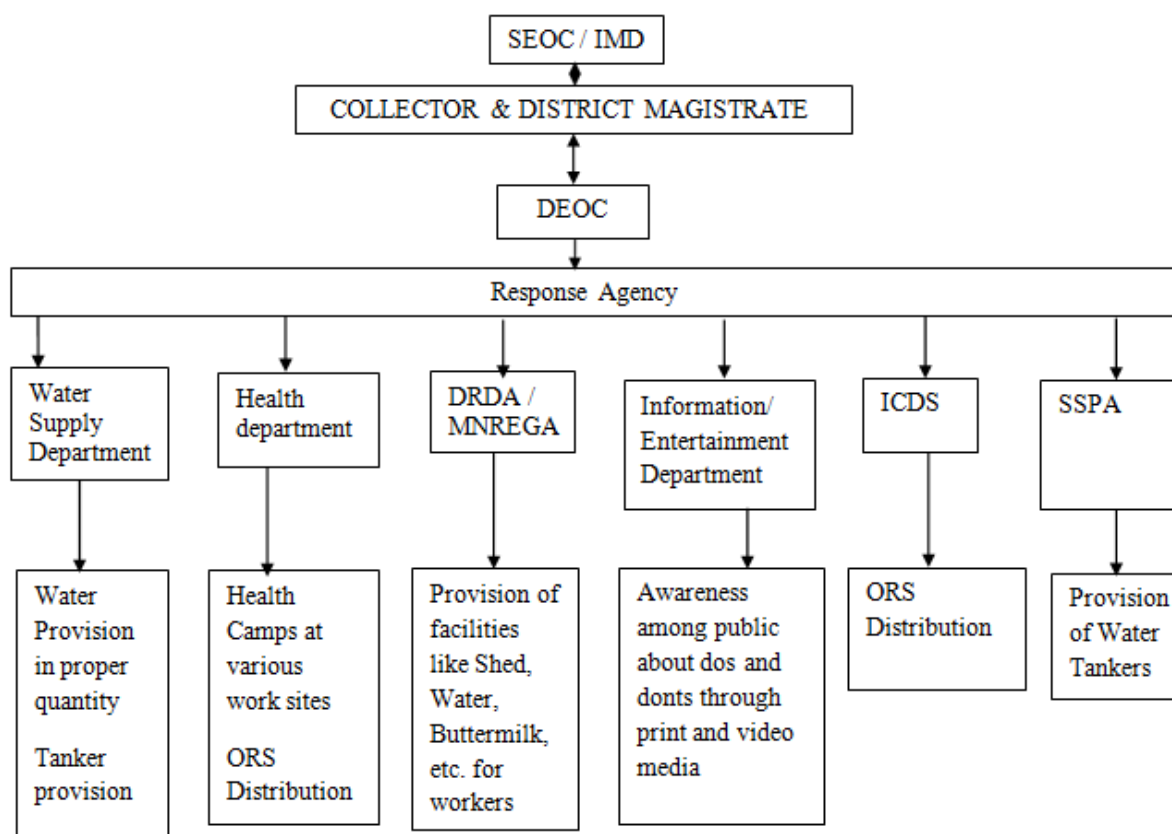
Heat wave need not be considered till maximum temperature of a station reaches at least 40° C for Plains and atleast 30° C for Hilly regions.

- A. When normal maximum temperature of a station is less than or equal to 40°C
- Heat Wave Departure from normal is 5° C to 6° C
 - Severe Heat Wave Departure from normal is 7° C or more
- B. When normal maximum temperature of a station is more than 40°C
- Heat Wave Departure from normal is 4° C to 5° C
 - Severe Heat Wave Departure from normal is 6° C or more
- C. When actual maximum temperature remains 45° C or more irrespective of normal maximum temperature
- Heat wave should be declared.

Colour Signals for Heat Alert

The DDMA will issue heat alerts, based on thresholds determined, as an additional means of communication by using the following colour 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	≥ 45°C



The above table represents the responsibilities of different Departments for various provisions that will help public reduce the impact on their health. In addition to that, DO's and DONT's for reducing the impact of Heat Wave, has been issued by Gujarat State Disaster Management Authority, Govt. of Gujarat.

12.8 Pandemic Management Plan

The health and medical services have to play vital role following the emergency. One fold is proper & timely treatments to the victims injured or affected. Persons other fold is to safe guard the public health.

The following actions are suggested for health & medical services.

- A). To ensure the arrangement & preparedness for special medical treatment antidotes and trained doctor Para-medical staff as specified in toxicology at the time of industrial emergency in local pocket area.
- B). On declaration of emergency or on receiving the message or information, prompt medical facilities should be set up e.g. first aid post, casualty. Receiving center/ camp, as per gravity of situation at site. Similarly, arrangement for emergency operation or special treatment on chemical burn, injury, gas dispersion etc with adequate arrangement, which will can serve the purpose of Base Hospital.
- C). Identification of dead bodies and post mortem arrangement.

- D). To maintain up to-date list with telephone nos. of services of doctors, hospitals, ambulance, primary health center, Para- medical staff, vehicle to meet the emergency situation.
- E). Arrangement to inform the up to-date status time to time to Central Control Room,, Chair Person, Relatives of injured or admitted patients, emergency services etc.
- F). Arrangement to safe guard the public health in case of development of epidemic situation & announcement on safety measure to be taken by public at the time of industrial emergency situation.
- G). To advice & guide the District Crisis Group in respect of medical & health part time to time.
- H). Provision for proper and adequate medicines, life saving drugs, equipments, antidotes etc. related to industrial emergency.
- I). To participate meetings, mock drills / examine and training.
- J). To prepare own detailed action plan to ensure the effective handling of industrial emergency.
- K). Liaison with Central Control Room, Chair Person, Emergency Services organization, agency and other related person.
- L). other duties as required during actual emergency

12.9 Coastal Mass Rescue Plan

It should be activated on occurrence of incident / mass casualty scenario requiring large scale rescue operation at sea involving various agencies.

The aim is to ensure prompt , well planned & coordinated response to Mass Rescue Operation (MRO) for saving maximum Lives at sea .

Setting up of following things will be followed after declaration of emergency.

- Incident Command System (ICS)
- Medical Triage
- Place of Safety to land persons rescued
- Hospital facilities including Hospital Ship and Ambulance
- Airlift and road transport facility for casualty transfer
- Transit accommodation
- Control and Communication Centre
- Security arrangements ashore
- Joint Information Centre (JIC) for Media

Response Mechanism

- a) Mobilisation - Deployment of SAR resources to Area / Scene of Action.
- b) Rescue / Retrieval - Plans and arrangements for rescue / retrieval of persons.
- c) Initial Assistance - Arrangement of initial medication, foods, clothing , sanitation etc.
- d) Executions Plans - For associated eventualities like pollution, fire , damage control , salvage operations .
- e) Medical Triage - Procedure and means of transfer of the survivors to Triage for medical requirements.
- f) Transfer - Procedure and resources for transfer of the survivors to Place of Safety ashore.
- g) Accounting - Identification and Accounting of all the survivors and dead bodies.
- h) Shifting - Transfer of rescued / retrieved person from Place of Safety to designated place.

13 SOP (Roles and Responsibilities)

The Present plan document identifies the roles and Responsibilities of the organization, in key identified sector. Taskforces have constituted for taking response measures in sectors. Action plan has been prepared for each taskforce which covers their roles & responsibilities in development of incident / emergency. It is expected that each taskforce shall develop the standard operating procedures for specific disaster / emergency. District collector has to ensure that all the members acquire knowledge and skills to perform their assigned roles.

A) District Magistrate & Collector

Being chairperson and Incident commander of the district for Disaster Management, he will be in overall command & emergency action to control a kind of emergency effectively for the district.

The Chair person has to perform the role as follows:

- Preparation and updating of District Disaster Management Plan for the District.
- To ensure that everyone is able to perform the role involved in emergency service effectively.
- To activate and maintain the District Control Room round the clock. To provide essential facilities with the District control room.
- To access emergency situation and have to declare the emergency, call and direct the emergency services to respond the emergency by providing reinforcement and support by pooling the resources from the District and if required from the State.
- The arrangement for rescue, evacuation, shelter, food, water, clothing, and transportation to affected area, announcement to the public.
- To keep inform to the higher authority time to time to declare the withdrawal or termination of emergency.
- Rehabilitation, Restoration, Cleaning, etc. on post emergency actions.
- To submit the reports on emergency. To conduct the meetings.
- To conduct the mock drill.

B) Municipal Commissioner

On receiving the information from the Collector, the Surat Municipal Corporation will help by making arrangements like:

- To receive casualties during an emergency in the corporation run Hospitals.
- To mobilize the firefighting equipments for Civil Hospital.
- To check for expected effected effects to the citizens of Surat and to take actions accordingly.
- To make schools available for shelters.
- To blow the city sirens for alarming the public.
- To inform the concerned department heads such as water and sewage supply, electricity section, hospitals, education department etc. about their DCPC plans and their functions

and preparedness during emergencies. To rehabilitate evacuated city population after the emergency.

C) District Development Officer

Being a responsible person of Taluka / District the following actions are to be given prime importance for emergency purpose.

- To ensure the different authorities, agencies, organization persons, as specified their role, should participate immediately during emergency in district pocket area.
- To advice and guide different panchayat department and local representatives for mitigate and preventives aspects of disaster management and coordinative approach at the time of emergency.
- To participate in the meeting, mock drill & training.
- To prepare own detailed action plan to ensure effective control on emergency.
- To liaison & co-ordination with chair person, Central Control Room, emergency services, organization, agencies, agencies person etc.
- To support all other duties as specified by District Collector.

D) Police Department

Another authority who gets the first information on incident / accident is police department. The following actions are to be carried out by police department.

- To access the situation and report immediately.
- To maintain the law and order during the emergency to control the traffic and control the affected area.
- To protect the life of people, inside, outside as well as road movers.
- To protect the property & environment & public announcement.
- Evacuation, rehabilitation, shelter & transportation work during the emergency as per prevailing situation.
- To help & assist to make area clean, removing of any structure and other similar work as required during actual emergency.
- To participate the meetings & Mock Drill / Rehearsal & Training.
- To liaison with Central Control Room and other emergency services / organization / agencies.
- To prepare their own details action plan & to ensure the provisions to handle the emergency.

E) Responsibilities of City Liason Officers

- Take action against the precautionary statement regarding the flood clearance in connection with the police officers fixed in their Liaison officer, municipal zonal officer and zonal area in all zones of Bardoli, Mandvi, Kanakpur, Kansad and Tarsadi

municipality. Every area is timely informed.

F) Police Department

Another authority who gets the first information on incident / accident is police department. The following actions are to be carried out by police department.

- To access the situation and report immediately.
- To maintain the law and order during the emergency to control the traffic and control the affected area.
- To protect the life of people, inside, outside as well as road movers.
- To protect the property & environment & public announcement.
- Evacuation, rehabilitation, shelter & transportation work during the emergency as per prevailing situation.
- To help & assist to make area clean, removing of any structure and other similar work as required during actual emergency.
- To participate the meetings & Mock Drill / Rehearsal & Training.
- To liaison with Central Control Room and other emergency services / organization /agencies.
- To prepare their own details action plan & to ensure the provisions to handle the emergency.

G) Fire Services

Most probably, the first information regarding any incidence / event is received by the fire services. Thus, fire service being first informant has to play the major role during the emergency.

- Inspection, survey & assess the situation where incident occur & give the report.
- To decide the proper & effective actions and immediate response actions to control the emergency, under intimation to Central Control Room or Chair Person.
- Proper training to fight against different hazards
- Rescue, Evacuation, Remove of debris, and other emergency work as directed or instructed.
- To maintain the proper and adequate firefighting, equipments, neutralizing media, selfbreathing apparatus, emergency equipments, personnel protective equipments with keeping in working order.
- The knowledge & information on different type of alternative resources, various types of extinguishing media, neutralizing media, chemical properties and their hazards with safe handling procedure.
- To participate the meetings Mock Drill / Rehearsal & training.
- To liaison with Central Control Room and other emergency services.
- To prepare their own details action plan & to ensure the provisions to handle the emergency.
- Other duties as required during actual emergency.

H) Health Department

The health and medical services have to play vital role following the emergency. One fold is proper & timely treatments to the victims injured or affected persons. Other fold is to safe guard the public health.

- To ensure the arrangement & preparedness for special medical treatment antidotes and trained doctor Para-medical staff as specified in toxicology at the time of industrial emergency in local pocket area.
- On declaration of emergency or on receiving the message or information, prompt medical facilities should be set up e.g. first aid post, casualty receiving center/ camp, as per gravity of situation at site. Similarly, arrangement for emergency operation or special treatment on chemical burn, injury, gas dispersion etc. with adequate arrangement, which will can serve the purpose of Base Hospital.
- Identification of dead bodies and post mortem arrangement.
- To maintain up to-date list with telephone nos. of services of doctors, hospitals,
- Ambulance, primary health center, Para-medical staff, vehicle to meet the emergency situation.
- Arrangement to inform the up to-date status time to time to DEOC, Chair Person, and Relatives of injured or admitted patients, emergency services etc.
- Arrangement to safe guard the public health in case of development of epidemic situation & announcement on safety measure to be taken by public at the time of emergency situation.
- To advice & guide the different stake holders in respect of medical & health part time to time.
- Provision for proper and adequate medicines, lifesaving drugs, equipments, antidotes etc. related to different hazards.
- To participate meetings, mock drills / examine and training.
- To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.
- To liaison with DEOC, Chairperson, emergency services organization, agency and other related person.
- Other duties as required during actual emergency.

I) RTO

- To respond to collector and police instructions in different kinds of emergency
- To provide adequate requirements for both persons and material.
- To arrange for deployment of vehicles with full fuel levels.
- To streamline traffic flow and parking yard movement.
- To co-ordinate in deployment of vehicles, if required.
- To participated meeting, mock drills & training.
- To prepare own detailed action plan to ensure effective handing at the time of actual emergency.

J) Civil Supplies Department

- To arrange to provide cooked food and clothing to evacuees and others involved in emergency controlling operation.
- To ensure availability of sufficient cooked food, water ready for distributaries at various locations.
- To participate in the meeting, mock drills & training.
- To prepare own detailed action plan to ensure effective handling of emergency.

K) Joint Director - Information

The proper and correct news should be reach to the public to avoid rumours and panicky. The role of District information officer is to create awareness and preparedness amongst the public for different hazards because of wide & fast spreading news.

- To participate in the meeting, mock drill / exercises and training.
- To assist the public in case of rescue operation and authentic news.
- To liaison & Co-ordination with Chair person, Central Control Room and emergency services.
- Ensure to safe guard the public at large during actual emergency by providing correct reliable authentic guideline and news.

L) Dy. Controller (Civil Defence)

- To participate in meeting, mock drills & training.
- To prepare own detailed action plan to ensure effective handling of emergency
- To assist police in rescue and evacuation work during emergency.
- To provide security, cordoning the area, and other Services.

M) Electricity Board (DGVCL & Torrent)

- To arrange for un-interrupted power supply, if needed.
- To arrange for lighting at temporary medical camps, rallying points and parking yards.
- To take care of electrical equipment within affected zone.
- Arrange for switching off power supply if requested by authority.
- To participate in the meeting, mock drills & training
- To prepare own detailed action plan to ensure effective handling of emergency

N) Regional Officer (GPCB)

- To participate in the meetings, mock drill / exercises and training.
- To prepare own detailed action plan to ensure the effective control of industrial emergency & subsequent action.
- Liaison with central control Room, chairperson, Emergency Services, Organization agencies & other related persons.
- Advice & Guidance to the District Crisis Group in Respect of environment protection

in the industrial pocket.

- To provide the technical input regarding environment and evaluate the contamination or adverse effect during industrial emergency.
- To provide the details & information on development of emergency situation regarding in safe level to the life and suggest area to be evacuated and other safety measures.
- To suggest the safe level for restoration & restarting of work on termination of emergency services & expert persons etc.
- Other duties or work as directed by District crisis group or chair person.

O) Representative Form MAH Units

The management of major accident hazardous unit has to maintain updated onsite emergency plan with necessary details with accurate information and a correct assessment of the situation. The site main controller is responsible to provide immediately on occurrence of crisis at his unit with specific details, development and needed help from local crisis group & district crisis group. He will arrange & provide all the resources, equipments, manpower, and communication network from his own unit and co-ordinate with local crisis group & district crisis Group to combat the industrial emergency.

P) Role of other members of District Crisis Group

The other members like controller of explosives, trade union representative, agriculture department, municipal commissioner and other government agencies, etc. have to perform the various duties. However, the following are the suggested duties as required during the emergency:

- To participate in the meeting, mock drill / exercise and training.
- To assist the public in proper way in case of rescue and evacuation during actual emergency.
- To advice and guidance to the District crisis group & Chair person.
- To arrange and help the supporting actions and duties in respect of industrial emergency
- To provide more and adequate resources & various requirement to tackle the industrial emergency immediately.
- Liaison & co-ordination with Central Control Room and emergency services.

Q) Volunteer Organizations (N.G.O.)

The voluntary organization / services can play vital role in relief & rescue operations like arrangement of food packets & packing up of the same, distribution of the food packets and water pouches, arrangements of life saving drugs & distribution of the same, can play a major role in awareness generation, to convince the person / public to evacuate the residence / place and to shift to safe shelter timely during emergency. Otherwise it may result more serious effect. To save the life of public is more important factor, which will be successfully carried out by the voluntary organization. The list of such organization with address, telephone no. organization etc. will be prepared and up-dated time to time.

R) Railway Authority

On getting information at the time of disaster from Central Control Room, the Divisional Manager, western Railway, Surat will take following actions:

- To issue the standing instruction to all railway gates to take actions on receiving the message from the Station Master.
- To decide authority level of railway staff to take actions.
- To carry out evacuation by railway, if required.
- To take care of floating population at railway stations and on board travelers.
- To issue the standing instruction to station Masters on up and down railway stations to stop the train as soon as emergency message is received from DEOC and CCR.

S) Irrigation Department

- Play vital role in pre, during and post form of emergencies particularly in floods.
- Proper management of dams, irrigation canals, ponds and timely maintenance of the same.
- Inform DEOC and respective stake holders in case of water release from the dams.
- Start their control room at the time of monsoon.
- Follow the instructions mentioned with the Flood memorandum.
- To participate in the meetings, mock drill / exercises and training.
- To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.
- Liaison with DEOC, Chairperson, emergency services organization, agency and other related person.
- Other duties as required during actual emergency.

T) R&B Department

- To play vital role in pre, during and post form of emergencies.
- Proper management of roads and buildings and timely maintenance of the same.
- Inform DEOC and respective stake holders' diversion of routes, closing status of the roads etc.
- Ensure safety terms while establishing or developing of bridges, dams, roads, buildings etc.
- To participate in the meetings, mock drill / exercises and training.
- To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.
- Liaison with DEOC, Chairperson, emergency services organization, agency and other related person.
- Other duties as required during actual emergency.

U) Citizen:

It is a duty of every citizen to assist the District Administration or such other person entrusted with or engaged in disaster management whenever his aid is demanded generally for the purpose of disaster management.

A N N E X U R E

14 Annexures

14.1 Annexure: 1 Profile of Surat District

Introduction

The city of Surat is situated on the bank of river Tapi in the West Indian state of Gujarat. The city extends from latitude 21°15' in the North to longitude 72°52' in the East. It occupies a pivotal position on the Ahmedabad-Mumbai corridor and is well connected by railway.

Surat is a district in the state of Gujarat with Surat city as the administrative headquarters of this district. It is surrounded by Bharuch, Narmada (North), Navsari and Dang (South) districts. Surat is located in Gujarat on the west coast of India. To the west of the city is the Gulf of Cambay. It is the second-most advanced district in Gujarat. It had a population of 4,995,174 of which 59.97% were urban as of 2001. On 2nd October 2007 Surat district is parted in to two by forming of Tapi district under the Surat district re-organisation act 2007. According to Census of India 2011 Surat had population of 6081322. 79.74 % of its total population was urban as of census 2011.



Administrative Set up:

Surat district consists of 10 Talukas under 5 sub divisions. Surat City is district head quarter. Surat is having Urban Local Bodies namely Surat Municipal Corporation,

Bardoli Nagarpalika (Bardoli),Kadodara Nagarpaliks, Mandvi Nagarpalika (Mandvi), Tarsadi Nagarpalika (Mangrol) Surat has also a Urban Development Authority, namely SUDA i.e Surat Urban Development Authority.

CLIMATE

The climate of Surat is mild due to its nearness to the Arabia Sea. There is not much change in the winter and summer temperature, which ranges between 10°C to 42°C. Although one can visit Surat in any season, the best time to do so would be between October and March. Average rainfall of last 1 years in Surat district is 1453.01 mm and last season average rainfall was 1448.60 mm.

14.2 Talukawise Rainfall Data(in mm) of Surat District (Year 2011 to Year 2021)

Year Taluka	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bardoli	1556	925	2074	929	864	876	934	1504	1567	2089	1552
Choryasi	959	837	2303	762	1111	1231	1479	1258	1562	2063	1217
Kamrej	1695	964	2088	1120	959	830	1115	1118	1593	2272	1465
Mahuva	1601	1024	1961	1047	842	1075	1146	1560	2019	1945	1618
Mandvi	1317	763	1886	797	689	945	1292	1130	1949	2090	911
Mangrol	1049	1121	1970	1480	1207	1551	1987	1645	3027	2330	1351
Olpad	1196	519	1861	958	728	729	883	885	1655	1252	1132
Palsana	1157	727	2054	785	838	1106	1135	1192	1779	1880	1899
Umarpada	2444	1483	3397	1406	1542	1547	1952	1293	3957	3890	1752
Surat City	1019	920	2135	965	1111	961	1329	1484	1837	2272	1589
Total	13993	9283	21729	10249	9891	10851	13252	13069	20945	22083	14486
District Average	1399.3	928.3	2172.9	1024.9	989.1	1085.1	1325.2	1306.9	2094.5	2208.3	1448.6

14.3 Flood History in Surat

Sr No	Year	Date & Month	Max. Level at Nehru Bridge (Feet)	Max. Level at Kakrapar Weir (Feet)	Discharge from Kakrapar (in Lac Cusec)
1	1954	-	96.50	172.80	7.04
2	1958	2 nd September	97.00	173.00	7.40
3	1959	17 th September	101.75	179.20	12.94
4	1968	6 th August	103.50	187.50	15.60
5	1969	8 th Septemebr	95.75	174.30	8.56
6	1970	6 th September	100.00	181.00	13.00
7	1978	31 st August	8.59 mtr	-	-
8	1979	12 th August	8.22 mtr	-	-
9	1990	25 th September	94.20	174.80	3.70
10	1994	8 th September	97.64	175.80	5.25
11	1998	16 th September	101.30	178.00	6.73
12	2002	7 th September	8.10 mtr	172.30	3.30
13	2006	9 th August	12.50 mtr	182.70	9.10
14	2013	25 th September	9.60 mtr	176.00	4.36
15	2014	8 th September	4.70 mtr	170	2.17
16	2019	10 th August	--	169.40	1.958
17	2020	21 st August	9.25 m(Cause-way)		

Sr No	Year	Date & Month	Max. Level at Cause-way (Meter)	Max. Level at Kakrapar Weir (Feet)	Discharge from Kakrapar Weir (in Lac Cusec)	Max. Level at Ukai Dam (Feet)	Discharge from Ukai Dam (in Lac Cusec)
1	2020	21 st August	9.20 m	168.4	1.63	333.57	1.76
2	2020	25 th August	9.25	167.6	1.38	333.39	1.31

14.3.1 Last Monsoon Season (Year-2021) Summary

In the Monsoon-2020 the average rainfall of the whole district was recorded as 1448.6 mm.

Taluka wise figures of rainfall was as follows.

Talukawise rainfall of Monsoon season Year 2021 (in mm)									
Bardoli	Chauryashi	Kamrej	Mahuva	Mandavi	Mangrol	Olpad	Palsana	Umarpada	Surat City
1552	1217	1465	1618	911	1351	1132	1899	1752	1585

Maximum rainfall was reported in Palsana taluka, which was 1899 mm.

Kim River Flooding 2020 Analysis of Olpad & Mangrol

There were some days on which more than 100 mm rain was reported, which is as shown in the following table.

Sr.	Date	Name of Taluka and Rainfall in 24 Hrs.
1	06-06-2020	Umarpada (182 mm)
2	14-08-2020	Mangrol, (104 mm)
3	17-08-2020	Mandavi (116 mm)
4	30-08-2020	Mangrol (149 mm)
5	17-09-2020	Umarpada (275 mm)
6	19-09-2020	Umarpada (100 mm)

In mangrol taluka, Mangrol to Harasani, Harasani to Nanipardi, Aambavadi to Kansali, Kim to Kosamba, Siyalaj to Kosamba, Siyalaj to Pansera were blocked on the day of 30-08-2020 due to heavy rainfall and 25 needed to be rescued.

Sr No	Year	Date & Month	Level at Cause-way (Meter)	Level at Kakrapar Weir (Feet)	Discharge from Kakrapar Weir (in Lac Cusec)	Max. Level at Ukai Dam (Feet)	Discharge from Ukai Dam (in Lac Cusec)
1	2020	21 st August	9.20 m	168.4	1.63	333.57	1.76
2	2020	25 th August	9.25 m	167.6	1.38	333.39	1.31

There was discharge of 1.76 Lac Cusecs from Ukai dam and 1.63 Lac Cusecs from Kakrapar Weir on the date of 21st August. The maximum level at Cause-way was 9.20 meters following this discharge.

The same for 22nd August was 1.31 Lac Cusecs from Ukai dam and 1.38 Lac Cusecs from Kakrapar Weir.

14.3.2 Details of Tapi Basin

Sr No	Name of Gauge Station	Danger Level)		Warning Level	
		In Meter	In Feet	In Meter	In Feet
1	Ukai	105.15	345.00	103.32	339.00
2	Kakrapar	53.66	176.05	53.15	174.33
3	Surat Nehru Bridge	9.50	31.16	8.50	27.88

14.3.3 Maximum Discharge Capacity and Spillway of the schemes

No	Scheme	Type	FRL Meter	Crest Level	SpillWay (Meter)	Details of Gates	Max. Discharge (Cum)
1	Ukai	Gated	105.15	91.23	425.00	22 15.54 X 14.78	49490
2	Kakrapar	Un Gated	48.77	-	613.38	-	1083
3	Doswada	Un Gated	123.44	-	207.00	-	899
4	Ver – 2	Gated	115.80	109.75	30.00	8 9.10 X 6.10	2155
5	Lakhigam	Un Gated	74.10	-	25.00	-	434

14.4 Annexure: 2 List of vulnerable talukas and villages with risk ranking

List of villages likely to be affected by floods in Tapi River on the basis of Gauge & Discharge at Kakrapar weir site, Surat				
SR NO.	CHORYASI Surat City TALUKA	MANDVI TALUKA	KAMREJ TALUKA	BARDOLI TALUKA
1	Magdalla	Kakrapar	Kamrej	Miyawadi
2	Nana varachha	Tarsada	Kholwad	Kadod
3	Katargam	Var jakham	Kholeswar	Uchhare
4	Gavier	Mandvi	Timba	Nasura
5	Surat city	Khedapur	Kathor	Haripara
6	Dabholi	Patha	Choryasi	Zarimora

7	Piplod	Vashigam	Antroli	Vadhvania
8	Umra	Vaghacha	Tharoli	Samthari
9	Tunki	Varoli	Varadi	
10	Kathodra	Moticher	Bhadad	
11	Singapur	Pipaltha	Valst	
12	Ved	Kakadawa	Sarthana	
13	Vesu	Kosamdi	Laskana	
14	Abhava	Piparia	Velanja	
15	Majura	Govachhi	Sarasana	
16	Anjana	Rupen	Ankhakhhol	
17	Parwat	Thutwati	Gior	
18	Samdod	Bothan	Karjan	
19	Magob	Zankhia	Bherav	
20	Fulpada	Nani cher	Amboli	
21	Athwa	Ratania	Ambharama	
22	Jhangirpura	Umarsadi	Navipardi	
23	Adajan	Vareli	Abrama	
24	Bairav	Kamalapur	Derod	
25	Bhatar	Vareth	Ghala	
26	Bamroli	Rajwad	Dhoranpardi	
27	Khajod	Kharoli	Dungra	
28	Bhimrod	Unn	Dhatva	
29	Udhana	Virpor	Machhi	
30	Simada	Vankla	Nansad	
31	Kumbharia	Roswad	Dewali	
32	Karanj	Khanjroli	Sampura	
33	Dumas	Khaler	Ghaduli	
34	Sarasana	Kosdi	Limodera	
35	Kawas	Godawadi	Pasodra	
36	Bhatha	Una	Navagam	
37	Palanpur	Vaghneria	Timba	
38	Bharthana	Varethi	Kathodra	
39	Kosad	Vadi	Koli bharthana	
40	Mora	Vadod	Netrang	
41	Mota varachha	Nogama		
42	Amroli	Kevadia		
43	Utran	Veghi		
44	Vanta	Naren		
45	Rundh	Kharoli		
46	Bharthana(vesu)	Nandapur		
47	Althan	Andhatri		
48	Navagam	Uncha mala		
49	Puna	Bed kuva		
50	Saroli			
51	Ichhapur			

52	Rander			
53	Sarsana			
54	Pardesara			
55	Kosamba			
56	Govalak			
57	Pal			
58	Chhaaprabhatha			
59	Bharthana (kosad)			
60	Malgama			
61	Limla township			
62	Bhesan			
63	Vansava			
64	Bhatalai			
65	Damka			
66	Mora			
67	Suwali			
68	Bhatpor			
69	Abhava			
70	Limbayat			
71	Parvat			
72	Sanla hemad			
73	Sarasana			
74	Pandesara			
75	Kosamba			

Flood:

Choryasi taluka passes Tapi and mindhola Rivers. It creates the flood. The detail is shown below.

River Name	Affected Village	Total Population	Vulnerable Population	Animal Population	Residential Place	Capacity Of Relief Area
1.Tapi	Kavas	6500	1600	412	Pri.Comm. Hall	1600
	Limla	6612	0	0		
	Malgama	960	200	489	Pri.Comm. Hall/ Temple	200
	Bharthana Kosad	7171	500	616	Pri.School	500
	Bhesan	2195	200	1139	Pri.School	200
	Bhatha	5122	100	1286	Pri.School	100
	Bhatpor	3449	2800	458	Pri.Comm. Hall	2800
	Ichhapor	12097	2500	862	Pri.School	2500
	Saniyahemad	3964	100	748	Pri.Comm. Hall	300
	Kumbharia	5850	250	411	Pri.School	300

	Saroli	3268	200	200	Pri.Comm. Hall	300
2.Mindhola	Samrod	1060	0	310	Pri.School	1100
	Kachholi	2149	300	479	Pri.School	300
	Lajpor	7920	300	1157	Pri.School	300
	Popada	1070	150	436	Pri.Comm. Hall	200

Olpad:

River Name	Affectad Village	Total Population	Affected Population	Animal Population	Residental Place	Capacity Of Relif Area
1. Sena Khadi (Kim River)	Kadrama	1811		1128	Takrama High School	914
	Umarchha					
	Vadoli					
	Kim					
	Kimamli					
	Kadodra					
	Anita					
	Bolav					
	Sayan		1710	974	Sayan High School	1771
	Saroli		115	856	Talad High School	615
	Kosam		381	482	Talad High School	615
2. Tena Khadi (Tapi River)	Pinjrat	5173				
	Tena	1119				
	Barbodhan	2496				
	Tunda	595				
	Dabhari	535				
	Aadmor	1076				
	Lavachha	2218				
	Bhadut	1191				
	Kudiyana	1740				
	Hathisa	473				

Kamrej:

River Name	Affected Village	Total Population	Vulnerable Population	Animal Population	Evacuation Centre	Capacity Of Relief Centre	Highest Flood Level
1.Tapi	Kamrej	11329	6500	2218	Primary School	900-1200	5 TO 19
	Bhairav	1004	820	192	Kalbhairav Temple	100-400	14 TO 19
	Derod	1666	1400	425	Primary School	500	5 TO 12
	Kholvad	10687	3530	1157	High School	350-900	3 TO 17
	Kathor	13258	10000	538	High School	400-600	3 TO 10
	Choryasi	1143	600	1215	Primary School	300	3 TO 10
	Aamboli	4186	2000	718	Primary School	300	3 TO 5
	Dhala	4713		1569	High School	500-1200	7 TO 9
	Karjan	2529	420	1089	Primary School	200	3 TO 5
	Dhoran Pard	2803	450	259	Primary School	400	3 TO 5
	Navi Pardi	3961	600	1804	Primary School	600	2 TO 4
	Kholeswar	1474	350	387	Primary School	250	2 TO 5
	Dungra	2744	500	514	Primary School	400	2 TO 8
	Dhatva	1382	400	321	Primary School	200	2 TO 5
	Machhi	462	150	218	Primary School	150	2 TO 6
	Timba	2418	500	1052	Primary School	500	4 TO 6
	Antroli	1088	400	319	Primary School	400	4 TO 7
	Tharoli	186	110	69	Community Hall	100	4 TO 9
	Velanja	2804	800	400	Primary School	400	3 TO 6
	Abrama	3041	1860	700	Dharamsala	700-300	5 TO 8
	Bhada	1842	1000	300	Primary School	300	2 TO 5
	Valak	1644	850	200	Primary School	200	4 TO 6
	Laskana	8452	2459	500	Public Temple	500-700	6 TO 10
	Aakhakhhol	541	419	350	Zoo	350	3 TO 5
	Jiyor	204	175	150	Community Hall	100-150	4 TO 6
	Shampura	3560	970	100	Primary School	100-200	2 TO 4
	Dethli	267	115	100	Primary School	100	3 TO 5

Bardoli:

River Name	Affected Village	Total Population	Vulnerable Population	Animal Population	Evacuation Centre	Capacity Of Relief Centre
1.Tapi	Kadod	11442	11401	545	Kadod School	3000
	Haripura	1741	1714	345	Primary School	300
	Vaghecha	1100	897	690	Vageshwar Temple	250

	Madhi	7240	3100	1277	Primary Tech.School &	400
	Surali	10724	9286	11618	Primary School	2300
	Karchka	1162	1033	252	Primary School	300
	Ten	4613		1217	Suruchi Printing School	350
	Kharad	72	9	241	Primary School	
	Chhitra	411		156	Primary School	

Mandvi:

Sr. No.	River Name	Affected Villages		Total Population	Danger Level
1	2	3		4	5
1	Tapi	1	Balaltirth	232	346 ft
		2	Kakrapar	2441	
		3	Wareth	2212	
		4	Nanicher	1479	
		5	Moticher	2278	
		6	Rataniya	2579	
		7	Tarsadabar	1465	
		8	Mandvi	18214	
		9	Waghnera	466	
		10	Ushkerkhurd	516	
		11	Puna	1743	
		12	Kaakadva	815	
		13	Khedpur	954	
		14	Warjakhani	1614	
		15	Jaakhla	780	
		16	Kosadi	1411	
		17	Unn	1265	
		18	Umarsadi	1066	
		19	Kamlapor	1485	
		20	Pipariya	764	
		21	Patana	344	
		22	Wareli	1101	

		23	Boudhan	5729	
2	Vareh	1	Picharwan	344	115.80 m)Tr
		2	Aamli	653	
		3	Soli	392	
		4	Devgadh- Andharwadi	2470	
		5	Maldha	1586	
		6	Kim Dungra	1083	
		7	Fulwadi	1519	
		8	Godadha	1962	
		9	Moritha	1809	
		10	Saalaia	1724	
		11	Valargadh	460	
		12	Amalsadi	2775	
		13	Karvali	1514	
		14	Godsamba	1382	
		15	Bori	1053	
		16	Nandpor	1157	
		17	Kharoli	1928	
		18	Godawadi	3915	
		19	Gawachhi	1811	
		20	Wareli	1101	
		21	Pimpariya	764	

Mahuva:

River Name	Affectad Village	Total Population	Affected Population	Animal Population	Relief Centre	Capacity Of Relief Centre
1.Purna	Mahuva	4924	565	1489	G.H.Bhakt	700
	Ratan	1031	565	286	Pri.School Odach	300
	Odach	2326	325	557	Pri.School Ratan	350
	Amroli	460	110	110	Pri.School Amroli	200
	Aamchak	1213	250	250	Pri.School Aamchak	300
	Kavitha	1024	250	250	Pri.School Kavitha	300
	Sevasan	230	50	56	Pri.School Sevasan	150
	Vadiya	1170	155	574	Pri.School Vadiya	150
	Miyapur	1040	215	541	Pri.School Miyapur	200
	Sekhpur	3998	225	1563	Pri.School Sekhpur	300

	Budhleshwar	566	55	143	Pri.School Budhleshwar	200
	Umra	4810	2100	2264	Pri.School Umra	2000
	Haldava	2764	550	1179	Pri.School Haldava	600
	Mahuvaliya	4747	550	2939	Pri.School Mahuvaliya	600
	Vaheval	6476	110	2090	Pri.School Vaheval	300
2.Ambika	Valvada	4462	550	2508	Pri.School Valvada	600
	Kankariya	1136	500	624	Pri.School Kankariya	600
	Samba	2129	540	898	Pri.School Samba	600
	Bhoriya	1722	250	858	Pri.School Bhoriya	300
	Velanpur	2689	110	996	Pri.School Velanpur	300

Palsana:

River Name	Affected Villages	Total Population	Affected Population	Animal Population	Relief Centre	CAPACITY OF RELIEF CENTRE
1.Mindhola	Kanav	1609	50	430	Pri.School Prin.	200
	Malekpor	2531	22	957	Pri.School Prin.9998927960	200
	Amalsadi	1610	300	468	Pri.School Prin.9909196911	350
					Utt.Buni.School	250
	Makhiga	874			Pri.School Prin. 9601674776	200
	Vanzodia	1176		248	Pri.School Prin.9909681914	400

Mangrol:

River	Village	Population	Affected Population	Animal	Relief Centre	Capacity
Kim		2322	85	945	Primary School	110
	Luvara					
	Kantva	2246	30	850		70
	Vansoli	839	25	320		40
	Sava	774	25	470		50
	Velachha	2138	45	925		100
	Kathwada	1040	45	435		70
	Hathoda	3735	45	1200		100
	Mota Borsara	1871	45	831		100
	Vasesa	568	45	265		60

	Moti Naroli	1060	45	730		60
	Palod	2558	45	630		70
	Kothva	1478	45	30		70
	Shethi	791	45	475		70
	Panetha	584	45	275		60
	Siyalaj	1711	45	885		100
	Kosadi	3328	135	715		200
	Simodara	1676	75	665		120
	Vadoli	732	45	400		70
	Asarama	941	45	415		100
	Ranakpore	1004	45	395		100
	Limbada	2434	85	815		100
	Mangrol	5354	65	845		100
	Amandera	900	45	325		60
	Gijaram	1814	65	645		80
	Ankdod	1355	40	400		70
Bhukhi	Vankal	5629	45	1245		100

Umarpada:

River	Affected Villages	Total Population
	Aamlidabda Wahar	1529
	Pada	1448
	Maandan	528
	Nasharpur	586
	Umarkhadi	4311
	Umarpada	1399
	Uchwaan	2300
	Kevdi	2642
	Sharda	1583
	Velavi	1090
	Nanasutkhadka	1393
	Wadpada	816
	Bardipada	1025
	Sevlaan	677
	Chakraa	1028

14.5 List of villages likely to be affected by floods in the basin of Gauge and

Discharge at Kakrapar Weir Site, Surat.

NOTE:- WHITE SIGNALS :ALERT

BLUE SIGNALS : READY FOR EVACUATION

RED SIGNALS : IMMEDIATE EVACUATION

Sr . No	Discharge At Kakrapar weir in (CUS/CUM)	Gaug e level at kakra par weir in feet	Gauge level at kakrapar weir in Meter	Name Of Taluka	Signal for Villages		
					White Signal	Blue Signal	Red Signal
1	3,91,100(CUS)	174.4 0	53.15	Chorya si	Magdalla		
	11,074(CUM)				Nava Varacha		
					Gavir		
					Surat City		
					Umra		
					Tunki		
					Singapor		
					Ved		
					Bharthana (Vesu)		
					Althan		
					Rander		
2	4,40,400(CUS)	175.5 0	53.40	Chorya si	Katr Gam	Magdala	
	12,740(CUM)				Dabholi	Nava varacha	
					Piplod	Gavier	
					Khatodra	Surat City	
					Vesu	Umra	
					Majura	Tunki	
					Anjana	Singapor	
					Parvat	Ved	
					Dhamrod	Bharthana (vesu)	
					Fulpada	Althan	
					Athva	Rander	
					Jahnagirpura		
					Adajan		
					Parvat		
					Dhamrod		
					Bhimrad		
					Udhna		
					Simada		

					Kumbhariya		
					Karjan		
					Dumas		
					Sarsana		
					Kavas		
					Bhatha		
					Palanpor		
					Bharthana		
3	4,60,640(CUS)	176.05	53.60	Corasi	Runda	Katargam	Magdalla
	13,044 (CUM)				Navagam	Dabholi	Nava Varacha
					Puna	Piplod	Gavier
					Saroli	Kathodra	Surat City
					Ichhapor	Vesu	Umra
						Majura	Tunki
						Anjana	Singapor
						Parvat	Ved
						Dhamrod	Bharthana (Vesu)
						Fulpada	Althan
						Athva	Rander
						Jahangirpora	
						Adajan	
						Vairav	
						Bhatar	
						Bamroli	
						Bhimrod	
						Udhna	
						Simada	
						Kumbhariya	
						Karanj	
						Dumas	
						Sarsana	
						Kavas	
						Bhatha	
						Palanpor	
						Bharthana	
						Kosad	
4	5,20,375 (CUS)	177.25	54.04	Choryasi	Chhaaprabhatha	Rander	Katargam
	14,735 (CUM)				Bharthana (Kosad)	Navagam	Dabholi
					Malgama	Puna	Piplod
					Limla Township	Saroli	Kathodra
					Bhesan	Ichhapoor	Vesu
					Bhatpor		Majura

							Anjana
							Parvat
							Dhamrod
							Fulpada
							Athva
							Jahngirpora
							Adajan
							Vairav
							Bhatar
							Bamroli
							Bhimrod
							Udhna
							Simada
							Kumbhariya
							Karanj
							Dumas
							Sarsana
							Kavas
							Bhatha
							Palanpor
							Bharthana
							Kosad
				Mandvi	Kakrapar		
				Kamrej	Kamrej		
					Kholvad		
					Kholeswar		
					Laskana		
					Bherav		
					Amboli		
5	5,80,740(CUS)	178.50	54.52	Mandvi	Mandvi	Kakrapar	
	16,444 (CUM)				Khedapor		
					Patha		
					Vishgam		
					Vagacha		
					Varoli		
					Moti Cher		
					Pipaltha		
					Kakadva		
				Bardoli	Miyavadi	Sarthana	Kamrej
				Kamrej	Timba	Aakhakhol	Kholvad

					Choryasi		Koleswar
					Antroli		Laskana
					Tharoli		Bhairav
					Pardi		Amboli
					Bhada		
					Sarthana		
				Olpad	Sayan		
					Vasvari		
					Atodra		
					Asnad		
					Saroli		
					Gothan		
					Jothan		
					Umra		
					Sivan		
					Delad		
					Segva		
					Madhar		
					Karamla		
					Ariyana		
					Sonsak		
					Balkas		
					Gola		
					Kosam		
					Mahmadpur		
					Earthan		
					Setul		
					Ambehta		
					Kunkai		
					Veluk		
					Pinjrat		
				Choryasi		Chhaaprabhatha	Runha
						Bharthana (Kosad)	Navagam
						Malgama	Puna
						Limla-Township	Saroli
						bhesan	Ichhapor
						Bhatpor	
6	6,90,370(CUS)	180.50	55.03	Choryasi		Mora	Chhaaprabhatha
	19,449 (CUM)					Mota Varacha	Bharthana
						Amroli	Limla Township

						Utran	Malgam a
						Vanta	Bhesan
							Bhatpor
				Mandv i	Kosamdi	Mandvi	Kakrapa r
						Khedapor	
						Pathan	
						Vashigam	
						Vagacha	
						Varoli	
						Moticher	
						Pipaldha	
						kakadwa	
				Kamre j		Chorashi	Kamrej
						Antroli	Kholvad
						Tharoli	Kholesw ar
						Pardi	Laskana
						Bhada	Bhairav
						Valsat	Amboli
						Sarthana	
						Sarsana	
						Aakhakhhol	
				Olpad	Olpad	Sayan	
					Asnabad	Vasvari	
					Barbodhan	Atodra	
					Pariya	Asnaad	
					Vadod	Saroli	
					Sandhiar	Gothan	
					Sithana	Jothan	
					Masama	Umra	
					Andhi	Sivan	
					Kalipur	Delad	
					Isnapor	Segva	
						Madhar	
						Karamla	
						Ariana	
						Sonsak	
						Balkas	
						Gola	
						Kasom	
						Mahmadpora	
						Earthan	
						Setul	
						Ambheta	
						Kunkai	

						Veluk	
						Pinjrat	
7	7,60,150(CUS)	181.7 5	55.41	Chorya si		Mora	
	21,524(CUM)					Mota Varacha	
						Amroli	
						Utran	
						Vanta	
				Mandvi	Rataniya	Kosmadi	Mandvi
					Umarsadi		Khedpor
					Vareli		Patha
					Kamalpor		Vashigam
					Varthan		Vagacha
					Rajwad		Varoli
					Kharoli		Moticher
					Unn		Pipaldha
					Virpor		Kakadva
					Vanakla		
				Bardoli	Kadod		Miyavadi
					Uchrael		
				Kamrej	Jiyor		Timba
					Karjan		Choryasi
					Bhairav		Antroli
					Amboli		Tharoli
					Abrama		Pardi
					Navi pardi		Bhada
					Derod		Valsat
					Ghala		Sarthana
					Dhoranpardi		Amboli
					Dungra		
					Dhatva		
					Machi		
					Nansad		
					Dethli		
					Shampora		
				Olpad	Dihen	Olpad	Sayan
					Kundlana	Asnabad	Vasvani
					Acharana	Barbodhan	Atodara
					Kamaj	Pariya	Asnad
					Saroli	Vadod	Saroli
					Talad	Sandhiyar	Gothan
					Sherdi	Sithana	Jothan
					Orma	Masma	Umra
					Andhi		Sivan

						Kalipur	Delad
						Isanapur	Segva
							Madhar
							Karamal a
							Ariyana
							Sonsak
							Balkash
							Gola
							Kosam
							Mahmad pur
							Erthan
							Setul
							Ambheta
							Kunkai
							Veluk
							Pinjrat
8	8,90,760(CUS)	184.0 0	56.10	Mandv i	Roswad	Rataniya	Kosmadi
	25,223(CUM)				Khanjroli	Umarsadi	
					Khelar	Vareli	
					Kosadi	Kamalapur	
					Godavadi	Vareth	
					Una	Rajvad	
					Vagnera	Kharoli	
					Varethi	Unn	
					Vadi	VirporVankal	
				Bardoli	Nasura	Kadod	
						Uchrel	
				Kamre j	Gaduli	Giyor	
					Limodra	Karjan	
					Pasodranavaga m	Bhairav	
					Timba	Amboli	
						Abrama	
						Navipardi	
						Derod	
						Ghala	
						Dhoranpardi	
						Dungra	
						Dhatva	
						Machhi	
						Nansad	
						Dethli	
						Shampura	
				Olpad	Bhandut	Dihen	Olpad

					Kaslakhurd	Kundalana	Asnabad
					Kachhol	Achharna	Barbodhan
					Tena	Kamaj	Pariya
					Kasla Bujrang	Saroli	Vadod
					Saras	Talad	Sandhiar
					Vadila	Sherdi	Sithana
					Sejpura	Orma	Masma
					Halthisa		Andhi
					Matkol		Kalipur
					Bhatgam		Isanpur
					Ansad		
					Sarsana		
					Sondla Mitha		
					Morthana		
					Takrama		
					Hasanpor		
					Kanbhai		
					Obhla		
					Bharunda		
					Shekhpur		
				Choryasi	Bharthana(Vesu)		Mora
					Althan		Mota Varacha
					Pandesara		Amroli
					Kosmada		Utran
					Govlak		Vanata
					Vanasva		
					Bhatlai		
					Dsmka		
					Mora		
					Suwali		
					Abhva		
9	9,50,950(CUS)	180.55	56.40	Mandvi	Vadod	Roswad	Rataniya
	26,927(CUM)				Nogama	Khanjroli	Umarsadi
					Kevadiya	Khaler	Vareli
					Veghi	Kosdi	Kamlapor
					Naren	Godwadi	Vareth
					Kharoli	Unn	Rajvad
					Nanpora	Vagnera	Karoli
					Andharti	Varethi	Unn
						Vadi	Virpor
							Vanakla
				Bardoli	Haripora	Nnsura	Kadod

							Uchrael
				Kamre j		Galudi	Gior
						Limodara	Karjan
						Pasodra	Bhaira
						Navagam	Amroli
						Timba	Abrama
							Navi pardi
							Derod
							Ghala
							Dhoranp ardi
							Dungra
							Dhatva
							Machi
							Nansad
							Dethli
							Shampur a
				Olpad	Lavachha	Bhandut	Dihen
					Admor	Kaslakhurd	Kundlan a
					Kudiyan	Kachhol	Achharn a
					Kuwad	Tena	Kmarej
					Kapasai	KaslaBujrang	Saroli
					Kunbhari	Saras	Talad
					Naghoi	Vadila	Sherdi
						Sejpor	Orama
						Hathisa	
						Motkol	
						Bhat Gam	
						Asnad	
						Sarsana	
						Sondhla Mitha	
						Morthana	
						Takarma	
						Hasnpor	
						Kanbhai	
						Obhala	
						Bharunda	
						Shekhpor	
						Lavacha	
				Chorya si	Limbayat	Bharthana (Vesu)	
					Parvat	Althan	
					Sanla Ahemad	Pandesara	

						Kosmada	
						Govalak	
						Vanasva	
						Bhatlai	
						Damka	
						Mora	
						Suwali	
						Abhva	
10	10,00,000(CU S)	185.7 0	56.40	Mandvi	Tarsada	Vadod	Roswad
	28,317(CUM)				Varjakhan	Nogama	Khanjrol i
					Uncha-Mala	Kevadia	Khaler
					Bedkuva	Vegi	Kosdi
						Naren	Godavri
						Kharoli	Unn
						Nandpur	Vagnera
						Andhatri	Varethi
							Vadi
				Bardoli	Zarimora	Haripura	Nasura
					Vadhvaniya		
				Kamrej	Kathor		Ghaludi
					Kathodra		Limodra
					Kolibharthana		Pasodra
					Netrang		Navaga m
							Timba
				Olpad	Delasa	Lavachha	Bhandut
					Sondhlkhara	Admor	Kaslakh urd
					Mirzapor	Kudiyana	Kachhol
					Mindhi	Kuwad	Tena
					Morbhava	Kapasi	Kasla Bujrang
					Syabha	Kumbhari	Saras
						Naghoi	Vadila
						Koba-pardi	Sejpura
						Kachhab	Hathisa
						Delasa	Matkoi
							Bhatgam
							Ansad
							Sarsana
							Sndhla Mitha
							Morthan a
							Takarma

							Hasanpo r
							Kanbhai
							Obhala
							Bharund ra
							Shekhpo r
				Chorya si	Abhva	Limbayat	Bhartha n (Vesu)
					Magob	Parvat	Althan
					Khajod	Sanla Hemad	Pandesar a
					Althan		Kosmad a
					Sarsana		Govalak
					Pandesara		Vansava
					Kosamba		Bhatlai
							Damka
							Mora
							Suvali
							Abhva
11	11,00,000(CU S)	187. 20	57.20	Mandv i		Tarsada	Vadod
	31,148(CUM)					Varjakhan	Nogama
						Uncha-Mala	Kevadiy a
						Bedkuva	Veghi
							Naren
							Kharoli
							Nandapu r
							Andhatri
				Bardoli		Zarimora	Haripur a
						VAdhvaniya	
				Kamre j		Kathor	
						Kathodra	
						Koli Bharthana	
						Netrang	
				Olpad		Delsaa	Lavachh a
						Sondhlakhara	Admor
						Mirzapor	Kudhiya na
						Mindhi	Kuwad
						Morbhava	Kapasi

						Sayabha	Kunbhar i
							Naghoi
							Koba- Pardi
							Kachhab
				Chorya si		Abhva	Limbaya t
						Mogab	Parvat
						Khajod	Sanla Hemad
						Althan	
						Sarsana	
						Pandesara	
						Kosmba	
12	12,00,000(CU S)	188.7 0	57.51	Mandv i			Tarsada
	33,980(CUM)						Varjakh an
							Uncha- Mala
							Bedkuva
				Bardoli			Zarimor a
							Vadhvan iya
				Kamre j			Kathor
							Kathodr a
							Kolibhar thana
							Netrang
				Olpad			Delasa
							Sondhla khara
							Mirzapo r
							Mindhi
							Morbhav a
							Syabha
				Chorya si			Abhva
							Magob
							Khajod
							Althan
							Sarsana

							Pandesar a
							Kosamb a

14.6 Cyclone affected villages

Choryasi, Olpad & Surat City are cyclone affected talukas of the District.

Taluka	Village Name	Affected Population	Village Name	Affected Population
Olpad	Pardi Zakhri	1233	Bhadol	1657
	Nesh	500	Kadrama	1811
	Karanj	1652	Bhadunt	1191
	Mor	5646	Pinjrat	5173
	Jinod	1142	Tena	1119
	Mirzapor	838	Koba	854
	Bhagva	679	Thothab	700
	Dandi	2758	Ansad	1607
	Delasa	1256	Kamroli	944
	Kapasi	365	Hathisa	473
	Kudiyana	1740	Kuvad	1086
	Lavachha	2218	Saras	2562
	Admor	1076	Kachhol	498
	Mandroi	1616	Barbodhan	2496
Choryasi				
	Vansva	2239	Hazira	6934
	Rajgari	1176	Mora	6115
	Suvali	900	Damka	4386
	Junagam	2000		
Surat City				
	Dumas	7735	Vanta	661
	Bhimpore	7553	Magdalla	5257
	Sultanabad	3263	Abhva	2881
	Gaviar	2449	Rundh	2155

Earthquake:

Surat District is under Seismic Zone III. The Surat City, Choryasi, Olpad, Kamrej taluka have a multistoried buildings. Bardoli , Palsana having some multistoried buildings. These are the vulnerable talukas for Earthquake.

Old Surat city is PAUL type and old constructions. It requires retrofitting. Even in slum areas the construction is from clay, not to follow the constructions guidelines. So, surat city is highly vulnerability of Surat city is higher than all other taluka.

In taluka level most of the construction was not regulated by government authorities. Even in lower economic conditions, the equipments/Material used was not qualitative. The constructions unable to suffer the earthquake.

Mandvi, Mahuva, Umarpada taluka having in constructions of using wood & leaf .So, it decrease the vulnerability.

Road Accidents:

Surat passes Broad-gauge railway lines 1.Western railways from Ahmedabad to Mumbai and 2.Central railway lines from Surat-Bhusaval-Amaravati lines. The national Highway No-8 Ahmedabad-Mumbai passes from Surat. Most of the cities & Villages of the district connected with state highways and local roads. Surat city, Mangrol, Olpad are vulnerable for road accidents.

Mangrol taluka passes N.H-8, kim char rasta to Tadkeshwar passes state road, Kosamba char rasta to Jankhvav passes state road. Here the places occur highly accidents in the district. Most accidents occur on NH-8 at this taluka. Mangrol taluka having 12 km Broad gauge lines and 33 km Nero gauge lines passes, there is no over bridge on it. N.H-8 & state road passes most of the vehicles from Hazira Notified Area with gas, Chemical & Highly Flammable gases/Liquids. So, these are these are the points which are highly vulnerable for Road & Chemical disaster.

Olpad passes S.H -6 on turn of NH-6 at Vadoli Chokadi and Cyanide turn occurs most of Road accidents. Near saroli bridge is also sensitive for road accidents.

Palsana and Bardoli pass NH 8 & 6. Near Kadodara chokadi is sensitive for road accidents.

Industries & Chemical Hazards:

Choryasi taluka is highly vulnerable for Industries & Chemical Hazards because of Hazira Notied Area and MAH units under the area. As per the district offsite plan, it affects the 11 villages the detail is mention below.

Choryasi Taluka:

Sr. No	Name of Village	Population	Sr. No	Name of Village	Population
1	Limla	5675	7	Dumas	7266
2	Mora	7416	8	Sunvali	2573
3	Kawas	2215	9	Rajgari	1009
4	Bhatpor	2327	10	Damka	4039
5	Ichchapor	5144	11	Bhatlai	1303
6	Vanta	472			

Mangrol Taluka:

Sr. No.	Village	Population	Village	Population
Industrial/ Chemical 16 Villages	Pipodara,	342	Mota	423
	Kosamba,	302	Basra,	
	Dhamdod,	401	Palod,	323
	Nanaborsara,	321	Kothwa,	324
	Mahuvej,	296	Siyalaj,	357
	Lindiyar,	342	Moti	
	Bhatkol,	202	Naroli,	256
	Limodara	256	Valesa,	232
			Nani	589
			Naroli,	
			Kuwarda	564

Cities pandsara, Udhana, Limbayat & athwa zone is vulnerable for chemical disaster. In pandesara, Udhna the powerlooms, Dying-Printing Mills& Embroidery factories creates the chemical disaster. Some of them storage the chemical which created the chemical disaster probability. Athwa & Rander zone is near the Hazira Notifies Area, & also near having Magdalla port. Resident near the area vulnerable for chemical & Industrial Hazard. The detail of affected villages and evacuation centers which is linked from Offsite Plan Surat-2010.

Gas pipelines, Chemical plants & industrial units in olpad taluka. The cyanide chemical company which produce potassium cyanide, Potassium pharos cyanide, Sodium cyanide, Sodium Pharos cyanide & other chemicals, If any hazard occurs in the company the processing chemical ammonia gas & other dangerous gases creates the disaster in nearby area.

Nuclear Power Radiation :

Name of Nuclear Power Plant	Villages in radius of 16 Kms	Population of respective villages (According to Census 2011)
Kakrapar Atomic Power Station, Ta: Mandvi, Di: Surat	Balda (8 to 16 km)	2790
	Bamni (8 to 16 km)	1422
	Bhesudala (8 to 16 km)	1301
	Haripura (8 to 16 km)	1714
	Junvani (8 to 16 km)	754
	Kadod (8 to 16 km)	11401
	Madhi (8 to 16 km)	7650
	Masad (8 to 16 km)	2054
	Miyavadi (8 to 16 km)	535
	Navi Bhatlav (8 to 16 km)	970
	Nasura (5 to 8 Km)	940
	Orgam (8 to 16 km)	1632
	Samthan (8 to 16 km)	1117
	Singod (8 to 16 km)	2172
	Surali (8 to 16 km)	9286
	Uchhrel (8 to 16 km)	1314
	Vadhvaniya (5 to 8 Km)	1797
	Vanskui (5 to 8 Km)	3010
	Rajvad (5 to 8 Km)	1468

14.7 Annexure: List of resources available in district

List and details of Cranes, Dumpers, Excavators, Heavy & Medium Goods Vehicles available in Surat district, along with Registration Number, Address, Name of Owner, Contact Details, etc. is attached separately in an Annexure.

List of available resources in the district.

(List of external private organizations that rent heavy vehicles, such as earthmovers, in times of emergency)

ક્રમ	કોન્ટ્રાક્ટરનું નામ અને સરનામું	વાહનોની વિગત
૧	એન.વી.પટેલ અર્થમુવર્સ, ૧૪, ગાયવાલા ચેમ્બર, કિષ્ના પેટ્રોલપંપની બાજુમાં, સુરત મો.૯૮૨૫૧૩૩૧૫૧	એસ્કેવેટર/ટીપર ટ્રેઈલર
૨	જયકિશન બી. રેતીવાલા, મક્કાઈ સર્કલ, નાનપુરા સુરત, ફોન નં.૨૪૩૯૯૯૩, મો.૯૮૨૫૧૨૦૪૩૯,	એસ્કેવેટર/ટીપર ટ્રેઈલર
૩	કિષ્ણા અર્થ મુવર્સ, અનાથ બાળાશ્રમનીએ સામે, કતારગામ રોડ, સુરત, ફોન નં. રે.સી.૨૫૧૦૫૯૬, મો.૯૮૨૫૧૪૪૩૩૬	એસ્કેવેટર/પોકલેન/ટ્રેક્ટર/રોડ રોલર/ટીપર ટ્રેઈલર
૪	શ્રી હિન્દુસ્તાન ફેબ્રિકેશન, ૧૦૭, ચાંસેલર, આર.ટી.ઓ.સામે, રીંગ રોડ સુરત, ફોન નં.૨૬૬૦૧૮૪, રે.સી.૨૨૩૬૭૧૧ મો.૯૮૯૮૦૧૩૬૩૫	એસ્કેવેટર/પોકલેન/મોબાઈલ કેઈન/ટીપર ટ્રેઈલર/ટીપર ટ્રક
૫	ચંત્રમેન ઓટોમેક પ્રા.લી. ૨૪,૨૫, એન.જે.કોમ્પ્લેક્સ, પુણા કુભારીયા રોડ, મગોબ ગામ પાસે, સુરત , ફોન નં.(ઓ)૮૨૪૨૧૨૯, મો.૯૮૨૪૦૭૯૮૭૫, ૯૮૨૪૦૩૬૦૪૫	એસ્કેવેટર
૬	ભવસાગર ટ્રેડર્સ, સુતરીયા બિલ્ડીંગ, નાનપુરા, સુરત ફોન રેસી.૨૪૭૪૬૧૩, મો.૯૮૨૫૧૧૩૯૭૩	ટીપર ટ્રેઈલર/ટીપર ટ્રક
૭	સુકાની ટ્રાણ-સ્પોર્ટ અને ટ્રાવેલ્સ, યુ-૧૬, ટ્રેડ હાઉસ, આલ્હાબાદ બેંક પાસે, નાનપુરા, સુરત ફોન નં.(ઓ).૨૪૭૬૮૨૦, રેસી.૨૪૭૬૦૦૯, મો.૯૮૨૫૧૪૮૭૫૧	એસ્કેવેટર/રોડ રોલર/ટીપર ટ્રેઈલર/ટીપર ટ્રક
૮	બી.કે પરમાર, ૧લો માળ, ૧-સી, એપાર્ટ, જલદર્શન સામે નાનપુરા, સુરત ફોન નં.-૨૪૭૦૭૯૭, ૨૪૭૧૮૧૪,૩૦૦૩૩૯૯ ,રેસી:-૨૩૩૮૦૦૪ , મો.નં.૯૮૨૪૧૩૮૧૩૮, ૯૮૨૪૧૩૩૦૦૩૩	એસ્કેવેટર/પોકલેન/કાઈલ ટાઈપ/ટીપર ટ્રેઈલર/ટીપર ટ્રક
૯	તીરૂપતી કન્સ્ટ્રક્શન, નાનપુરા, સુરત ફોન નં.૨૪૬૨૮૫૮, મો.૯૮૨૫૧૨૭૦૧૮	ટીપર ટ્રક/રોડ રોલર

૧૦	એચ.જી.સારંગ, નાનપુરા, સુરત. ફોન નં.૨૪૬૨૮૫૮	ટીપર ટ્રક/રોડ રોલર
૧૧	ધનસુખભાઈ રેતીલાલ, સ્વામી વિવેકાનંદ બ્રીજ પાસે, મક્કાઈપુલ, નાનપુરા, સુરત મો.૯૮૨૫૧૨૦૪૩૯	લોડર/એસ્કેવેટર/ટીપર ટ્રક
૧૨	રાકેશકુમાર દુબે પ્લોટ નં.૧૨, ગોવર્ધનનગર, બમરોલી રોડ, પાંડેસરા, સુરત,	ટીપર ટ્રક
૧૩	શાંતિ કોર્પોરેશન ૧૪, ગુરૂનગર સોસાયટી, વરાછા રોડ, સુરત મો.૯૪૨૯૦૫૭૨૦૧	ટીપર ટ્રક
૧૪	શ્રી નવીનભાઈ આગાવાળા, ૨૦૧, યશ એપાર્ટમેન્ટ, મક્કાઈપુલ, નાનપુરા, સુરત મો.૯૮૨૫૯૦૦૭૦૭	વ્યક્તિગત બોટ
૧૫	અમૃતભાઈ નવસારી વાલા યશ એપાર્ટમેન્ટ, મક્કાઈપુલ, નાનપુરા, સુરત	વ્યક્તિગત બોટ
૧૬	મોહનભાઈ પી. ટંડેલ ઓજલ માછીવાડ, નુતન ફળીયા, જી.નવસારી મો.૯૯૭૪૨૨૬૭૪૧	વ્યક્તિગત બોટ
૧૭	અમીતભાઈ પી. ટંડેલ ઓજલ માછીવાડ, નુતન ફળીયા, જી.નવસારી મો.૯૯૭૪૨૨૬૭૪૧	વ્યક્તિગત બોટ
૧૮	કીર્તીભાઈ પી.કોન્ડ્રાકટર પેરેડાઈઝ એપાર્ટમેન્ટ, દિવાળીબાગ, અઠવાલાઈન્સ, સુરત	વ્યક્તિગત બોટ
૧૯	કીભકો કાં, હજીરા	મોબાઈલ કેઈન
૨૦	સાર્થી કેઈન એન્ડ કાર્ગો, હજીરા ઓ.એન.જી.સી ચાર રસ્તા, સુરત	મોબાઈલ કેઈન
૨૧	પોલોમી રોડ બિલ્ડર્સ યુ-૧, અમરકૃતિ એપાર્ટમેન્ટ, પાર્લે પોઈન્ટ, સુરત ફોન.ઓ.૨૨૨૯૩૧૬, રે.સી.૨૨૨૦૬૯૬, મો.૯૮૨૫૦૧૫૨૭૪, ૯૩૭૬૯૭૭૮૭૯, ૯૯૨૫૦૦૩૮૫૬, ૯૯૦૯૯૫૫૬૨૦	મોબાઈલ કેઈન/લોડર એક્સેવેટર/પોકલેન/ટીપર ટ્રક/ટીપર ટ્રેઈલર/રોડ રોલર
૨૨	બાવરી અર્થ મુવર્સ એલ-૧૪, જે.કે.ટાવર, અડાજણ રોડ, સુરત મો.૯૮૨૫૧૪૨૩૮૫	એરસેવેટર
૨૩	શ્રી કોર્પોરેશન ૭૫, સરદાર કોમ્પ્લેક્સ, અડાજણ રોડ સુરત ફોન નં.(ઓ).૨૬૮૬૩૪૨ રે.સી.૨૨૫૮૫૭૮, મો.૯૮૨૫૧૧૩૫૮૮	લોડર/પોકલેન/ચેઈન ડોઝર

૨૪	સોના કંટ્રક્શન એલ-૭, જે.કે.ટાવર સબજેલ પાસે રીંગરોડ સુરત.ફોન નં.(ઓ).૨૬૩૨૯૧૭, રે.સી.૨૪૭૩૦૧૦ મો.૯૮૨૫૧૧૫૭૭૬	એક્સેવેટર/ટ્રીપર ટ્રક
૨૫	ગાયત્રી ટ્રાન્સપોર્ટ ૧/૬૭૭૨, રામજીમંદિરની ગલીમાં ખારવાવાડ, નાનપુરા,સુરત ફોન નં.૨૪૬૨૮૬૫, મો.૯૮૭૯૦૩૮૨૫૮	ટ્રીપર ટ્રક/રોડ રોલર
૨૬	પટેલ અર્થમુવર્સ કૈલાસનગરપાસે, મજુરાગેટ, સુરત	લોડર/એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૨૭	ચંદુભાઈ સી.પટેલ ગાયવાલા ચેમ્બર, ઉધના મેઈન રોડ, કિષ્ણા પેટ્રોલપંપની બાજુમાં, સુરત	લોડર/એક્સેવેટર/ટ્રીપર ટ્રેઈલર
૨૮	ડી.ડી.કન્સ્ટ્રક્શન(દિપેશ) ડી-૩૦૩, ગ્રીન એવન્યુ ફ્લેટ એલ.પી સવાણી રોડ, અડાજણ સુરત. મો.૯૮૨૫૨૨૧૨૧૧	લોડર/એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૨૯	ભરતકુમાર એચ.પટેલ, ૧૫૪-ગોપાલ નગર ગુ.હા.બોર્ડની સામે. પાંડેસરા, સુરત. મો.૯૮૨૫૪૨૦૦૬૪	એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૩૦	યુ.એન.આઈ.કન્સ્ટ્રક્શન ૪/એફ, નટરાજ એપાર્ટમેન્ટ, ભાગ-૦૨, મોટા મંદિર, ભાગાતળાવ, સુરત. મો.૯૮૨૪૧૧૨૦૬૨	લોડર/એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૩૧	ભવાની કન્સ્ટ્રક્શન ૧૮, ગીરધર દ્વારા સોસાયટી વિભાગ-૦૪, નિતિનગરની બાજુમાં અલથાણ, સુરત મો.૯૮૨૫૧૨૧૫૦૪	એક્સેવેટર/ટ્રીપર ટ્રક/રોડ રોલર
૩૨	મહેન્દ્ર એ.પટેલ ડી-૪, ઈન્દ્રલોક બંગ્લોઝ, નિતી નગર નજીક, સાંઈ આશીષ સોસાયટી, અલથાણ, સુરત મો.૯૭૨૫૧૨૫૩૩૪	એક્સેવેટર/ટ્રીપર ટ્રક/રોડ રોલર

૩૩	આર.એસ.શિંગાળા, લેક્ચુ એપાર્ટમેન્ટ, મહાદેવ ફળીયુ, કતારગામ, સુરત. મો.૯૦૯૯૦૫૭૪૨૧,	એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૩૪	એ.પી.પટેલ ૨૫/૨૬,બ્રહ્માણીનગર, સાયણ રોડ, સુરત, મો.૯૮૨૫૬૦૩૪૮૧	એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર
૩૫	નિલમ કન્સ્ટ્રક્શન ૩૦૩, વિશ્વનગર સોસાયટી, સાયણ રોડ, સુરત મો.૯૮૨૫૨૩૪૮૧૨	એક્સેવેટર/ટ્રીપર ટ્રક/ ટ્રીપર ટ્રેઈલર/રોડ રોલર
૩૬	મારૂતિનંદન સુરેશભાઈ, અડાજણ, સુરત મો.૮૧૪૧૮૩૧૮૪૯	પોકલેન્
૩૭	સંધુ ટ્રાન્સપોર્ટ (પ્રકાસભાઈ) ફોન નં.૦૨૬૧-૨૮૪૦૫૮૦ મો.૯૩૭૪૫૫૩૨૧૭	પોકલેન મશીનમાટેના ટ્રેઈલર
૩૮	બાબા રામદેવ ટ્રેઈલર સર્વિસ(ઓમ પ્રકાસભાઈ) મો.૯૮૨૫૬૮૭૩૪૪	પોકલેન મશીનમાટેના ટ્રેઈલર
૩૯	પાર્થ કાર્ટીક મો.૯૮૭૯૧૫૬૫૯૨	પોકલેન/લોડર
૪૦	ગુડલક કેઈન સર્વિસ (સલીમભાઈ પટેલ) મો.૯૮૨૫૨૯૫૭૮૬	કેઈન
૪૧	રાજુભાઈ મો.૯૮૨૫૩૩૭૬૦૩, ૯૮૯૮૬૧૪૭૦૮	કેઈન
૪૨	બાબા મો.૯૮૨૫૪૩૪૨૧૬, ૯૯૧૩૮૨૨૨૦	કેઈન
૪૩	કિશોર મો.૯૯૨૫૧૪૨૮૮૦	કેઈન
૪૪	ગુજરાત મો.૯૯૧૩૫૯૮૯૮૧	કેઈન
૪૫	સહકાર બ્રેક ડાઉન એન્ડ કેઈન સર્વિસ ચિંકા ઈન્ટરસીટી, ભક્તિધામ મંદિર સામે, પુણા કુંભારીયા રોડ, સુરત. મો.૯૮૭૯૭૪૫૬૧૭	કેઈન
૪૬	પ્રવિણ કેઈન હાયરીંગ કાં. ૭, કુસુમચંદ્ર પાર્ક ઓ.એન.જી. ચાર રસ્તા ઈચ્છાપોર, સુરત. ફોન નં.૦૨૬૧ ૨૮૪૧૫૨૧ મો.૯૮૨૫૧૯૯૪૮૯, ૯૭૧૨૯૯૯૮૯૯	કેઈન
૪૭	ઝા કેઈન હાયરીંગ કાં, ૭, કુસુમચંદ્ર પાર્ક ઓ.એન.જી. ચાર રસ્તા ઈચ્છાપોર, સુરત. ફોન નં.૯૮૨૫૫૫૦૩૮૩, ૯૭૨૭૭૮૪૯૯૪, ૯૭૨૪૯૮૧૩૮૩	કેઈન

૪૮	અમન લીફ્ટર(કરીમ કાસમ જરીયા) એલ.જી.૧૮, મેઘમપુર પ્લાઝા, જૈન ફરસાણની સામે, પાર્લે પોઈન્ટ, સુરત ફોન નં.૦૨૬૧-૨૨૫૮૫૧૯, મો.૯૮૨૫૩૧૭૮૬૨, ૯૪૪૦૦૪૧૩૮૯,	કેઈન
૪૯	અસિક ભાનવડીયા નં.૩૦૦૯, ચાંદણી ચોક કોમ્પ્લેક્સ, મોટી સિનેમા પાસે, બેગમપુરા સુરત ફોન નં.૦૨૬૧-૨૪૦૧૨૦૦, મો.૯૮૨૫૪૬૦૦૦૦	કેઈન
૫૦	પાટીલ ટ્રાન્સપોર્ટ એન્ડ કેઈન સર્વિસ. શોપ નં.૦૧, અશોક કોમ્પ્લેક્સ, એકડમી સ્કુલ સામે, ઉધના સ્ટેશન, મેઈન રોડ, ઉધના, સુરત, મો.૯૬૬૨૦૨૮૩૪૮	કેઈન
૫૧	પાટીલ કેઈન સર્વિસ શ્રીરામ કોમ્પ્લેક્સ શોપનં.૦૨, ખાડી ન્યુ બ્રીજ, બોમ્બે ડાઈંગ રોડ, જી.આઈ.ડી.સી પાંડેસરા, સુરત, મો. ૯૯૦૯૨૯૪૧૩૧	કેઈન
૫૨	સાઈની ડીઝલ પાવર સર્વિસ પ્રા.લી. પ્લોટ નં.૯૯૨, રોડ નં.૮૭, જી.આઈ.ડી.સી, સચીન, સુરત. ફોન નં.૦૨૬૧-૨૩૯૮૪૭૫, મો.૯૮૨૪૦૫૫૫૯૧	કેઈન
૫૩	દક્ષ ઈન્કવીપમેન્ટ જી-૩૨, સીટી સેન્ટર, સોસીયો સર્કલ બમરોલી રોડ, સુરત. મો.૯૯૭૮૮૪૪૭૪૪	કેઈન
૫૪	ભારત કેઈન સર્વિસ શ્રીજે કોમ્પ્લેક્સ ઊન પાટીયા, મેઈન રોડ, ઉધના સુરત, મો.૯૮૨૫૩૧૮૪૦૫	કેઈન
૫૫	રાજ કેઈન સર્વિસ, ૨૭૫, સુર્ભી સરીતા સોસ. ટી.વી.એચ.સર્વિસ સેન્ટર, ઉધના, સુરત. મો.૯૮૨૫૩૩૬૦૩	કેઈન

14.8 Emergency Vehicles & Earth Moving Equipment Facilities Held by

MAH Industries

Sr.	Name Of Mah Unit	Name Of Earthmoving Equipment With Quantity	Contact Persons
1	2	4	
1.	Bharat Petroleum Corp. Ltd.	Nil	Mr. Ajay Trayambakey (M) 7058995994
2.	Bharat Petroleum Corp.Ltd - Botteling Plant	Nil	Mr. Prassna Kumar (O) (0261)6540792 (R) (0261)2902071 (M) 9740432188
3.	Colourtex Industries Pvt. Ltd., Pandesara, Surat	Jcb – 2,Bus-2,Dumper-1,Tractor-5,Crane-1	Mr. Pankaj Gandhi (O) (0261) 2890122 (M) 98250 98380
4.	Colourtex Industries Pvt. Ltd., Sachin, Surat	Jcb – 2,Bus-2,Dumper-1,Tractor-5,Crane-1	Mr. Pankaj Gandhi (O) (0261) 2890122 (M) 98250 98380
5.	Arcelormittal Nippon Steel India Limited	Jcb – 2,Bus-5,Dumper-3,Tractor-2,Crane-2	Mr. Rathindranath Chakraborty (O) 0261-6683335 (R) 0261-6683335 (M) 9818542390
6.	Hazira-Lng Private Ltd.	Bus-2,Truck-2,Dumper-0,Jcb-0,Tractor-0,Crane-0	Mr.Rahul Deep Singh (M) 07971333111
7.	Hindusthan Chemicals Company	Nil	Mr. Satish Patil (O) 02621 - 221681 (M) 90994 62420
8.	Hindustan Petroleum Co. Ltd. (Hpcl)	Jcb – 2	Mr. Sandipkumar Jain

			(O) 0261 - 6994242 (M) 73515 44999
9.	Indian Oil Corpn. Ltd.	Nil	Mr. Piyush Shrimali (O) (0261)2901183 (M) 98796 24424
10.	Indian Oil Corpn. Ltd. - Botteling Plant	Nil	Mr. Ranjit Kumar (M) 70132 32557
11.	Krishak Bharati Co-Op.Fertilisers Ltd.	Truck – 1, Dumper – 1, Bus-4 Crane – 1	Mr. S.T. Makwana (O) 0261-2802085 (R) 0261-2802671 (M) 9978447468
12.	Navin Florine International	Crane-1	Mr. G.C.Jain (O) 0261-6715303 (M)8347459700
13.	Nova Dyestuff Ind. Pvt. Ltd.	Nil	Mr.S.M.Masuriya (O) (0261) 289 8552 (M) 987922 05555
14.	Ntpc - Kawas Gas Power Project	Nil	Mr. Ajay Amare (O) (0261)2860375 (R) (0261)2860287 (M) 94204 89248
15.	Oil And Natural Gas Corporation Ltd.	Nil	Mr. V.A.Rao (O)(0261) 2875700 (R) (0261) 2875408 (M) 94275 04487
16.	Reliance Industries Ltd.	Dumper-1,Jcb-1,Tractor-0, Crane-1	Mr. Shri S. S. Date (O) (0261)3535030 (M) 7600796026
17.	Shree Sayan Vibhag Sahakari Khand Udyog Ltd.	Nil	Mr. Rohit Desai (O) (0261)242149 (M)9099934324
18.	Shri Chalthan Vibhagkhandudyog Sahakari Mandal Ltd	Jcb-4, Tractor-8	Mr. Bharat Patel (O)(02622)281050 (M)9825277107

19.	Shri Kamrej Vibhag Khand Udyog Sahkari Mandali Ltd	Bus-1,Truck-2,Jcb-1,	Mr. K. V. Patel (O) 02621 - 234 500 Ext. 204 (R) 02621 – 234 700 Ext. 234 (M) 98795 09815
20.	Shri Madhi Vibhag Khand Udyog Sahkari Mandali Ltd.	Nil	Mr. Avinash Dhekane (O)9727796177
21.	Shri Mahuva Vibhag Khand Udyog Sahkari Mandali Ltd.	Bus-1,Tractor-01,Crane-02	Mr. Deepak Patel (O)(02625)256846 (M)98794 91285
22.	Spectrum Dyes & Chemicals (P) Ltd.	Bus-2,Tractor-1,	Mr. Balbirsingh Pilania (O) 9824407575 (M) 098241 19577
23.	Rander Water Works, Surat Municipal Corporation	Jcb, Tempo, Dumper, Buldozer	Mr.Ashok Kanjaye (M) 9426772013
24.	Katargam Water Works, Surat Municipal Corporation	Jcb, Tempo, Dumper, Buldozer	Mr. Ashish J. Naik (O) 0261 – 257 2511 (M) 97243 44915
25.	Sarthana Water Works, Surat Municipal Corporation	Jcb, Tempo, Dumper, Buldozer	Mr. Saiyad Mojib (O) 0261 – 257 2511 (M) 98251 48713
26.	Head Water Works, Varachha, Surat Municipal Corporation	Jcb, Tempo, Dumper, Buldozer	Mr. Ashish J. Naik (O) 0261 – 257 2511 (M) 97243 44915
27.	Adani Hazira Port Pvt Ltd	Bus,Car	Mr. Rupesh Jambudi (O) 20612207771 (M) 89808 02504
28.	Aether Industries Ltd,	Nil	Mr. Harsahad Patel (O)02613303000

29.	Hindustan Petroleum Corporation Ltd Bottling Plant	Car	Mr. Anubhav Yadav (O)2061-6590231 (M) 89800 01533
30.	Gujarat State Energy Generation Ltd.	Nil	Mr. S. K. Joshi – Occupier (M) 9099954243 (M) 9099029857
31.	Chief Fire Officer- Surat Municipal Corporation	Hook Arm Truck-2, Mobile Crain (Rescue Vehi.)-1, Rescue Vehi.-4, Tata Truck-2,	0261-2663049
32.	Exe. Engineer- Surat Municipal Corporation- E.Z.-A	Excavator Loader-7, Heavy Loader-3, Loader-1, Loader With Breaker At-1, Road Roller-5, Robat (Skid Street Loa)-1, Tractor-2	0261-2663049
33.	Exe. Engineer- Surat Municipal Corporation- E.Z.-B	Excavator Loader-7, Heavy Loader-1, Road Roller (Vibratory)-2, Robat (Skid Street Loader)-1, Tractor-2	0261-2663049
34.	Exe. Engineer- Surat Municipal Corporation- N.Z	Excavator Loader-10, Heavy Loader-1, Heavy/ Wheel Loader-1, Loader-2, Road Roller-2, Road Roller (Vibratory)-3, Robat (Skid Street Loader)-2, Tractor-2	0261-2663049
35.	Exe. Engineer- Surat Municipal Corporation-C.Z	Excavator Loader- 6, Loader-1, Road Roller-2, Road Roller (Vibratory)-2, Robat (Skid Street Loader)-2, Tractor-2	0261-2663049
36.	Exe. Engineer- Surat Municipal Corporation-S.Z.	Excavator Loader- 9, Heavy Loader-2 Loader-2, Road Roller-1, Road Roller (Vibratory)-2, Robat (Skid Street Loader)-2, Tractor-2	0261-2663049
37.	Exe. Engineer- Surat Municipal Corporation-W.Z.	Excavator Loader- 7, Heavy Loader-1 Loader-1, Road Roller-2, Road Roller (Vibratory)-2, Robat (Skid	0261-2663049

		Street Loader)-2, Tractor-1	
38.	Exe. Engineer- Surat Municipal Corporation-S.E.Z.	Excavator Loader- 8, Loader-1, Road Roller-1, Road Roller (Vibratory)-3, Robat (Skid Street Loader)-2, Tractor-2	0261-2663049
39.	Exe. Engineer- Surat Municipal Corporation-S.W.Z.	Excavator Loader- 11, , Heavy Loader-1, Loader-1, Road Roller-5, Road Roller (Vibratory)-2, Robat (Skid Street Loader)-2, Tractor-2	0261-2663049
40.	Exe. Engineer- Surat Municipal Corporation-D.D.	Excavator Loader- 1, Tractor-3	0261-2663049
41.	Exe. Engineer- Surat Municipal Corporation-S.W.M.	Excavator Loader- 1, Heavy Loader-2, Loader-2, Road Roller-1, Tracked Excavator – 2.	0261-2663049
42.	Exe. Engineer- Surat Municipal Corporation-P.P.G.	Tractor-3	0261-2663049
43.	Exe. Engineer- Surat Municipal Corporation-H.E.D.	Excavator Loader- 7	0261-2663049
44.	Anupam Rasayan India Ltd. (Unit - 1b), Sachin	Nil	R. K. Patil (M) 99099 18023
45.	Inox Air Products Pvt. Ltd., Hazira	Nil	Manoj Boriker (M) 93419 34692

14.9 Taluka wise details of available rescue equipments

Sr. No.	Taluka Name	Life Jacket	Life Buoy	Palmist	Small Rope	Big Rope	Tent	Generator
1	Bardoli	49	19	77	10	21	00	1 (NW)
2	Choryasi	60	60	00	24	00	00	1
3	Kamrej	50	50	00	00	05	00	1(NW)
4	Mahuva	90	50	00	13	50	40	1
5	Mandvi	40	35	00	00	30	00	1
6	Mangrol	230	80	00	00	03	00	
7	Olpad	95	70	00	90	--	--	1
8	Palsana	72	00	55	00	10	00	0
9	Surat City	533	653	--	50	100	00	17
10	Umarpada	23	10	-	00	00	00	0

14.10 Annexure: 4 Infrastructure in the District (Public and Private)

Name	Number
Anganwadi	
Primary School	
Secondary and Higher Secondary School	
General Hospital	1
CHC	14
PHU	1
PHC	56
Sub Centre	358
grant in Aid Hospital	6
Medical College	2
Veterinary Hospital	

List of Boats that can be used for rescuing work

Taluka	Name & Address of Boat Owner	Address	Contact
<i>Chauryashi</i>	Jayeshbhai Naveenbhai Patel,Hajira, Ta. Chorasi, Dist. Surat.		9586172561
<i>Chauryashi</i>	Umeshbhai Babubhai Patel Hajira, Ta. Chorasi, Dist. Surat.		9825547057
<i>Chauryashi</i>	Vijay Chimnabhai Patel Hajira, Ta. Chorasi, Dist. Surat.		9879542070
<i>Chauryashi</i>	Minalbhai Hasmukhbhai Patel Hajira, Ta. Chorasi, Dist. Surat.		9687654408
<i>Chauryashi</i>	Riteshbhai Rasikbhai Patel Hajira, Ta. Chorasi, Dist. Surat.		9904252322
<i>Olpad</i>	Mor, Olpad Mor, Olpad		9638193616
<i>Chauryashi</i>	Champakbhai Devjibhai Patel Rajgari, Ta. Chorasi, Dist.		9825303866
<i>Olpad</i>	Dharmeshbhai Ramanbhai Sellar Rander, Ta. Surat City		9824108587
<i>Chauryashi</i>	Parashottamabhaiharibhai Timla Street, Rander, Surat-1		2612773630
<i>Chauryashi</i>	Naranbhai Diabhai Timla Street, Rander, Surat		2612773630
<i>Chauryashi</i>	Rameshbhai Bhanbhai Timla Street, Rander, Surat		2612773630
<i>Chauryashi</i>	Naranbhai Ganeshbhai Timla Street, Rander, Surat		2612773630
<i>Chauryashi</i>	Fakirbhai Haribhai Timla Street, Rander, Surat		2612773630
<i>Chauryashi</i>	Harilalabhai Lalabhai Timla Street, Rander, Surat		2612773630
<i>Olpad</i>	Motu Faliyu, Mor Motu Faliyu, Mor		9825372034
<i>Olpad</i>	Motu Faliyu, Mor Motu Faliyu, Mor		9913950925
<i>Chauryashi</i>	Bipin Chhimkabhai sailor Dumas, Navasatha,		7383610248

Chauryashi	Raman Sukhbhai Khalasi Dumas, Wadwa Street	9998223843
Olpad	Pipariyu Faliyu, Dandi Pipariyu Faliyu, Dandi	9913717613
Chauryashi	Prabhubhai Balubhai sailor Bhimapur, Ta. Chorasi, Dist. Surat	9824976834
Chauryashi	Ishwarbhai Panchayabhai Patel Magdalla, Ta. Chorasi, Dist.	9825270048
Chauryashi	Ishwarbhai Panchayabhai Patel Magdalla, Ta. Chorasi, Dist.	98247634474
Chauryashi	Kalpeshbhai Ishwarbhai Patel Magdalla, Ta. Chorasi, Dist.	98247634474
Olpad	Shekh Mahamad Sidiki Hajimiya, Olpad, Ta. Olpad	9825546017
Olpad	Somjibhai Budhiyabhai Khalasi, Dandi, Ta. Olpad	9913717613
Olpad	Somjibhai Budhiyabhai Khalasi, Dandi, Ta. Olpad	9913717613
Olpad	Ketanbhai Ramjibhai Patel, Mor, Ta. Olpad	9825372034
Olpad	Hirenbhai Jitendrabhai Patel, Mor, Ta. Olpad	9913950925
Olpad	Tarunbhai Valjibhai Patel, Mor, Ta. Olpad	9726669087
Olpad	Hiteshbhai Arvindbhai Patel, Mor, Ta. Olpad	9726669087
Olpad	Tarunkumar Harilal Morkar, Mor, Ta. Olpad	9726669087
Olpad	Jayeshbhai Bhanabhai Patel, Mor, Ta. Olpad	9726669087
Olpad	Bharatbhai Balubhai Rathod, Shirdi, Ta. Olpad	9909241614
Olpad	Kikubhai Ukabhai Rathod, Pardi-Zakhari, Ta. Olpad	9909241614
Olpad	Kishorbhai Dayabhai Rathod, Pardi-Zakhari, Ta. Olpad	9909241614
Olpad	Vinodbhai Thakorabhai Patel, Pardi-Zakhari, Ta. Olpad	9712785799
Olpad	Kishanbhai Keshavbhai Patel, Mor, TA. Olpad, Dist. Surat	9638193616

Useful boats for flood rescue

ક્રમ	તાલુકાનું નામ	બોટનો પ્રકાર	બોટ કોના હસ્તક છે? ગામનું નામ	બોટની સંખ્યા	સંપર્ક નંબર
૧	માંડવી	ટીનબોટ બિન યાંત્રિક OBM Fiber	બુણધા વિભાગ મત્સ્યોદ્યોગ સહકારી મંડળી લિ. બુણધા	૩૫	૯૮૭૯૭૭૩૫૪૭
૨	માંડવી	ટીનબોટ બિન યાંત્રિક	વીસડાલિયા વિભાગ મત્સ્યોદ્યોગ સહકારી મંડળી ઈસર-જસુભાઈ		૯૭૨૬૧૬૬૬૭૯
૩	માંડવી	ટીનબોટ બિન યાંત્રિક OBM Fiber	કેવડી મત્સ્યોદ્યોગ સહકારી મંડળી કેવડી	૧૦	૯૬૮૭૨૭૬૦૫૦

૪	ચોર્યાસી	IBMયાંત્રિક	ડુમ્મસ-અભિષેકભાઈ	૩૦	૯૮૨૫૬૩૭૫૨૮
૫	ચોર્યાસી	IBMયાંત્રિક	ભીમપોર પ્રભુભાઈ	૨૧	૯૮૨૪૯૭૬૮૩૪
૬	ચોર્યાસી	બિન યાંત્રિક	રાંદેર	૬૦	૦૨૬૧-૨૭૭૩૬૩૦

14.11 Annexure: 5 Medical Facilities at Major Industries

MEDICAL FACILITIES AT MAJOR INDUSTRIES

Sr. No.	Name Of Factories	Medical & Parmedical Staff	No. Of Ambulance	No. Of Beds In Ohc	No. Of Oxygen Cylinders	Telephone Nos. Office
1	Arcelormittal Nippon Steel India Limited (Hrc Division)	3+4	1	3	15	Mr. Ajay Trayambakey (M) 7058995994
2	Kribhco	5+15	2	6	15	Mr. S.T. Makwana (O) 0261-2802085 (R) 0261-2802671 (M) 9978447468
3	Reliance Industries Ltd. Hazira	7+25	4	4	35	Mr. Shri S. S. Date (O) (0261)3535030 (M) 7600796026
4	Larson & Turbo Ltd. Bhatha	1+3	1	2	3	2862160
5	Ongc- Hazira	2+4	1	2	4	Mr. V.A.Rao (O)(0261) 2875700 (R) (0261) 2875408 (M) 94275 04487
6	Navin Fluorine Industries Ltd. Bhestan	1+4	1	2	9	Mr. G.C.Jain (O) 0261-6715303

						(M)8347459700
7	Ntpc- Kawas	3+8	1	2	2	Mr. Ajay Amare (O) (0261)2860375 (R) (0261)2860287 (M) 94204 89248
8	Spectrum Dyes- Palasana	-	1	-	1	Mr. Balbirsingh Pilania (O) 9824407575 (M) 098241 19577

14.12 Resources with MAH units forming part of Mutual Aid Resources

Resources with MAH units forming part of Mutual Aid Resources

<u>SR.</u>	<u>MAH UNIT NAME WITH ADDRESS AND PHONE:- NUMBER</u>	<u>DESIGNATED CONTACT PERSONS WITH ADDRESS (O, R) AND PHONE:- NUMBERS (O, R, M)</u>	<u>TYPE AND NUMBER OF FIRE TENDERS (WATER, FOAM, MIST TENDERS)</u>	<u>OTHER EQUIPMENTS AND MATERIALS (SCBA, PPE, FIRE EXTINGUISHERS ETC</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1.	Bharat Petroleum Corp. Ltd. P.O. Ichhapore Hazira Surat	Mr. John Thomas (O) (0261)6531655 (R) 0261-2258944 (M) 9958147771	Nil	Co2-6 Dcp-19 Other-10 Scba-2
2.	Bharat Petroleum Corp.Ltd (Hazira Depo) Ichhapore,Dist-Surat	Mr. Mayur Chovatiya (O)(0261)2860454, (M) 8233827777	Nil	Co2-20 Dcp-120 Other-50, Scba-2
3.	Colourtex Industries Ltd. (Unit-1) Sachin, Surat -394 221. Gujarat, India.	Mr. Pravinchandra D. Kabutarwala (O) (0261) 2890122 (R) (0261) 224 0568 (M) 98250 56491	Foam Base Fire Tender -01	Co2-87 Dcp-381 Other-168 Scba-11 Foam-2
4.	Colourtex Industries Pvt. Ltd. (Unit – 2) Survey No. 80 Gidc, Surat Pandesar-394 221 Gujarat	Mr. Pravinchandra D. Kabutarwala (O) (0261) 2890122 (R) (0261) 224 0568 (M) 98250 56491	Foam Base Fire Tender -01	Co2-67 Dcp-661 Other-194 Scba-22 Foam-21
5.	Arcelormittal Nippon Steel India Limited (Hrc Division) 27 Kms Hazira-Surat Road	Mr. Santosh Mudra (O) (0261)-6683009 (R) 0261-6684171 (M) 99099 01999	Water Base Fire Tender-03	Co2-1462 Dcp-2352 Other-335 Scba-40

	Hazira Surat-394 Gujarat	270			Foam-30
6.	Hazira-Lng Private Ltd. Terminal Site,Via-Surat, Hazira 394270	Mr. D.K. Mishra (O) (0261) 4151001 (M) 6359975111	Foam Base Fire Tender -01	Scba – 12 Ffe - 107	
7.	Hindusthan Chemicals Company Gidc, Ind. Estate Olpad, Surat-394540 Gujarat	Mr. A. K. Singh (O) 02621 - 221681 (M) 9879163617	Nil	Scba- 26 Ffe - 250 Helmet, Hand Gloves	
8.	Hindustan Petroleum Co. Ltd. (Hpcl) (Depot) Ichhapore Choryasi, Surat	Mr. Vishal Sharma (O) 0261 52983782 (M) 9989929933	Nil	Co2-16 Dcp-145 Other-50 Scba-2 Foam-65	
9.	Indian Oil Corp. Ltd. Lpg Bottling Plant, P.O. Ongc Bhatpore Dist. Surat Gujarat	Mr. Vijay B Bhatkar (M) 94482 86697 (O) (0261)6530056	Nil	Co2-49 Dcp-160 Other-168 Scba-1 Foam-123	
10.	Indian Oil Corp. Ltd. Post Ichhapore (Depot) Surat-394 510 Gujarat	Mr. Rajiv Sharma (O) (0261)6501186 (M) 97120 17140	Nil	Co2-16 Dcp-117 Other-60, Scba-2	
11	Krishak Bharati Co- Op.Fertilisers Ltd. Kavas, P.O. Kribhconagar Hazira, Surat-394515 Gujarat	Mr. M.R. Sharma (O) 0261-2802303 (M) 99252 40255	Foam Base Tender-1 Water Base Tender-1 Dcp Base Tender-1 Emergency Tender-1	Co2-316 Dcp-565 Other-50 Scba- 90 Foam – 29	
12	Navin Florine International P.O. Bhestan Surat-394210 Gujarat	Mr. Rakesh Welling (O) 0261-66509999 (R) (0261)2892458 (M)98250 76314	Multi Purpose Fire Tender -1	Co2-198 Dcp-235 Other-2 Scba-21	
13	Nova Dyestuff Industries Pvt. Ltd., 251-G.I.D.C., Pandesar, Surat. Ph.No.2898551/552/553	Mr. Pravin Modi (O) (0261) 289 8551 (M)98258 00057	Nil	Scba – 2 Ffe - 3	
14	Ntpc - Kawas Gas Power Project Po Aditya Nagar Surat-394 516 Gujarat	Mr. Anup Kumar (O) (0261)2861434 (M) 94133 54065	Foam Base Tender-1 Water Base Tender-1 Dcp Base Tender-1	Scba – 8 Dcp-225 Co2-186 Foam-32	
15	Oil And Natural Gas Corporation Ltd. Ongc Nagar Surat-394 518, Gujarat	Mr. D.M.Roy (O)(0261) 2223657 (R) (0261) 2875600 (M) 99692 28117	Foam Tender- 5, Mp Tender-1 Fire Jeep-4	Co2-680 Dcp-1135 Scba-12 Foam-14373 Ltr	
16	Reliance Industries Ltd. Mora, Post Bhatha	Mr. Shri S. S. Date (O) (0261)3535030	Foam Tenders – 4	Scba – 308 Dcp-4476	

	Hazira Road Surat-394 510 Gujarat	(M) 7600796026		Co2-1274 Rescue Tools Like Cutter & Spreader, Hazmat Fully Encapsulated Chemical Suits,
17	Shree Sayan Vibhag Sahakari Khand Udyog Ltd. Sayan Surat-394 130 Gujarat	Mr. Ajay Navik (O) (0261)242149 (M) 99797 30466	Nil	Co2-8 Dcp-28
18	Shri Chalthan Vibhagkhandudyog Sahakari Mandal Ltd Chalthan Dist. Surat Gujarat	Mr. Sunil Patel (O)(02622)281050	Nil	Co2-6 Dcp-89 Other-10
19	Shri Kamrej Vibhag Khand Udyog Sahkari Mandali Ltd At-Navi Pardi,Ta-Kamrej, Dist-Surat	Mr. A.P. Rawat (O) 02621 - 234 500 (M) 9099972036	Nil	Dcp-9 Co2-48 Foam-2 Other-16
20	Shri Madhi Vibhag Khand Udyog Sahkari Mandali Ltd. At-Madhi,Ta-Bardoli, Dist-Surat	Mr. Digant Oza (O) 99255 57450	Nil	Dcp-7 Co2-38 Foam-2
21	Shri Mahuva Vibhag Khand Udyog Sahkari Mandali Ltd. At-Bamania,Ta-Bardoli, Dist-Surat	Mr. Keshav Kapse (O)(02625)256846 (M) 9979895126	Nil	Scba – 1 Ffe(Co2+Dcp) - 95
22	Spectrum Dyes & Chemical Pvt. Ltd. Plot No - 484, 502, 503, And 504. N.H. #8. Palsana - 394315. Surat.	Mr. Balbirsingh Pilania (O)(02622)264259 (R) (02622)264162 (M) 09824119577	Nil	Scba Set – 10 Ffe(Co2+Dcp) – 238
23	Rander Water Works, Surat Municipal Corporation	Mr. Ashish J. Naik (O) 0261 – 257 2511 (M) 97243 44915	Nil	Scba - 1 Cl2 Emergency Kit – 1 Others Ppe
24	Katargam Water Works, Surat Municipal Corporation	Mr. Ashish J. Naik (O) 0261 – 257 2511 (M) 97243 44915	Nil	Scba - 3 Cl2 Emergency Kit – 2 Others Ppe
25	Sarthana Water Works, Surat Municipal Corporation	Mr. Saiyad Mojib (O) 0261 – 257 2511 (M) 9825148713	Nil	Scba - 1 Cl2 Emergency Kit – 2 Others Ppe
26	Head Water Works, Varachha, Surat Municipal Corporation	Mr. Ashish J. Naik (O) 0261 – 257 2511 (M) 97243 44915	Nil	Scba - 1 Cl2 Emergency Kit – 1 Others Ppe
27	Adani Hazira Port Pvt. Ltd. Hazira, Surat	Mr. Gaurang Chudasama	Foam Base Fire Tender -2	Co2-42 Dcp-587

		(O)(0261) 2207539 (M) 8980802997	Water Base Fire Tender -1	Other-164 Scba-20
28	Aether Industries Ltd Sachin, Surat	Mr.Rohan A. Desai 0261-3303000 (M)7874833133	Nil	Abc-54 Co2-53 Dcp-10 Foam-58
29	Gujarat State Energy Generation Ltd.	Mr. S. K. Joshi – Occupier (M) 9099954243 (M) 9099029857	Nil	Co2-16 Dcp-145 Foam-65
30	Hindustan Petroleum Corporation Ltd (Bottling Plant) Ichaapore, Surat	Mr. Anubhav Yadav (O) (02625)6590232 (M) 89800 01533	Nil	Co2-10 Dcp-128
31	Essar Power Ltd. Hazira, Surat	Occupier Mr.Devdas L. Shetty (O) 261-7146602 Mr.Dharmesh Patel (M) 9879102802	--	--
32	Anupam Rasayan India Ltd. (Unit - 1b), Sachin, Surat	Occupier Mr. Anand Sureshbhai Desai (M) 98251 23708 Manager R. K. Patil (M) 99099 18023	Nil	Sba-03
33	Inox Air Products Pvt. Ltd., Hazira, Surat	Occupier Mr. Pavan Kumar Jain (M) (0224) 0323851 Manager Manoj Boriker (M) 93419 34692	Nil	-

14.13 Annexure:6 Facilities available in the District

(1) Volunteers who are trained by First Aid trainer through GSDMA

No.	Name	Training	Mob.
1.	Dev Kamlesh	First Aid	9099445432
2.	Gothana Kirti .P	First Aid	9879569080
3.	Prajapati Arun.N	First Aid	7367952751
4.	Jitubhai N. Chudhari	First Aid	9925367021
5.	Kulkarni Radhika .R	First Aid	9429268809
6.	Amitbhai K.Chudhari	First Aid	8980938095
7.	Mayurkumar L. Sarateja	First Aid	9624054261
8.	Vijaybhai F.Gamit	First Aid	9879922428
9.	Shweta S. Patel	First Aid	9726733306
10.	Girish V Chudhari	First Aid	9925862216
11.	Vipulbhai K. Katariya	First Aid	9427305810
12.	Niravkumar H.Tndel	First Aid	8511335655
13.	Shashikant D.Chudhari	First Aid	9979448673
14.	Sarasvati R. Chudhari	First Aid	9979353614
15.	Desai Bhavin.G	First Aid	9327506099
16.	Dimpal M.Rana	First Aid	8238220669
17.	Dipaliben P.Patel	First Aid	9427490422
18.	Patel Shveta D	First Aid	8140537699
19.	Patel Shveta V	First Aid	9879317324
20.	Patel Mauri S	First Aid	9825518674
21.	Bhagat Grishma B	First Aid	9510055240
22.	Mehul P. Maheta	First Aid	9727834933
23.	Digesh J Aivala	First Aid	9825848098
24.	Aahir Paresbhai B	First Aid	9925630130
25.	Subhash G. Ghodadara	First Aid	9510422910
26.	Sunil N Chudhari	First Aid	9879206055
27.	Avniben B Soni	First Aid	9904635296
28.	Vilasini M Patel	First Aid	9913762528
29.	Harshbhai Bharavad	First Aid	9925137702
30.	Manishaben Pnchal	First Aid	
31.	Vimalbhai Prabhudas Vinchhi	First Aid	9825475850
32.	Patel Nikunjbhai Chndrkantbhai	First Aid	9687959093
33.	Dharmendrbhai Dalaptbhai Patel	First Aid	9099056449
34.	Patel Ashvinbhai Pratapbhai	First Aid	9909681924
35.	Ratnakarbhai Rameshbhi Mahale	First Aid	9898402278
36.	Kishorbhai Natavarbhai Telar	First Aid	9737234764

37	Parekh Sanjaykumar Kirtibhai	First Aid	9913007736
38	Manishbhai Prhaladbhai Patel	First Aid	9275128210
39	Vinaykant Babubhai Dhuliya	First Aid	
40	Manojkumar Shantilal Lad	First Aid	9904040022
41	Nikunj Labhshnkar Raval	First Aid	9510177375
42	Pankajbhai Parabhubhai Patel	First Aid	9726020955
43	Jayeshbhai M Naiya	First Aid	9427547684
44	Jigarkumar Somabhai Patel	First Aid	9714571505
45	Ankurkumar Dilipbhai Patel	First Aid	8735036844
46	Rajeshkumar Farasubhai Patel	First Aid	
47	Kishorbhai Bhanabhai Patel	First Aid	9904231974
48	Pareshbhai Govindbhai Tendal	First Aid	9924398652
49	Hiteshkumar Bhikubhai Patel	First Aid	8866444651
50	Jinaybhai Ishvarbhai Patel	First Aid	
51	Shaileshbhai Medhajibhai Navadiya	First Aid	
52	Patel Pramodbhai Ramajibhai	First Aid	9979472780
53	Kalpeshbhai Devidas Jagtap	First Aid	
54	Arvindbhai Vasnjibhai Patel	First Aid	
55	Divyeshbhai Lalubhai Patel	First Aid	9724793579
56	Ramanbhai Babarbhai Patel	First Aid	
57	Rakeshbhai Shantilal Joshi	First Aid	9687540181
58	Narendrsinh Ramikabal Yadav	First Aid	
59	Variya Jivarajbhai Ramajibhai	First Aid	9723744723
60	Priteshkumar Premdas Patel	First Aid	9712360677

(2) Swimmers list (fishery swimmers)

ક્રમ	તાલુકાનું નામ	તરવૈયાનું નામ	તરવૈયાનું સરનામું	સંપર્ક
૧	માંડવી	કરસનભાઈ બાપુડાભાઈ ચૌધરી	તરસાડા	૦૨૬૨૩-૨૨૧૧૨૮
૨	માંડવી	અનિલભાઈ લક્ષ્મણભાઈ ચૌધરી	તરસાડા	૦૨૬૨૩-૨૨૧૧૨૮
૩	માંડવી	ઉમકાભાઈ ધનજીભાઈ ચૌધરી	તરસાડા	૦૨૬૨૩-૨૨૧૧૨૮
૪	માંડવી	કરસનભાઈ કીકાભાઈ ચૌધરી	તરસાડા	૦૨૬૨૩-૨૨૧૧૨૮
૫	માંડવી	રેલીયાભાઈ ધનજીભાઈ ચૌધરી	તરસાડા	૦૨૬૨૩-૨૨૧૧૨૮
૬	માંડવી	ચરજીતભાઈ પ્રેમાભાઈ ચૌધરી	નાનીચેર	૦૨૬૨૩-૨૨૧૧૨૮
૭	માંડવી	ગુમાનભાઈ ઢેડાભાઈ ચૌધરી	નાનીચેર	૦૨૬૨૩-૨૨૧૧૨૮

૮	માંડવી	નવીનભાઈ રેશ્માભાઈ ચૌધરી	નાનીચેર	૦૨૬૨૩-૨૨૧૧૨૮
૯	માંડવી	બાબુભાઈ દેવજીભાઈ ચૌધરી	નાનીચેર	૦૨૬૨૩-૨૨૧૧૨૮
૧૦	માંડવી	ફતેસીંગભાઈ રામજીભાઈ ચૌધરી	નાનીચેર	૦૨૬૨૩-૨૨૧૧૨૮
૧૧	ચોર્યાસી	પ્રભુભાઈ બાલુભાઈ ખલાસી	ભીમપોર	૯૮૨૪૯૭૬૮૩૪
૧૨	ચોર્યાસી	અરવિંદભાઈ હાંસજીભાઈ ખલાસી	ભીમપોર	૮૨૩૮૩૧૯૧૨૧
૧૩	ચોર્યાસી	રોહીતભાઈ જયમતભાઈ ખલાસી	ડુમસ	૯૮૨૫૦૧૪૩૯૫
૧૪	ચોર્યાસી	અરવિંદભાઈ જયમતભાઈ ખલાસી	ડુમસ	૯૯૨૫૯૦૪૯૫૦
૧૫	ચોર્યાસી	બીપીનભાઈ છીપકાભાઈ ખલાસી	ડુમસ	૭૩૮૩૬૧૦૨૪૮
૧૬	ચોર્યાસી	વિજયભાઈ ચિમનભાઈ પટેલ	હજીરા	૯૮૭૯૫૪૨૦૭૦
૧૭	ઓલપાડ	કેતનભાઈ રામજીભાઈ પટેલ	મોર	૯૮૨૫૩૭૨૦૩૪
૧૮	ચોર્યાસી	ચંદ્રવદન સુભાષભાઈ ખલાસી	ભીમપોર	૭૦૯૬૧૨૭૪૭૯
૧૯	ચોર્યાસી	દિવ્યન ફકીરભાઈ ખલાસી	ભીમપોર	૮૫૩૦૪૭૩૩૪૦
૨૦	ચોર્યાસી	પરેશભાઈ ગાંડાભાઈ ખલાસી	ભીમપોર	૯૯૦૪૯૪૩૬૩૯
૨૧	ચોર્યાસી	વિમલકુમાર બાબુભાઈ ખલાસી	ભીમપોર	૯૭૧૨૬૩૪૧૮૯
૨૨	ચોર્યાસી	રિતેશભાઈ રામાભાઈ ખલાસી	ડુમસ	૮૨૩૮૯૫૯૭૯૯
૨૩	ચોર્યાસી	ફકીરભાઈ છીમકાભાઈ ખલાસી	ડુમસ	૯૮૨૫૭૮૩૭૧૯
૨૪	ચોર્યાસી	વિવેકભાઈ સિકેશભાઈ ખલાસી	ડુમસ	૯૪૨૮૧૪૦૧૨૮
૨૫	ચોર્યાસી	જયેશભાઈ નવીનભાઈ પટેલ	હજીરા	૯૯૭૪૭૩૧૭૨૭
૨૬	ચોર્યાસી	ભીખુભાઈ ચિમનભાઈ પટેલ	હજીરા	૯૮૨૫૪૮૭૦૦૫
૨૭	ચોર્યાસી	રિતેશભાઈ રસિકભાઈ પટેલ	હજીરા	૯૯૦૪૨૫૨૩૨૨
૨૮	ચોર્યાસી	વિજયભાઈ ચિમનભાઈ પટેલ	હજીરા	૯૮૭૯૫૪૨૦૭૦
૨૯	ચોર્યાસી	કેતનભાઈ રામજીભાઈ પટેલ	હજીરા	૯૮૨૫૩૭૨૦૩૪

તરવૈયા/ડીઝાસ્ટરની તાલીમ મેળવેલા હોમગાર્ડઝ/અધિકારીની યાદી

અનું.	હોમગાર્ડઝ નું નામ	સ નંબર	યુનિટ નું નામ	મોબાઈલ નં.
૧	ડો. પી. વી. શિરોયા	૧	જીલ્લા કચેરી	98250-34591
૨	હાર્દિકભાઈ જશવંતભાઈ પરમાર	૩૯૦	સાયણ	88665-59382
૩	અભિમાનભાઈ ગુલાબસિંહ વસાવા	૪૦૯	સાયણ	74340-03929

૪	અનિલભાઈ છનાભાઈ રાઠોડ	૪૦૫	સાયણ	99251-90714
૫	જયેશભાઈ સામુભાઈ જોગી	૪૦૦	સાયણ	82002-95009
૬	નરેશભાઈ એ.વસાવા	૩૦૯	માગરોલ	99257-01859
૭	સંજયભાઈ. આર.વસાવા	૩૧૧	માગરોલ	99137-19784
૮	વિપુલ આર.ચૌધરી.	૨૯૮	માગરોલ	84692-43496
૯	રોહીતભાઈ.એમ.વસાવા.	૨૧૯	માગરોલ	99137-52701
૧૦	રાકેશ મંગાભાઈ વસાવા	૨૬૯	કોસંબા	97254-64752
૧૧	મુકુંદ ભાદ્રેશભાઈ રાઠોડ	૩૭૮	કોસંબા	88668-64906
૧૨	હસમુખભાઈ જગજીવનભાઈ સુરતી	૨૨૦	કઠોર	82006-72163
૧૩	હિતેન્દ્રભાઈ મગનભાઈ પરમાર	૩૧૩	કઠોર	99258-62250
૧૪	પવનભાઈ રામબદનભાઈ તિવારી	૧૮૭	કઠોર	98243-52622
૧૫	મોહસીન ઈબ્રાહિમ મલેક	૩૬૩	કઠોર	83205-88649
૧૬	કે. એચ. કોટવાળીયા	૩૬૧	માંડવી	98803-46236
૧૭	અશોક એ. કોટવાળીયા	૩૬૫	માંડવી	87581-51929
૧૮	અમિતકુમાર બી. ગામીત	૪૨	માંડવી	97269-99238
૧૯	જયંતીભાઈ જે વસાવા	૫૦૮	માંડવી	99797-13221
૨૦	પ્રવિણકુમાર વરસાળે	૪૭	માંડવી	97270-24018
૨૧	એ. એન. વળવી	૩૬૨	બારડોલી	96240-25690
૨૨	મનોજ બી. પટેલ	૩૬૫	બારડોલી	92546-78044
૨૩	અજય એ. પરમાર	૩૭૦	બારડોલી	81414-43180
૨૪	ત્રિકમ આર. પટેલ	૩૮૧	બારડોલી	97379-64024
૨૫	પંકજ આર. કોંકણી	૩૯૧	બારડોલી	79848-18854
૨૬	પિયુષ યુ. કોંકણી	૩૯૨	બારડોલી	97120-78376
૨૭	અભિજીત એચ. દેવનાથ	૩૭૭	બારડોલી	97379-67311
૨૮	આદર્શ આર. ચૌધરી	૪૦૭	બારડોલી	99257-60936
૨૯	જીનલ એ. કોંકણી	૪૦૯	બારડોલી	95749-60766
૩૦	સંદિપ એફ. માંજલપુરીયા	૪૨૩	બારડોલી	87804-47817
૩૧	કૈવલ એસ. રગડે	૪૩૪	બારડોલી	75675-95891

૩૨	મયુર એસ. મૈસુરીયા	૪૧૭	બારડોલી	88499-31169
૩૩	દિવ્યેશ એસ. રાઠોડ	૪૨૮	બારડોલી	82382-65851
૩૪	આકાશ ડી. રાઠોડ	૪૩૦	બારડોલી	99787-22635
૩૫	કૈલાસ . એમ. કહાર	૪૧	પલસાણા	98795-80276
૩૬	રીયાઝ. એચ. શેખ	૭૩	પલસાણા	98245-97041
૩૭	ફેનિલ .કે . પટેલ	૮૯	પલસાણા	96621-42900
૩૮	દિપેશ. એ . બાવિસ્કર	૧૪૦	પલસાણા	76002-82780
૩૯	વાસુદેવ. વી. મોહિતે	૬૪	પલસાણા	95583-57007
૪૦	ઉમેશભાઈ ઉમેદભાઈ ચૌધરી	૧	મહુવા	70162-42217
૪૧	વિરલભાઈ ગંભીરભાઈ પટેલ	૮	મહુવા	97267-81989
૪૨	સતીષભાઈ ઠાકોરભાઈ નાયકા	૧૭	મહુવા	93271-02111
૪૩	અશ્વિનભાઈ અજુનભાઈ નાયકા	૧૮	મહુવા	63540-20597
૪૪	પટેલ ભવ્યેશ ઠાકોર	૩૨૭	ઓલપાડ	81404-70812
૪૫	વસાવા સતિષ નરેશ	૩૬૨	ઓલપાડ	96381-44869
૪૬	રાઠોડ પ્રવીણ નટવર	૩૬૧	ઓલપાડ	70699-93676
૪૭	સુરતી બિપિન રતિલાલ	૩૭૭	ઓલપાડ	8238202853
૪૮	પટેલ તુષાર ગિરીશ	૩૬૭	ઓલપાડ	70163-62917
૪૯	રાઠોડ ગુણવંત મણીલાલ	૩૭૫	ઓલપાડ	63532-40510
૫૦	પરમાર હાર્દિક ધનસુખ	૩૫૯	ઓલપાડ	74860-72227
૫૧	પટેલ ધર્મેશ જયેશ	૩૭૦	ઓલપાડ	97274-44805
૫૨	પટેલ જીજ્ઞેશ પ્રમોદ	૩૪૯	ઓલપાડ	90992-89318
૫૩	પટેલ રાકેશ ભરત	૩૧૯	ઓલપાડ	96627-36388

List of Fishermen which are swimmers is attached separately in annexure.

14.14 Annexure: 7 List of NGOs

Sr. No	NGO NAME,	NGO NAME, ADDRESS	phone /fax
	Olpad		
1	RAMA NEWSPRINT AND PAPERS LTD.	RAMA NEWSPRINT AND PAPERS LTD. BARBODHAN OLPAD	02621-224203, 224205, 224207
2	THE JAHANGIR PURA GROUP CO. OP. COTTON SALE SOCIETY LTD.	THE JAHANGIR PURA GROUP CO. OP. COTTON SALE SOCIETY LTD. OLPAD JIN, PO. OLPAD	2762062
	Bardoli		
3	MANAV KALYAN RACHNATMAK TRUST	MANAV KALYANRACHNATMAK TRUST BARDOLI	
4	RURAL LABOUR ASSOCIATION	RURAL LABOUR ASSOCIATION HALPATI SEVA SANGH, KAMDAR HOUSE, SARDAR BAUG BARDOLI	02622-20134, 02622-220478
5	SARVAJANIK MAHILA MANDAL, BARDOLI	SARVAJANIK MAHILA MANDAL, BARDOLI OPPOSITE PRAKASH CINEMA BARDOLI	(02622)227201, 222522
6	SWARAJ ASHRAM	SWARAJ ASHRAM SARDARBAUG BARDOLI	02622 220034
	Choryasi		
7	HAZIRA AREA EDUCATIONAL AND MEDICAL CHARITABLE TRUST	HAZIRA AREA EDUCATIONAL AND MEDICAL CHARITABLE TRUST INDUSTRIAL TRAINING CENTER 1/160, GIDC ESTATE, BHATPOR CHORYASI	
8	SHREE AMBICA NIKETAN TRUST	SHREE AMBICA NIKETAN TRUST VESU ROAD, VESU CHORYASI	2226600, 2252971
	Kamrej		
9	KATHOR VIBHAG NAGARIK SAHKARI DHIRAN MANDAL LTD	KATHOR VIBHAG NAGARIK SAHKARI DHIRAN MANDAL LTD KATHOR KAMREJ	256516 257131, 256351
	Mahuva		
10	JANTA KALYAN RACHANATMAK TRUST	JANTA KALYAN ACHANATMAK TRUST VADIYA KARACHELIYA MAHUVA	02625-256101, 256516 257131, 256351
	Mandvi		
11	ADARSH MAHILA MANDAL	ADARSH MAHILA MANDAL PUNA MANDVI	
12	NAVRANG MAHILA MANDAL	NAVRANG MAHILA MANDAL FALI MANDVI	
	Mangrol		
13	CATHOLIC CHURCH	JHANKHVAV MANGAROL	
14	SAMAJ SEVA SANGH ZANKHVAV	SAMAJ SEVA SANGH ZANKHVAV MANGAROL	02629-256028 2629-256339

15	M.L.P CHARITABLE TRUST.	M.L.P CHARITABLE TRUST. OFFICE, 9, PATEL SHOPPING CENTRE OPP GODREJ ADHARKIM CROSS ROAD, MANGROL	0261-324927
16	THE KOSAMBA KHEDUT SEVA SAHAKARI MANDL LTD	THE KOSAMBA KHEDUT SEVA SAHAKARI MANDL LTD JUNAGAM, KOSAMBA MANGROL	02629-235279
	Palsana		
17	SANJIVNI HOSPITAL	SANJIVNI HOSPITAL N.H.NO 8, NR, KADODARA CHARRASTA PALSANA	02622-281184, 281253, 281083
18	SHREE SWAMINARAYAN GAUSEVA TRUST	SHREE SWAMINARAYAN GAUSEVA TRUST SHREE SWAMINARAYAN VISHVA VIDHYAPITH (GURUKUL) NATIONAL HIGHWAY NO 8, KADADARA CHARRASTA PALSANA	02622--72322
	Surat city		
19	<u>Federation Of Surat Textile Traders Association</u>	5046 JJ A/C Textile Market, RingRoad , Surat -395002	0261 300 6709
20	<u>Navsarjan</u>	NAVSARJAN NR. RTO., RING ROAD,	0261-2475683
21	<u>Nature club</u>	sarjan society parle point	098250 57678

List of different unorganized/working groups included separately in annexure.

14.15 Annexure: 8 Medical and Hospital Management Plan

MANAGEMENT OF MASS CASUALTIES TRIAGE AND COLOR TAGGING

- Airway
- Breathing
- Circulation

THE FOLLOWING INFORMATION SHOULD BE CONTAINED IN THE PATIENT'S COLOR TAG:

1. Patient's sequence number
2. Name of patient
3. Latest diagnosis and suspected injury
4. Previous treatment as stated on the tag which was placed on the patient at the scene of the disaster
5. Blood type (cross matching/signature)
6. X-ray number

PRIORITY FOR IN-HOSPITAL CARE

RED TAG (1ST PRIORITY): LIFE THREATENING

- A. obstruction/damage to airway
- B. breathing disturbance (RR >30/min)
- C. circulation disturbance (no radial pulse, weak, irregular or absent carotid pulse)
- D. altered level of consciousness
- E. need for life-saving measures

- F. victims whose injuries demand definite treatment in the hospital but which treatment may be delayed without prejudice to ultimate recovery?

YELLOW TAG (2ND PRIORITY): URGENT

- A. needs to be treated within 4-6 hours otherwise they will become Unstable
- B. severe burns; burns involving hands, feet or face (excluding Respiratory tract); burns complicated by major soft tissue trauma
- C. hospital admission is required moderate blood loss; back injuries; heat injuries with a normal level of consciousness.

GREEN TAG (3RD PRIORITY): DELAYED

- A. minor injuries not threatened by ABC instability
- B. minor fractures, minor soft tissue injuries, minor burns
- C. victims whose injuries are so severe that survival cannot be expected even under the most ideal conditions; obviously mortal wounds where death is certain (such as head injuries or massive burns)

BLACK TAG (LAST PRIORITY):

- A. patient is dead
- B. victim is also clinically dead
- C. those who die while awaiting treatment and those in cardiac arrest following trauma.

TYPE OF EMERGENCY

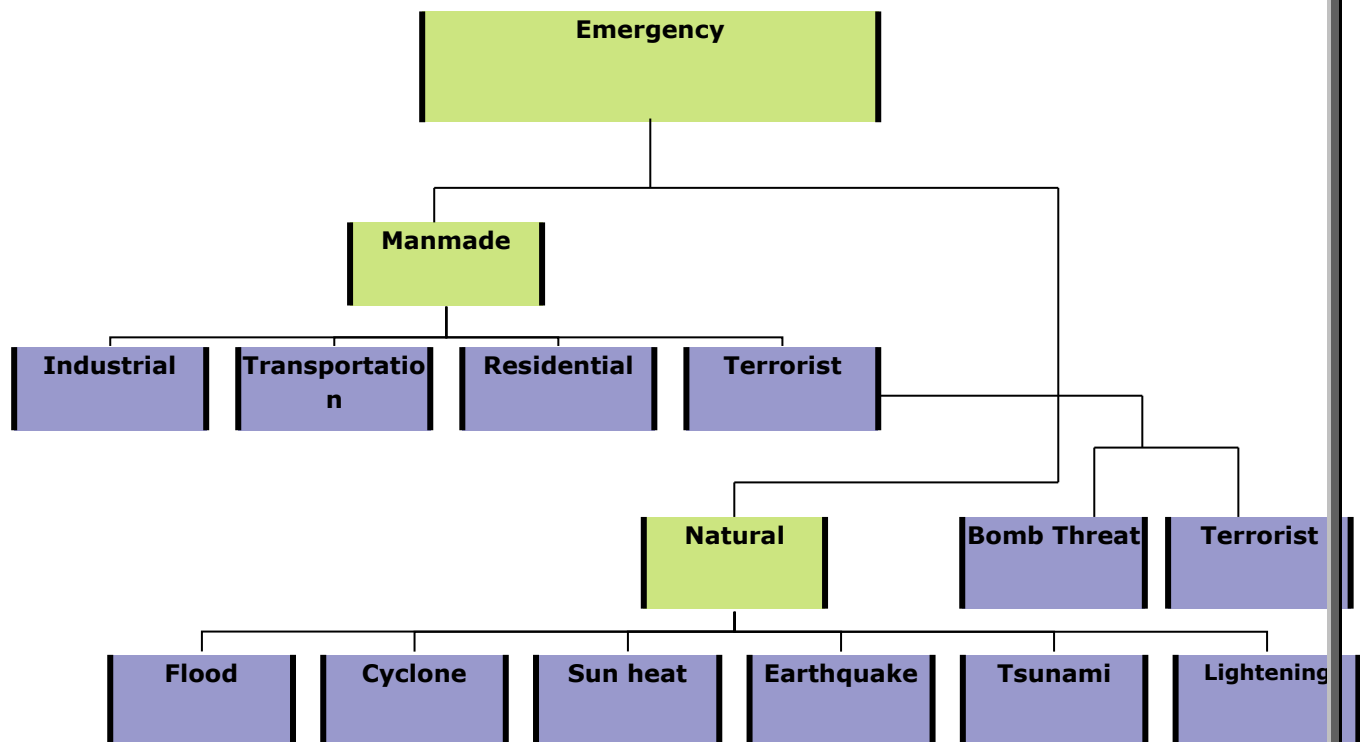
The off-site emergency, as identified by the management in their onsite emergency plans, may affect the surrounding people and the environment outside their premises. The emergency can be classified broadly in the following manner;

- (1) Natural Calamity.
- (2) Man made Emergency

Further, Emergency can be divided in the following way, please see next page

14.16 Health infrastructure in the vicinity

No.	PARTICULARS	NO.	CENTRE
1	District Hospital	1	Surat Civil Hospital, majura gate
2	COMMUNITY HEALTH CENTRE	14	Olpad, Sayan, Palsana, Kamrej, Bardoli, Mandvi, Areth, Mahuva, Anaval, Mangrol, Zankhavav, Kharwasa, Umarpada, Kathor
3	PRIMARY HEALTH CENTRE	54	Olpad-7, Palsana-4 Kamrej-5 Bardoli-7 Mandvi-8 Mahuva-6 Mangrol-8 Umarpada-4 Choraysi-5
4	MOBILE COMPREHENSIVE	9	all talukas



14.17 Medical & health department

Brief Health Details

No. of District Hospitals: 1 (New Civil Hospital-Surat)

No. of Sub District Hospital:2 (Mandvi & Bardoli)

No. of CHC: 12

No. of PHC: 55

No. of PHU: 4

No. of Sub Centre: 358

No. of Medical College: 2 (Govt. Medical College-Surat & “SMIMER” Surat Municipal Medical College)

Surat decadal growth rate: 42.2 (2011 Census)

Sex ratio, Surat rural-787, Urban-756 (2011 Census)

Bed occupancy in Surat rural

At CHC level – 602

At PHC level – 330

List of PHC, PHU & Sub Centre (Taluka wise)

Sr. No.	Taluka	No. of PHC	No. UPHC	No. of Sub Centre
1.	Choryasi	4	0	19
2.	Olpad	7	0	37
3.	Palsana	4	1	25
4.	Kamrej	5	0	32
5.	Bardoli	7	1	54
6.	Mandvi	9	1	60
7.	Mangrol	8	1	55
8.	Umarpada	4	0	28
9.	Mahuva	7	0	48
Total	9	55	1	358

PHC wise primary information								
Sr. No.	Taluka	Sr. No.	Designation	Vehicle	Inverter	Generator	MBBS	AYUSH
1	Choryasi	1	Suvali	1	1	1	1	2
		2	Mohini	1	1	1	1	2
		3	Sachin	1	1	1	2	2
		4	Ichchhapor	1	1	1	1	2
		5	Lajpor	1	0	0	1	2
2	Olpad	6	Erthan	1	0	1	1	1
		7	Karanj	1	0	1	1	1
		8	Dihen	1	0	1	1	1
		9	Kim	1	0	1	1	0
		10	Mor	1	0	1	1	1
		11	Sandhiyer	1	1	1	1	1
		12	Kudiyana	1	0	0	1	1
3	Palsana	13	Kanav	1	0	1	1	2
		14	Kadodara	1	0	1	1	2
		15	Vanesa	1	0	1	2	1
		16	Gangadhara	1	0	1	1	2
4	Kamrej	17	Sevani	1	0	1	2	1
		18	Orana	1	1	1	2	1
		19	Navi Pardi	1	0	1	1	1
		20	Valan	1	0	1	1	1
		21	Vav	1	0	1	1	1
5	Bardoli	22	Sarbhon	1	1	1	1	1
		23	Umarakh	1	1	1	1	1
		24	Varad	1	0	0	1	1
		25	Kadod	1	0	1	1	0
		26	Uva	1	0	0	1	0
		27	Vanskui	1	0	1	1	1
		28	Vankaner	1	0	0	1	0
6	Mandvi	29	Sathavav	1	1	1	1	0
		30	Amlidem	1	1	1	1	0

		31	Dadhvada	1	1	1	1	1
		32	Kamlapor	1	0	1	1	0
		33	Boudhan	1	1	1	1	1
		34	Patal	1	1	1	2	0
		35	Tadkeshwar	1	1	1	1	0
		36	Godsamba	1	0	0	1	0
		37	Rataniya	1	0	0	1	0
7	Mangrol	38	Vankal	1	1	0	1	1
		39	Velachha	1	0	0	1	1
		40	Nani Naroli	1	1	0	1	0
		41	Kosamba	1	1	1	1	1
		42	Simodara	1	1	0	1	1
		43	Lavet	1	1	1	1	1
		44	Verakui	1	1	0	1	1
		45	Palod	1	0	1	1	0
8	Umarpada	46	Kevdi	1	1	1	1	0
		47	Vadpada	1	0	1	1	0
		48	Vadi	1	1	1	1	0
		49	Dongripada	1	0	1	1	0
9	Mahuva	50	Valvada	1	0	1	1	0
		51	Karcheliya	1	0	1	1	0
		52	Kharvan	1	0	1	0	0
		53	Naladhara	1	0	1	1	0
		54	Gunasvel	1	0	1	1	1
		55	Vaheval	1	0	1	2	0
		56	Mahuvaria	1	0	1	1	0

List of CHCs

Sr. No.	Name of Taluka	Name of CHCs	Office Contact No.
1	Bardoli	Bardoli	02622-220260
2	Kamrej	Kamrej	02621-252319
3	Mahuva	Mahuva	02625-255750
4	Mahuva	Anaval	02625-244213
5	Mandvi	Mandvi	02623-221163
6	Mandvi	Areth	02623-261307
7	Mangrol	Mangrol	02629-220247
8	Mangrol	Jankhvav	02629-256317
9	Mangrol	Kharwasa	0261-2394826
10	Olpad	Olpad	02621-222048
11	Olpad	Sayan	02621-243413
12	Palsana	Palsana	02622-264232
13	Umarpada	Umarpada	02629-253390

14	Umarpada	Kathor	02621-256166
15	Mandvi	SDH Mandvi	02623-221163

Contact Details of District Level Health officers

Sr. No.	Officer Name	Designation	Office No.	Mobile No.
1.	Dr. R. K. Kanchhal	RDD	2460673, 2460260	9879553521
2.	Dr. P. Y. Shah	CDHO	2430589	9727709501
3.	Dr. M. M. Lakhani	ADHO	2430780	9727709504
4.	Dr. M. T. Chhari	RCHO	2430780	9727709506
5.	Dr. Kaushik Mehta	I.c. EMO	2430780	9875273898

Details of Grant in Aid Hospitals

Sr. No.	Hospital	Address	Phone No.
1.	Sanjivani Hospital	Chalthan, Ta.Palsana	02622-281184
2.	Sardar Smarak Hospital	Bardoli	02622-220089
3.	Damodardas Gandhi Hospital	Kadod, Ta.Bardoli	02622-246242
4.	Rambhai Bhulabhai Hospital	At.Bamani, Ta.Bardoli	02622-241038
5.	Chanchalben Ghiyani	At.Kevadi, Ta.Mangrol	
6.	Lions Cancer Hospital	Surat	2242862/2240974

Contact Details of Taluka/Block Health Officers

Sr. No.	Name THO	Taluka	Contact No.	Email ID
1.	Dr. Shantakumari	Choryasi	9727709523	bho_choryasi@yahoo.com thochoryasi.health.surat@gmail.com
2.	Dr. P. V. Sailor	Olpad	9727709527	bho_olpad786@yahoo.com thoolpad.health.surat@gmail.com
3.	Dr. M. N. Bhati	Kamrej	9727709539	kamrej_bho@yahoo.com thokamrej.health.surat@gmail.com
4.	Dr. Babubhai B. Chaudhari	Palsana	9727709534	bho.palsana@yahoo.com thopalsana.health.surat@gmail.com
5.	Dr. Rajubhai M. Chaudhari	Mandvi	9727709558	blockhealthmandvi@yahoo.com thomandvi.health.surat@gmail.com
6.	Dr. Hetalbhaji Chaudhari	Bardoli	9727709545	bhobardoli@yahoo.com thobardoli.health.surat@gmail.com
7.	Dr. Himanshu Patel	Mahuva	9727709597	thomahuva.health.surat@gmail.com thomahuva.health.surat@gmail.com
8.	Dr. R. P. Sahi	Mangrol	9727709566	bho_mangrol@yahoo.com thomangrol.health.surat@gmail.com
9.	Dr. Ullas Wagh	Umarpada	7574803346	thoumarpada@yahoo.com

14.18 District Rapid Response Team

Designation	RRT Member's Name	Address	Phone Numbers			E-mail id
			Office	Fax No	Mobile No.	
Clinician (Pediatrics)	Dr. Kirti Mehta	Govt. Medical collage, Surat			925107465	pediagmc@gmail.com
Clinician (Physician)	Dr. K. N. Bhatt	Govt. Medical collage, Surat	0261-2208387		9825190476	knbsurat@gmail.com
HOD, Micro	Dr. Sumaiya Mulla	Govt. Medical collage, Surat	0261-2208406		9925276950	microbiologydepartment@yahoo.in
Laboratory Officer (Pathologist)	Dr. Mandakini M. Patel	Govt. Medical collage, Surat	0261-2208410		9898381444	rdpatel17@gmail.com
Public Health Specialist (PSM)	Dr. J.K. Kosmbiya	Govt. Medical collage, Surat	0261-2241790		9925014333	jjkkosambiya@gmail.com
Epidemiologist (CDHO)	Dr. H.J. Chaudhary	Dist. Panchayat-Surat	0261-2430780		9727709501	dpc_surat@yahoo.co.in cdho.health.surat@gmail.com
District Surveillance Officer i/c(EMO)	Dr. Kaushik Mehta	Dist. Panchayat-Surat	0261-2430589		9875273898	dso_surat@yahoo.com
Entomologist/ DMO	Dr. P. V. Sailor	New Civil Hospital campus	0261-2233846		6359911451	dmho.health.surat@gmail.com
APM (IDSP)	Dr. Paresh Surati	Dist. Panchayat, Surat	0261-2430780		8758111582	Suratidsp2@gmail.com suratidsp@gmail.com

Human Resource at Rural Level

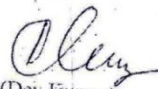
Sr.No.	Cadre	Information
1	THO	9 (3+6 Incharge)
2	Medical Officer(MBBS)	63
3	AYUSH	31
4	MPHS	48
5	FHW	352
6	MPW	306
7	Pharmacist	44
8	Lab Technician	47
9	ASHA	ASHA-1273, Urban ASHA-34, ASHA Faci.-126
10	Anganwadi Worker	1721

14.19 Annexure-9 Relief and Rehabilitation Norms (Standards) Office

Memorandum

- e) The composition of the Central Team will be same as the Central Team constituted for the purpose of drought/hailstorm. The Central Team would make a field visit for assessment of damage to agriculture and horticulture production due to cold wave/ frost and shall take into consideration of all concomitant factors such as crops cutting experiment, fall in normal production, Normalized Differential Vegetation Index (NDVI) status of crops in the affected area, crops sown in the area affected, the vulnerability of the cold wave/ frost on standing agriculture/ horticulture crops etc. in the guidelines. The Ministry of Agriculture will be the nodal Ministry for natural calamity of cold wave/ frost.

4. This order will come into force prospectively with immediate effect.


(Dev Kumar)
Director (DM-I)
Telefax: 234328123

Distribution:-

1. Ministry of Finance, Department of Expenditure, North Block, New Delhi.
2. Ministry of Agriculture, Department of Agriculture & Cooperation, Krishi Bhavan, New Delhi.
3. National Disaster Management Authority, New Delhi.
4. Chief Secretaries of (All States).
5. The Relief Commissioners/ Secretaries, Department of Disaster Management of (All States).
6. Accountants General of all State Governments.
7. Controller General of Accounts (CGA), New Delhi.
8. Comptroller & Auditor General (CAG), New Delhi.
9. Resident Commissioners of all State Governments.

2/2

Fund (SDRF) and The National Disaster Response Fund (NDRF) for the period 2010-2015

Encl: As above

Annexure -

REVISED LIST OF ITEMS AND NORMS OF ASSISTANCE FROM STATE DISASTER RESPONSE FUND (SDRF) AND NATIONAL DISASTER RESPONSE FUND (NDRF)

(Period 2010-15, MHA Letter No. 32-7/2011-NDM-I Dated 16th January 2012, modified vide letter No. 32-3/2012-NDM-I, dated 28th September 2012, modified vide letter No. 32-3/2013-NDM-I, dated 21st June 2013)

SNO.	ITEM	NORMS OF ASSISTANCE
1	2	3
1	GRATUITOUS RELIEF	
	a) Ex-Gratia payment to families of deceased persons.	<p>Rs.1.50 lakh per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.</p> <ul style="list-style-type: none"> In the case of an Indian citizen who loses his life due to a notified natural calamity in a foreign country, his family would not be paid this relief. In the case of a Foreign citizen who loses his life due to a notified natural calamity within the territory of India, his family would also not be paid this relief.
	b) Ex-Gratia payment for loss of a limb or eye(s).	<p>Rs. 43,500/- per person, when the disability is between 40% and 80%.</p> <p>Rs. 62,000/- per person, when the disability is more than 80%.</p> <p>Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.</p>
	c) Grievous injury requiring hospitalization	<p>Rs. 9,300/- per person requiring hospitalization for more than a week.</p> <p>Rs. 3,100/- per person requiring hospitalization for less than a week.</p>
	d) Clothing and utensils/ house-hold goods, for families whose houses have been washed away/ fully damaged/severely inundated for more than a week due to a natural calamity.	<p>Rs.1,300/- per family, for loss of clothing.</p> <p>Rs.1,400/- per family, for loss of utensils/ household goods.</p>
	e) Gratuitous relief for families in dire need of immediate sustenance after a calamity.	<p>Rs. 40/- per adult and Rs. 30/- per child, not housed in relief camps. State Govt. will certify that (i) these persons have no food reserve, or their food reserves have been wiped out in the calamity, and (ii) identified beneficiaries are not housed in relief camps. Further State Government will provide the basis and process for arriving at such beneficiaries district-wise.</p> <p>Period for providing gratuitous relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period of assistance will upto to 30 days, which may be extended upto 60 days in the first instance, if required, and subsequently upto 90 days in case of drought/ pest attack.</p>
	GR to be provided to those who have no food reserves, or whose food reserves have been wiped out in a calamity. and who have no other immediate means of support.	

2. SEARCH & RESCUE OPERATIONS	
(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). By the time the Central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommend actual/ near-actual costs.
(b) Hiring of boats for carrying immediate relief and saving lives.	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). The quantum of assistance will be limited to the actual expenditure incurred on hiring boats and essential equipment required for rescuing stranded people and thereby saving human lives during a notified natural calamity.
3 RELIEF MEASURES	
a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/ evacuated and sheltered in relief camps.	As per assessment of need by SEC and recommendation of the Central Team (in case of NDRF), for a period up to 30 days. The SEC would need to specify the number of camps, their duration and the number of persons in camps. In case of continuation of calamity like drought, or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and upto 90 days in cases of severe drought. Medical care may be provided from National Rural Health Mission (NRHM).
b) Air dropping of essential supplies	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF). The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defence for airdropping of essential supplies and rescue operations only.
c) Provision of emergency supply of drinking water in rural areas and urban areas	As per actual cost, based on assessment of need by SEC and recommended by the Central Team (in case of NDRF), up to 30 days and may be extended upto 90 days in case of drought.
4. CLEARANCE OF AFFECTED AREAS	
a) Clearance of debris in public areas.	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team for assistance to be provided under NDRF.
b) Draining off flood water in affected areas	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team (in case of NDRF).
c) Disposal of dead bodies/ Carcasses	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
5 AGRICULTURE	
(i) Assistance to small and marginal farmers.	
A. Assistance for land and other loss	
a). De-silting of agricultural land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government.)	Rs. 8,100/- per hectare for each item.

b) Removal of debris on agricultural land in hilly areas	(Subject to the condition that no other assistance/ subsidy has been availed of by/ is eligible to the beneficiary under any other Government Scheme)
c) De-silting/ Restoration/ Repair of fish farms	
d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	Rs. 25,000/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records.
B. Input subsidy (where crop loss is 50% and above)	
a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 4,500/- per ha. in rainfed areas and restricted to sown areas. Rs. 9,000/- per ha. in assured irrigated areas, subject to minimum assistance not less than Rs.750 and restricted to sown areas.
b) Perennial crops	Rs. 12,000/- ha. for all types of perennial crops subject to minimum assistance not less than Rs. 1500/- and restricted to sown areas.
c) Sericulture	Rs. 3,200/- per ha. for Eri, Mulberry, Tussar Rs. 4,000/- per ha. for Muga.
(ii) Input subsidy to farmers other than small and marginal farmers	Rs. 4,500/- per hectare in rainfed areas and restricted to sown areas. Rs. 9,000/- per hectare for areas under assured irrigation and restricted to sown areas. Rs. 12,000/- per hectare for all types of perennial crops and restricted to sown areas. - Assistance may be provided where crop loss is 50% and above, subject to a ceiling of 1 ha. per farmer and upto 2 ha per farmer in case of successive calamities irrespective of the size of holding being large.
6. ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS	
i) Replacement of milch animals, draught animals or animals used for haulage.	Milch animals - Rs.16,400/- Buffalo/ cow/ camel/ yak etc. Rs.1650/- Sheep/ Goat Draught animals - Rs.15000/- Camel/ horse/ bullock, etc. Rs.10,000/- Calf/ Donkey/ Pony/ Mule - The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 1 large milch animal or 4 small milch animals or 1 large draught animal or 2 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the Competent Authority designated by the State Government). Poultry:- Poultry @ 37/- per bird subject to a ceiling of assistance of Rs 400/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity. Note:- Relief under these norms is not eligible if the assistance is available from any other Government Scheme, e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal Husbandry has a separate scheme for compensating the poultry owners.

	ii) Provision of fodder / feed concentrate including water supply and medicines in cattle camps.	Large animals- Rs. 50/- per day. Small animals- Rs. 25/- per day. Period for providing relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period for assistance will be upto 30 days, which may be extended upto 60 days in the first instance and in case of severe drought up to 90 days. Based on assessment of need by SEC and recommendation of the Central Team, (in case of NDRF) consistent with estimates of cattle as per Livestock Census and subject to the certificate by the competent authority about the requirement of medicine and vaccine being calamity related.
	iii) Transport of fodder to cattle outside cattle camps	As per actual cost of transport, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF) consistent with estimates of cattle as per Livestock Census.
7	FISHERY	
	i) Assistance to Fisherman for repair / replacement of boats, nets – damaged or lost -- Boat -- Dugout-Canoe -- Catamaran -- net (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme.)	Rs. 3,000/- for repair of partially damaged boats only Rs. 1,500/- for repair of partially damaged net Rs. 7,000/- for replacement of fully damaged boats Rs. 1,850/- for replacement of fully damaged net
	ii) Input subsidy for fish seed farm	Rs. 6,000 per hectare. (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme, except the one time subsidy provided under the Scheme of Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture.)
8	HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS	
	i) For replacement of damaged tools/ equipment	Rs. 3,000 per artisan for equipments. - Subject to certification by the competent authority designated by the Government about damage and its replacement.
	ii) For loss of raw material/ goods in process/ finished goods	Rs. 3,000 per artisan for raw material. - Subject to certification by Competent Authority designated by the State Government about loss and its replacement.
9	HOUSING	
	a) Fully damaged/ destroyed houses	
	i) Pucca house	Rs. 70,000/- per house
	ii) Kutch House	Rs. 15,000/- per house
	b) Severely damaged houses	
	i) Pucca House	Rs. 6,300/- per house
	ii) Kutch House	Rs. 3,200/- per house

(c) Partially Damaged Houses – both pucca/ kutcha (other than huts) where the damage is at least 15 %	Rs. 1,900/- per house
d) Damaged / destroyed huts:	Rs. 2,500/- per hut, <i>(Hut means temporary, make shift unit, inferior to Kutcha house, made of thatch, mud, plastic sheets etc. traditionally recognized as hut by the State/ District authorities.)</i> <i>Note: -The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.</i>
e) Cattle shed attached with house	Rs.1,250/- per shed.
10 INFRASTRUCTURE	
<p><i>Repair/restoration (of immediate nature) of damaged infrastructure:</i></p> <p><i>(1) Roads & bridges (2) Drinking Water Supply Works, (3) Irrigation, (4) Power (only limited to immediate restoration of electricity supply in the affected areas), (5) Schools, (6) Primary Health Centres, (7) Community assets owned by Panchayat.</i></p> <p>Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own revenues, and also undertake immediate repair/ restoration works from their own funds/ resources, are excluded.</p>	<p><i>Activities of immediate nature :</i></p> <p>Illustrative lists of activities which may be considered as works of an immediate nature are given in the enclosed Appendix.</p> <p><i>Assessment of requirements :</i></p> <p>Based on assessment of need, as per States' costs/ rates/ schedules for repair, by SEC and recommendation of the Central Team (in case of NDRF).</p> <ul style="list-style-type: none"> - As regards repair of roads, due consideration shall be given to Norms for Maintenance of Roads in India, 2001, as amended from time to time, for repairs of roads affected by heavy rains/floods, cyclone, landslide, sand dunes, etc. to restore traffic. For reference these norms are <ul style="list-style-type: none"> • Normal and Urban areas: upto 15% of the total of Ordinary Repair (OR) and Periodical Repair (PR). • Hills: upto 20% of total of OR and PR. <p><i>Note: States shall first use its provision under the budget for regular maintenance and repair.</i></p>
11 PROCUREMENT	
Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.	<ul style="list-style-type: none"> - Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The total expenditure on this item should not exceed 5% of the annual allocation of the SDRF.

Illustrative list of activities Identified as of an immediate Nature

APPENDIX
(Item No. 10)

Illustrative list of activities identified as of an immediate nature.

1. Drinking Water Supply :

- i) Repair of damaged platforms of hand pumps/ring wells/ spring-tapped chambers/public stand posts, cisterns.
- ii) Restoration of damaged stand posts including replacement of damaged pipe lengths with new pipe lengths, cleaning of clear water reservoir (to make it leak proof).
- iii) Repair of damaged pumping machines, leaking overhead reservoirs and water pumps including damaged intake – structure, approach gantries/jetties.

2. Roads

- i) Filling up of breaches and potholes, use of pipe for creating waterways, repair and stone pitching of embankments.
- ii) Repair of breached culverts.
- iii) Providing diversions to the damaged/washed out portions of bridges to restore immediate connectivity.
- iv) Temporary repair of approaches to bridges/embankments of bridges., repair of damaged railing bridges, repair of causeways to restore immediate connectivity, granular sub base, over damaged stretch of roads to restore traffic.

3. Irrigation :

- i) Immediate repair of damaged canal structures and earthen/masonry works of tanks and small reservoirs with the use of cement, sand bags and stones.
- ii) Repair of weak areas such as piping or rat holes in dam walls/ embankments.
- iii) Removal of vegetative material/building material/debris from canal and drainage system.

4. Health :

Repair of damaged approach roads, buildings and electrical lines of PHCs/ community Health Centres.

5. Community assets of Panchayat

- a) Repair of village internal roads.
- b) Removal of debris from drainage/ sewerage lines.
- c) Repair of internal water supply lines.
- d) Repair of street lights.
- e) Temporary repair of primary schools, Panchayat ghars, community halls, anganwadi, etc.

14.21 Annexure: 10 Evacuation and Shelter Plan

Temporary Shelter:

Urban Area:

Local Nagar Palika and TEOC,-District Primary and Secondary Education Officer will be Responsible to Shift safely of Affected Population during any kind of Disaster ,In Tapi District mainly use school, collage /community hall ,and Samaj Vadi for shifting of Affected people.Also already it has been identified ward wise by TEOC AND Nagar Palika. The list of Safe Shelter Included in CDMP Plan. Also find list on SDRN Side. At Urban level City Disaster Management Committee and District Administration directly responsible to Evacuate affected people at Safe Place.

Village area:

Mainly village area looking by District and Taluka Panchyat with the support of Liaison officer and Respective mamlatdar. Also already Identified Village wise Safe Shelter at village level, like school/community hall/Samaj vadi ect put Detail List in VDMP Plan. Also find list on SDRN Side. District /Taluka/Village Level - District /Taluka /Village Disaster Management Team directly responsible to Evacuate affected people at Safe Place.

Identified Shelters at Emergency

Taluka Name	Village Name	Name of Shelter
Choryasi	Ichchhapor	Prathamik Shala Sharda Vidhyalay Co. Hall
	Bhatpor	Prathamik Shala Co. Hall, Bhatpor
	Bhatha	Prathamik Shala Bhatha
	Malgama	Prathamik Shala Co. Hall temple
	Bhensaan	Prathamik Shala Bhensaan, Lokmanya hall Rander
	Paali	Prathamik Shala Paali
	Kawas	Prathamik Shala Co. Hall Kawas
	Limla	Kribhco Township
Olpad		All Prathamik Shala & Community Halls
Kamrej		All Prathamik Shala & Community Halls
Palsana	Maakhinga	Prathamik Shala
	Kanaav	Prathamik Shala
	Malekpor	Prathamik Shala
	Baleshwar	Prathamik Shala
	Vanjhodiya	Prathamik Shala
	Amalsadi	Prathamik Shala
	Chalthan	Prathamik Shala
	Kadodara	Prathamik Shala
	Haripura	Prathamik Shala
	Gaangpur	Prathamik Shala
	Baarasadi	Prathamik Shala
	Soyani	Prathamik Shala
Mandvi		All Prathamik Shala & Community Halls
Bardoli	Kadod	Gujarati Kumar and Kanya Shala, Kadod
	Miyawadi	Bachchon ka ghar, Laghumati Sikshan Sanstha
	Isroli	Prathamik Shala, Isroli
	Bamroli	Prathamik Shala, Bamroli
	Kanaai	Prathamik Shala, Kanaai
	Haripura	Prathamik Shala, Haripura
	Uchhrel	Prathamik Shala, Uchhrel
	Astaan	Prathamik Shala, Astaan
	Kharwasa	Prathamik Shala, Kharwasa
	Mowachhi	Prathamik Shala, Mowachhi
	Ishanpor	Community Hall, Ishanpor
	Karachaka	Prathamik Shala, Karachaka
	Pipariya	Prathamik Shala, Pipariya
	Mangroliya	Prathamik Shala & Community Hall
	Khoj	Community Hall
	Pardi kadod	Prathamik Shala, Pardi Kadod
	Waaghecha kadod	Community Hall & Wagheshwar Mahadev Temple
	Timbarwa	Prathamik Shala, Timbarwa
	Rayam	Prathamik Shala, High School & Sahakari Mandali Godown

	Ten	Prathamik Shala & Suruchi Yantra Chhap Shala
	Naandiya	Prathamik Shala, Naandiya
	Nijhar	Prathamik Shala, Community Hall
	Pathradiya	Prathamik Shala, Pathradiya
	Goji	Community Hall
	Tajpor bujrang	Prathamik Shala, Community Hall
	Tarbhon	Prathamik Shala, Community Hall
	Kharad	Prathamik Shala, Kharad
	Chhitra	Prathamik Shala, Chhitra
	Masaad	Prathamik Shala, Community Hall
	Rajwad	Prathamik Shala, Rajwad
	Jharimora	Prathamik Shala, Jharimora
	Vadhvaniya	Prathamik Shala, Vadhvaniya
	Nasuraa	Prathamik Shala, Nasuraa
	Bhuwasan	Prathamik Shala, Bhuwasan
	Jhankharda	Prathamik Shala, Jhankharda
	Ninat	Prathamik Shala, Ninat
	Baabla	Prathamik Shala, Baabla
	Akoti	Prathamik Shala, Akoti
	Palsod	Prathamik Shala, Palsod
	Pardi wagha	Prathamik Shala, Pardi Wagha
	Nogama	Prathamik Shala, Nogama
	Waghecha Sarbhon	Prathamik Shala, Waghecha Sarbhon
	Kunwadiya	Prathamik Shala, Kunwadiya
	Baalda	Prathamik Shala, Baalda
	Bhensudla	Prathamik Shala, Bhensudla
	Waanskui	Prathamik Shala, Waanskui
	Nani bhatlav	Prathamik Shala, Nani Bhatlav
	Baaben	Prathamik Shala, Baaben
	Umrraakh	Prathamik Shala, Moni Bapu Ashram
	Wadoli	Prathamik Shala, Wadoli
	Ancheli	Prathamik Shala, Ancheli
	Singod	Prathamik Shala, Singod
	Junvani	Prathamik Shala, Junvani
	Orgaam	Prathamik Shala, Orgaam
	Baamni	Prathamik Shala, Baamni
	Bhamaiya	Prathamik Shala, Bhamaiya
	Moti falod	Prathamik Shala, Moti Falod
	Ruuva bharampor	Prathamik Shala, Ruuva Bharampor
	Maanekpor	Prathamik Shala, Maanekpor
	Uvaa	Prathamik Shala, Uvaa
	Mota	Prathamik Shala, Mota
	Madhi	Prathamik Shala, Madhi

	Vaankaner sarethi	Prathamik Shala, High School
	Waraad	Prathamik Shala, Waraad
	Panda	Prathamik Shala, Panda
	Suraali	Prathamik Shala, Suraali
	Sarbhon	Prathamik Shala, Sarbhon
	Kantadi	Prathamik Shala, Kantadi
	Saankari	Swami Narayan Rest House, Community Hall
	Sejwad	Prathamik Shala, Sejwad
	Hindoliya	Prathamik Shala, Hindoliya
	Allu	Prathamik Shala, Allu
	Pardi valod	Prathamik Shala, Pardi valod
	Samthan	Prathamik Shala & Paaatidar Samaj Hall
	Aafva khali	Prathamik Shala, Aafva Khali
	Gotasa	Prathamik Shala, Gotasa
	Tajpor khurd	Kedareswar Mandir, Tajpor Khurd
	Kikvad	Prathamik Shala, Kikvad
	Moti bhatlav	Prathamik Shala, Moti bhatlav
	Dhamdod lumbha	Prathamik Shala, Dhamdod
	Utara	Prathamik Shala, Utara
	Vaghava	Prathamik Shala, Vaghava
Mahuva	Ondach	Ondach Prathamik Shala
	Miyapur	Gram Panchayat
	Aamchak	Aamchak Prathamik Shala
	Shekhpur	Shekhpur Prathamik Shala
	Mahuva	G. H. Bhakt
	Budhleshwar	Budhleshwar Prathamik Shala
	Raanat	Raanat Prathamik Shala
	Amroli	Amroli Prathamik Shala
	Kavitha	Kavitha Prathamik Shala
	Sevasan	Sevasan Prathamik Shala
	Wadiya	Wadiya Prathamik Shala
	Umraa	Prathamik Shala/Gram Panchayat
	Haladwaa	HaladwaPrathamik Shala
	Mahuvarya	Mahuvarya Prathamik Shala
	Vaheval	Vaheval Prathamik Shala
	Walvada	Prathamik Shala/High School
	Kaankariya	Kaankariya Prathamik Shala
	Bhoriya	Bhoriya Prathamik Shala
	Velanpur	Gram Panchayat
	Saamba	Saamba Prathamik Shala
Mangrol		All Prathamik Shala & Community Halls
Umarpada		All Prathamik Shala & Community Halls

14.22 Annexure:11 Media Management Plan

1. Preparedness

External

- Broadcast programs to raise people's awareness of disaster prevention measures
- Develop news sources in emergency situation
- Liaison with community leaders
- Publicize station frequency
- Broadcast public planning meetings
- Outreach to the elderly, women, children, mentally and physically disabled people, as well as other marginalized and other vulnerable groups
- Encourage stockpiling of (hand –powered) radio receivers
- Compile local knowledge on signs of impending disaster and share it with community

Internal

- Back up important documents and files (including audio content) and store in a safe location
- If possible, place a set of minimum broadcast equipment such as a microphone, tape/CD player, transmitter and antennae in a safe location
- Plan radio programs to raise people's awareness of disaster prevention
- First aid training for station personnel
- Technical preparedness (generator, APS, securing, transmitter)
- Guidelines for managing staff and volunteers
- Arrange emergency drills in the station
- Develop a contact list and post in station
- Map community (ethnicity, religion, race, culture, vulnerability)
- Prepare pre-recorded Emergency Response
- Announcements and scripts and post in the studio

2. Mitigation

Develop networks with local Disaster Management and Response (DMR) NGOs, local government and key stakeholders: hold regular meeting with them

- Arrange emergency drills in the community
- Training of on-air personnel - what and how to broadcast

3. Response

External-on air

- Broadcast pre-prepared announcements
- Broadcast emergency public meetings
- Broadcast emergency evacuation announcements
- All announcements broadcast in a reassuring and calm manner
- Dispel myths and rumors and provide timely and accurate updates
- Broadcast updates on damage situation
- Produce programs in which victims can express themselves
- Establish contact with the meteorological office and broadcast weather information

Internal-behind the scenes

- Ensure safety of all station personnel
- Call station briefing meeting
- Notify CR networks of status
- Monitor all official announcements and activities of national government, local government and aid agencies(NGOs)
- Enact station evacuation plan if needed
- Log all communications for reference
- Stay calm
- Divide information work so that all voices of the community can be heard and not just male leaders.

4. Relief

Establish Information Support Centre for information sharing and logistic distribution

5. Rehabilitation**External – Networking and Support**

- Broadcast pre-prepared announcements
- Broadcast programs to heal victim's psychology trauma.
- Interview trauma counselors, monks, Imams and priests
- Broadcast recovery announcements
- Cooperate with DMR NGOs, local government and key stakeholders
- Broadcast recovery public meetings
- Provide call in or talk-back programs for people to people interactions

Broadcast positive entertainment programming

Annexure: 12 Contacts Directory

District Incident Command Structure-Key Officers

Incident Commander -District Collector:- 9978406222

Alternate Incident Commander- Resident Additional Collector:- 9978405220

Sr. No	Task-force	Task-force Operation room	Task-force leader/contact Number	Alternate task-force leader -- contact Number
1	Warning and Communications	RAC Office	RAC/9978405220 0261-2660011/2669200	
2	Law & Order	Police control room	DSP/0261 2651831-2 CP/ 9978406275 2241301-3	Dy.SP/ 2479150 ACP/9978408288
3	Search & Rescue	Fire brigade CR-	Chief fire Officer- 9724345508, Control room-9724346022, 0261-2414139, 2423751	
4	Public Works	Road & Building	Ex. Engr, R&B/ Division-1 0261-2474162 Division-2 0261-2471097	Div. 9427107041
5	Shelter	Education Office-CR	District Education Officer/ 9909970218, 0261-2662903	
6	Water Supply	GWSDB-CR	Ex. Engr. GWSDB/ 9978406722,0261-2782088	Ex. EngrWater works, VMSS/
7	Food & Relief supplies	District Supply Officer -CR	DSO-9978405223 2655751, 0261-2465114	
8	Public Health & Sanitation	District Health Centre	CDHO-9727716689 0261-2425752-55/	
9	Power	GEB-CR	Supt. Engr. GEB/ 0261-2804491, 2804499	
10	Logistics	DDO office	DDO- 0261-2422160	DDO- 9978406247
11	Animal Health & Welfare	A & H Office	Dy. Director, A&H 0261-2425751-55	
12	Damage Assessment-Survey	Res. Add. Coll. office	Res.Addl. Collector/ 9978405220	
13	Media/public Information	Information Dept. CR	District Info Officer/ 9879412185, 0261-2465541	Dy. DIO/ Mohan Vadvi/9879412186
14	Planning and coordination	Collector's office-	Collector-0261-2471121 9978406222	Res. Add. Coll. 9978405220
15	Finance/Administration /protocol	Res. Add. Coll. office-	Res. Add. Coll. 9978405220	

14.23 State 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.

State Control Rooms- Contact Numbers

Sr.No.	EOCs/ Control rooms	STD C0de	Contact Numbers
1	State EOC	079	23251902, 23251914, 23251900, 23251916- F 079-23251907 Mam.
2	Relief Commissioner	079	9978406109 (M) 23251509/68
3	Director of Relief	079	9978406087 (M) 23251611/2
4.	CEO,GSDMA Jt. CEO, GSDMA	079	9978405600 (M) 23259220, 9978407003 (M) 23259451
5	Pri. Secretary Revenue Department	079	23251591 23251591
6	Dy. Collector (SEOC)	079	23251990 23251916-12
7	India Meteorology Department , Ahmedabad	079	22865012 , 22865449 22865165 , 22861413
8	Institute of seismological Gandhinagar	079	66739000, 23257641 23252703
9	NDRF team Gandhinagar	079	23201551, F- 23202540
10	Commandant of NDRF team Gandhinagar	079	23202540 094288 26445
11	District EOC Help line	0261	1077
12	Stats EOC Help line	079	1070
13	NDMA	011	26701728, 26701729(F)
14	VTs, Hajira(GMB)	0261	6586788, 6546788, 2977007(F) mob. 9909903748

TASK FORCE OPERATION ROOM		
Sr. No	TASK FORCE	Phone Number
1	Warning and Communications	9978405220
2	Law & Order	0261-2651831
3	Search & Rescue	972434508 0261-2414195/ 962423751
4	Public Works	R&B-1 mob. 9427107041 0261-2474162 R&B-2 mob. 9825164701 0261-2471097
5	Shelter	0261-2662903
6	Water Supply	0261-2782088
7	Food & Relief supplies	0261-2465114, 8758401001
8	Public Health & Sanitation	0261-2425751, 2425751-55
9	Power	0261-2804491/99
10	Logistics	0261-2422160 -2425751-55
11	Animal Health & Welfare	0261-2425751
12	Damage assessment/Survey	0261-2660011, 2669200 9978405220
13	Media/public Information	0261-2465541, 2474423
14	Planning and coordination	0261-2472471, 2471121
15	Finance/ Administration/ protocol	0261-2472211, 2463819 9978405220
16	EOC Surat	0261-2663200 0261-2664800-F

14.24 List of area wise Liasion Officers

Sr.No	Name of the taluka	Liaison Officer Name and Designation Phone No.	Name and Designation of Nodal Officer
1	Mahuva	Shri. Smit Lodha (IAS) Deputy Collector Shri Bardoli Prant Phone no. 02622-221124, Fax no. 02622-229091 Mo no. 70280-20180 E-mail 19.prantbardoli@gmail.com	Shri. Smit Lodha (IAS) Deputy Collector Shri Bardoli Prant Phone no. 02622-221124 Fax no. 02622-229091 Mo no. 70280-20180 E-mail: 19.prantbardoli@gmail.com
2	Bardoli		
3	Palsana	Shri S C Savaliya Prant Officer Shri Kamarej Prant Phone no.0261-253400 Fax no. 0261-253500 Mo No: 9099905040 E-mail: 17.prantkamrej@gmail.com pro-158-kamarej@gmail.com	Dr. Janam Thakor Deputy Collector Shri Mandavi Prant Phone no. 02623-221178 Fax no. 02623-221177 Mo no. 7567011470 E-mail: tspmandvi@gmail.com
4	Madvi	Shri C R Padhiyar P.O.Cum TDO Shri Mandvi Phone No: 02623-222886 Fax no. 02623-221024 Mo No: 8264528689 E-mail tdo_mandvi@gmail.com	
5	Mangrol	Mr. V.K. Sambrad Deputy District Development Officer (Revenue) Chok Bazar, Surat Phone No: 0261-2425751-55 Fax no. 0261-2412543 Mo No: 98795-53038, 75670-17800 E-mail cor-ddo-sur@gujrat.gov.in	
6	Umarpada	Shri C R Padhiyar, P.O.Cum TDO Shri Mandvi Phone No: 02623-222886 Fax no. 02623-221024 Mo No: 8264528689 E-mail tdo_mandvi@gmail.com	
7	kamrej	Shri S C Savaliya Prant Officer Shri Kamarej Prant Phone no.0261-253400 Fax no. 0261-253500 Mo No: 9099905040 E-mail: 17.prantkamrej@gmail.com pro-158-kamarej@gmail.com	Shri D D Vaghela Deputy District Development Officer (Development) Chok Bazar, Surat Phone No: 0261-2425751 Fax no. 0261-2412543 Mo No: 90990-51463 E-mail dyddo-vikas-gmail.com
8	Olpad	Shri C K Undhad, Prant Officer Olpad Phone No: 0261-221244 Fax no. 0261-221246 Mo No: 99784-05222 99256-45344 E-mail 16.prantolpad@gmail.com	
9	Choryasi	Shri D D Vaghela Deputy District Development Officer (Development) Chok Bazar, Surat Phone No: 0261-2425751 Fax no. 0261-2412543 Mo No: 90990-51463 E-mail dyddo-vikas-gmail.com	

Surat City

Sr.N	Name Of The Zone	Liaison Officer Name And Designation Phone No.	Name And Designation Of Nodal Officer
1	Central Zone	Mr. G V Miyani, Deputy Collector, City Prant, Surat Phone No: 0261-265800 Fax No. 0261-2665700 Mo No: 99784-05221, 99130-02250 E-Mail 15.Prantcity@Gmail.Com	Shri T. K. Pandya Zonal Chief And Additional City Engineer Katargam Zone Surat Municipal Corporation Surat Phone No: 0261- 2480518 Fax No. 0261-2486300 Mo. No. 6359909910
2	South- West Zone (Athva)	Mr. M M Patel Deputy Collector Land Reforms Surat Phone No: 0261-2669200/2660011 Fax No. 0261-2655757 Mo No: 8238040525 E-Mail 44.Tenancysurat@Gmail.Com	
3	West Zone (Rander, Adajan)	Shri V.C. Mandaviya District Planning Officer, Phone: 0261-2462579 Mo. 99099-49269 E-Mail: Dpo-Sur@Gujarat.Gov.In	
4	South Zone (Udhana)	Smt. Khyati Patel Deputy Director, Sardar Patel Institute Of Project Administration Adajan, (Spipa), Surat Phone: 0261-2732033,2731701 Fax No. 0261- Mo No: 99784-41502 E-Mail Srtdeputydirector@Yahoo.In	
5	East Zone (Varachha)	Shri A I Halpati District Supply Officer, Surat Phone No: 0261-2655751 Fax No. 0261-2655751 Mo. No:9924998569, E-Mail Dso-Sur@Gujarat.Gov.In	Shri Upadhyay N. V. Dy. Commissioner

6	North Zone (Katargam)	Mr. R B Bhogayata Deputy Collector, Stamp Duty Valuation System Division-1, Surat Phone No: 0261-2465339 Fax No.0261- Mo No: 902307813 E-Mail Pro-159-Surat.Est@Gmail.Com	Surat Municipal Corporation, Surat Phone No: 0261- 2423749 Fax No.0261-2451935
7	Limbayat	Shri K R Patel Special Land Acquisition Officer Shri Branch No. 2 Surat A / 5 Bahumali Building Nanpura Surat Phone No: 0261-2460139 Mo No: 9316863145 E-Mail 30.Laq4@Gmail.Com/Laq4surat@Gmail.Com	Phone No: 97243-45001 E-Mail Commissioner@Suratm unicipal.Org Dmc.Nvu@Suratmuni pal.Org

- **Note:** In addition to the above, the **Plan Annexes** should include information as per the proposed list given below. Or all the annexes can be put into a separate booklet called “**Emergency Operation Reference Manual**”.

14.25 List of important telephone no.s

Sr. No	Office	Name of Officer	Office	Res.	Mob.No.	Fax
1	Collector	Aayush Oak	2652525 2655151	2669080 2669580	99784 06222	2655757
2	Resi. Addl. Collector	Y B Jhala	2660011		9978405220	2655757
3	D. S. O.	A I Halpati	2655751 6599749	2655752	9924998569	2655752
4	P.O. Surat City	G V Miyani	2665800	2665700 2655155	9978405221 9913002250	2665700
5	Mam. Majura	I.C./ B V Patel	2650335		9913481329	
7	Mam. Udhana	I./C.Dipsingh P Solanki	2650335		9879069089	2650337
8	Mam. Adajan	Kalpana R Patel	0261-2471416		9428868068	
9	Mam. Puna	Dipsingh P Solanki	0261-2465118		9879069089	

10	Mam.Katargam	I.C. Kalpana R Patel	0261-2464601		9428868068	
11	P.O. Mandvi	Dr. Janam Thakor	221178		7567011470	221178
12	Mam. Mandvi	M P Patel	02623 221023	02623 221044	7567006594 8980035030	221178
13	Mam. Mangrol	I.c. Shree M.P.Patel	02629 220227	02629 233570	8980035030 7567006594	220094
14	Mam. Umarpada	K N Rana	02629 253399		9879608343	
15	P.O. Olpad	C K Undhad	02621 241244	2656088	99784-05222 6353486992	221246
16	Mam. Olpad	Laxman R Chaudhari	02621 -222444		9427065256 6354735218	
17	Mam. Choryasi	Bharat Saxena	0261-2663800		8849189980	
18	P.O. Kamrej	S C Savaliya	02621 253400		9099905040	253500
19	Mam. Kamrej	Krutika A Vasava	02621-252078		9727634948	
20	Mam. Palsana	Chetan R Suthar	02622-264228		9624284220	
21	P.O. Bardoli	Smit Lodha (IAS)	02622 221124		7028020108	229091
22	Mam. Mahuva	Dinesh V Gamit	02625 255721 255363	02625 255738	9664890918 8141250313	02625 255366
23	Mam. Bardoli	Pratik F Patel	02622-220024		9712624231	
24	Add. Ex.Mag		02650103			
25	L.A.Q. (1)		0261 2465294		9824230331	
26	L.A.Q. (4)	J. B. Mahtra	0261 2460139		9712916327	
29	Dy. Collector Stemp duty 1	R B Bogayata	0261 2465339	2262837	7567011698	
30	Stemp duty 2		0261 2461893			
31	LRC	S S Vagh	0261 2465120	2492697	9427757086	
32	NIC	I./C.Nency Patel	0261 2471042	2663030	9712081891	

SMC Zone Offices			
No.	Area	Phone No. (0261)	Mobile No.
1	Central Zone	2427726 2420547	9727740932 9724345486
2	West Zone	27866181-83	9724346025 9727740921
3	North Zone	2480518 2485700	9724346011
4	East Zone A	2547750 2548365 2551363	9724346031
5	East Zone B	2547750 2548365 2551363	9724346031 9724345001
6	South Zone A	2278429 2277043 2275651	9724346060-61
7	South Zone B	-	9724345499
8	South West Zone	2663049-50 2667926	9724346015 9724346017-18 9727740933
9	South East Zone	2331903-05	9724346049-52

<u>Control Rooms</u>				
No.	Place	Phone No.	Mobile No.	Fax No.
1	Surat controlroom (DEOC)	0261 2663200		2664800
2	Emergency control room,SMC	0261 2423750-55	9724346021	
3	Fire control room,SMC	0261 2414195-96	9724346022	
4	Police control room	0261 2651832		2651831
5	Emergency Ambulance	0261 2462600,108		
6	District Epidemic Control	0261 2430589	9727706505	
7	District Panchayat	0261 2425751		
8	Irrigation Circle	0261 2667426/69	9429276205	
9	Surat Canal Division	0261 2668716	9429276205	
10	Ukai Dam	02624-233267	8738637138 9825141643	

11	Kakrapar Dam	02626-222913 02626-231685	9978291903 9879774261	
12	Hathnur dem	02582 277044	09403942566	
13	Causeway Rander	0261-2761365	9724346024	
14	Flood control SMC		9724346023	
15	E.R PWD Div.-1	0261 2464161-63		
16	R & B E.S Div.	0261 2464161		
17	DGVCL	0261 2506102/ 2506200/ 2506112	9925211297	
18	Torent Power	0261 2413017-7	9904808480	
19	Gujarata Water Supply and Sewerage Board	0261 2782088	9827406800/ 9827406722	
20	Gujarat Gas	0261 2733373	9099940017	2736324
21	Hazira Notified Area	0261 2840208	9879645264	
22	Forestry Dprt.	0261 2733831	94277528583	
23	Regional Transport Office	0261 2977191	9737782289	2977193
24	GSRTC, Surat	0261 2551731	9998953009	
25	Highway Authority	0261 2215167	7567095149	
26	Information Dprt.	0261 2465541	9909237547	
27	Safety and Health Dprt.	0261 2653502		2653501
28	VTs, Hajira(GMB)	6586788, 6546788,	9909903748	2977007(F)
29	NDMA	011-26701728,		26701729(F)
30	G'nagar control (SEOC)	079232 51900	079232 51900	

14.26 Emergency Contact Numbers for Nuclear Radiation

N o	Name of the Department	Mobile Number	Landline Number	Fax Number	Email id
1	CEO- GSDMA,	99784 05600, 99784 07003	079232 59502, 079232 59276	079232 59275	ceo.gsdma@gmail.com
2	Relief Commissioner, Revenue Dept.	99784 06491	079232 51509, 079232 51926	079232 51916 079232 51568	revcontrol1@gujarat.gov.in revcontrol2@gujarat.gov.in
3	Principal Secretary, Revenue Dept.	99784 05930	079232 51501, 079232 51503	079232 51591, 079232 51507	secrev@gujarat.gov.in
4	Bhabha Atomic Research Centre (BARC), Mumbai		22-25505050, 22-25592000	22-25505151, 22-25519613	webmaster@barc.gov.in
5	National Disaster Management Authority (NDMA), Delhi		011 26701700, 011 26701728	011 26701729	website@ndma.gov.in
6	Chief Secretary, GOG	96876 11155	079232 50301, 079232 50302	079232 50305	chiefsecretary@gujarat.gov.in

7	Secretary of Hon Chief Minister, GOG	99784 06358	079232 50021 079232 50023	079232 22101	sec2cm@gujarat.gov.in
8	Additional Chief Secretary, Home Dept.	99784 06138	079232 50502 079232 50505	079232 52075	secpers@gujarat.gov.in
9	KAPS, Site Director Kakrapar, Surat	94298 92073	02626 230370	02626 230727	alok@npcil.co.in
	KAPS, main control room Kakrapar, Surat		02626 230400 02626 230444		prcell_kaps@npcil.co.in
10	Secretary of Dep. Of Atomic Energy, New Delhi		02222 862702	02222 048476	chairman@dae.gov.in
11	Nodal officer, Physical Research Laboratory (PRL), Ahmedabad		079263 14000, 079263 02129	079263 14900	root@ prl.res.in
12	Director of PRL	9898586326	079263 08550 079263 14241	079263 00374	director@ prl.res.in
13	PS to Director of PRL	9909950963	079263 14855		pauline@ prl.res.in
14	State Emg. Oper. Centre(SEOC) Director of relief	9978406087	079232 51611, 079232 51612	079232 51912 079232 51916	

DISTRICT PANCHAYAT

No	DEPARTMENT AGENCY	OFFICE	Fax	MOBILE
1	District Panchayat President	2422118,2412546		
2	District Development Officer	2422160, 2425751	2667453	9978406247
3	Dy. DDO(Revenue)	2425750 to 55	2412543	7567078000
4	Dy. DDO (Development)	2425751 Ex.113		
5	Dy. DDO (Panchayat)	2425751 Ex.113		7567017783
6	District Agriculture Officer	2425751 Ex.131		9978354901
7	Dy. Director Animal Husbandry	2425751 Ex.155 2544071		9825496545, 9825800968
8	Chief District Health officer	2425751 Ex.136 0261-2413066		9727709501
9	Exe. Engineer (R&B)	2476894		
	Exe. Engineer (Irrigation)	2425751 Ex.146		9426683611
10	Exe. Engineer R&B Panchayat	2472337		9426842467
11	District Primary Education Officer	2595903	2595902	9909971697
12	T.D.O. CHORYASI	0261-2669660		9099079651
13	T.D.O. OLPAD	02621-221253	292995	7567015971
14	T.D.O. KAMREJ	02621- 252087/255163	255264	9879988021
15	T.D.O. PALSANA	02622-264224	264123	7567015850
16	T.D.O. BARDOLI	02622-220046	220701	9426347947 8141516058

17	T.D.O - Mangrol	02629-220224	253484	8264528689
18	T.D.O - Mandvi	02623-221024	222886	9725676767
19	T.D.O- Umapada	02629-253484		9898340541
20	T.D.O. MAHUA	02625-255890	255749	7567015957

Nagar Palika Chief Officer

NO.	DEPARTMENT	OFFICE	FAX	MOBILE
1	Bardoli nagar palika	02622-220084/85	223084	9825106060
2	Mandvi nagar palika	02623-221057/221810	222755	9586935654
3	Tarsadi nagar palika	02629-232600	232151, 232592	9586935654
4	Kadodara nagar palika	02622-272008		9723164649

POLICE DEPARTMENT (Rural) (0261-2651832)

NO.	DEPARTMENT AGENCY	OFFICE	MOBILE	FAX
1	Suprintendent of Police	0261- 2651831	99784-05082	2651834
2	District Suprintendent of Police	2651831	9978405082	0261 261834
3	Dy. District Suprintendent of Police (Headquater)		9099946399/ 9978408074	0261 261834
4	Dy. District Suprintendent of Police, Bardoli		9099030693	02622 226861
5	Police Inspector L.C.B		9825790822	0261 261834
6	Police Inspector L.I.B		9312133311	0261 261834
7	Police Inspector S.O.G.		9727479191	
8	Police Inspector C.P.I. Surat		9725609262	
9	Police Sub-Inspector, District Traffic		8980049700	0261 2651834
10	Police Sub-Inspector, Rider to S.P.		9909032683	0261 2651834
11	Police Sub-Inspector, live Reserve		9825158259	0261 2651834

POLICE DEPARTMENT (Urban)

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	COMMISSIONER OF POLICE	2244440	2667322	9978406275
2	Joint police commissioner (Range 1)	2244446	2720212/2668999	9978407285
3	Joint police commissioner (Range 2)	2244447	2254544	9978406992
4	Additional Police Commissioner	2463636	2651900	9978406290
5	Dy. Police Commissioner (Zone1)	2554760	2259198	9978406096
6	Dy. Police Commissioner (Zone2)	2414102	2253270	9978405576
7	Dy. Police Commissioner (Zone3)	2244101	2651096	9978405052
8	Dy. Police Commissioner (Zone4)	2734103	2654457	9978406097
9	Dy. Police Commissioner (Crime)	2460892	2652159	9978405622

10	Dy. Police Commissioner (H Q)	2669500		9978408288
<u>POLICE DEPARTMENT (Other Info.)</u>				
NO.	Police Station with Address & Phone No.	Designated Contact Persons with Address & Phone Nos.		
1	Police Inspector Wireless (O) 0261-2669564	R.R.Avasthi ACP “E” (O) 0261-2462570		
2	Police Inspector, Ichchhapor (O) 0261-2860197 (R) 0261-2793333	Mr. M.I.Pathan (M) 9925012109		
3	Police Inspector, Kapodra (O) 0261-2577579/2574965	Mr. M. K. Gurjar (M) 8980047007		
4	Police Inspector, Udhna (O) 0261-2277155/2282329	Mr. H. V. Goti (M) 9825387862		
5	ACP Traffic (Region-1) (O) 0261-2365417	Mr. Z. A. Shaikh (M) 9825149944		
6	Police Inspector Traffic Circle-2 (O) 0261-2365417	Mr. R. N. Patel (M) 9974339602		
7	Police Inspector Traffic Circle-4 (O) 0261-2535917	(I/C) Mr. S. N. Sagarka (M) 9979362122		
8	Police Inspector Traffic Circle-5 (O) 0261-2535917	(I/C) Mr. A. K. Kuvadiya (M) 9727505176		
9	Police Inspector Traffic Circle-6 (O) 0261-2535917	Mr. L. G. Kharadi (M) 9099978052		
10	Police Inspector Traffic Circle-7 (O) 0261-2365417	(I/C) Mr. S. F. Shaikh (M) 8980044533		
11	Police Inspector Traffic Circle-8 (O) 0261-2365417	(I/C) Mr. M.G. Chauhan (M) 8000213444		
12	Police Inspector Traffic Circle-9 (O) 0261-2365417	Mr. R. C. Vyas (M) 9427456928		
13	Police Inspector Traffic Circle-10 (O) 0261-	I/C Mr. H. C. Masani (M) 9979013192		
14	Police Inspector, Limbayat (O) 0261-2277001	Mr. V. M. Makwana (M) 9725013130		
15	Police Inspector, Salabatpura (O) 0261-2324229	Mr. V. J. Chaudhari (M) 9727780111		
16	Police Inspector, Mahidharpura (O) 0261-2422163	Mr. P. A. Arya (M) 9825486829		
17	Police Inspector, Katargam (O) 0261-2532535	Mr. Z. N. Ghasura (M) 9978999700		
18	Police Inspector, Athwalines (O) 0261-2460959	Mr. S. B. Bharwad (M) 9925114222		

19	Police Inspector, Chowk Bazar (O) 0261-2424185	Mr. S.B.Shaikh (M) 9825040365
20	Police Inspector, Umraa (O) 0261-2669428	Mr. K. A. Gadhavi (M) 9978445700
21	Police Inspector, Pandesara (O) 0261-2890200, 2899033	Mr. K.B.Zala (M) 9727780130
22	Police Inspector, Rander (O) 0261-2766152	Mr. M. I. Zala (M) 9825805593
23	Police Inspector, Adajan (O) 0261-2734100, 2736100	A.K.Chauhan (M) 9099091153
24	Police Station, Rander (O) 0261-2766152	Mr. M. I. Zala (M) 9825805593
25	Police Station, Varachha-I (O) 0261-2544496, 2554486	Mr. M.P.Patel (M) 9099355333
26	Police Station, Varachha-II	(O) 0261-2544496
27	Police Station, Limbayat	P.I. Mr. N.D.Solanki (O) 0261-2277001, 2282328 (M) 9714362620
28	Police Station, Salabatpura	P.I. Mr. V.J.Chaudhari (O) 0261-2324229, 2368896 (M) 9727780111
29	Police Station, Chowk Bazar	P.I. Mr. S.B.Shaikh (O) 0261-2424185 (M) 9825040365
30	Police Station, Wireless	P.I. Mr. R.R.Avasthi (O) 0261-2669574 (M) 9825939556
31	Police Station, Sachin	P.I. Mr. R.J.Gohil (O) 0261-2392258, 2395734 (M) 9925022423
32	Police Station, Ichchhapur	P.I. Mr. G.A.Patel (O) 0261-2860197 (M) 7201088299
33	Police Station, Punagam	P.I. Mr. B.N.Sagar (O) 0261-2640500 (M) 8980399899

34	Police Station, PCB	P.I. R.R.Chaudhari (O) 0261-2244450 (M) 9824863399
35	Police Station, Amroli	P.I. M.B.Vaghela (O) 0261-2497700 (M) 9825167096
36	Police Station, M.T.Sec	P.S.I. Mr. B.D.Solanki (O) 0261-2660437 (M) 9409553000
37	Police Station, Khatodra	P.I. Mr. H.R.Bhrahmbhatt (O) 0261-2633800 (M) 7567875400
38	Police Station, Adajan	P.I. A.K.Chauhan (O) 0261-2734100, 2736100 (M) 9099091153
39	Police Station, Jahangirpura	P.S.I. I/C Smt. H.A.Sindha (O) 0261-2770030 (M) 9924099979
40	Police Station, Hazira	P.I. P.A.Arya (O) 2912711/12 (M) 9825486829
41	Police Station, D.C.B.	P.I. B.N.Dave (O) 0261-2415572 (M) 9825084301
42	Police Station, D.C.B.	P.I. P.L.Chaudhri (O) 0261-2415572 (M) 9925046214

Surat Fire & Emergency Services
List of Officers & Fire Station Incharge

**SMC Control Room: 0261-2423751 to 2423756, 2422285 to 2422287
EXT. 250 9724346026/27/34 Fire Control Room: 0261-2414139/95/96,
9724346022, 9099004528, 101/102 EXT. 324**

NO.	Fire Station (Zone wise)	Name	Designation	Contact No.	Fire Station No.
	Fire Control Room (SMC)	B. K. Pareekh	I/c. CFO	9724345553	O-EXT-229
		Shree Makhijani	Dy. CFO	9724345508	O-EXT-322
		Nirav Rana	W. O.	9427881184/ 9099835686	O-EXT-251
		Patel Hardik A	F.O.	8347473734	2400172 Ex-324
	Central Zone				
1	Muglisara	R. I. Rajput	F. O.	9724345688	2400172 EXT-413
2	Ghanchi Sheri	P. R. Patel	S. O.	9724345690	2400173
3	Navsari Bazar	J. J. Patel	F. O.	9724345684	2400246
	East Zone (Varachha)				
4	Kapodra	K. J. Mod	F. O.	9724345020	2571388
5	Mota Varachha	A. R. Salunke	F. O.	9724345685	2494244
	West Zone (Rander)				
6	Adajan	V. B. Vadhvana I. M. Patel F. J. Gadhvi	D. O. F. O. S. O.	9724345513 9724345694 9974656780	2781232 2781232 2781232
7	Mora Bhagal	S. D. Dhobi	F. O.	9724345695	2770768
8	Palanpor	O. S. Mishra B. I. Rawat	F. O. S. O.	9724345693 9574540404	- -
	North Zone (Katargam)				
9	Katargam	L. M. Patel H. T. Thakor	S. O. S. O.	9727740969 7573048372	2482269 2482269
10	Kosad	R. N. Patel	S. O.	9727740970	2497240
	South Zone (Udhna)				
11	Bhestan	R. K. Gaikwad H. R. Borste	F. O. F. O.	9724345686 9727740994	2902734 2902734
	South West Zone (Limbayat)				
12	Maan Darwaja	K. N. Mod R. H. Khadiya	S. O. S. O.	8141968382 9978252506	2331357 2331357
13	Dumbhal	B. K. Solanki H. A. Patel	S. O. S. O.	9727740996 8347473734	2913509 2913509

South East Zone (Athwa)					
14	Majura	D. H. Makhijani V. B. Tiwari H. A. Gadhavi	D. O. F. O. S. O.	9724345510 9724345689 9727740995	2230686 2230686 2230686

SURAT MUNICIPAL CORPORATION

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Municipal Commissioner	2422240	2258393	9724345000
2	Dy.Municipal Commissioner (Gen)	2423340	2252593	9724345002
3	Dy.Municipal Commissioner (Sp.)	2422221	2256030	9724345001
4	East Zone (A)	2547750	control room	9724346030-33
		2548365	2551363 9724346031	9724345211
	East Zone (B)	2547750, 2548365, 2551363	Control 9724346031	9724345001 9724346031
5	West Zone (Rander)	2786181 to 83	control room	9724346025-26
			2786181	9724345216
6	North Zone (Katargam)	2480518	control room	9724346011
		2485700	2480518	6359909910
7	South Zone(A) (Udhana)	2278429	control room	2275651
			9724346060-61	2277043
	South Zone(A) (Kanakpur, Kansad)			97724345499
8	Central Zone (Muglisara)	2420547/8	control room	9727740932
			2420547	
9	South - West Zone (Athawa)	2663049 – 50	control room	9727740933
			9724346015-18	
10	South - East Zone(Limbayat)	2331903 to 05	2335455	9724346049 to 52

MEDICAL & HEALTH

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Medical Superintendent new civil hospital surat	2244985, 2244456 to 59	2266120	9825555387
2	district Health Officer district panchayat surat	2430589	2669801	9727709505
3	Old civil hospital surat	2479311, 2479610		

4	new civil hospital surat	2244456 to 59		
5	mahavir hospital surat	2339181-2330274		
6	surat general hospital surat	2422040-41, 2427265		
7	maskati hospital surat	2420412		9724346066
8	mission hospital surat	2652890		
9	ESIC general hospital surat	2244110		
10	CHC & referral hospital olpad surat	02621-222048		9327397573
11	CHC & referral hospital kamrej surat	02621-252319		7567873626
13	Lokhat Rampura	2422080-81		
14	mahavir city scene center	2470114,4082000, 402020,		
15	Walk heart hospital	2656590-91		
16	Pramukhswami hospital (BAPS)	2781000		
17	sanjivni hospital chalthan surat	281083		

WESTERN RAILWAY

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Senior Divisional Engineer			9004499201
2	Assistant Divisional Engineer, Surat			9724099260
3	Senior Sectional Engineer			9724099271

OTHER DEPARTMENT & ORGANIZATION

ST Depot , Surat City Station and Railway Station, Surat

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Divisional Controlor, Surat	2424972		9998953098
2	Divisional Mechanical Engineer			9998953099
3	Divisional Traffic Suprintendent Office			9998953100
4	Depot Manager, Surat Rural			9998953103
5	Depot Manager,Bardoli			9998953104
6	Depot Manager,Surat City			9998953105
7	Depot Manager, Mandvi			9998953107
8	Depot Manager, Olpad			9998953108
9	Depot Manager, Songadh			9998953109
10	Depot Manager, Navsari			9998953121
11	Depot Manager, Zagadia			9998953093
12	Surat City Bus Station	0261-2439090		

Airport, Surat

14	Airport Director	0261 2700200/295	2700244(F)	
15	AGM (Second in command)	0261 2700203	2700244(F)	

Railway Station, Surat

16	Area Manager, Surat		02267641500	9724099903
17	Station Superintendent			9724099942
18	Assistant Station Superintendent	0261-2450144		
19	Linear bus stand	2424972		
Power Supply, Surat				
20	Executive director Torrent power ltd	2452441,2400240 2551912	2422171 (F)	
21	South Guj.Vij.Co.Ltd.-Udhana	2277248		
	South Guj.Vij.Co.Ltd.- Kapodara	2506000/200	2572636 (F)	
22	South Guj.Vij.Co.Ltd.-Rander 1 - 2	rander1:2776122 rander2: 2762670		
23	Regional transport officer RTO	2465188	2464902 fax	9426560574
24	PWD	2464162		
25	Gujarat Gas Company	2736373, 4065000	2736362 (F)	9924004000
26	Chamber Of Commerce	2470083		

14.27 Annexure 13 Industrial Details

Chairman Local Crisis Group

NO.	DEPARTMENT AGENCY	OFFICE
1	SUB DIV. MAGISTRATE (CITY) (CHAIRMAN- LCG – CITY) Member	0261- 2665800
2	SUB DIV. MAGISTRATE (OLPAD) (CHAIRMAN LCG – OLPAD, CHORYASI) Member	02621- 241244
3	SUB DIV. MAGISTRATE (MANDAVI) (CHAIRMAN LCG – MANDAVI, MANGROL & UMARPADA) Member	02623- 221178
4	SUB DIV. MAGISTRATE (BARDOLI) (CHAIRMAN LCG – BARDOLI & MAHUVA) Member	02623- 221178
5	SUB DIV. MAGISTRATE (KAMREJ) (CHAIRMAN LCG – KAMREJ & PALSANA) Member	02621- 253400

NEWS MEDIA

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Gujarat Mitra	2599991		9825496195
2	Sandesh	2543000		9825544303
3	Gujarat Samachar	2634645-6		9898988137
4	Times Of India	2256164		9879539255
5	Indian Express	2470374		9925130345
6	Divyabhaskar	3988885		9909956100
7	Gujarat Gaurdian	4010203		

OTHER GOVERNMENT DEPARTMENT

NO.	DEPARTMENT AGENCY	OFFICE	RESIDENT	MOBILE
1	Joint director, industrial safety & health surat	2653501/2	2667692	9898630454
2	Regional Officer, GPCB surat	2442696/ 2411192	fax 2429733	9825329663
3	Regional Manager, GIDC, surat	0261-2668948, 2661257(fax)		9879110014
4	Joint Director District Agricultural Officer	2425751	2687137	9427460219
5	District Information Officer surat	2479177 2474423	2669077 2669178	8980042006
6	Chief Civil Defense surat	2464102	2772368	9825118188
7	Regional Transport Office, surat	0261-2979191	2979192	9737782289
8	ExEr.,public health & machanical Dn.	0261-2687376	2220564	
9	District Supply Officer surat	0261-24655751		9978405223
10	Boiler Inspector surat	0261-2472427		
11	chairman surat	0261-2465848		
12	The executive engineer, R& B division (state) surat 1	0261-2464161-63		8758084320
	R& B division surat 2	0261-24710977		8758084320
13	Port officer	0261-2423781	2435645	9925153038
14	Port Exe. Enginneer	0261-2430533		9925153096
15	Port Trafic Inspector	0261-2430533		9879463627
16	Vessel Traffic Management Solutions (VTMS) Control room hazira			9909903748
17	Assistant Director Fisheries	0261-2462846, 2463946	2462848	9427127103
18	Fishing Officer	0261-2460782		9427468833/ 9033933207
19	DFO-Forest	0261-2733824		9737918010
20	DCF-Forest	0261-2733831		9427528587/ 9978406167
21	RFO-Forest	0261-2733831		9978968799

22	Circuit House	0261-2669218/178		9727645857
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14.28 Contacts of Emergency Response Centre (ERC)

Sr. No.	ERC/PCC Description & Facilities Available	Location	Contact Authority Name, Address & Contact No.
1.	Disaster Management Cell, Collector Office	Collector Office, Surat	Mr. H. H. Kaklotar (O) 0261-2663200 (M) 9537235978
2.	Police Control Room	Surat	(O) 0261-2241301/302/303 (M) 992595000
3.	Emergency Control Room, SMC	Surat	I/C B. K. Pareek, SMC Surat (O) 0261-2422285 (M) 9724345553
4.	Fire Control Room, SMC	Surat	I/C B. K. Pareek, SMC Surat (O) 0261-2414195 (M) 9724345508
5.	Emergency Ambulance	Surat	108

14.29 Contacts Of The Surat District Crisis Group

SR	DESIGNATION	DESIGNATION & DEPARTMENT	TELEPHONE NUMBERS			
N O.	SURAT CRISIS GROUP	DEPARTMENT	STD CODE	OFFICE	RESIDENT	MOBILE
1	CHAIR PERSON	DISTRICT MAGISTRATE	261	2652525	2669080	9878406222
		COLLECTOR,SURAT		2655151	2669580	
2	MEMBER	Municipal COMMISSIONER	261	2422240	2258393	9724345000
		SMC,SURAT		2423751 TO 56		
3	MEMBER	POLICE COMMISSIONER	261	2244440	2668555	9988406275
		MSBLDG,nanpura,surat				
4	MEMBER	Superintendent of Police, Surat	261	265183/132	2665666	9978405082

5	MEMBER & CHAIRPERSON (LCG-1)	SDM,choryasi	261	2464393	2655155	9978405221
6	MEMBER & CHAIRPERSON (LCG-2)	SDM,choryasi	261	2464393	2655155	9978405221
7	MEMBER	Executive engineer	261	2792740	9978441270	9978406648
		public health -gujarat water supply & sewerage board,surat				
8	MEMBER	superintendent Engineer	261	2804491		9879200617
		DGVCL surat		2804499		9879201257
9	MEMBER	District health officer	261	2425751/ 55	2669801	9727709505
		district panchayat,surat				
10	MEMBER	medical superintendent new civil hospital surat	261	2244985	6508651	9825555387
		hospital surat		2244456- 59		
11	MEMBER	chief fire officer surat municipal	261	2422285	ext.226,m.	9724345553
		corporation surat				
12	MEMBER	chief civil defense	261	2464102	2772368	9429090764
		officer surat				
13	MEMBER	dy.chief controller of explosive, 8thfloor yashkumar building ,	261	2225159	2343078	
		sayajigunj vadodra		2361035		
14	MEMBER	regional officer gujarat pollution control board surat	261	2442696		
				2429733		9825088667
15	MEMBER	regional transport officer	261	2465188		
		surat		2464902	2465818	9427686622
16	MEMBER	the executive engineer	261	2464162	2655077	9824039551
		R & B division(state)				
17	MEMBER	joint director district	261	2425751	2687137	9427460219
		agriculture office				
18	MEMBER (IND. REPRESENTATIVE)	mr.kiritbhai gandhi	261	2890122	2244666	9825056865

19	MEMBER- EXPERT	mr.d.m.reddy	261	4135069	4137249	9898876565
		vp reliance				
20	MEMBER- EXPERT	dr.a.v.mevara	261	2835070	4137432	9998011550
		cmo reliance				
21	MEMBER- EXPERT	dr.pankaj desai (msc,phd)	261	2890122	2650027	9825057933
		colourtex ind. Ltd.				
22	MEMBER- EXPERT	shri p murugeshan	261	2840039	6581569	9925036510
		dgm gail hazira				
23	MEMBER	shri naishadh desai	261	2424767		
		trade union representative		2426017		9825113887
24	MEMBER SECRETARY	dy.director indutrial safety & health	261	2473501	2650085, 2667692	9825058741

14.30 Evacuation Information – Sheltering (Incise of Chemical Accident)

Sr. No.	Evacuation Location	Area	Capacity (No. of People)	Contact Authority Name with Address & Phone No.
1.	Dhamanwala Complex, G.I.D.C., Pandesara, Surat		100 people	Mr. Ramanbhai (O) Pandesara Association (O) 0261-2899205 (M) 9825804697
2.	D. B. High School ITI Palsana Gayatri Mandir Hall Bhatt Eng. Medium School Poly Tech. College Sanskar Vidhya Sankul		2500 500 300 1000 1000 2500	Mr. Balbirsingh Pilnia Spectrum Dyes & Chemical Pvt. Ltd. Plots, No.-484, 502, 503, 504 N.H. #8, Palsana-394315, Surat, (O) 2622-264259, (R) 02622-264162,(M) 09824106565
3.	Laxmiben Dahyabhai High School, Station Road, Sachin		1000	Principal (O) 2392221/2395836
4.	Udhyog Bharati School, GIDC, Pandesara		200	Principal (O) 0261-2893469
5.	R. N. Naik High School, Ranchhod Nagar, Udhna		1000	Principal (O) 0261-2272970
6.	HCC Housing Colony, 1.2 KM South Side		1000	02621-221682
7.	School Building In. Mahadev Shashtri Mahavidhya Bhavan, 1 KM Olpad		1000	02621-221214 02621-320129
8.	Shree Vivekanand College of Commerce		1000	0261-2915488 0261-3295488
9.	R. V. Patel College of Commerce		1500	0261-2918222 0261-2914182

10.	J. B. Dharukawala Arts & J. B. Gabani Commerce College	5000	0261-2573802 0261-2571103
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14.31 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	Acephate Anilophos Ethion Phorate Quinalphos	Non flammable	Use DCP, foam if exposed to fire.	Atropine sulphate in dose 2 – 4 mg for adult, 2 pam 1000 – 2000 mg / im.
2	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.
3	Acrylonitrile	Flammable , 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 ampoule in a cloth and hold it under the nose for 15 seconds in every minute. Do not interrupt artificial respiration during this process.
4	Alachor Carbendazim Thiophanate – M	Non flammable	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.
5.	Allethrin Cypermethrin Fevalrate	Toxic	Use DCP, foam is exposed to fire	The treatment is symptomatic.
6.	Aluminium Phosphate	Non flammable	Use DCP, foam is exposed to fire	Injection copper sulphate 0.25 gm.
7.	Ammonia	Flammable , Toxic	Stop flow of gas, use water spray to cool fire exposed containers. Exposed fire fighter must wear positive pressure self-contained	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

			breathing-apparatus and full protective clothing.	morphine 15mg to relieve Dyspnoea, Oxygen inhalation.
8.	Ammonia 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.
9.	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.
10.	Aniline	Flammable, 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. Antidote 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.
11.	Benzene	Flammable, 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. Chronic exposure may lead to leukemia. In case of eye contact flush with plenty of water for 15 minutes. Remove wet clothes and wash affected area with plenty of water.
12.	Butadiene	Flammable, Explosive	DCP, Water	First aid.
13.	Carbon Disulphide	Flammable, Explosive	Use DCP, CO ₂	Remove victim to fresh air. If there is a difficulty breathing, give oxygen. Do not induce vomiting. Obtain medical treatment urgently.
14.	Carbon Dioxide	Asphyxiant	Non-flammable	It is simple asphyxiant and can cause oxygen deficiency in confined space / non ventilated areas. Respiratory protection is required.
15	Carbon Monoxide	Flammable, Toxic	Carbon monoxide, dry chemical powder, wear self contained breathing apparatus. Let fire burn, shut off gas while using the chemicals.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. If heartbeats are absent, give external cardiac compression. Do not use mouth to mouth ventilation. Administer 100% oxygen till carboxyhemoglobin level is measured.

				Cerebral edema and convulsions must be controlled. Ethylene blue must not be injected.
16	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
17.	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.
18.	Coal	Flammable	Dry chemical powder, water supply	Incomplete combustion may produce CO, sulphur dioxide, hence respiratory protection may be required to fight the fire.
19.	Copper Compounds	-	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.
20.	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.
21	Ethylene Oxide	Flammable , Carcinogen	Use DCP	Remove victim to fresh air. If there is a difficulty breathing, give oxygen. Do not induce vomiting. Obtain medical treatment urgently.
22	Formic Acid	Flammable , 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.
23	Fuel Oil	Flammable	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.

24	Hexa- conazole Propi- conazole	Non flamm-able	Use DCP, foam is exposed to fire	There is no specific antidotes and treats the victim symptomatically.
25	High Speed Diesel	Flammable	Dry chemical powder, foam	- do -
26	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.
27	Hydroge n	Flammable , 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.
28	Hydroge n 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.
29	Hydroge n Sulphide	Flammable , Toxic	Carbon dioxide, dry chemical powder. Wear self-contained breathing apparatus. Alcohol resistant foam is also advisable to be used to stop fire.	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 centre may be stimulated by injection of LOBGIN and nike thamide. Victamin C may be injected intravenously. Incase of eye exposure, it should be treated with boric acid solution.
30	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 hearts beats abosent, 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 hormon or 30 mg/kg of methyl prednisolone IV.
31	Isopro- turon	Non flamm-able	Use DCP, foam is exposed to fire	Supportive treatment.

32	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.
33	Mancozeb Thiram	Non flammable	Use DCP, foam is exposed to fire	Low toxicity, no specific treatment.
34	Metaol-uene Di Amine	Flammable , 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.
35	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.
36	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.
37	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.
38	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.
39	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.
40	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 steroid aerosol by inhalation and or upto 30 mg / kg of methyl prednisolone. In case of eye, contact immediately, refer to ophthalmologist.
41	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.
42	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.
43	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.
44	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.
45	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.
46	Nitro-benzene	Flammable, 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.
47	Nitrogen	Asphyxiate	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. Treat for frostbite with lukewarm water.
48	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. Incase 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.
49.	Ortho Dichloride Benzene	Flameable, 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.
50	Oxygen	-	Non flammable	Inhalation of 100 % oxygen can cause nausea, dizziness, irritation of lungs, pulmonary edema, pneumonia and collapse. Liquid oxygen will cause frostbite.
51	Phosgene	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.

52	Potassium 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. In case of eye contact immediately refer for opt homological opinion. Treat skin burns conventionally.
53	Potassium Methoxide	Flammable , Toxic	Only dry chemical powder is allowed to be used. It reacts with water and CO ₂ .	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. Baking soda in glass of water should be given.
54	Propionic Acid	Flammable , Toxic, Corrosive	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. If heart beats are absent, give external cardiac compression. In case of eye contact flush with plenty of water for about 15 minutes. Remove wet clothes and wash affected area with water & soap.
55	Propane	Flammable, Explosive	DCP, Water	First aid.
56	Propylene	Flammable, Explosive	DCP, Water	First aid.
57	Rhodium Trioxide	-	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. In case of eye contact, flush with plenty of water for 15 minutes.
58	Sodium Hydroxide	Corrosive, Toxic	Non flammable	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 water & soap.
59	Styrene Monomer	Flammable	DCP, Foam compound	-
60	Sulphur Dioxide	Corrosive, 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. Atrophic rhinitis and pharyngitis 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. In case of eye contact, flush with 2%

				sodium bicarbonate solution, drops of 2 to 3 % phedrine should be instilled in the nose.
61	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.
62	Toluene	Flammable, 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. 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.
63	Toluene Di Isocyanate	Corrosive, Toxic	Dry chemical powder, carbon dioxide. Do not apply water as it reacts violently with water at elevated temperature.	Remove the victim to fresh air. If there is a difficulty in breathing, give oxygen. Toluene Di Isocyanate is very toxic if inhaled.. In case pulmonary edema. TLV of TDI vapor is very low i.e. 0.0005 ppm. If splashed on skin, incases sensitization of skin tissue. 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.
64	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.
65	Tricolor Ethylene	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. 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.

14.32 Emergency Resources – Antidote Suppliers

Sr. No.	Toxic Chemicals Handled in District (ESP. in MAH Units)	Antidotes required	Antidote Supplier* Name with Address & Ph. Nos of Contact Persons	Quantity of Antidotes Available
1	Ammonia	0.4% Benzocain for eyes	Local Chemists	

2	Chlorine	Derrifyline Dexona, CP Malate, Milk of Meghnesiya	Local Chemists	
3	Hydrogen Chloride	Milk of Meghnesiya	- Local Chemists - Yash Medical Stores, Ground floor, Yashkamal Apartment, Near Jivanjyot Cinema, Udhana, Surat- 394210, (O)-6959264	
4	Hydrogen Fluoride	INJ Cal Gluconate	- Maheshbhai Hiralaln Chemist, Opp. Surat General Hospital (M)- 9825338442 - Navin Fluorine, Bhestan, Surat	150 Ampule
5	Oleum (Sulphur Trioxide)	Milk of Meghnesiya	Local Chemists	
6	Acrilonitrile/ Sodium/ Potassium Cyanide	Cynide Antidote Kit	Sarvodaya Instruments, Sarvodaya Nagar, SPS road, Bhandup, Mumbai-78, (O)- 25765195 (M)- 09869228851	
7		Oxygen Administration Facility	Ashok Jyot Oxygen, Udhna, Road No. 9, (O)-0261- 2278760	
8		Cyanides Antidote Kit	M/S. Troikaa Pharmaceuticals Ltd. THOL-382728 (Gujarat)	
9	ETHANOL	THIAMINE - HYPOGLYCEMIA - HYPOTHERMIA - HEMODIALYSIS -	ALL GOVT. HOSPITALS ALL MEDICAL STORES	
10	Methanol	Fomepizole, Leucovorin/Folic Acid	15 All Govt. Hospitals All Medical Stores	
11	Benzene, Toluene, Xylene	Diazepam 10 Mg I/V Move The Person To Fresh Air. Give Oxygen	All Govt. Hospitals All Medical Stores	

12	Formaldehyde (Formalin)	Milk Of Meghnesiya	Local Chemist	
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15.1 List of Civil Defence leaders

List of officers / appointed, members of Civil Defence Force Surat				
Sr.	Name & Address	Designation	Division	Mobile number
1	SHRI D.P.P MISTRI 2/1939/15 TEJASH FLET,2 FLOOR KEILASH NAGAR PASE, SANGRAMPURA, SURAT.	CHIEF WARDEN	SURAT CITY	9826836736, 82380 95253
2	SHRI SANJEBHAI R. BHALANA 303, ALIF TAVR, L H ROAD, SURAT.	D.CHIEF WARDEN	SURAT CITY	9925133366
3	SHRI J.J.M 200, SHAJANAND SOCIETY L H ROAD, KAPODRA.	DIVISION WARDEN	KAPODRA	9428177989 ,9898146236
4	SHRI DR MADHUKANT K. GONDALIA 44,45 RATANJEE PARK NEAR, RAILWAY GARNALA, AK ROAD SURAT SHRI	DIVISION WARDEN	VARACHHA	9825328858
5	SHRI VIJAY BHAI CHANDAN BHAI PATEL ,JALARAM NAGAR,ANATHA ASHRAM, KATARGAM ROAD SURAT.	DIVISION WARDEN	KATARGAM	9824094449 ,9825316091
6	SHRI VAMANBHAI T. PASVALA 6/75,GALEMANDIR ROAD, SURAT.	DIVISION WARDEN	MAHIDHARPURA	9824522221
7	SHRI KANJEEBHAI V.MITHAR 7/254/1 SORTHIIYA HOUSING SOSA ROOM NO .1,SYEDPURA SURAT-2.	DIVISION WARDEN	CHOK BAZAR	9727062045
8	SHRI HARSHID BHAIV.PATEL RANGKRUPA ,SOSA,JAMANA NAGAR, BUS STOP GHODDOD RAOD ,SURAT.	DIVISION WARDEN	SALABATPURA	9825188945
9	SHRI MOH,NAVED ABDUL RAZZAQ SHEILK NANPURA ,ARKET,MAIZE BRIDGE SURAT.	DIVISION WARDEN	ATHAVA	9729900136

10	SHRI MR.MEHULBHAI.SORATHIYA 12 SURUCHI SOSA, RAMCHOK PASE,GHODDOD RAOD SURAT.	DIVISION WARDEN	UMARA	9825118188
11	SHRI SHIVKUMAR TOLARAM ARORA E/A,YOGI KRUPA SOSA,NEW CIVIL ROAD,SUAR.	DIVISION WARDEN	PANDESRA	9825123470, 9377600000
12	SHRI NAGINBHAI V. CHAUHAN ,1 HARINAGAR,UDHANA SURAT.	DIVISION WARDEN	UDHNA	9913510010
13	SHRI ATULBHAI J.YAGNIK , SANIYA KANDE TADAV,TCHORYASI, DIST SURAT.	DIVISION WARDEN	LIMBAYAT	9512687491
14	SHRI JENTIBHAI J. GANDHI,162 JOGANI NAGAR, NEW RANDER SURAT.	DIVISION WARDEN	RANDER	9727062045
15	SHRI MUNJALBHAI R. DESAI ,C-11 MAHIMA TOWER, CHANDNI CHOK,SURAT	DIVISION WARDEN	KHATODRA	8925049000
16	SHRI SANJAY R. SHARMA,2302,SHIVSHAKIT NAGAR G.H.B,KANAKPUR,SACHIN	DIVISION WARDEN	SACHIN	8980406024, 8320582686
17	SHRI BAKULBHAI ANILBHAI PATEL ,MADHAV VILA ROAD HOUSE,NEW CITY LIGTH,SURAT.	DIVISION WARDEN	ADAJAN	9825083878
18	SHRI JEYKAT RAJNIKAT RAWAL,20,PANCHOLI SOSA,KAKDIYA COMPLEX,DHODDOD ROAD ,SUART.	DIVISION WARDEN	DUMAS	9227979646
19	NEHABEN ATULBHAI DESHI A-2 1005, AKSHAR PLAZA,ADAJAN SURAT.	DIVISION WARDEN	JHANGIRPURA	9377133639
20	SHRI DHANSHIYAMBHAI V.NASIT 1,ROOP SAGAR SOCIETY,ASHWANI KUMAR ROAD,VARRACHHA,SURAT.	DIVISION WARDEN	SARTHANA	9898109120
21	SHRI BHAGVAT GULABRAV PATIL 86/87,NAVAGAM,LIMBAYAT ,SURAT.	DIVISION WARDEN	DINDOLI	9879307490, 8238200000

22	SHRI SAMBHU PRASAD R. MALIK ,2298,SHIVSHAKITNAGAR,G.H.B. KANAK,SACHIN,SUART.	DIVISION WARDEN	SACHIN G.I.D.C	7874000717
23	SHRI MOHAMMAD AMIN M. NATHANI 103/104, ALNUR RESIDENCY,KOJHVE CIRCLE, RANDER ROAD,ADAJAN,SURAT.	DIVISION WARDEN	HAZIRA	8225606962
24	SHRI SATYA ASHWINBHAI DEV 5/501,MASIDIYASHERI,BHAVANIVAD,SUART.	DIVISION WARDEN	LALGET	9376309900

15.2 Tide Table

15.3 Annexure 14 Dos & Don'ts in Various Disaster

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 bends and plucks 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 kachha 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, than Stay indoors! Get under a heavy desk or table and hang on 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

Dos

- 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, incase 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 unburst 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 need 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

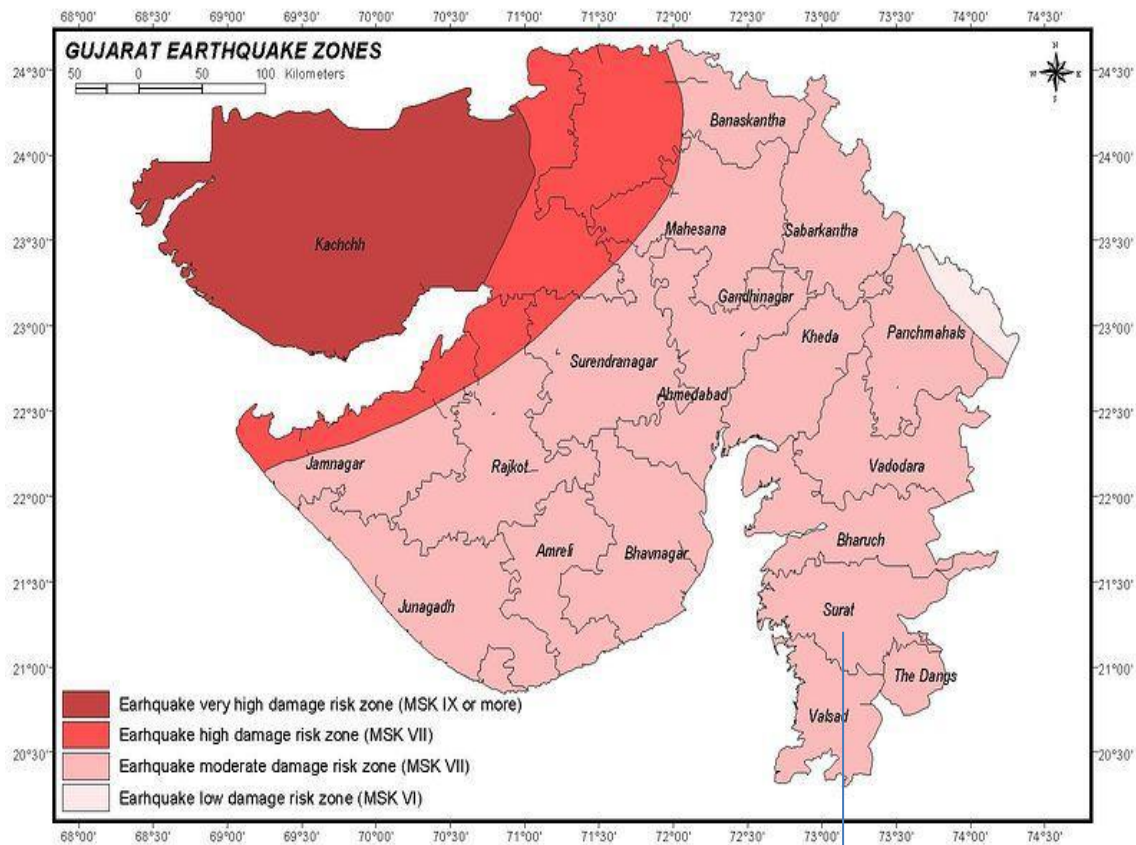
16 Various Maps of Surat District

Map showing Surat District

Hazard Maps

Map Showing Gujarat Earthquake Zones

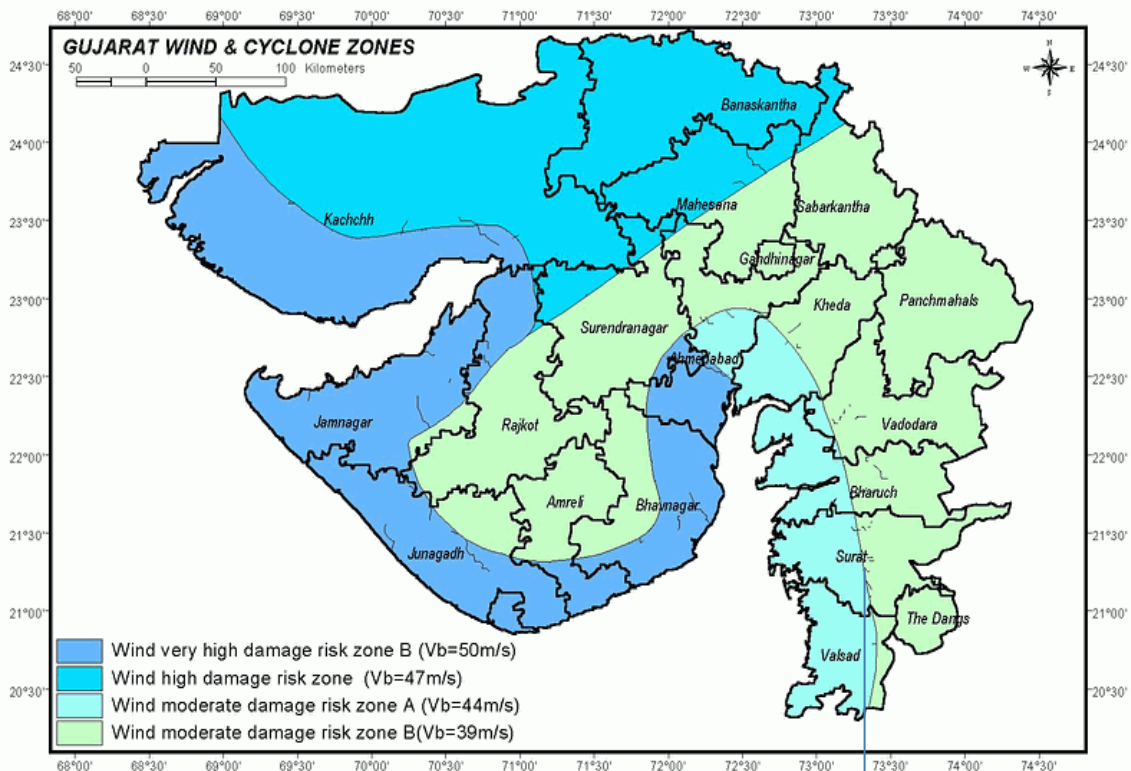
Surat District come in Zone III



Disclaimer: This map was collated based on the data/information compiled by the Ministry of Urban Development and Poverty Alleviation. UNDP has not verified the accuracy of information of the Map. Source: BMTPC, India

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Surat District

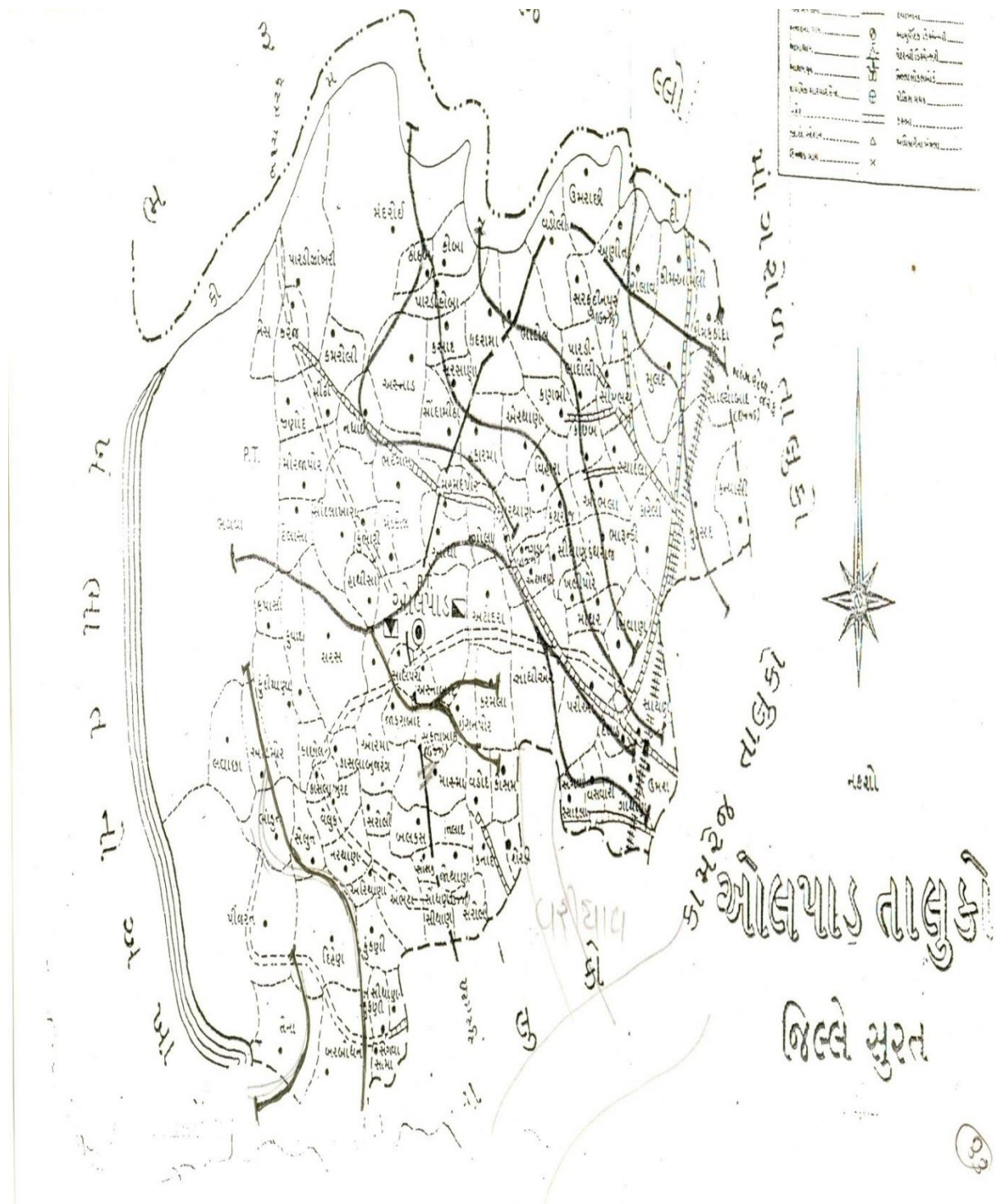
Map Showing Gujarat Wind and Cyclone Zones Tapi District Costal area come Zone B (vb=39m/s)



Disclaimer: This map was collated based on the data/information compiled by the Ministry of Urban Development and Poverty Alleviation. UNDP has not verified the accuracy of information of the Map. Source: BMTFC, India

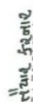
Surat District

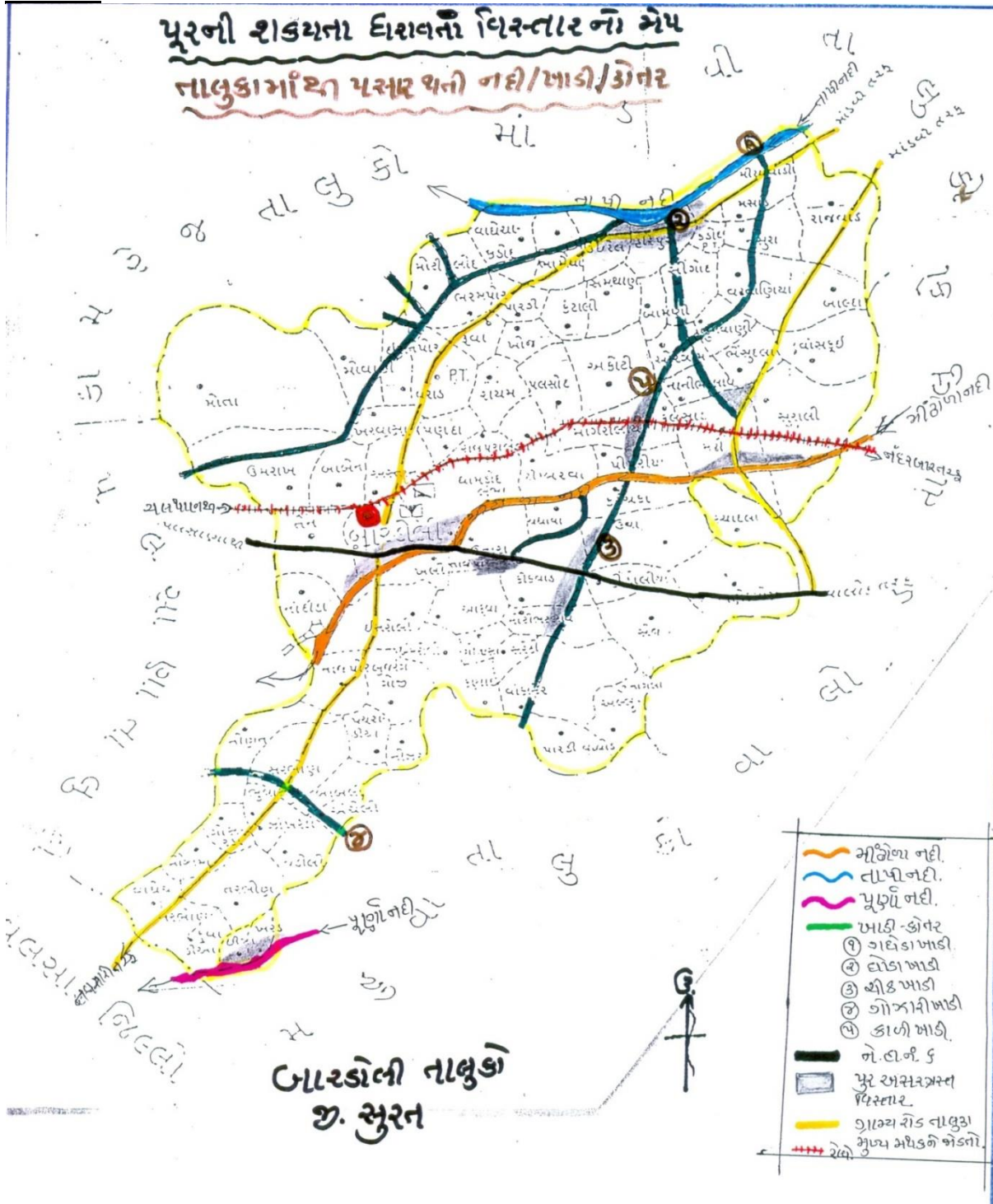
16.1 Khadi of Olpad Taluka:



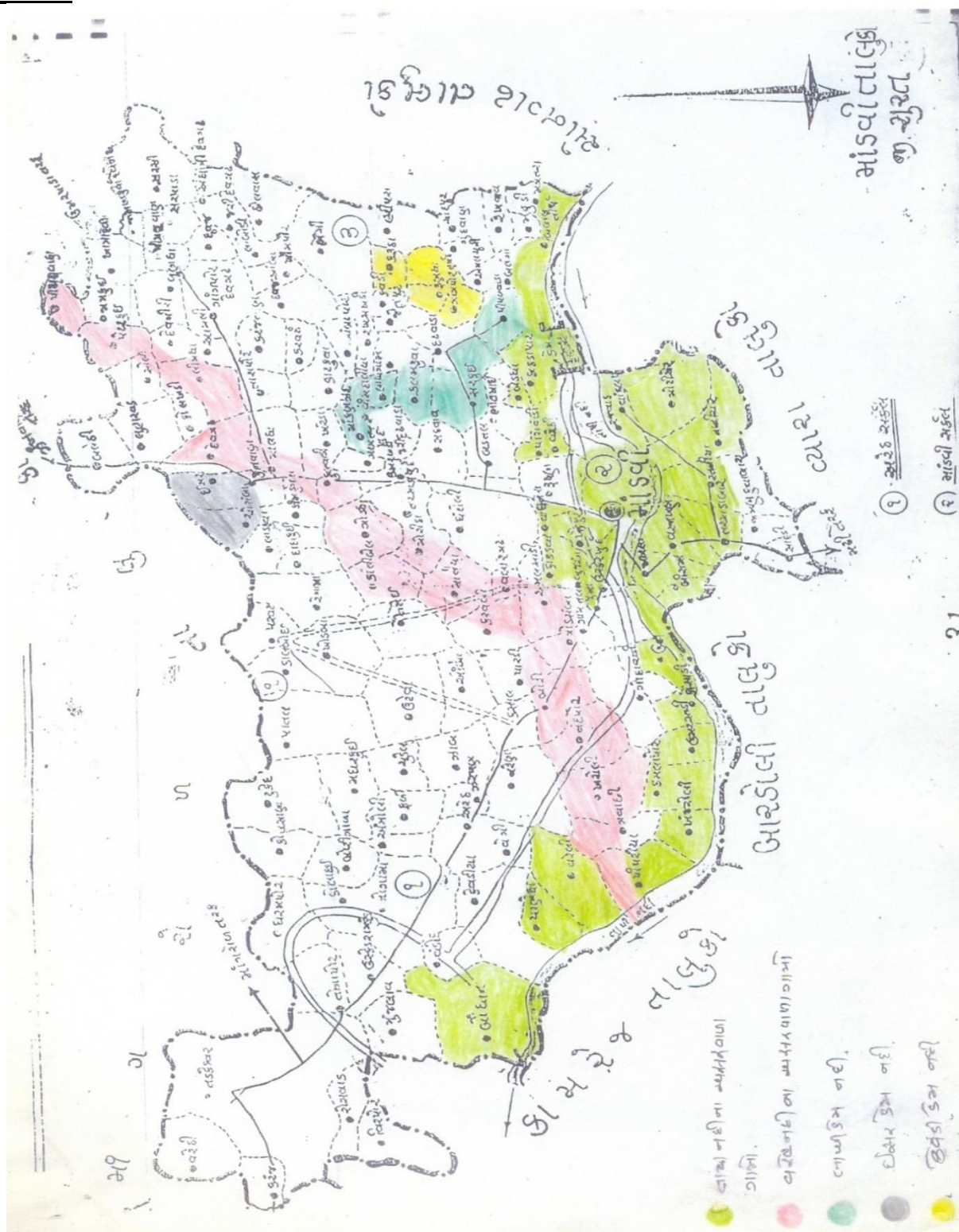
16.2 Tapi Affected Villages of Olpad Taluka:

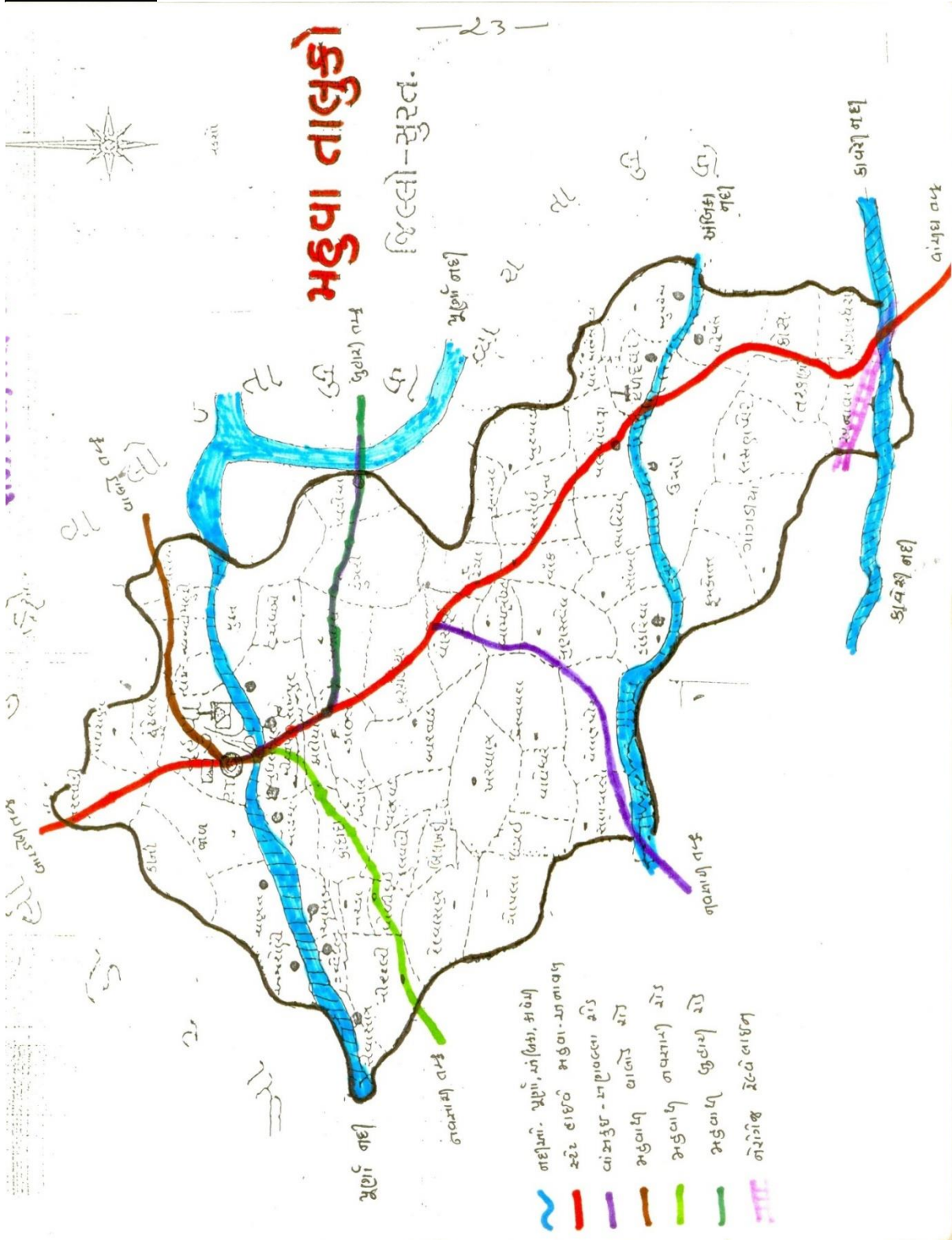




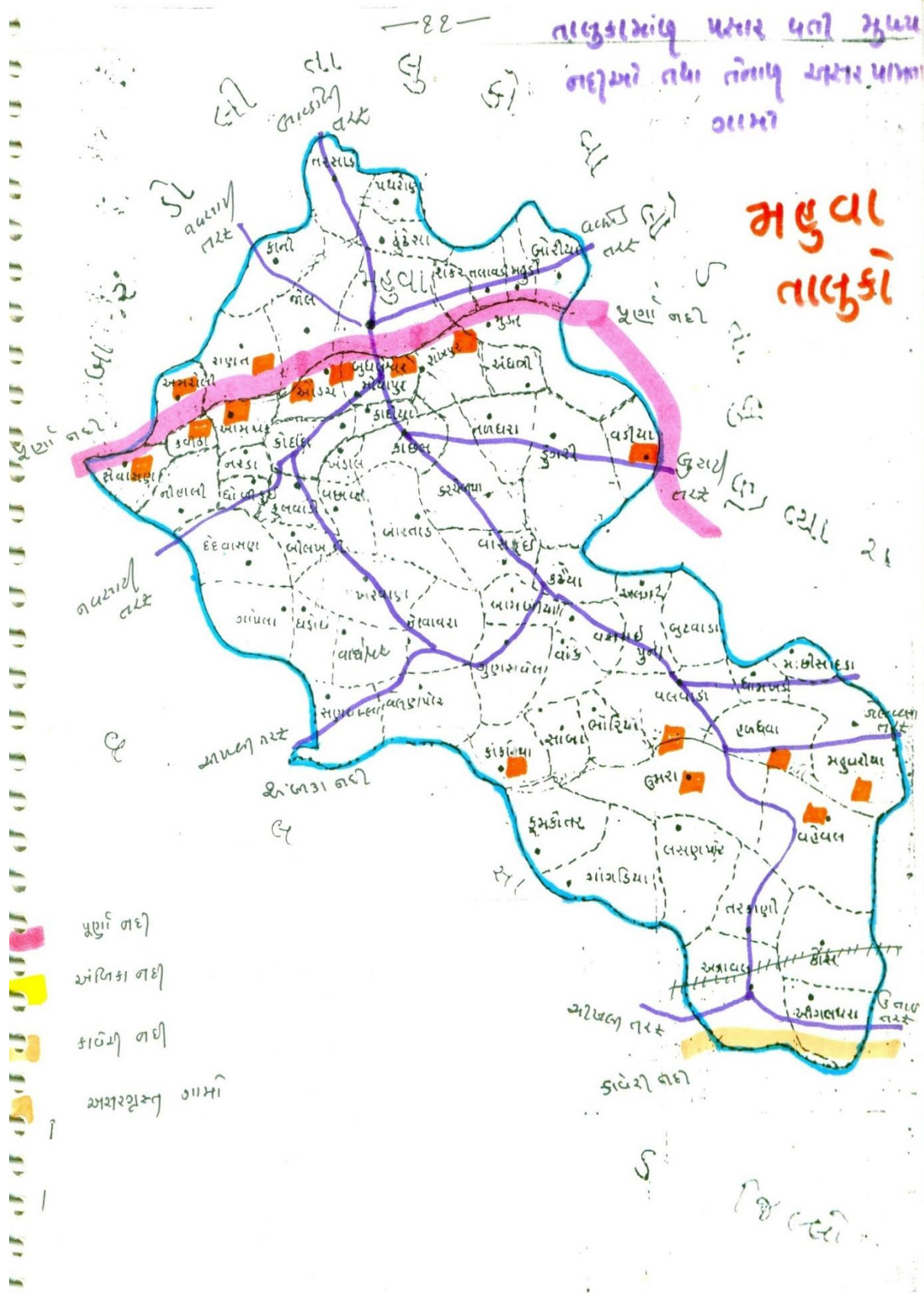


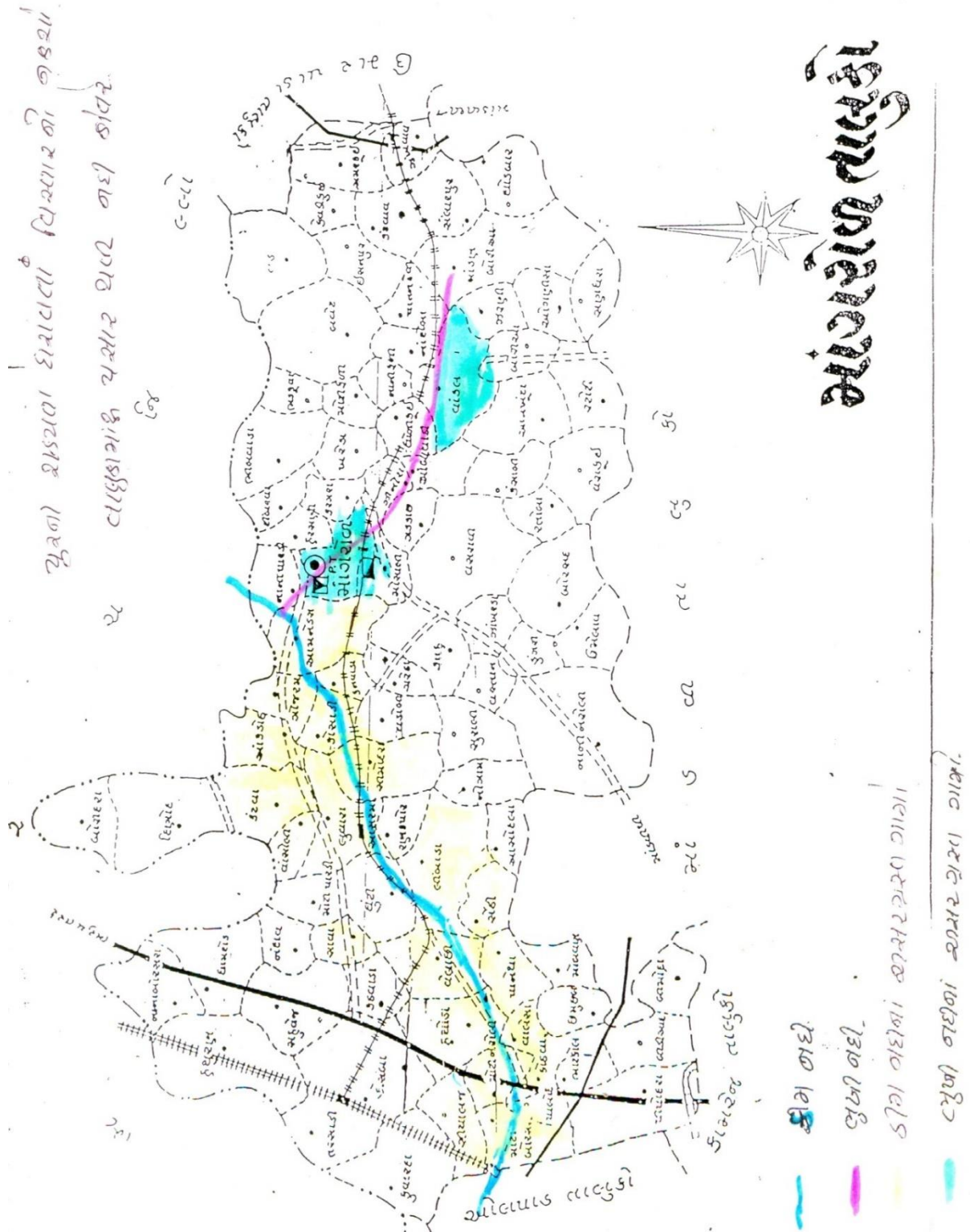
Mandvi





महुवा
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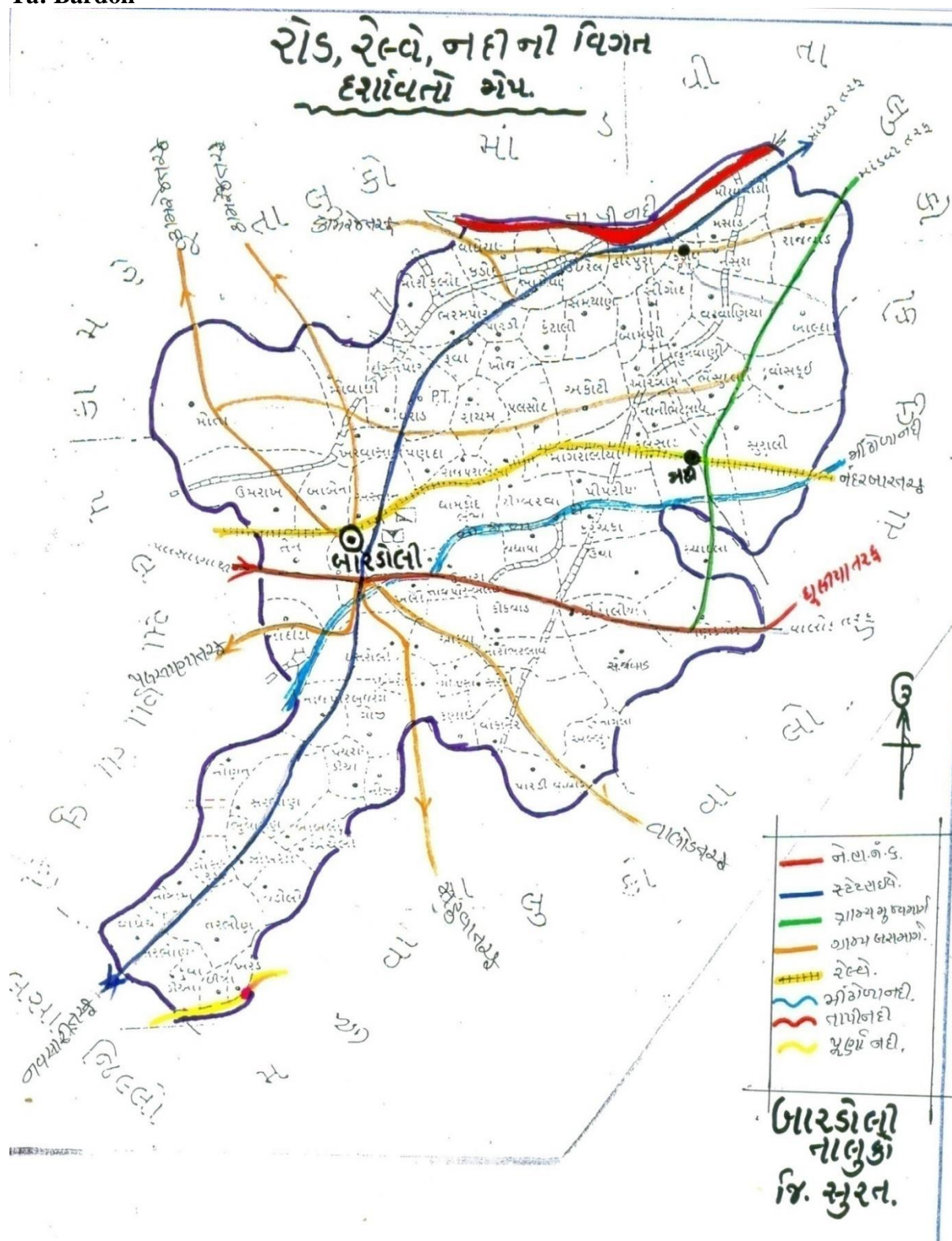




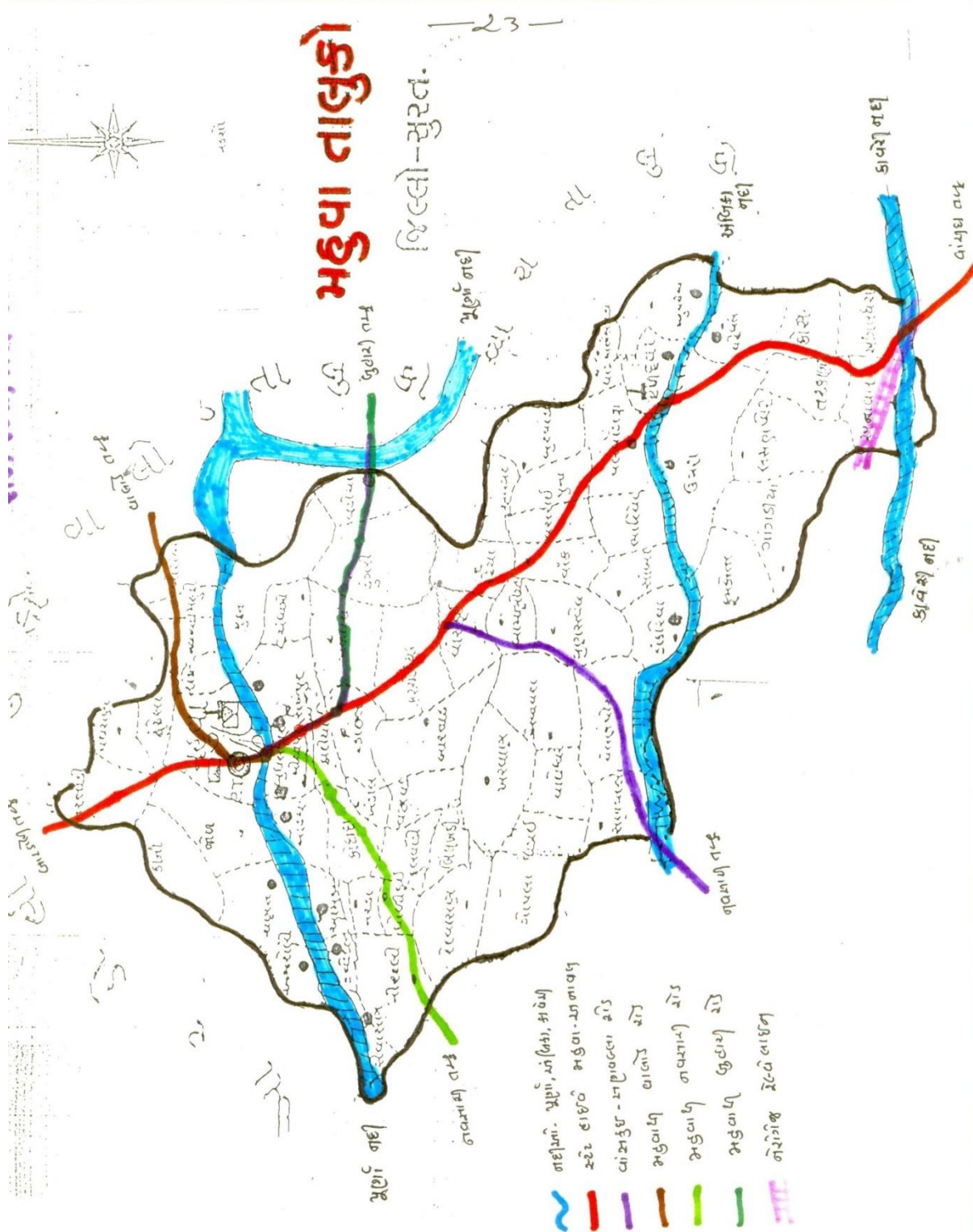
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Ta: Bardoli

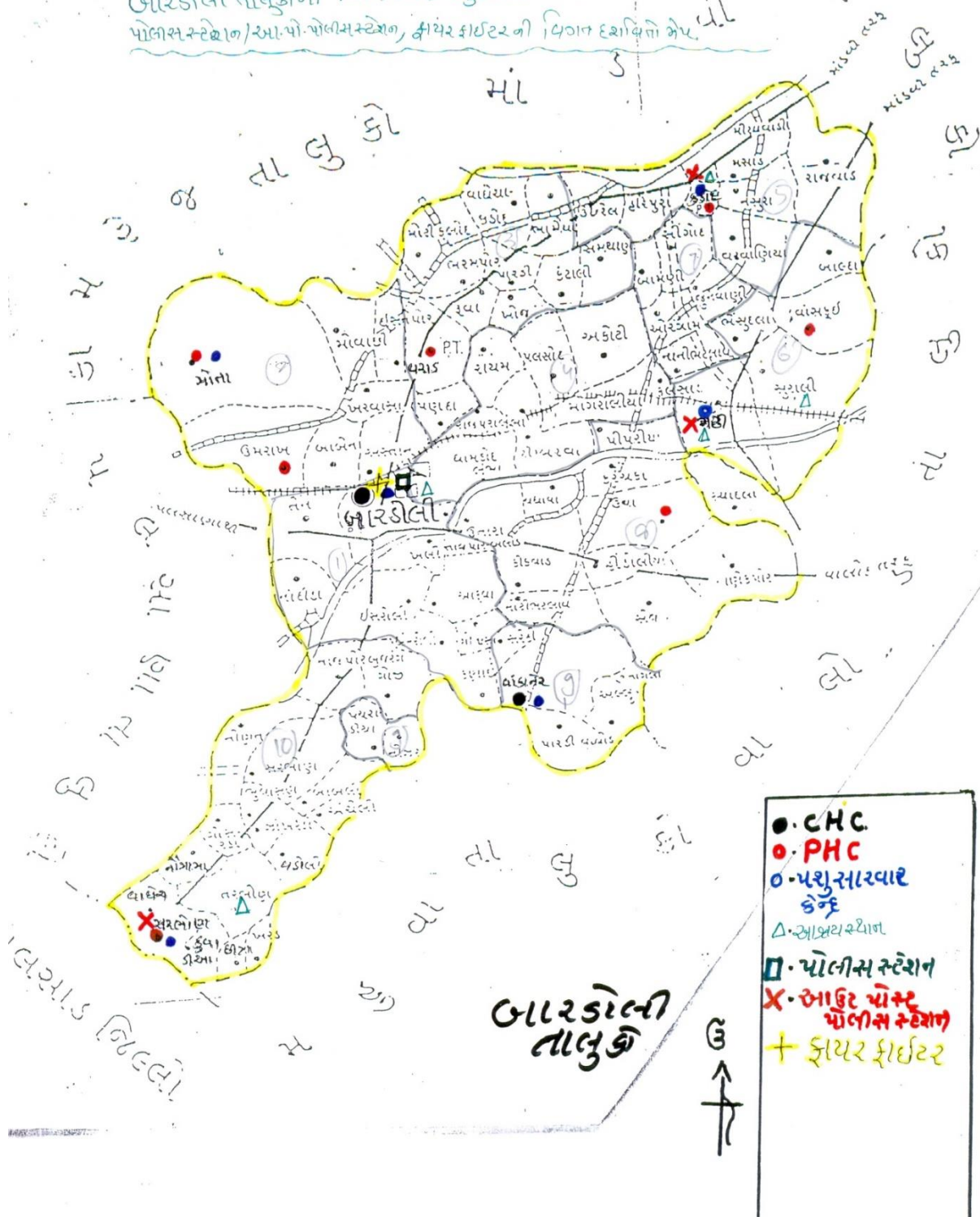


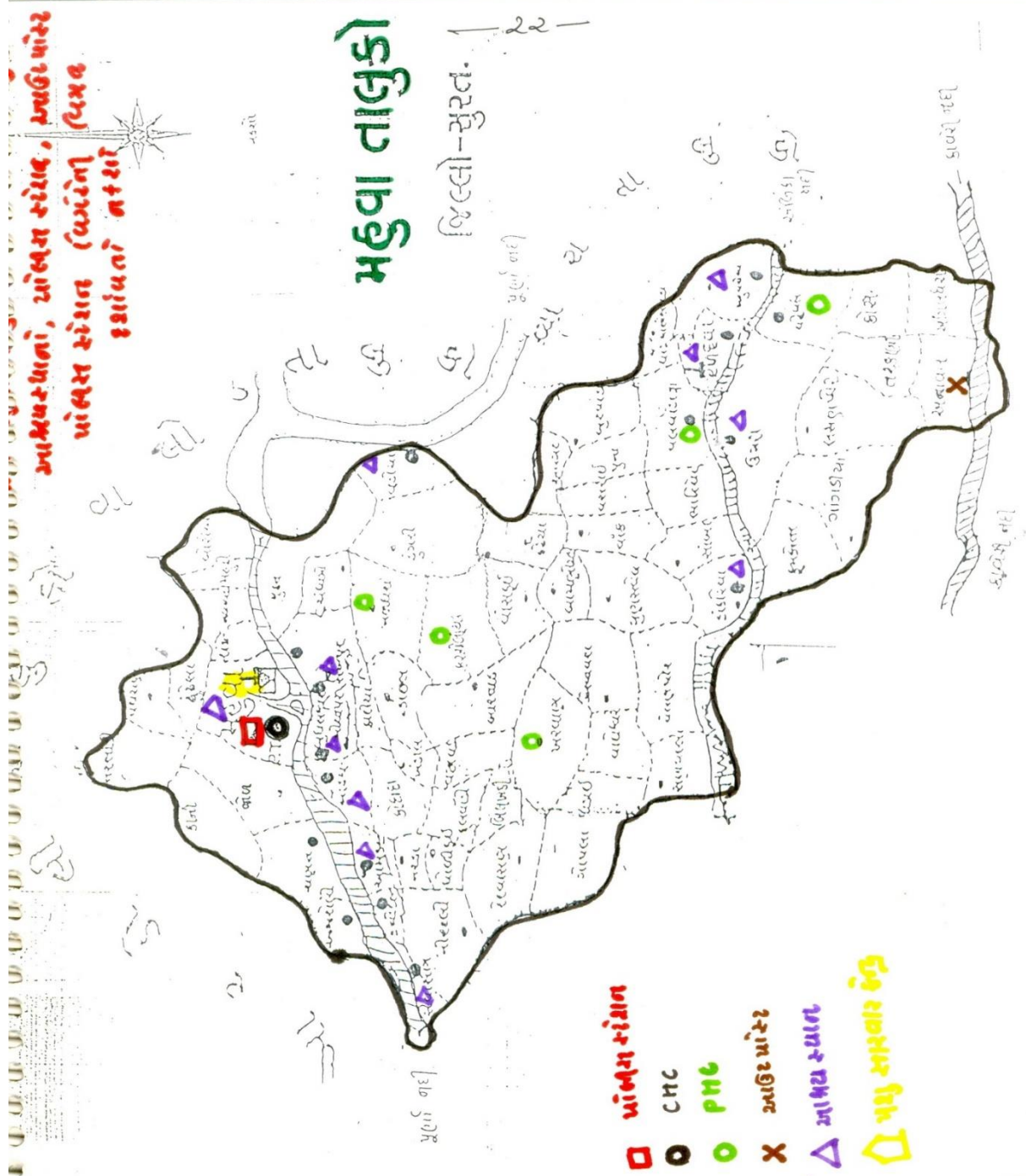
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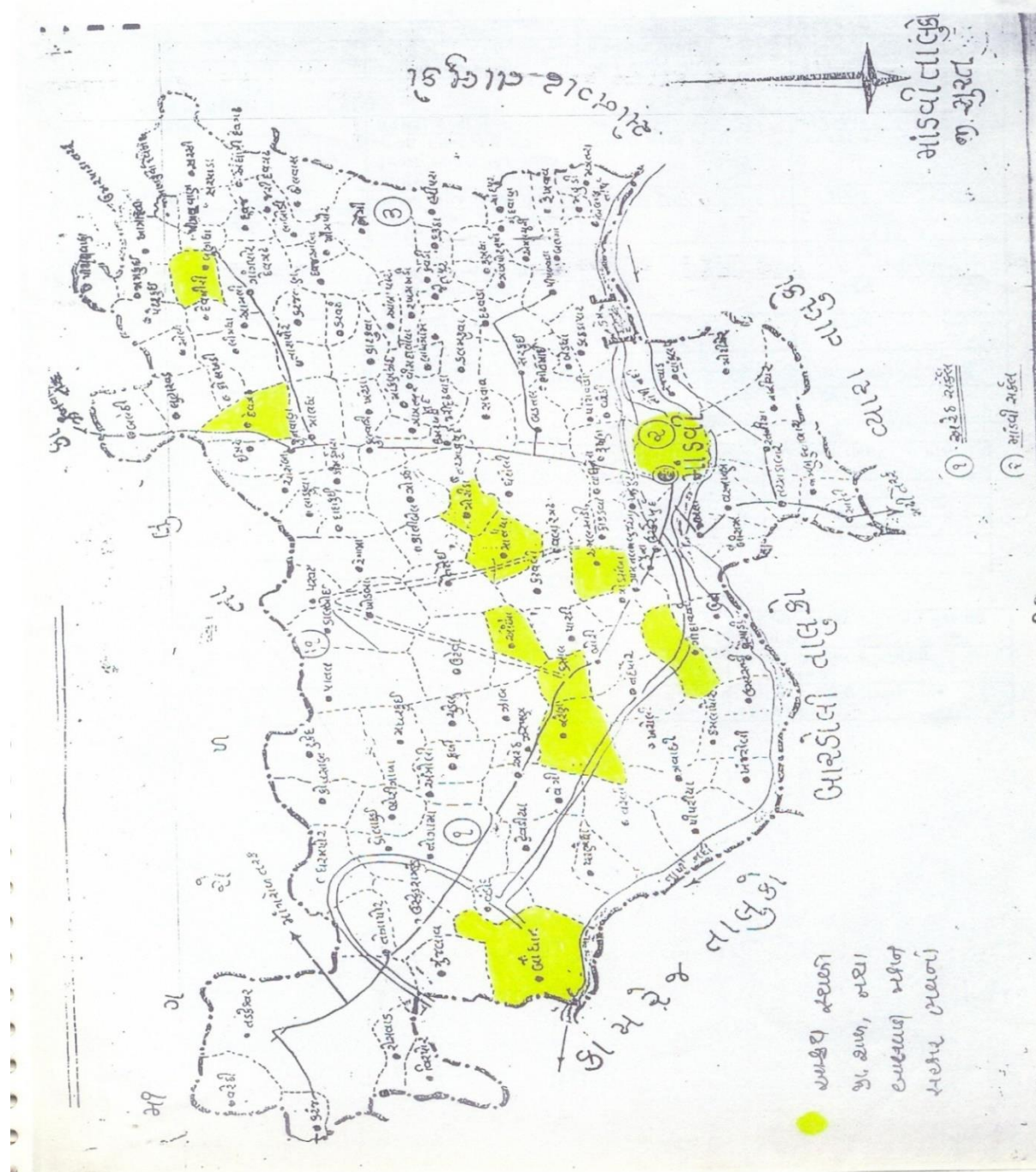
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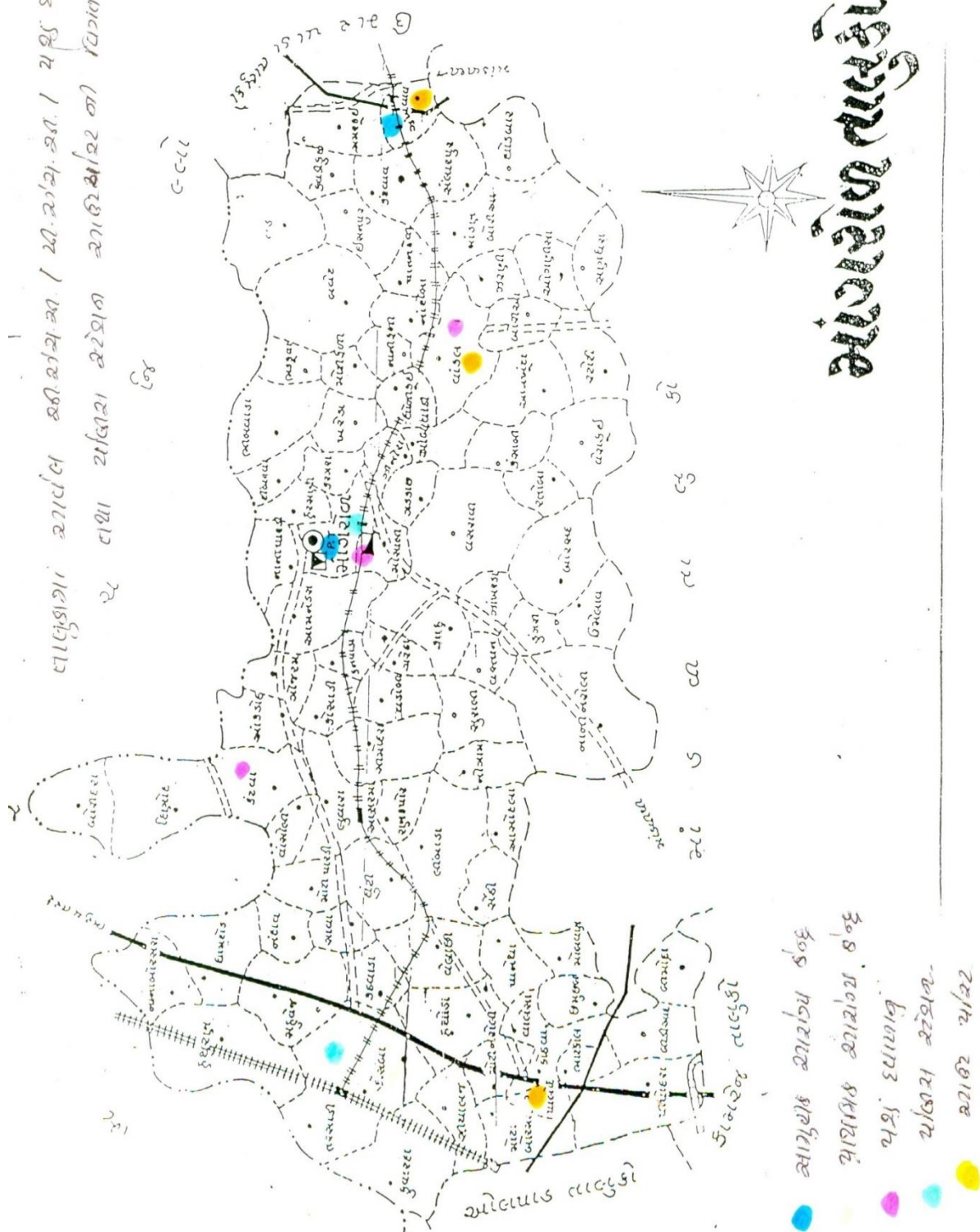
ઊરડોની તાલુકાનાં PHC, CHC, પશુ દવાખાના, જનસંકર સંમયનાં આશ્રય સ્થળો તથા પોલીસ સ્ટેશન/આ.પો.પોલીસ સ્ટેશન, કાયદર કાઉન્સિલની વિગત દર્શાવિતો એપેન્ડિક્સ.

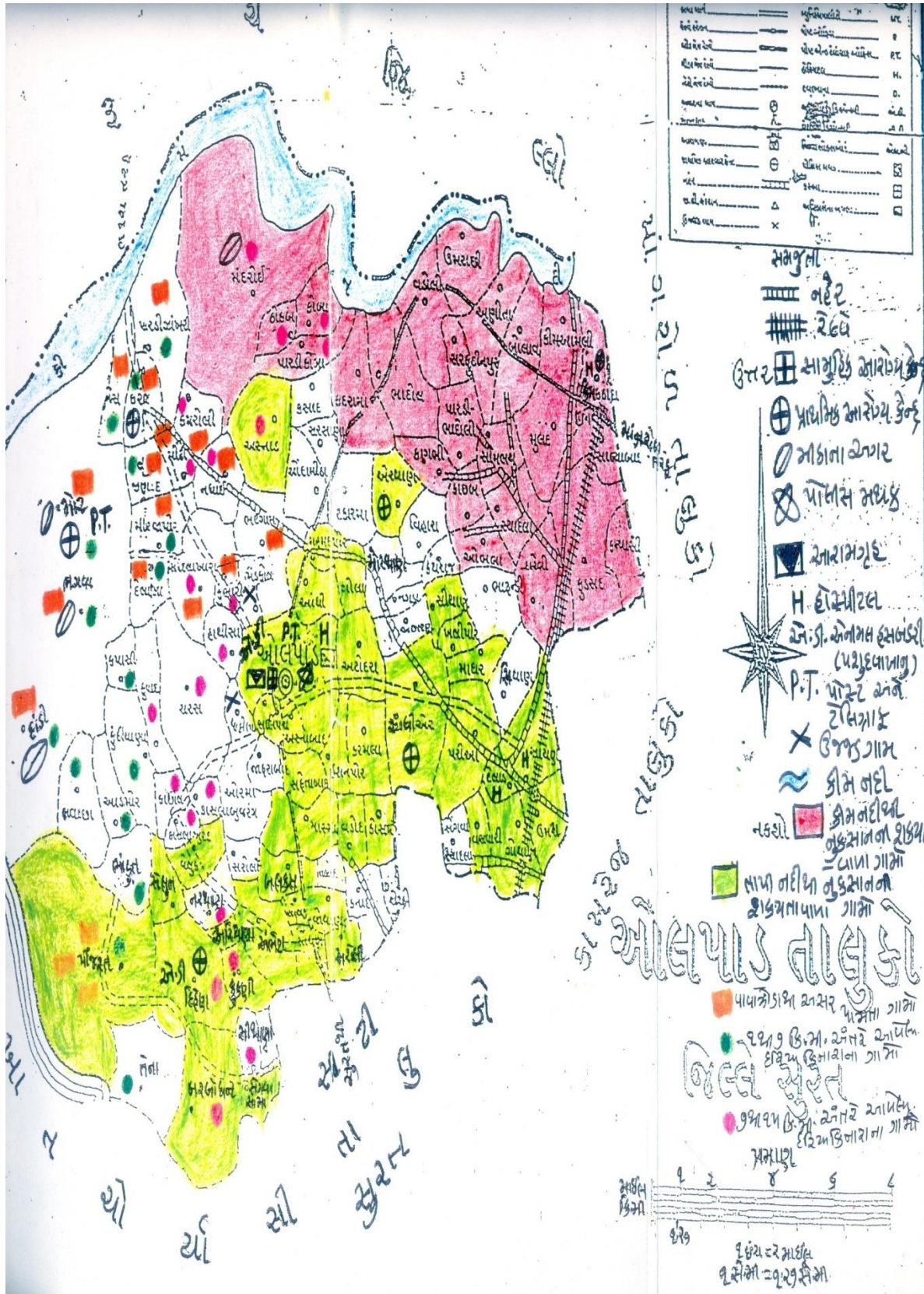




Mandvi- Affected Villages-Dam-Rivers







16.4 Tapi Basin

