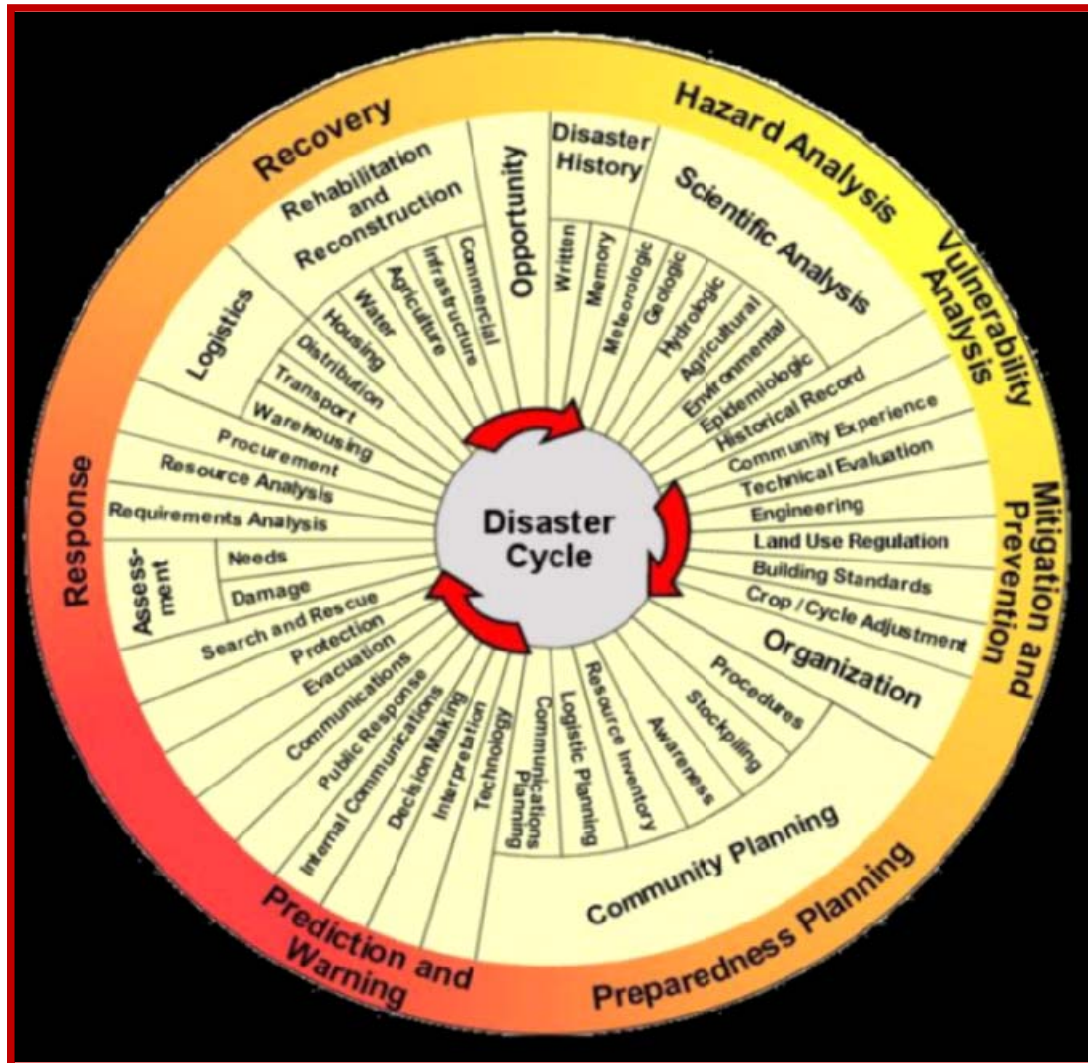




District Disaster Management Plan-2024 Bhavnagar



District Disaster Management Authority
Bhavnagar

Foreword



"Disasters can not be totally prevented but their impact can be reduced by proper preparedness"

Bhavnagar has faced multitude of Disasters like; Flood, Cyclone, Earthquake, Lightening, Fire and Industrial Accident. Experience has shown that pre-planned and practiced procedures for handling an emergency can considerably reduce loss of life and minimize damage too.

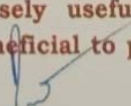
Gujarat State Disaster Management Authority and Collector Office Bhavnagar are preparing the communities and Government Officials from grass root level to top level for securing quick response mechanism right from bottom to top level through various projects regarding Disaster Risk Reduction.

NDMA's guiding principles for the preparation of the Plan at district level has been to draft the Plan in a participatory approach with the preparatory process essentially strengthening the communities, elected local bodies and administration's response and preparedness.

The Role of each agency in the event of an emergency is specified. Needless to say that the success of disaster management depends upon the co-ordination and effective performance of the duties assigned to each and every agency.

The multi-hazard District Disaster Management plan of Bhavnagar is divided in two Parts. Part-1 is a comprehensive document covering all possible hazards, with a systematic analysis of risk and vulnerability, element at risk and level of impact through scientific method and experience. Part-2 is all about informative details of the district.

Hope the updated DDMP 2024 shall be immensely useful to all departments and agencies and shall prove to be beneficial to public at large.


R.K.Mehta IAS
Collector & District Magistrate
Bhavnagar

Preface




Disaster risk reduction must be an everyday concern for everybody. Due to natural and man made disasters; people are being tested time to time. As on today, it is observed that people of Gujarat are strong and bold to counteract disasters confidently. Technology is developed to work with such disasters.

Bhavnagar district is vulnerable towards multiple types of disasters. So, It is very necessary to be prepared for and respond in a timely manner to it.

Gujarat State Disaster Management Authority and Collector Office Bhavnagar prepare the communities and Government Officials from grass root level to top level for securing quick response mechanism under the Disaster Risk Management Programme. There are four DRM Components; These are Capacity Building, Awareness Generation, Mock drill and Plan Preparation. There are some other programmes like; Gujarat School Safety Programme and Apadamitra project headed by GSDMA for preparing community.

I am elated by this Bhavnagar District Disaster Management Plan as it has been developed in a consultative manner with constant inputs and feedbacks from all the stakeholders. This Plan has moved beyond the reactive relief based approach and has a concise plan of actions for different stakeholders at District level for disaster risk reduction, emergency response and recovery.

This District Disaster Management plan is a necessary document for reducing risks due to hazards and vulnerability; I hope this great document would be really helpful for protecting life and properties as well as sustainable development in the future.


N.D. Govani GAS
Additional District Magistrate
Bhavnagar

LIST OF ABBREVIATION/ACRONYMS

GSDMA:	GUJARAT STATE DISASTER MANAGEMENT AUTHORITY
DCO:	DISTRICT COLLECTOR OFFICE
DCR:	DISTRICT CONTROL ROOM
EOC:	EMERGENCY OPERATION CENTER
BMC:	BHAVNAGAR MUNICIPAL CORPORATION
DC:	DISTRICT COLLECTOR
DDO:	DISTRICT DEVELOPMENT OFFICER
MC:	MUNICIPAL COMMISSIONER
DSP:	DISTRICT SUPRITENDENT OF POLICE
RAC:	RESIDENSIAL ADDITIONAL COLLECTOR
DRMP:	DISASTER RISK MANAGEMENT PROGRAMME
CBDM:	COMMUNITY BASED DISASTER MANAGEMENT
CBDP:	COMMUNITY BASED DISASTER PREPAREDNESS
IDRN:	INDIA DISASTER RESOURCE NETWORK
SDRN:	STATE DISASTER RESOURCE NETWORK
DDMP:	DISTRICT DISASTER MANAGEMENT PLAN
DDMC:	DISTRICT DISASTER MANAGEMENT COMMITTEE
CDMP:	CITY DISASTER MANAGEMENT PLAN
CDMC:	CITY DISASTER MANAGEMENT COMMITTEE
TDMP:	TALUKA DISASTER MANAGEMENT PLAN
TDMC	TALUKA DISASTER MANAGEMENT COMMITTEE
VDMP:	VILLAGE DISASTER MANAGEMENT PLAN
VDMC:	VILLAGE DISASTER MANAGEMENT COMMITTEE
SDMP:	SCHOOL DISASTER MANAGEMENT PLAN
IEC:	INFOR MATION EDUCATION COMMUNICATION
ICS:	INCIDENT COMMAND SYSTEM
SOP:	STANDARD OPERATING PROCEDURE
CMG:	CRISIS MANAGEMENT GROUP
NAC:	NOTIFIED AREA COUNCIL
NCC:	NATIONAL CADET CORPS
NSS:	NATIONAL SERVICE SCHEME

NGOS: NON GOVERNMENTAL ORGANIZATION
ULB: URBAN LOCAL BODIES
UEVRP: URBAN EARTHQUAKE VULNERABILITY REDUCTION PROGRAM
AC: AREA COMMANDER
ESF: EMERGENCY SUPPORT STAFF
GSU: GROUND SUPPORT UNIT
IAP: INCIDENT ACTION PLAN
ISS: INCIDENT STATUS SUMMARY
UC: UNMIFIED COMMANDER
TUL: TIME UNIT LEADER
SUL: SITUATION UNIT LEADER
TS: TECHNICAL SPECIALIST
TB: TRANSPORTATION BRANCH
RO: RESPONSIBLE OFFICER
LO: LIAISON OFFICER
NO: NODAL OFFICER
IRS: INCIDENT RESPONSE SYSTEM
IRTS: INCIDENT RESPONSE TEAM
IC: INCIDENT COMMANDER
ICP: INCIDENT COMMAND POST
ICS: INCIDENT COMMAND SYSTEM
LS: LOGISTIC SECTION
LSC: LOGISTIC SECTION CHIEF
OS: OPERATION SECTION
OSC: OPERATION SECTION CHIEF
PS: PLANNING SECTION
PSC: PLANNING SECTION CHIEF
GSSP: GUJARAT SCHOOL SAFETY PROGRAMME
NCRMP: NATIONAL CYCLONE RISK MITIGATION PROGRAMME

Part-1			
Chapter	Sr. No	Description	Page No.
1	1	Introduction	
	1.1	What is disaster?	
	1.2	Aims and Objectives	
	1.3	Evolution of the plan	
	1.4	How to use the plan	
	1.5	Authority for the plan	
	1.6	Stakeholders and their responsibilities	
	1.7	Approval of the plan	
	1.8	Plan review and updation	
	1.9	Sendai Framework of Actions for Disaster Risk Reduction 2015-2030	
	1.10	Sustainable Developmental Goals	
	1.11	Paris Agreement on Climate Change Action and Disaster Risk Reduction (CoP 21)	
	1.12	Prime Minister's 10 Point Agenda towards Disaster Risk Reduction	
2	2	Hazard Vulnerability and Risk Assessment	
	2.1	Hazard Risk Vulnerability Assessment – Authority that carried out HRVA	
	2.2	Tool and methodology used for HRVA	
	2.3	List of Hazards with probability	
	2.4	List of Vulnerable Talukas and villages (Hazard wise)	
	2.5	Resource Analyses	
	2.6	Capacity Analyses	
	2.7	Outcome and recommendations of the Hazard, Risk, Vulnerability and capacity analysis	
3	3	Institutional Arrangements	
	3.1	D.M.organizational structure in the State	
	3.2	D.M.organizational structure in the District	
	3.3	District Crisis Management Group (Task Force)	
	3.4	District Disaster Management Committee (DDMC)	
	3.5	Insident Response System in the District	
	3.6	EOC setup and facilities available with the location	
	3.7	Alternate EOC if available and its location	
	3.8	Public and private emergency service facilities available in the district	
	3.9	Forecasting and warning agencies	

4	4	Prevention and Mitigation Measures	
	4.1	Prevention measures in development plans and programs	
	4.2	Special project proposed for preventing the disasters	
	4.3	Hazard wise structural & non-structural mitigation measures Summary of mitigation measures	
	4.4	Specific projects for vulnerable group	
5	5	Preparedness Measures	
	5.1	Identification of stakeholders involved in disaster response	
	5.2	Formation of persons and training for-	
		(A) Search & Rescue	
		(B) Early warning	
		(C) Evacuation	
		(D) Damage and Loss Assessment	
	5.3	Training need analyses	
	5.4	Arrangements for training and capacity building	
	5.5	Activation of Incident Response System in the district	
	5.6	Protocol from seeking help from other agencies	
	5.7	Checking and certification of logistics, equipments and stores	
	5.8	Operational check-up for warning system	
	5.9	Operational check-up for Emergency Operation Centre	
	5.10	Seasonal inspection for facilities and critical infrastructure	
	5.11	Command and coordination- identification of quick response teams	
	5.12	NGOs and other stakeholders coordination	
	5.13	Seasonal preparedness for seasonal disasters	
	5.14	Community awareness, education and preparedness	
	5.15	Community warning system	
	5.16	Procurement for Various Resources	
	5.17	IDRN/SDRN updation	
	5.18	Protocol and arrangements for VIP visits	
	5.19	Media management / information dissemination	
	5.20	Documentation	

6	6	Response Measures (Multi-Hazard)	
	6.1	Response flow chart	
	6.2	Warning and alert dissemination	
	6.3	District CMG meeting	
	6.4	Activation of EOC	
	6.5	Response planning, preparedness and assumption- Quil assessment of damages and need	
	6.6	Warning dissemination	
	6.7	Resource mobilization	
	6.8	Seeking external help for assistance	
	6.9	First assessment report	
	6.10	Media management/ Coordination/ Information dissemination	
	6.11	Emergency Response Functions	
	6.12	Humanitarian Relief and assistance	
	6.13	Reporting	
	6.14	Information management	
	(A) Situation reports		
	(B) Media release		
6.15	Demobilization and winding up		
7	7	Recovery measures	
	7.1	General policy guidelines	
	7.2	Detailed damage and loss assessment	
	7.3	Long-term recovery programme	
	7.4	Short-term and long-term recovery time table	
8	8	Financial Arrangements	
	8.1	Financial resources for implementation of plan	
		(A) National and state disaster response fund	
		(B) National and state disaster mitigation fund	
		(C) State budget	
		(D) Centrally sponsored schemes	
		(E) District planning fund	
		(F) Disaster insurance	
	(G) Micro financing		
9	9	Maintenance of plan	
	9.1	Schedule for updation of plan	
	9.2	Schedule for revision of plan	
	9.3	Schedule for mock drills	

10	10	Incident Response System	
	10.1	Operation Section	
	10.2	Planning Section	
	10.3	Logistic Section	
	10.4	Roles and Responsibilities of Different Key Departments or Officers	
	10.5	Bhavnagar District and Taluka level IRT	
	10.6	Action Plan in various Disasters	
11	11	Template for Mass Rescue Operation (MRO) at Sea	
12	12	Miscellaneous	
	12.1	Evacuation plan	
	12.2	Shelter management plan	
	12.3	Medical and hospital management plan	
	12.4	Media management plan	
	12.5	Disaster zonation	
	12.6	Projects for prevention of disasters	

Part-2

Annexures		
Annexure – 1	Bhavnagar District Profile	
Annexure – 2	Disaster History of District	
Annexure – 3	Details of Public Gathering Places	
Annexure – 4	Details of Public Fairs	
Annexure – 5	Rainfall Data of last 10 Years	
Annexure – 6	Dam Details of District	
Annexure – 7	List of Dam Affected Villages	
Annexure – 8	List of Coastal Villages	
Annexure – 9	List of Water Logging Villages	
Annexure – 10	List of River Affected Villages	
Annexure – 11	Government Health Facilities	
Annexure – 12	Private Health Facilities	
Annexure – 13	List of Blood Bank	
Annexure – 14	List of Ambulance	
Annexure – 15	List of NGOs/CBOs/CSOs/YOs/VOs	
Annexure – 16	List of Gaushala/Panjarapol	
Annexure – 17	List of Community Hall	
Annexure – 18	List of Ham Radio Operator	
Annexure – 19	List of Cable Operator	
Annexure – 20	List of Media Person	
Annexure – 21	List of Private Travels	
Annexure – 22	List of Private Transport	

Annexure – 23	List of Private Water Tenker	
Annexure – 24	List of Petrol Pump	
Annexure – 25	List of Kerrosine Diller	
Annexure – 26	List of LPG Gas Diller	
Annexure – 27	List of Rescue Equipment Suppliers	
Annexure – 28	List of Resources Available with Government	
Annexure – 29	List of Resources Available with Corporate Sector	
Annexure – 30	List of Private JCB Suppliers	
Annexure – 31	List of Private Crain Suppliers	
Annexure – 32	List of Private Gas Cutter Suppliers	
Annexure – 33	List of Private Generator Suppliers	
Annexure – 34	Contact detail of Aapda Mitra (Up Scalling Aapda Mitra)	
Annexure – 35	Contact detail of State Government Offices	
Annexure – 36	Contact details of Army, Airforce, Coast Gaurd, NDRF, SDRF	
Annexure – 37	Contact details of Elected Members	
Annexure – 38	Contact details of Collector office	
Annexure – 39	Contact details of District Panchayat	
Annexure – 40	Contact details of DSP Office	
Annexure – 41	Contact details of BMC	
Annexure – 42	Contact details of Other offices	
Annexure – 43	Contact details of All SDM	
Annexure – 44	Contact details of All Mamlatdar	
Annexure – 45	Contact details of All TDO	
Annexure – 46	Contact details of All Chief Officer	
Annexure – 47	Contact details of All Fire Station	
Annexure – 48	Contact details of All Police Station	
Annexure – 49	Contact details of All Vetarnary Hospital	
Annexure - 50	Important Tollfree Numbers	
DOs And DONTs		
1	DOs and DONTs in various Disasters	
1.1	Cyclone	
1.2	Earthquake	
1.3	Flood	
1.4	Tsunami	
1.5	Fire	
Maps		
1	Hazard Maps	
1.1	Gujarat Cyclone Hazard Map	
1.2	Gujarat Earthquake Hazard Map	
1.3	Gujarat Flood Hazard Map	
1.4	Gujarat Tsunami Hazard Map	
1.5	Gujarat Multy Hazard Map	
2	Bhavnagar District Map	

Part-1

CHAPTER – 1

Introduction:

What is Disaster?-

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

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.

Concept of Disaster Management-

Disaster Management is a continuous and integrated process of:

- Planning and implementing measures to mitigating or reducing the risk of disasters
- Mitigating the severity or consequence of disaster
- Preparedness for emergencies and disasters
- Assessing the effects of disasters
- Providing emergency relief and rescue and post disaster rehabilitation and reconstruction, and
- Building capacities to these ends.

The concepts of all hazard management and empowerment provide the foundation for disaster management plans and efforts. All hazards management involves considering, planning for, and taking actions to avoid or mitigate, all possible hazards, which may affect the district.

Empowerment means that each citizen is enabled, through education, training and support, to be able to address all hazards and disasters, which may threaten their lives or livelihoods. Empowerment does not transfer full responsibility for dealing with disasters to the individual, but strives to ensure each individual has the means and support needed to avoid or limit the impact of disaster.

The district and subsidiary plans seek to limit vulnerability and reinforce the resilience of communities in the face of hazards and disasters. Addressing vulnerability generally takes place before a disaster through actions to reduce the opportunities for the disasters to occur. Reinforcing the resilience occurs through actions to reduce the scale or potential impact of a disaster, and building capacities and systems that facilitates (shorten and make less costly) the recovery process.

Levels of Disaster (**The L Concept**)

The L concept has been developed to define the different levels of disaster in order to facilitate the assistance to State and the Centre. It has four levels which are as follows.

L0 level: Denotes normal times, which will be utilized for close monitoring, documentation and preparatory activities. Training of Search and Rescue teams, rehearsals, evaluation and inventory updation for response activities will be carried out during this period.

L1 level: Denotes when the disasters which can be managed at the District level where the State and the Centre need to be on guard in case assistance is required for disaster relief operations.

L2 level: Disaster situations that require assistance and active participation of State resources for management of the disaster.

L3 level : Disaster situation arises in case of large scale disasters that have a noticeable impact on a number of districts of states and when the State and District authorities have been overwhelmed with the disaster and require assistance from the Centre for rescue and relief operations.

Approach to Disaster Management-

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

- Warning, Relief and recovery, focusing on plans and actions necessary to reduce the impact of quick-onset disasters or speed the response of slow- onset disaster, and,
- Mitigation, Preparedness and Prevention, focusing on plans and action to avoid or eliminate the causes or impacts of hazards or threatened disasters.

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

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

Approach to Disaster Management:-

1 Warning, Relief and Recovery

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

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

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

2 Mitigation, Preparedness and Prevention

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

- Long term planning for mitigation, preparedness and prevention investments in the district,
- Enforcement of regulations, particularly building and safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,

- Capacity building including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

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

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.

3 Finance

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

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

Aims and Objectives-

In the absence of a defined plan response to a disaster would be arbitrary leading to over emphasis of some actions or other actions, which would be critical. Moreover, due to absence of a defined response structure and responsibilities allocations there would be mismanagement of resources and overlap of actions among various agencies, which may exacerbate the situation there by compounding the disaster effect.

The objectives of the disaster management plan for the Bhavnagar District should be listed covering the subject of responsibility of the District administration.

- To ascertain the status of existing resources and facilities available with the various agencies involved in the management of disaster in the District.
- Assess their adequacies and short falls if any in providing a multi- disaster response.
- Suggest institutional strengthening, technology support, up gradation of information system and data management for improving the quality of administrative responses to disaster at the district level and finally
- To evolve DDMP as an effective managerial tool.
- Defines the risks and Vulnerabilities of the citizens of the district to different disasters and Identifies the private and public sector parties with prime and supporting responsibilities to reduce or negate these vulnerabilities.
- Defines actions to be taken by these parties to avoid or mitigate the impact of possible disasters in the district.
- To prevent loss of human lives and property and effective medical response

Subsidiary plan detail the roles and responsibilities of most important and at the bottom of parties (Stake holders) in responding to definite disasters. These plans are developed

- At the Taluka level
- For location specific major industrial sites located in the district and,
- Through Standard Operation Procedures (SOPs) detailing how specific disaster response actions will be accomplished.

Developing and maintaining SOPs are the responsibility of parties with designated prime of supporting tasks assigned by this plan.

Evolution of the Plan-

Gujarat Act No. 20 of 2003, THE GUJARAT STATE DISASTER MANAGEMENT ACT, 2003 clearly stated to mandatory provision of the DM 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

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.

Authority for the plan-

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

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

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.

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

Citizen

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.

Approval of the plan-

The District Collector has authority to give approval to DM plan when there are any significant changes in that then it will have to be incorporated by the District Collector / District Emergency Operation Centre.

The DM Act authorizes the District Collector to secure cooperation and assistance from other parties in efforts to avoid or reduce the impact of disasters. The Collector (Specifically) and Government authorities (generally) are responsible for managing hazards and disasters which affect a district, with support from GSDMA, the relief commissioner and other public and private parties as may be needed. The roles, responsibilities and obligations of the Collector and other parties are set out in detail in the Act and are considered as part of this plan.

Plan Review and Updation-

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

- When significant changes in the nature of any hazards
- Lessons learnt following any major disaster or
- When there is any significant change to organization or responsibility of primary members of the task forces defined in the plan.

Sendai Framework of Actions for Disaster Risk Reduction 2015-2030

The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) was adopted at the Third United Nations World Conference on Disaster Risk Reduction held in Sendai, Japan in March 2015. The SFDRR is document which outlines 4 priorities for action to achieve 7 targets, which in turn would lead to one outcome that is- substantial reduction of disaster risk and losses in lives, livelihoods, health, economy of persons, businesses, communities and countries. India is a signatory to the Sendai Framework for a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk, but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders.

The Four priorities of actions are:

1. Understanding Disaster Risk
2. Strengthening Disaster Risk Governance to Manage Disaster Risk
3. Investing in Disaster Risk Reduction for Resilience
4. Enhancing Disaster Preparedness for Effective Response and to "Build Back Better Recovery, Rehabilitation and Reconstruction

The seven global targets are:

1. Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015
2. Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020-2030 compared to the period 2005-2015
3. Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030
4. Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030
5. Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020

6. Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030
7. Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030

Sustainable Developmental Goals

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in September 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The 17 SDGs are integrated—that is, they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth all while tackling climate change and working to preserve our oceans and forests. In order to make the 2030 Agenda a reality, broad ownership of the SDGs must translate into a strong commitment by all stakeholders to implement the global goals.

Paris Agreement on Climate Change Action and Disaster Risk Reduction (CoP 21)

The CoP 21 or the Paris Climate Conference held in December, 2015 led to a new international climate agreement, applicable to all countries, aiming at "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change" The Paris Agreement recognized the need, loss and damage associated with the effects of climate change. The agreement identified areas of cooperation central to DRR and called for investments to address the underlying risk drivers associated with rising green house gas (GHG) emission levels and to inspire innovation and low-carbon growth.

Prime Minister's 10 Point Agenda towards Disaster Risk Reduction

The Prime Minister, India, listed a Ten Point Agenda in his inaugural speech at the Asian Ministerial Conference on Disaster Risk Reduction 2016, held in New Delhi in November 2016 (AMCDRR), which has also been incorporated in the DMP. The ten key elements consist of the following:

1. All development sectors to imbibe principles of Disaster Risk Management.
2. Work towards risk coverage for all-starting from poor households to small and medium enterprises to multi-national corporations to nation states.
3. Encourage greater involvement and leadership of women in disaster risk management.
4. Invest in risk mapping globally related to hazards such as earthquakes based on widely accepted standards and parameters.
5. Leverage technology to enhance the efficiency of disaster risk management efforts.
6. Develop a network of universities to work on disaster issues.
7. Utilise the opportunities provided by social media and mobile technologies.
8. Build on local capacity and initiative. Response agencies need to interact with the communities and make them familiar with the essential drill of disaster response.
9. Ensuring that disaster learning is well documented.
10. Bring about greater cohesion in international response to disasters.

CHAPTER – 2

Hazard Vulnerability and Risk Assessment:

‘Hazard Risk Vulnerability Assessment- (Authority that carried out HRVA)

Bhavnagar faces a number of hazards, which pose the threat of disaster, the threat (risk) and possible impact (vulnerability) which can be actualized from these hazards ranges from minor impacts affection one village to events impaction larger than the state alone.

The table below summarize the results of an analysis of hazard, risk and disaster impact in Bhavnagar. This analysis indicated that disaster planning at the Bhavnagar district level should first focus on the functional response to the High winds and Sea surge. The functional responses to these events have links to the response to floods, hail storms and dam failure. Typical responses to these disaster events also can apply to fire, industrial accidents, failure of critical infrastructure and building collapse.

Special plans exist for drought, oil spills and ship breaking. A separate plan for dealing with chemical and industrial accidents also exists and focuses on the technical procedures needed to avoid or address these hazards.

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/ Taluka	Vulnerable Population
1	2	3	4	5	6
High Wind	4	4	16 (high)	Very high damage risk zone B (50m/s.) Bhavnagar, Ghogha, Talaja and Mahuva	(4 taluka of the district are likely to be affected)
Sea Surge	4	4	16 (high)	Coastal Taluka i.e. Bhavnagar, Ghogha, Mahuva, Talaja	34 Coastal villages in 4 taluka are likely to be affected.
Drought	4	3	16 (high)	(4 Taluka) Vallabhipur, Bhavnagar,	

				Gariadhar and Umrالا	
Fire	4	3	12 (moderate)	Mostly in urban pockets and industrial areas (including rural areas)	
Industrial Accidents	3	4	12 (moderate)	In major Industries like Excel, Nirma etc.	
Oil Spill	2	5	10 (moderate)		
Earthquake	2	5	16 (high)	Zone – III : Bhavnagar	
Flood	4	4	4 (high)	May occur due to heavy rain fall, sea surge and dam failure	
Heat Wave	3	2	8 (high)		
Rail/Road Air Accidents	4	1	4 (high)		
Terrorism	1	1	1	Bhavnagar City, IOCL, along	
Failure of Critical Infrastructure	1	3	3 (Low)		
Boat Sinking	1	1	2 (Low)		
Mine Fires/ Collapse	2	1	2 (Low)		
Building Collapse	1	2	2 (Low)		
Hail Storms	1	1	1 (Low)		
Land Slides /Mud Flows	1	1	1 (Low)		
Epidemics	1	1	1 (Low)		
Animal Disease	1	1	1 (Low)		
Food Poisoning	1	1	1 (Low)		
Dam Failure	1	1	1 (Low)		
Civil Unrest	2	1	1		

List of Vulnerable Talukas and Villages (Hazard wise)

The Details of Coastal villages are as under

Sr. No.	Name of Taluka	No.of Villages
1	Mahuva	13
2	Talaja	10
3	Bhavnagar	8
4	Ghogha	3
Total:-		34

Details of water logging villages are as under

Sr. No.	Name of the Taluka	No. of Villages
1	Mahuva	5
2	Talaja	5
3	Sihor	3
4	Gariyadhar	2
5	Bhavnagar	17
6	Umrالا	4
7	Jesar	2
Total :-		38

Details of river affected villages are as under

Sr. No.	Name of the Taluka	No. of Villages
1	Mahuva	6
2	Talaja	4
3	Palitana	10
4	Gariyadhar	3
5	Vallabhipur	19
6	Bhavnagar	13
7	Ghogha	4
8	Umrالا	17
9	Jesar	4
Total :-		80

Resource Analyses-

Equipment available with District Collector Office

Sr.No.	Item Name	Number of Items
1	Portable inflatable Emergency Lighting System	2
2	Life Jacket	25
3	Life Buoy	25
4	PP Ropes 26 MM (100ft)	5
5	PP Ropes 26 MM (200ft)	3

Equipment available with BMC
(Fire & Emergency Services)

Sr.No.	Item Name	Number of Items
1	Mini Fire Fighter	1
2	Foam Tender	1
3	Fire Bouser	8
4	Rescue Van (Pick up)	2
5	Ambulance	2
6	Dharma Rath	3
7	Fire Jeep	1
8	Fire Bullet	1
9	Life Buoya	120
10	Life Jacket	120
11	PP Ropes (200-M)	10
12	PP Ropes (100-M)	20
13	Portable inflatable Emergency Lighting System	5
14	Fibre Boat	1
15	Unse Water BA Set	2

Equipment available with Nagarpalikas

Sr. No.	Name of Nagarpalika	Portable inflatable Emergency Lighting System	Motorcycle Mounted Water Mist	Water Bowser	Mini Fire Tender	HDPE Boat	Tata Yodha
1	Gariyadhar	2	1	1	1	-	-
2	Mahuva	2	1	1	2	1	-
3	Palitana	2	1	1	2	-	-
4	Sihor	2	1	2	1	-	1
5	Talaja	2	1	1	1	-	-
6	Vallabhipur	2	0	1	0	-	-

Equipment available with Alang Fire Station

Sr. No.	Item Name	Number of Items	Sr. No.	Item Name	Number of Items
1	Water Bowser	2	5	BA Sets	2
2	Water Tanker	2	6	Fire Suits	4
3	Fire Hoses-15 mtr	18	7	Mini Fire Tender	1
4	Fire Hoses-30 mtr	35	8	Portable Fire Pump	1

Capacity Analyses -

It is important to identify and recognize traditional coping capacity of the community to enable them to enhance their capacity to withstand disasters.

Hazard	Early Warning	Preparedness	Early Response
Flood	Monitoring of water sources through community	Identified high elevation places and rescue teams	Evacuation, Search and Rescue and First Aid support
Cyclone	Information through fisher folks	Evacuate to safe place	Search and Rescue and First aid support
Earthquake	-	Identification of Safe places	Search and Rescue and First aid support
Drought	Own assessment mechanism	Fodder storage, Food storage at individual level	Panjarapol
Tsunami	-	Evacuate to safe place	Search and Rescue and First aid support
Industrial/Chemical Hazard	Local administration	OCR, DISH and DEOC	Local response team

Outcome and Recommendations of the Hazard, Risk, Vulnerability and Capacity Analyses

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.

Hazard, Risk 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

Bhavnagar district falls under zone-III according to the zoning map so very high possibility of failure of various infrastructures and very high chances of risk of loss of live properties too in certain highly inhabited areas of the district.

Population / Density wise area / residents details can be drawn from the CDM Plan / WDM Plan of BMC in case of city area, from TDM Plan / CDM Plan of Municipalities for urban areas of the district.

2. Flood

The Climate of Bhavnagar District can be regarded as one of extreme king with hot summers & cold winters except in the coastal region, where it is generally pleasant all throughout the year. The air is humid due to coastal location.

- a. The District has no major river. There are seasonal rivers streams. Amongst these are the river Maleshri, Lakahnka, Kalubha, Ghelo, Vaigad, Manari, Kairi, Shetrunji, Kharo, Rajaval, Hanol, Khodiya, Sitapari, Sukhbhadar, Goma, Kaniyad, Rangholi, Malan, Rojki, Bagad, Bhadod, Ranaji. Flow of the river is towards the Gulf of Kutch in the north and in northwest.
- b. There is not any huge dam in Bhavnagar District, the 17 dams of Bhavnagar controlled by the Department of irrigation and 4 other dams are in the neighbor district, but affect the villages of Bhavnagar.
- c. The dams situated in Ghogha taluka; does not affect any village of Ghogha but affect the villages of Bhavnagar Taluka.
- d. Sukhsagar dam of Surendranagar district also affects the villages of Bhavnagar district.

3. Cyclone

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

Coastal areas of District like Bhavnagar, Ghogha, Mahuva and Talaja are particularly prone. Cyclones originate out at sea and become hazardous when they come ashore. They also drive the sea level up to cause coastal flooding.

At a community level, the GSDMA has proposed to provide temporary cyclone shelter. There is a identified site to construct Cyclone Shelter. This shelter will be, with built-in safety against high wind velocity and heavy rainfall and within easy reach of the people most affected. Educational buildings or places of worship may also be designed as cyclone shelter, for evacuation and temporary occupation.

4. Drought: probability chances are higher due to low rainfall.

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. So far as Bhavnagar District is concern there are 4 costal talukas and 34 villages of the same. Most deaths caused by a tsunami are because of drowning. Associated risks include flooding, contamination of drinking water, fires from ruptured tanks or gas lines, and the loss of vital community infrastructure.

6. Fire

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

Bhavnagar district has 5 MHA company, many cotton and oil mills and Alang Ship Breaking Yard which is most vulnerable for Fire in so fire possibility are like more.

7. Industrial Accident

There are 723 factories registered under the Indian factories Act and approximately 2.00 lacks persons are employed in these factories. Besides the district is known for Diamond and Handicrafts.

There are 9651 small-scale industries registered and employing 47291 people.

Bhavnagar has 5 MAH industries. IOCL, Alang Ship Breaking Yard, Sun petrochemical private ltd are the LPG user industries. Exel Corps ltd. using Mithenol, Toluin, Hydrogen, Solvent C-IX and Formaldehyd and Nirma Ltd. using Chlorine. So District is very high chances of risk of loss of property due to leakage of gases and fire.

Industries have their own Onsite Emergency Management Plans to dealt with onsite emergencies and the other major units like IOCL, Excel crop care, Nirma and Alang etc. has developed their Disaster Management Plans.

8. Epidemic

Probability is almost certain due to increase in Human Disease (Water borne disease, air borne disease and vector borne disease) along with that animal disease so impact will be very high according to that vulnerability is very high.

Bhavnaagr district Faced unforgettable effect of Covid-19 as the whole world were in the effect of Novel Corona.

Chapter – 3

Institutional Arrangements:

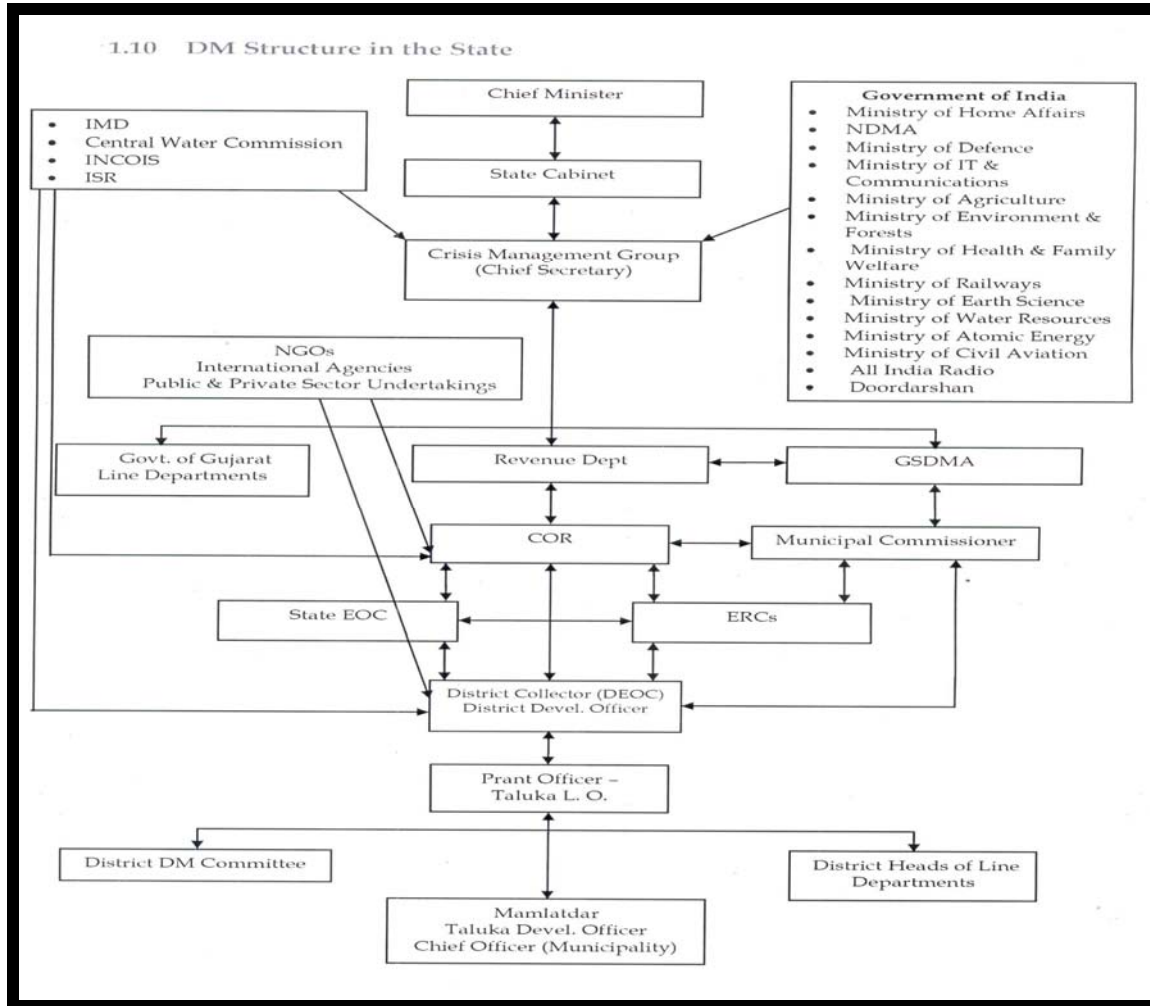
The plan incorporate multi level institutional as well as response planning mechanism at district level. That is.....

The DM structure in the State is as per the Gujarat State Disaster Management Act – 2003. The National Disaster Management Act – 2005 resembles the State Act with only a few provisions which are not a part of the State Act but are there in the Central Act. Those provisions include designating a Vice Chairman to the 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.

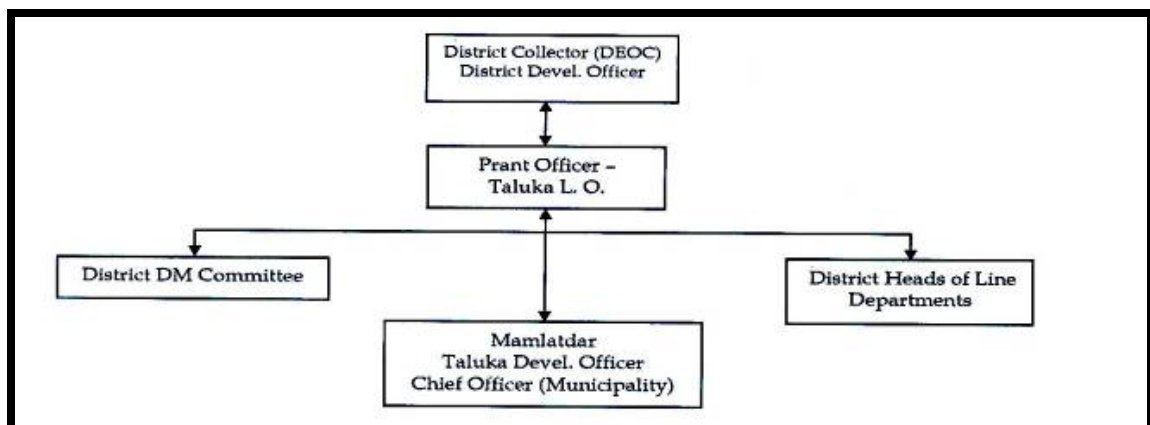
The Revenue Department of the State is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever 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.

DM Organizational Structure in the State



DM Organizational Structure In The District



District Crisis Management Group (Task Force)

The District administration of Bhavnagar has identified 16 expected task forces for key response operation functions that are described below (As per the ICS manual). 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
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 analyses 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 executed and coordinated through the ICS/GS system. For example, in flood, search & rescue would come under the Operations section, Transport would come under the Logistics Section and Public Information under the Public Information Unit.

District Disaster Management Committee (DDMC)

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

DDMC

Sr. No.	Designation	Position in DDMC
1	Collector/ District Magistrate	Chairman
2	District Development Officer	Member
3	District Superintend of Police	Member
4	DCF, Forest	Member
5	Residential Additional Collector	Member
6	District Supply Officer	Member
7	District HomeGuard Commandant	Member
8	Exe. Engineer-R&B State	Member
9	Exe. Engineer-R&B Panchayat	Member
10	Exe. Engineer State Irrigation	Member
11	Exe. Engineer Irrigation-Panchayat	Member
12	Exe. Engineer- Water Supply	Member
13	Superintending Engineer- PGVCL	Member
14	Superintendent Civil Hospital	Member
15	CDHO	Member
16	District Agriculture Officer	Member
17	Dy. Director Animal Husbandary	Member
18	District Primary Education officer	Member
19	District Educatin Officer	Member
20	Port Officer	Member
21	Airport-Director	Member
22	DRM-Railway	Member
23	Divisional Controller-State Transport	Member
24	Regional Transport Officer	Member
25	Regional Officer-GPCB	Member
26	Dy. Director-DISH	Member
27	Dy. Director-Information Department	Member
28	Dy. Controller -Civil Defense	Member
29	District Municipality Officer	Member
30	All S D M	Member

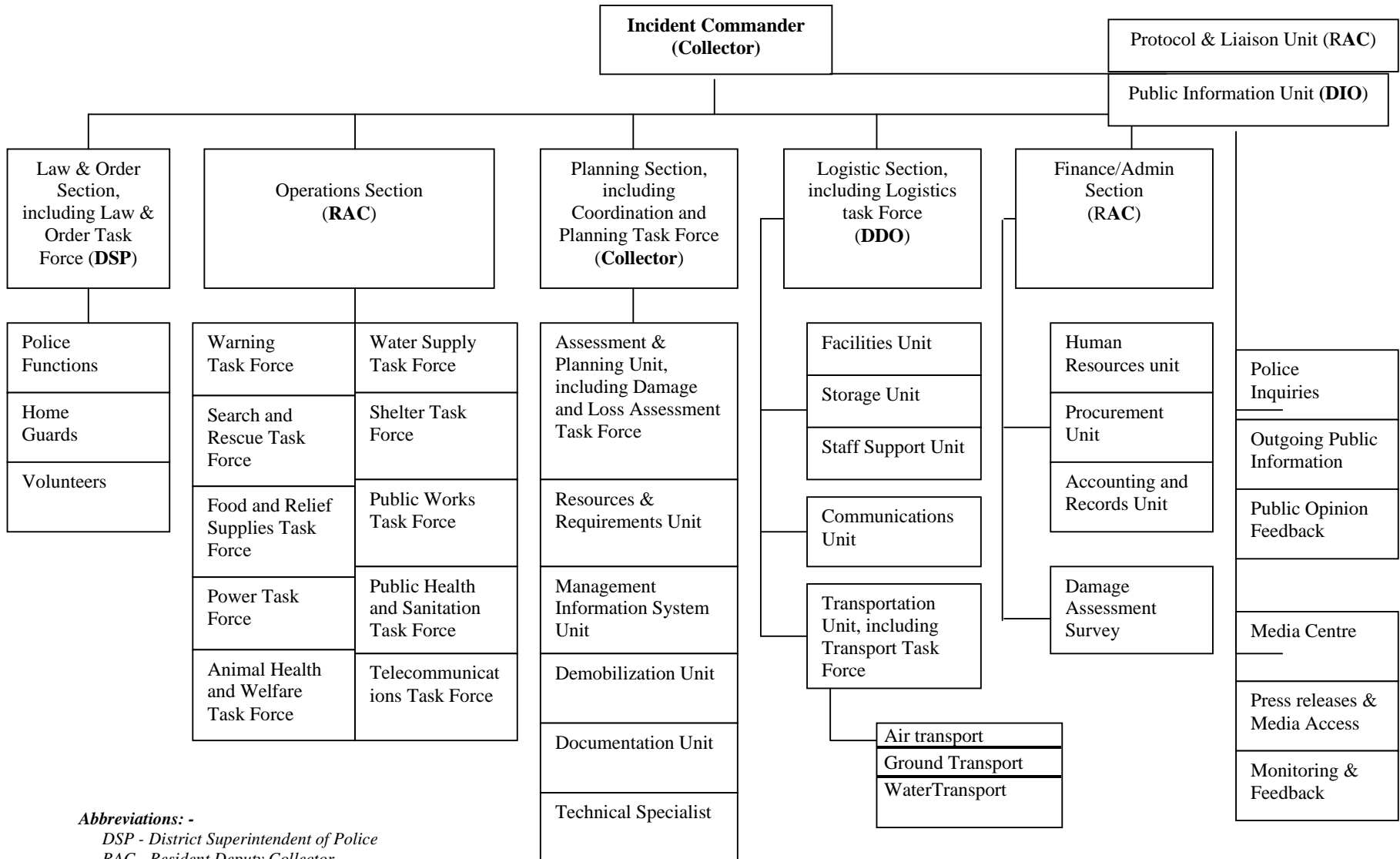
Incident Response System in the Distict

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 Bhavnagar 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 district and Taluka is given in the next page.

Incident Command/Response System in the District



Abbreviations: -

DSP - District Superintendent of Police

RAC - Resident Deputy Collector

ADC - Additional District Collector

DDO - District Development Officer

DIO - District Information Officer

Departmental Control Room and Nodal Officer
Supporting department details in response

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

Sr. No.	Task Force	Taskforce Leader	Supporting members / Organizations/Departments	Section / Unit
1.	Planning and Coordination	Collector	DDO, DSP, Commissioner BMC, RAC and Mamlatdar	Planning
2.	Administration & Protocol	RAC	DDO, DSP, Commissioner BMC, RAC and Mamlatdar	Finance & Admin.
3	Damage Assessment/Survey	RAC	DIC, Dy. DDO, Ex. Engr., R&B, DAO, Fisheries	Planning
4	Warning	RAC	RAC, Dy. Mamlatdar, Control Room, District Information Officer (DIO)	Operation
5	Communications	RAC	Dy. Mamlatdars, Mobile Operators, TV, Radio, Post 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	RAC Civil Defense	Mamlatdar, TDO, Police, Executive Engr., BMC Fire & Emergency services, RTO, State Transport, Health Deptt.	Operation
10	Public Works	Ex. Engr. R&B (State)	Irrigation, Ex. Engr., Panchayat, NGOs, Water Supply Board, Municipalities, Home	Operation

			Guards, Police	
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 VMSS	Dy. Ex. Engr., Talati, Mamlatdar, TDO, Health, Dy. Engr. BMC	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. PGVCL	Ex. Engr., Dy. Engr. Technical, PGVCL, Transport	Operation
15	Public Health & sanitation	Chief district health Officer (CDHO)	Supt. GG Hospital, BMC Hospital, Municipality, Red Cross, Fire and emergency services, BMC, Civil Defense, R&B, NGOs, Doctors, TDO, Mamlatdar	Operation
16	Animal Health & Welfare	Dy. Director Animal Husbandry	Veterinary Inspector, NGOs	Operations

EOC setup and facilities available with the location

District Emergency Operation Center (DEOC)/ District Control Room (DCR)

The District Control Room is located in building of Collector office, Near Bhavnagar Mahanagarpalika and Jilla Panchayat office, opposite Galaxy. 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	Television	1
2	Telephones	3
3	Satellite Phone	1
4	Fax machine	1
5	Printer	3
6	Scanner	1
7	PC with GSWAN Internet and web site facilities	3
8	Marker board	1
9	Projector	1
10	A copy of Disaster Management Plan	5
11	Other relevant documents of district information	-
12	Chairs	30
13	Tables	5

Taluka Emergency Operation Centers (TEOC)

The Taluka Emergency Operation Centers located at the Office of Mamlatdar. The Liaison Officers of the respective Talukas shall take charge of the Control Room. The respective Liaison Officers shall coordinate between the task group members working at disaster sites and 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 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	
2.	Law & Order & its TFOR	
3.	Search & Rescue & its TFOR	
4.	Public Works & its TFOR	
5.	Shelter & its TFOR	
6.	Water Supply & its TFOR	
7.	Food & Social Service & its TFOR	
8.	Power & its TFOR	
9.	Public Health & Sanitation & its TFOR	
10.	Logistics & its TFOR	
11.	Animal Health & Welfare & its TFOR	
12.	Relief Supplies & its TFOR	
13.	Communication & its TFOR	
14.	Survey & its TFOR	
15.	Taluka Level Control Room (TLCR)	

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.

Alternate EOC available and its location

The Bhavnagar District Control Room is located in the building of Collector office near Bhavnagar Mahanagarpalika and jilla Panchayat office, opposite Galaxy. 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.

Public and private emergency service facilities available in the district

Bhavnagar district has a fire station of Bhavnagar Municipal Corporation and 6 Fire stations in Respective 6 Municipality and in addition the district has a fire station in Alang as well as GMB control Room. This emergency service are fully equipped by various equipment and train personal which are use in search and rescue operation during disaster situation.

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

Chapter 4

Prevention and Mitigation Measures:

Prevention measures in development plans and programmes

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.

Special Project proposed for Preventing the Disaster

1. Disaster Risk Management Programme (DRMP)

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 School Safety Programme (GSSP)

Gujarat State Disaster Management Authority initiates the GSSP with the help of government of Gujarat. This programme is all about promoting the idea of school safety in schools of the state. It designed for creating culture of disaster safety in schools and reduce risk through structural and non-structural measures in the schools.

Celebration of School Safety Week

School safety week celebration creates awareness among the school teachers and students regarding to mitigate the risks of natural hazard as well as manmade disaster in schools.

3. Apada Mitra Project/Up Scaling Apada Mitra Project

Community Service has always been part and parcel of culture of gujarat and community is always the first responder during any disaster. Training the community to effectively respond during a disaster would professionalize the response and reduce the impact of a disaster.

Gujarat State Disaster Management Authority undertakes various capacity building activities to mitigate the impact of disasters. As part of such capacity building measures, GSDMA is initiated a project "Aapda Mitra: on training of community volunteers in conducting basic search & rescue operations and to assists the district administration for effective disaster response.

Hazard wise Structural and Non- structural Mitigation Measures

Hazard: Flood

Table No. : A1

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

Probable Mitigation Measures	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Desalting 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, Integrated coastal zone management programme	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	NCRMP	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 Integrated coastal zone management	Regularly
Desalting of water bodies like river and ponds	Irrigation DDO Rural Development	MGNREGA and Land Development	Regularly

Table No. : A2

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

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**Table N.: B1****Structural Mitigation Measures for Cyclone**

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/Program	Time Frame
Plantations (mangroves) and Shelter Belt in the Coastal Area	Cyclone prone 34 villages Bhavnagar district	Forest department, Port Authority, DIC, TDO, Rural development department, GEC	Departmental schemes, MGNREGA Integrated coastal zone management	Regularly
Identification and repair/retrofitting of houses and buildings unsafe for cyclone		R & B (District Panchayat)	Departmental Scheme	Regularly

Table No.: B2**Non-Structural Mitigation Measures for Cyclone**

Non-Structural measures	Location/ coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Strengthening of Early warning mechanisms	Cyclone prone 72 villages In Kutch district	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	Regularly
Enforcing strict compliance to coastal regulation zone and awareness regarding hazard		Department of Environment & Forest Dept. Fishing GEC	Integrated Coastal Zone Management CRZ Regulation	Regularly
Registration of fishing boats		Fisheries Department	CRZ Regulation	Regularly
Regulate and issue orders for poor quality hoardings/buildings or any other objects		R & B Department		Regularly

Hazard: Earthquake**Table No. : C1****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	Bhavnagar direct comes under Zone-III	R & B (State and Panchayat), DDO, Rural department	DM Plan and all development plan	Regularly
Retrofitting of unsafe rural houses		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

Table No. : C2**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	Bhavnagar direct comes under Zone-III	R & B (State and Panchayat) DDMC, TDMC, CDMC	DRM	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	Regularly

Hazard: Drought**Table No. : D1****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, de-silting of water sources, check dams, hand pumps etc.		Irrigation, Rural Development	MGNREGA, Watershed	Regularly

Table No.: D2

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)

Table No. E1

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

Table No.: E2**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	Occupier,	Various	Industrial

Non structural Measures	Activities	Implementing Departments	Convergence Agencies	Time Frame
	availability and validity of relevant antidotes for chemical hazards prevalent in Taluka	LCG, DISH, THO	Industrial act	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.

Hazard: Tsunami**Table No. F1****Structural Mitigation Measures for Tsunami**

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Constructing shelter belts in coastal areas		Rural Development	Departmental programs , MGNREGA	Long term planning
Contraction Sea water brake structure		R & B State and panchayat	Departmental programs , MGNREGA	Long term planning

Table No. : F2**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		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

Hazard-Fire

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

Specific projects for vulnerable group

DRMP (Disaster risk management programme) is targeting the most vulnerable people or group and give the training on different subject for built their capacity. It also organized mockdrills on various subject at industry, village, Taluka, ULB, district and Municipal corporation level.

GSSP (Gujarat School Safety programme) is targeting the school students, teachers and principal as organized training, sensitization programme, mockdrills, preparing the school disaster management plan and distribute the IEC material.

Thus, DRMP and GSSP are specific project for vulnerable group.

Chapter 5

Preparedness Measures:

Identification of Stakeholders involved in Disaster Response

Disaster response is the most important step during disasters. Public as well as volunteers take part in the response work. There should be search and rescue, first aid and evacuation activities. In case of Search and Rescue NDRF, Fire staff, Police, Homeguard, GRD, NCC, NSS and other trained volunteers involved in Search and rescue. In case of First Aid work people from Health profession and other trained volunteers involved in First Aid activities and in case of Evacuation again Police, Fire, HG and GRD involved in the same work.

Formation of Persons and Training for-

Search & rescue

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

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

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

Search & rescue Team

Designation of trained S&R Team member
<p><i>The Search & Rescue team is formed as and when required and the members & equipments are taken according to the nature of the disaster (and also on their availability).</i></p> <ul style="list-style-type: none"> • Police Officers (2 or more) • Home guards (2 or more) • Swimmers (In case of flood) • A construction engineer (From P.W.D.) • Driver (For Every vehicle) • Any person with the prior experience of the disaster (From Home Guard/Police Dept.) • A doctor or nurse or at least a person having first aid training • A Class IV Officer (Health Dept.)

Early Warning

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

The State acknowledges the crucial importance of quick dissemination of early warning of impending disasters and every possible measure will be taken to utilize the lead-time provided for preparedness measures. As soon as the warning of an impending calamity is received, the EOCs at the State, District and Block levels will be on a state of alert. The Incident Commander will take charge of the EOC and oversee the dissemination of warning to the community. The District Collector will inform the District Disaster Management Committees who will alert the lock 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 Cyclone.

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 mention:

- The issuing authority, date and time of issue
- An accurate description of likely hazard and what is expected

- Possible impact on population, area to be in undated or affected due to earthquake
- Need to activate evacuation plan
- Do's and Don'ts to ensure appropriate response
- Advise to the people about further warnings to be issued, if any

Damage & Loss Assessment

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

Damage is 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 phase's viz. Rapid Damage Assessment and Detailed Damage Assessment.

Training need analysis

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 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.

Awareness

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	<input type="checkbox"/> Information Dept <input type="checkbox"/> Education Dept <input type="checkbox"/> All line dept <input type="checkbox"/> Dist. Collectors <input type="checkbox"/> Chief officer <input type="checkbox"/> Other Dist. Authorities

Arrangements for training and capacity building

Training, capacity building and other proactive measures

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

Activation of Incident Response System in the District

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

Protocol to seeking help from other agencies

As any kind of disaster happened to district which is not controllable by the district response team, collector ordered to DEOC for seeking help from ERC of Saurashtra or NDRF team and Army team to tackle the disaster situation. DEOC also informed same to SEOC.

Checking and certification of logistics, equipments and stores

Bhavnagar district has various types of logistics and equipment. It should be checked 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)

Operational check-up of Warning System

Warning system are checked 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.

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.

Seasonal inspection for facilities and critical infrastructure

Before Cyclone and Monsoon, the equipments are checked, especially pre-monsoon all the equipments, other facilities and critical infrastructure check by respective authority if it found that equipments are not in working condition, regularly follow up taken by DEOC.

Command and Coordination – Identification of quick response teams

In case of any kind of disaster district collector is responsible for command all the line departments and DEOC is responsible for coordination with affected area and other stakeholders under the guidance of district collector.

During any disasters quick response is essential and Police, HG, GRD, NCC, NSS, Fire services and other volunteers are responsible to identification of quick response teams.

NGOs and other stakeholders coordination

NGO and Voluntary group are doing very important activity and response during disaster. DDMA also organized capacity-building programmes, awareness programmes 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 in Annexure)

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 collections, 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, and 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 first step is to list geographic and climatic hazards and other risks that could jeopardize the building and collections. These might include geographical susceptibility to hurricanes, tornadoes, flash flooding, earthquakes, or forest fires, and even the possibility of unusual hazards such as volcanic eruptions. Consider man-made disasters such as power outages, sprinkler discharges, fuel or water supply failures, chemical spills, arson, bomb threats, or other such problems. Take note of the environmental risks that surround you. Chemical industries, shipping routes for hazardous materials, and adjacent construction projects all expose you to damage. Any event that is a real possibility should be covered

under your Emergency Preparedness Plan. It is also important to determine the vulnerability of the objects within the collections. What types of materials are included? Are they easily damaged? Are they particularly susceptible to certain types of damage such as moisture, fire, breakage, and the like? How and where are collections stored? Are they protected by boxes or other enclosures? Is shelving anchored to structural elements of the building? Is it stable? Are any artifacts stored directly on the floor where they could be damaged by leaks or flooding? All items should be raised at least four inches from the floor on waterproof shelves or pallets. Are materials stored under or near water sources? Analyze your security and housekeeping procedures. Do they expose collections to the dangers of theft, vandalism, or insect infestation? Consider vulnerabilities. Are your collections insured? Is there a complete and accurate inventory? Is a duplicate of the inventory located at another site? Although there may be a wide range of disaster scenarios, the most common are water, fire, physical or chemical damage, or some combination of these. The specific procedures of a disaster plan focus on the prevention and mitigation of these types of damage.

Decreasing Risks

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

Identifying Resources

An important step in writing your plan is to identify sources of assistance in a disaster. Research these services thoroughly--it is an essential part of the planning process. These can range from police, fire, and ambulance services to maintenance workers, insurance 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.

Community awareness, education and preparedness

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.

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, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

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

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)

Bhavnagar 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 the 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.

Community Warning System

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.

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 and operators available				
Villages covered	All risk prone villages			
Villages/habitat not covered or difficult to access	Communities in remote locations (fisher folk, salt pan workers, etc) VDMC			
Measures required to improve timeliness and outreach (For example, voice enabled SMS)	Contact of communities in remote locations (fisher folk, saltpan workers etc)			

During and Post Disaster Advisory Action Plan

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

Procurement various Resources

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.

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.

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.

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.

Media Management/information dissemination

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 created which is made operational during emergencies. Both print and electronic media are regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground.

Documentation

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

Chapter 6

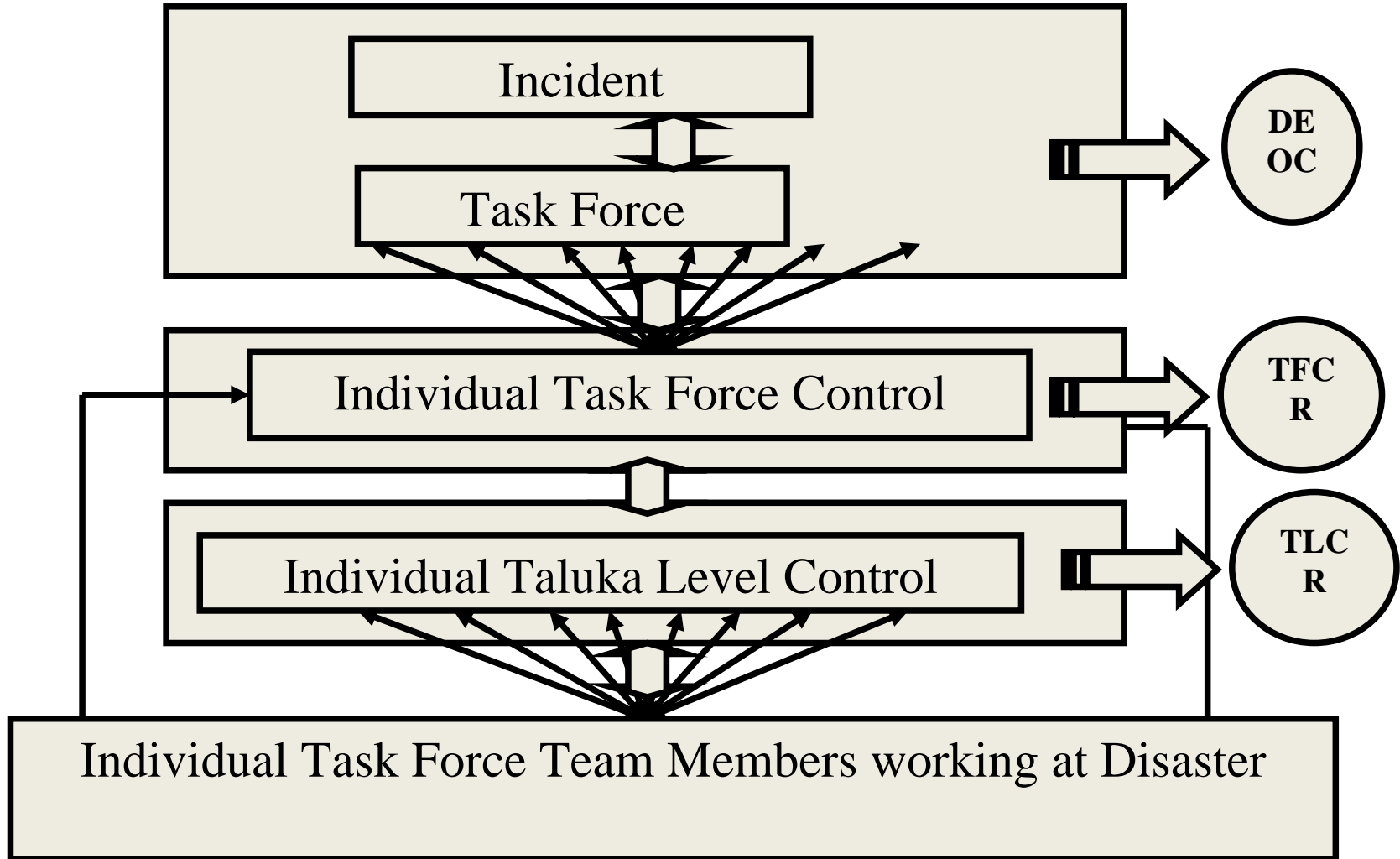
Response Measures (Multi-Hazard):

Response measures are those which are taken instantly prior to, and following, a disaster aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by disaster. Response process begins as soon as it becomes apparent that a disastrous event is imminent and lasts until the disaster is declared to be over. Since response is conducted during periods of high stress in a highly time-constrained environment and with limited information and resources (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.

Response Flow chart



Warning and alert 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.

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.

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 with the SEOC.

Response planning, preparedness and assumption Quil assessment of damages and need

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:

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

1. Collection, laboratory testing and analysis of viruses to ensure their control and eradication
2. Pre-positioning of seeds and other agro inputs in strategic points so that stocks are readily available to replace damage caused by natural calamities.
3. 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.
4. 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 paraprofessionals to improve the capacity of surveillance and control of epidemics
- Establishing testing laboratories at appropriate locations to reduce the time taken for early diagnosis and subsequent warning
- Establishing procedures and methods of coordination with the Health Department, other local authorities/departments and NGOs to ensure that adequate prevention and preparedness
- measures have been taken to prevent and / or 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 programmers 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: PGVCL

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, and 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 ups 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, Collector during 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 programmes.

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

Warning dissemination

An early warning system can be implemented as a chain of information communication systems and comprises sensors, event detection, decision subsystems. They work together to forecast and signal disturbances that adversely affect the stability of the physical world, providing

time for the response system to prepare for the adverse event and to minimize its impact.

EWS Observer Controller Model and the Subsystem

It prevents loss of life and reduces the economic and material impact of disasters. To be effective, early warning systems need to actively involve the communities at risk, facilitate public education and awareness of risks, effectively disseminate alerts, and warnings and ensure there is constant state of preparedness. A complete and effective early warning system supports four main functions: risk analysis, monitoring and warning; dissemination and communication; and a response capability.

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 mentioned 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.

Seeking external Help for assistance

In case of very big disaster, it is need to take help from external authority like, other district, state government and central government

First Assessment Report

It is very important to report on time in any kind of disasters; natural disasters as well as manmade disasters.

Media Management/Coordination/Information dissemination

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.

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 Bhavnagar 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

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	Provide human and material resources needed to

	Rescue (including Evacuation)	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.

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 3 C (Command, Control and Communication) mechanism. ICS covers early warning, search and rescue, humanitarian assistance, Food, 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, other essential needs and shelter related work. It is also essential to repair and restoration of basic aninities and management of VIP visits.

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.

Reporting

Disasters include natural events such as earthquakes, volcanic eruptions and hurricanes, and situations sparked by human actions, such as oil spills, radiation leaks and chemical accidents.

There are two main phases to disaster reporting

- The initial period
- The longer-term aftermath

It is useful to report the chronology of events to create an accurate picture of what has happened, and it is important to avoid laying the blame for any disaster without having strong reasons to do so.

Information Management

Taskforce Leader: District Information Officer

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

Activation of the Plan

The District Disaster Response structure is activated on warning or occurrence of a disaster. Task Forces are 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 are providing 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.

Situation Report

Information department is also responsible for giving current situation report in any kind of disasters.

Media release

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.

Demobilization and winding up

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 and after any kind of disasters proper documentation of the event, success stories and lessons for future is also essential.

Chapter-7

Recovery Measures:

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

Strategies for restoring physical infrastructure and lifeline services may be:

General policy guidelines

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, and power supply and sanitation facilities.

equipment for storage								
Drugs and medicines perished	(Location and qty)							
No of Ambulance damaged								

Note: To be planned after initial damage assessment by departments

**Table No. 7.3
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

**Table No. : 7.4
Water Supply**

Type	Village	No. of unit affected	Faliya/ Population affected	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Well							
Bore wells							
Pond							

Type	Village	No. of unit affected	Faliya/ Population affected	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Water Supply Disrupted							
Contamination							
ESR damaged							
GLR Damaged							
Sump damaged							
Pipe lines damaged							
Stand post damaged							
Cattle trough damaged							
Hand pump							

**Table No. 7.5
Road and Transport**

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

APMC								
Other								

**Table No. : 7.8
Housing**

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

**Table No. : 7.9
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							

**Table No. : 7.10
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				

**Table No. : 7.11
Land Improvement**

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

**Table No.:7. 12
Agricultural**

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

**Table No. : 7.13
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						

**Table No. :7.14
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)				

Long-term recovery programme

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

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

Oftentimes, committees, task forces or other means of collaboration 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.

Grievance Redressed System

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

Grievance Redressed System

No.	Key Person/ Establishment	Contact No	Address
1	DEOC/ RAC	0278- 2521554/55	Collector Office-District Emergency Operation centre
2	DDO	0278- 2426810	District Panchayat
3	Police	0278- 2520050	S.P. Office, Bhavnagar

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.

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
HMGF proposal	70-200 days	200-365 days
Long-term reconstruction	100 days to 5 years	5 to 10 years

Chapter-8

Financial Arrangement

Financial resources for implementation of plan

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

National and 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.

National and state disaster mitigation fund

The Pre-Disaster Mitigation (PDM) program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program was set in place to reduce overall risk to people and structures, while at the same time, also reducing reliance on federal funding if an actual disaster were to occur.

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.

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

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.

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.

Disaster Insurance

Risk Transfer / Risk Distribution

Risk transfer or risk distribution refers to compensation cover against loss of life or assets in case of any disaster event. Insurance and reinsurance mechanisms and products against natural and manmade disasters have rapidly evolved in last decade. According to UNISDR, "Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer.

Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally, where governments, insurers, multi-lateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and re-insurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings. Linkages with government insurance schemes like Rashtriya Swasthya Bima Yojana, Aam Admi Bima Yojana can be extensively taken up for risk transfer. Linkages can be done for teaching staff and children with existing insurance schemes. Livestock insurance can also be taken up through animal husbandry department. Coverage of crop insurance should be increased specifically for small and marginal farmers. Weather/rainfall insurance can be explored with various existing schemes.

(DDMC should draw up their own risk transfer/distribution framework and action plan in this regard)

Micro financing

Microfinance has proven to be an essential element for people in disaster situations, enabling them to start to rebuild their lives and improve their living conditions. However, in recent times there have been crisis situations where massive injections of donor funding—including capital for microfinance operations—have not achieved their intended purpose, largely because there was insufficient local capacity to deliver services in a timely and appropriate manner.

Chapter-9

Maintenance of Plan

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

Schedule for updation of plan

District Disaster Management Plan (DDMP) updated by Disaster management cell, collector office in the month of May-June every year as a part of pre monsoon preparedness.

Schedule for revision of plan

DDMP revises in the month of October-November every year by the Disaster Management Cell of Collector office.

Schedule for Mockdrills

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

Certified/ Approved By _____ **Collector Bhavnagar**

Chapter-10

Incident Response System

Introduction:

The Incident Response System (IRS) is a system of management by objectives through Incident Action Plan (IAP). It takes care of any expanding incident through an organisational structure of Command Staff, Sections, Branches, Divisions, Groups, Units, resources and span of control, called Incident Response Team (IRT)

As per NDMA's IRS guidelines, IRT at District, Sub-Division, Tehsil and Block level should be constituted under the written directives of District Magistrate (DM). These teams will include experienced officers / employees at all levels and respond to all natural and man-made disasters. The lowest administrative unit (Sub-Division, Tehsil or Block) will be the first responder as the case may be. IRT at all levels will have same structure, i.e. IC supported with Operations, Planning and Logistics Sections. The IRTs are to be pre- designated at all levels.

Incident Response System

Operation Section (OS)

The OS deals with all types of field level tactical operations directly applicable to the management of an incident. This section is headed by an Operation Section Chief (OSC). In addition, a deputy may be appointed to assist the OSC for discharging his functions depending on the magnitude of the work load. OS is further sub-divided into Branches, Divisions and Groups which assist the OSC / IC in the execution of the field operations.

Operations Section Chief (OSC)

On activation of the OS, the OSC will assume command of all the field operations and will be fully responsible for directing all tactical actions to meet the incident objectives.

The OSC will report to the IC. He will be responsible for activation, deployment and expansion of his Section as per IAP. As the operational activities increase and because of geographical reasons, the OSC will introduce or activate and expand the Branch into Divisions for proper span of control and effective supervision.

Roles and Responsibilities of Operations Section Chief (OSC)

The Operations Section Chief will:

1. Coordinate with the activated Section Chiefs;
2. Manage all field operations for the accomplishment of the incident objectives;
3. Ensure the overall safety of personnel involved in the OS and the affected communities;
4. Deploy, activate, expand and supervise organizational elements (Branch, Division, Group, etc.) in his Section in consultation with IC and in accordance with the IAP;
5. Assign appropriate personnel, keeping their capabilities for the task in mind and maintain On Duty Officers list (IRS Form-007) for the day as enclosed in Annexure-VII;
6. Request IC for providing a Deputy OSC for assistance, if required;
7. Brief the personnel in OS at the beginning of each operational period;
8. Ensure resolution of all conflicts, information sharing, coordination and cooperation between the various Branches of his Section;
9. Prepare Section Operational Plan in accordance with the IAP; if required;
10. Suggest expedient changes in the IAP to the IC;
11. Consult the IC from time-to-time and keep him fully briefed;
12. Determine the need for additional resources and place demands accordingly and ensure their arrival;
13. Ensure record of various activities performed (IRS Form-004 enclosed in Annexure-IV) by members of Branches, Divisions; Units/Groups are collected and maintained in the Unit Log IRS Form-003

Planning Section (PS)

The PS deals with all matters relating to the planning of the incident response. It is headed by the Planning Section Chief (PSC). This section helps the IC in determining the objectives and strategies for the response. It works out the requirements for resources, their allocation and subsequent utilization. It maintains up-to-date information about the ongoing response and prepares IAP. For the closing phase of the Operations, this Section also prepares the Incident Demobilization Plan (IDP).

Planning Section Chief (PSC)

The Planning Section Chief is responsible for collection, evaluation, dissemination and use of information. It keeps track of the developing scenario and status of the resources. In case of need, the PS may also have Technical Specialist for addressing the technical planning matters in the management of an incident.

A list of such specialists will be kept available in the PS. The PSC reports to the IC and will be responsible for the activation of Units and deployment of personnel in his Section as per requirement.

Roles and Responsibilities of Planning Section Chief

The Planning Section Chief will:

1. Coordinate with the activated Section Chiefs for planning and preparation of IAP in consultation with IC.
2. Ensure that decisions taken and directions issued in case of sudden disasters when the PS had not been activated are obtained from the IMO (Command Staff) and incorporated in the IAP.
3. Ensure collection, evaluation, and dissemination of information about the incidents including weather, environment toxicity, availability of resources etc. from concerned Composition of Planning Section Technical Specialist (if required) Demobilization Unit, Documentation Unit, Situation Unit Resource Unit

departments and other sources. The PS must have a databank of available resources with their locations from where it can be mobilized.

4. Coordinate by assessing the current situation, predicting probable course of the incident and preparing alternative strategies for the Operations by preparing the IAP. The IAP contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period (24 hours is considered as one operational period). The plan may be oral or written. Written plan may have a number of attachments, including incident objectives, organization assignment list IRS Form-005 (enclosed in Annexure-V), incident communication plan IRS Form-009 (enclosed in Annexure-IX), demobilization plan IRS Form-010 (enclosed in Annexure-X), traffic plan, safety plan, and incident map etc. The major steps for preparing IAP are as follows;
 - ✓ Initial information and assessment of the damage and threat;
 - ✓ Assessment of resources required;
 - ✓ Formation of incident objectives and conducting strategy meetings;
 - ✓ Operations briefing;
 - ✓ Implementation of IAP;
 - ✓ Review of the IAP; and
 - ✓ Formulation of incident objectives for the next operational period, if required;
5. Ensure that Incident Status Summary (IRS Form-002) enclosed in Annexure-II is filled and incorporated in the IAP.
6. Ensure that Organizational Assignment List (Divisional / Group) IRS Form-005 as enclosed in Annexure – V is circulated among the Unit leaders and other responders of his Section.
7. Plan to activate and deactivate IRS organizational positions as appropriate, in consultation with the IC and OSC.
8. Determine the need for any specialized resources for the incident management.
9. Utilize IT solutions for pro-active planning, GIS for decision support and modeling capabilities for assessing and estimating casualties and for comprehensive response management plan;
10. Provide periodic projections on incident potential;
11. Report to the IC of any significant changes that take place in the incident status.
12. Compile and display incident status summary at the ICP.

13. Oversee preparation and implementation of Incident Demobilization Plan (IRS Form-010) enclosed in Annexure-X.
14. Assign appropriate personnel, keeping their capabilities for the tasks in mind and maintain On Duty Officers List (IRS Form-007) for the day as enclosed in Annexure-VII.
15. Ensure that record of various activities performed (IRS Form-004 enclosed in Annexure-IV) by members of Units are collected and maintained in the Unit Log (IRS Form-003) enclosed at Annexure-III; and

Logistics Section (LS)

The LS deals with matters relating to procurement of resources and establishment of facilities for the incident response. It also deals with all financial matters, concerning an incident. This section is headed by the Logistic Section Chief (LSC) and is an important component of the IRS organization for providing back end services and other important logistic support like communications, food, medical supplies, shelter and other facilities to the affected communities and responders as well. There is a Finance Branch (FB) attached to this Section in order to ensure that the procurements, if any, may be done quickly and in accordance with the financial rules.

The establishment and functions of all Sections are essential and vital for efficient response management. However, for management of smaller incidents, all the Sections need not be activated.

Logistics Section Chief (LSC)

The LS comprises Service, Support and Finance Branches. Structure and details of each Branch are shown in Fig. 16. The Section is headed by a chief known as the LSC. The activation of various Branches of the LS is context specific and would depend on the enormity and requirements of the incident. The Finance Branch (FB) constitutes an important component of the LS to specially facilitate speedy procurement, and proper accounting following financial procedures and rules.

Roles and Responsibilities of Logistics Section Chief (LSC)

The Logistics Section Chief will:

1. Coordinate with the activated Section Chiefs;
2. Provide logistic support to all incident response effort including the establishment of SA, Incident Base, Camp, Relief Camp, Helipad etc.
3. Participate in the development and implementation of the Incident Action Plan (IAP)
4. Keep RO and IC informed on related financial issues.
5. Ensure that Organizational Assignment List (Divisional / Group) IRS Form-005 as enclosed in Annexure – V is circulated among the Branch Directors and other responders of his Section.
6. Request for sanction of Impress Fund, if required.
7. Supervise the activated Units of his Section.
8. Ensure the safety of the personnel of his Section.
9. Assign work locations and preliminary work tasks to Section personnel.
10. Ensure that a plan is developed to meet the logistic requirements of the IAP with the help of Comprehensive Resource Management System.
11. Brief Branch Directors and Unit Leaders.
12. Anticipate over all logistic requirements for relief Operations and prepare accordingly.
13. Constantly review the Communication Plan, Medical Plan and Traffic Plan to meet the changing requirements of the situation.
14. Assess the requirement of additional resources and take steps for their procurement in consultation with the RO and IC.
15. Provide logistic support for the IDP as approved by the RO and IC.
16. Ensure release of resources in conformity with the IDP.
17. Ensure that the hiring of the requisitioned resources is properly documented and paid by the FB.
18. Assign appropriate personnel, keeping their capabilities for the tasks to be carried out and maintain On Duty Officers List (IRS Form-007) for the day as enclosed in Annexure-VII.
19. Ensure that cost analysis of the total response activities is prepared;

20. Ensure that record of various activities performed (IRS Form-004 enclosed in Annexure-IV) by members of Branches and Units are collected and maintained in the Unit Log IRS Form 003 as enclosed at Annexure-III.

Role and Responsibility of IRS Officers

1. District Magistrate & Collector

- Preparation and updating of District Disaster Management Plan for the District.
- To ensure to able to perform the role of each involved 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 form 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.

2. District Development Officer

- 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.

3. 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.

4. Fire Service

- Inspection, survey and assess the situation where incident occurs & 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 fire fighting, equipments, neutralizing media, self-breathing 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.

5. Health Department

- 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 upto-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, life saving 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, Chair person, emergency services organization, agency and other related person.
- Other duties as required during actual emergency.

6. 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.

7. 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.

8. Dy Director – Information

- 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.

9. 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.

10. Gujarat Electricity Board (PGVCL)

- 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

11. 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, chair person, 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.

12. 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.

13. Role of other members of District Crisis Group

- 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.

14. 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.

15. Railway Authority

- 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.

16. 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.

17. 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

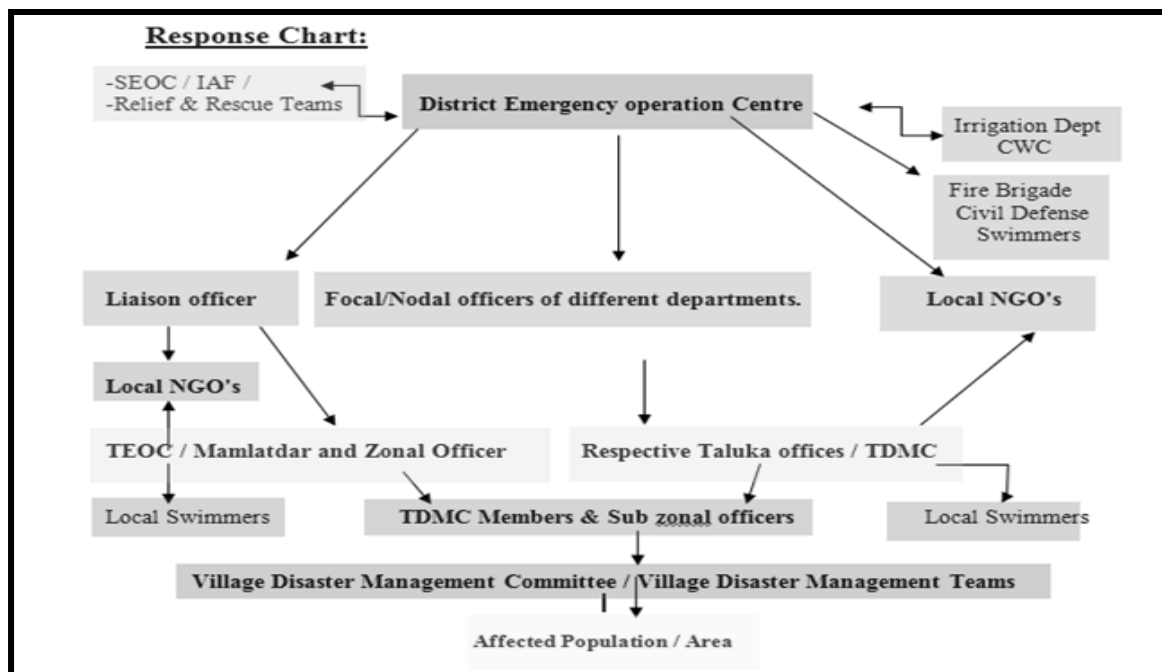
Bhavnagar District & Taluka level IRT

Position of IRT	District	Taluka
Responsible Officer	Collector & DM	Dy Collector & SDM
Incident Commander	ADM	Mamlatdar
Information & Media Officer	Dy. Director Information	Asst. Officer from Info dept.
Liaison Officer	SDM/Any Class one officer	SDM/Any Class one officer
Safety Officer	Disaster specification/(fire-fire officer, flood-health, earthquake -civil engineer, CDHO)	Disaster specific-Fire-fire officer, As per require Health-BHO, Earthquake-Dy. Engineer
OPERATIONS SECTION CHIEF	DISH/SP/CDHO/FO	Dy. SP/Factory Inspector/BHO/FO
Staging area manger	DPEO/DEO	TPEO
Response Branch Director	District Municipal Officer	Chief Officer
Division Supervisor/Group-in charge	Fire officer	Fire officer /FireStaff
Transportation Branch Director	Dy. Collector Stamp Duty	Dy. Mamlatdar (Extra post)
Road Group	ARTO	ARTO's staff
Rail Group	Divisional Manger	Station Master
Air Operations Group	EE R&B State	Ass. Eng.R&B State
PLANNING SECTION CHIEF	Dy Collector DCLR	Dy Mmaltdra DCLR
Resource Unit	District Project Officer-GSDMA	Dy. Mamaltdar Revenue
Situation Unit	Taluka Mamltar	Members of VDMC
Documentation Unit	District Project Officer-GSDMA(Along with DEOC Staff)	Dy.Mamlatdar Revenue
Demobilization Unit	District Project Officer-GSDMA (Along with DEOC Staff)	Dy.Mam and TDO staff/CO
LOGISTIC/ FINANCE SECTION CHIEF	Dy Collector Election	Dy Mamltar Election
Service Branch Director	Dy. DDO Panchyat	Dy. Chinish Panahcyat

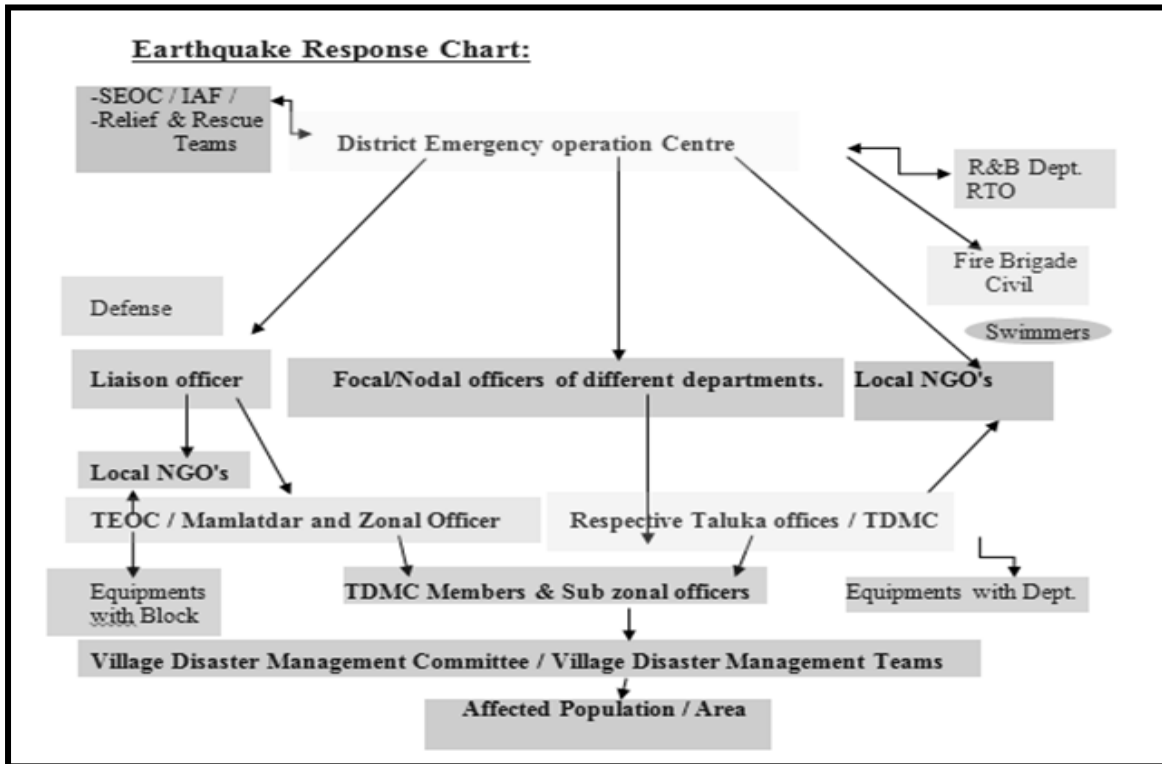
Communication Unit	Ex. Eng. GEB/R&B, General Manager BSNL	Dy. Engineer, R&B& GEB; SDOP;
Medical Unit	CDHO	BHO
Food Unit	DSO	Dy Mamlatdar, Supply Office
Support Branch Director	Dy DDO Revenue	ATDO
Resource Provisioning Unit	DSM (District Supply Mamlatdar)	Dy Mamlatdar / RAK
Facilities Unit	DPEO/DEO, Ex. ENG.R&B Panchayat	TPEO; Dy Engineer R&B Panchayat
Ground Support Unit	ARTO, DSO	RAK, RTO Inspector
Finance Branch Director	District Treasury officer	Sub-Treasury Officer
Claim Unit	Citnish to Collector (PRO)	Accountant Panchayat/Mamltar
Compensation Unit	Dy. DDO (Revenue) & Team	Dy. Mamlatdar / TDO / CO and team
Procurement Unit	Chitnish to Collector	Dy. Mamlatdar under the guidance of Mamlatdar
Cost Unit	ADM	Mamltar

Action Plan in various Disasters

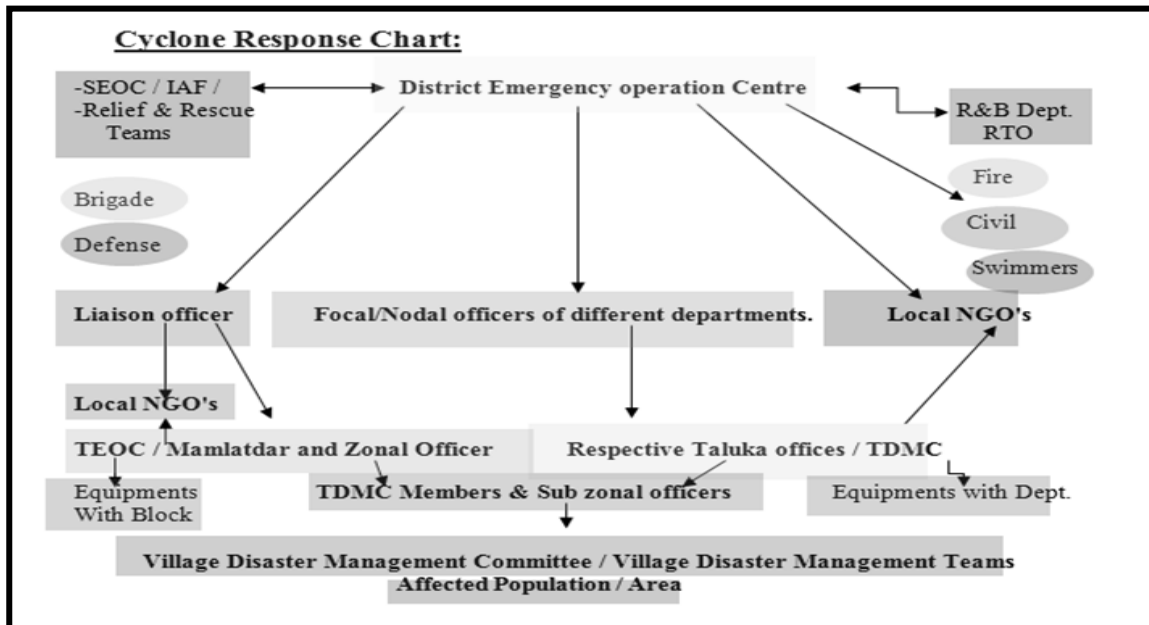
Response Chart



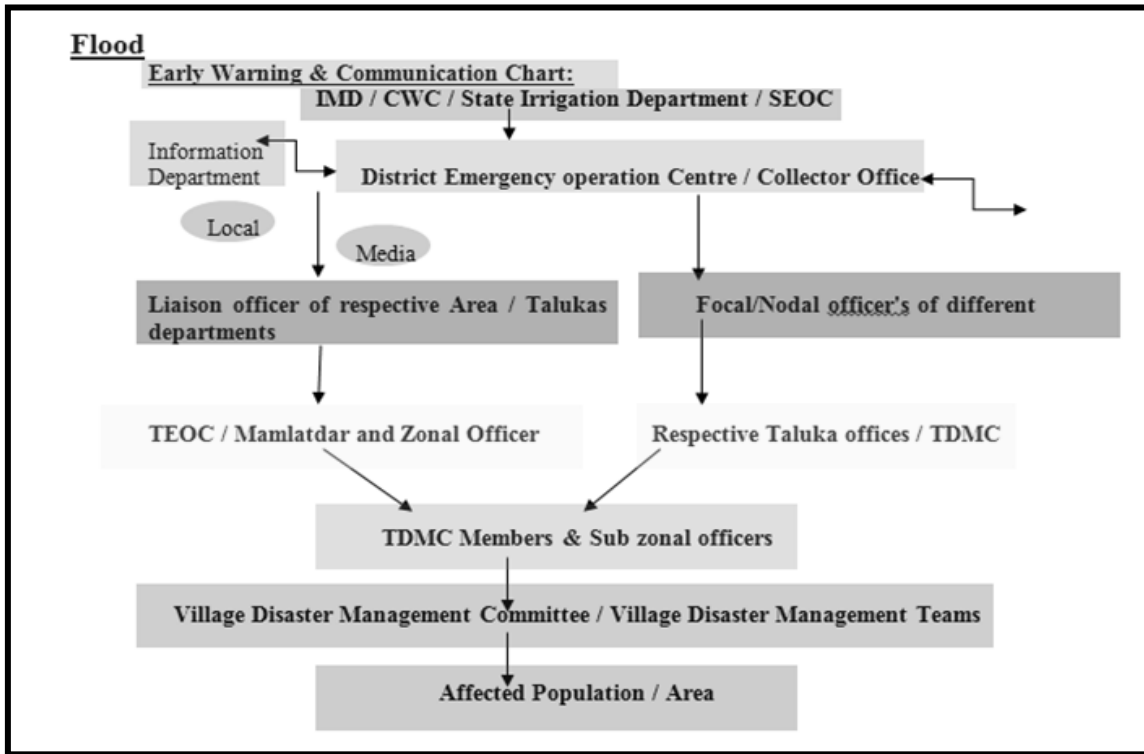
Earthquake Action plan



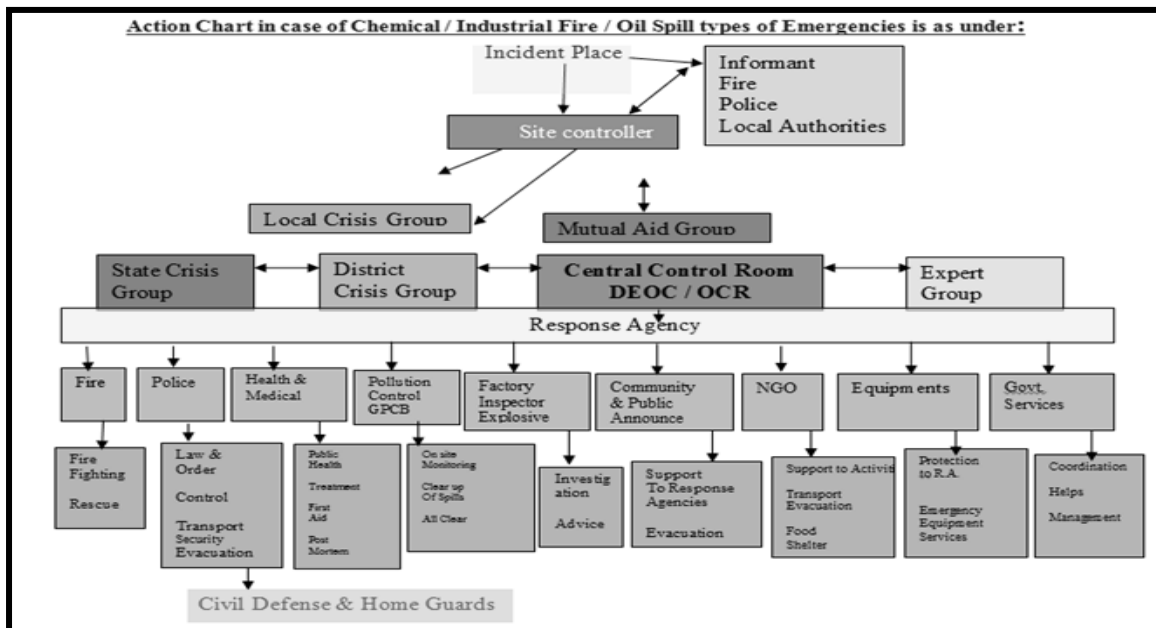
Cyclone Action Plan



Flood Action Plan



Chemical/Industrial fire/Oil spills Action Plan



Chapter-11

Mass Rescue Operation (MRO)

Template for Mass Rescue Operation (MRO) at Sea

1. Introduction

A mass rescue operation (MRO) is one that involves the need for immediate assistance to large numbers of persons in distress such that capabilities normally available to search and rescue (SAR) authorities are inadequate. Flooding, earthquakes, terrorism, casualties in the offshore oil industry, accidents involving releases of hazardous materials and major aircraft or ship incidents are examples which, because of their magnitude, may need to use the same resources as would be needed to carry out mass maritime or aeronautical rescue operations.

MROs are relatively low-probability high-consequence events. Effective response to such major incidents typically requires immediate, well-planned and closely co-ordinated large-scale actions and use of resources from multiple organizations. Intense and sustained high priority lifesaving efforts may need to be carried out at the same time and place as major efforts to save the environment and property. Huge amounts of selected information will need to be readily available at the right times and the right places not only to support the response efforts, but to meet the needs of the media, public and families of the persons in distress, which may number in the hundreds or thousands.

2. Policy

It is the policy of the signatory agencies to provide a national plan for coordinating Maritime Search and Rescue (M-MAR) services to meet the national needs as well as regional and international commitments. Guidance for implementing this plan is amplified in the National Maritime Search and Rescue (MAR) manual, International Aeronautical and Maritime Search and Rescue (IAMMAR) manual and other relevant directives of the agencies to this plan.

3. Purpose

This plan construes by inter-agency agreement, the effective use of all available resources and facilities to assist persons and property in potential or actual distress at sea within the Indian Search and Rescue Region (ISRR) regardless of the nationality or circumstances in which that person is found.

4. Objectives

Having known the obligations under several international conventions, agreements and instruments to render assistance to persons in distress at sea and to the establishment of effective MAR services, the participating agencies to this plan recognise the need for cooperation and co-ordination of activities regarding safety on and over the sea and desire to :-

- (a) Provide a national plan for co-ordinating MAR services, effective use of all available resources, mutual assistance and efforts to improve such co-operation and services for greater protection of life and property with economy of effort.
- (b) Support in implementing the provisions of International Maritime MAR

5. Terms and Definitions

Following are the terms and definitions based on International Maritime Organization usage for M-MAR:-

- (a) MAR Coordinator.** A person or agency with overall responsibility for establishing and providing MAR services within the SRR and ensuring that planning for those services is properly co-ordinated for which India is obliged under Maritime MAR Convention 1979.
- (b) Search and Rescue Region (SRR).** An area of defined dimensions recognized by International Maritime Organisation (IMO) and International Civil Aviation Organisation (ICAO) or other cognizant international body and associated with a Rescue Co-ordination Centre, within which MAR services are provided.

- (c) Search and Rescue Sub-region (SRS).** A specified area within a SRR associated with a rescue sub-centre.
- (d) MAR Services.** The performance of distress monitoring, communication, coordination and MAR functions, including provision of medical advice, initial medical assistance or medical evacuation, through the use of public and private resources including co-operating aircraft, vessels and other craft and installations.
- (e) Maritime Rescue Co-ordination Centre (MRCC).** A unit responsible for promoting efficient organisation of MAR services at sea and coordinating the conduct of maritime - MAR operations within a SRR.
- (f) Maritime Rescue Sub-Centre (MRSC).** A unit subordinate to a MRCC established to complement the latter according to particular provisions of the responsible authorities.
- (g) Search and Rescue Unit (SRU).** A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations.
- (h) On-scene Co-ordinator (OSC).** A person designated to co-ordinate MAR operations within a specified area.
- (i) MAR Mission Co-ordinator (SMC).** An official temporarily assigned to coordinate response to an actual or apparent distress situation.
- (j) Search and Rescue Point of Contact (SPOC).** Rescue Co-ordination Centers and other established and recognized national points of contact which can accept responsibility to receive COSPAS-MARSAT alert data to enable the rescue of persons in distress.
- (k) Mission Control Centre (MCC).** Part of the COSPAS-MARSAT System that accepts alert messages from the local user terminal(s) and other mission control centers to distribute to the appropriate Rescue Co-ordination Centers or other search and rescue points of contact.
- (l) Search and Rescue Data Provider (SDP).** A source for a Rescue Coordination Centre to contact for obtaining data to support search and rescue operations, including emergency information from communications equipment registration databases, ship reporting systems and environmental data systems (e.g. weather or sea current).

Bhavnagar district coastal Geographical Sea Area.

Region	Saurashtra
Headquarter	Bhavnagar
Sea Area	152 Km Sea area
Coastal area	Bhavnagar(R), Ghogha, Mahuva and Talaja Taluka
Location of Port	Alang Port and Bhavnagar Port

6. Participating Agencies

The participating agencies to this plan are:-

- (a) Ministry of Shipping.** Ministry of Shipping carries out broad responsibility w.r.t. Navigation and Port State Control of vessels and transportation safety. The Director General of Shipping, implementing agency for international conventions on maritime matters, shall promulgate all MAR preventive programmes on advice from the National Maritime MAR Board for commercial vessels operating in the Indian waters. They also maintain database of Maritime Mobile Service Identity (MMSI) numbers of all vessels registered with them.
- (b) Indian Coast Guard.** Indian Coast Guard has been designated as the national coordinator for the conduct of maritime MAR operations on and over the sea areas of the Indian SRR. Towards this, the Indian Coast Guard develops, establishes, maintains and operates MAR facilities for maritime MAR operations. The operation is coordinated through Maritime Rescue Co-ordination Centres (MRCCs) and Maritime Rescue Sub Centres (MRSCs) located in maritime states of India.
- (c) Indian Navy.** Indian Navy has facilities and resources that are used to support their own operations. These facilities may be used for maritime MAR needs on a 'not-to-interfere' basis with military missions.

- (d) **Indian Air Force.** Indian Air Force has MAR facilities for their own operations over land and sea. These facilities may be used for maritime MAR needs on a 'not- to-interfere' basis with military missions.
- (e) **Shipping Industry.** Shipping industry operates a fleet of merchant ships for national use and promotes a safe merchant marine, which should assist and support when called upon in maritime MAR operations, in accordance with the national and international conventions and provisions.
- (f) **Airports Authority.** Airports Authority of India undertakes air traffic control and maintains flight service facilities and shall provide information to assist in maritime MAR operations.
- (g) **Meteorological Department.** Meteorological Department shall support MAR operations through timely input of weather messages, marine environment forecasts and warnings for the coastal and high seas and provide weather information on demand to co-ordinator and coordinating agency.
- (h) **Department of Space (DoS).** Department of Space (DoS) shall provide satellite "alert" services as per the guidelines of COSPAS-MARSAT, for detection and location of aircraft, ships and individuals in potential distress situation that carry recommended distress beacons. DoS also maintains beacon registration data base, through web based access, containing unique identity of the beacon, vessel/aircraft type, owner and emergency contact details as provided by the users and also distributes the same to concerned rescue co-ordination centre for MAR mission planning.
- (i) **Chief Hydrographer.** Chief Hydrograph to Govt of India shall assist the maritime MAR agencies by timely promulgation of navigational warnings through NAVAREA and other measures.
- (j) **Customs and Excise.** Customs and Excise provide rescue facility assistance, and equipment clearance during MAR operation involving foreign crew / passengers.

- (k) Major Ports.** Major Ports provide rescue facility assistance to the MAR agencies during MAR operations occurring near ports and offshore areas. The major ports shall also provide berthing, towing, tug assistance to MAR agencies, when requested.
- (l) Department of Telecommunication (DoT).** Department of Telecommunication (DoT) on advice from the coordinating agency, promulgates rules and regulations for non-government use of wireless and radio facilities for promoting safety of life and property and co-operation in MAR operations by relaying inputs obtained from Coast Radio Stations.
- (m) Coastal State Government.** Coastal State Government shall provide assets, emergency medical and other facilities that would contribute to the effective MAR operations when requested by the coordinating agencies.
- (p) Fishing Community.** Fishing Community representing fisher- folk and operating around our coasts shall provide assets to the coordinating agencies, when requested to augment MAR effort.
- (q) Sailing Vessel Operators.** Sailing vessels operating around our coasts for commercial purposes shall provide assistance to the coordinating agencies, when requested to augment MAR effort.
- (r) Director General of Civil Aviation (DGCA).** Director General of Civil Aviation (DGCA) is to provide an updated list of civil aircraft registered in India, coordinate flexi-use of air space by civil and military air traffic and issue air safety notices during a particular MAR operation involving various air units.
- (s) Bureau of Immigration.** Bureau of Immigration to provide rescue facility by expediting immigration clearance during MAR operation involving foreign crew /passengers and also provide Regional and Foreign Language Experts whenever requisitioned by MAR agencies.
- (t) Minor Ports.** Minor Ports to provide rescue facility assistance to the MAR agencies during MAR operations occurring near ports and offshore areas. The minor ports shall also provide priority berthing, towing, and tug assistance to MAR agencies when requested.

(u) Private Ports. Private Ports to provide rescue facility assistance to the MAR agencies during MAR operations occurring near ports and offshore areas. The private ports shall also provide priority berthing, towing, tug assistance to MAR agencies when requisitioned by MAR agencies.

(v) Oil Exploration Agencies. Oil Exploration agencies (Government, PSUs and Private) to provide offshore Supply Vessels, Tugs, helicopters, extend helipad of oil platforms/drill ships, medical facility whenever requisitioned by MAR agencies.

(w) Airlines. Airlines (Government, PSUs and Private) are to extend facilities to maritime MAR agencies whenever requisitioned. The airlines to provide passenger list of the aircraft in distress at sea and diversion of other aircraft, if feasible, to locate vessel/aircraft in distress.

(x) Marine Police/Coastal Security Police (CSP). Marine Police/ Coastal Security Police (CSP) shall provide boats and other assistance to the coordinating agencies, when requested to augment MAR effort.

7. Indian Search and Rescue Region (ISRR)

- SRR is established by a country solely to ensure the primary responsibility for coordinating or providing effective MAR services, communication network and routing of distress alerts to MRCC responsible for that geographic area. SRR should, as far as possible, be contiguous and not overlap.
- India's maritime and aeronautical SRR will be harmonised with each other to the extent practicable, recognising that the lines separating SRR must be agreed by the countries having neighbouring SRRs. The delimitation of SRR is not related to and shall not prejudice the delimitation of any maritime boundary between neighbouring countries. The Indian SRR limits need to be resolved with the neighbouring countries for publishing in the documents of the IMO and ICAO.
- SRR may be sub-divided into sub-regions as long as delimitation coincides with relevant SRR limits. Where this is not practicable, changes to the international

limits should be taken up with the appropriate international organisation through proper channel by the maritime MAR Co-ordinator.

- Each SRR is to be associated with a MRCC. The MRCC is responsible for coordinating the conduct of MAR operations within a SRR. The standards and guidance for the MRCCs has been developed by the IMO and can be found in international conventions and IAMMAR manual. They are to be kept in the MRCCs for reference.

8. PARTICIPANT RESPONSIBILITIES

Primary Responsibility

MAR coordinator is responsible for arranging MAR services and establishing the MRCCs within the SRR. The system established should meet International standards and to facilitate integration into the global maritime MAR system support outside Indian Search and Rescue Region.

1. MAR co-ordinator may support maritime MAR operations outside the Indian SRR when requested, consistent with the expertise, capabilities and legal authority. This is in keeping with India's concern for safety of life at sea and the humanitarian nature of MAR and the advantages of national and international co-operation.
2. The Rescue Co-ordination Centre compatible with their capabilities and expertise will support maritime MAR operations in the neighbouring States territorial and international waters beyond Indian SRR when requested, in accordance with the international laws. In such cases, MAR operations shall, as far as practicable, be co-ordinated by the MRCC, which has authorised entry, or such other authority designated by the State concerned.
3. In carrying out Maritime MAR support functions with other nations, such as training, exercises, and liaison, each Participant will co-ordinate its activities with other Participants having maritime MAR expertise with respect to the support concerned.

4. While it is appropriate, that the Participants have the authority to do so, to co-operate and maintain liaison with maritime MAR authorities of other nations, such support should be dealt in co-ordination with the maritime MAR Co-ordinator and neighbouring MAR authorities. Such co-ordination will normally include Indian Coast Guard Headquarters, New Delhi, to ensure consistency with India's obligations under international agreements to which India is a Party, and compliance with the IAMMAR Manual and other relevant international guidance relevant to implementing such agreement.
5. Participants should not accept MAR Coordinator or MRCC role for maritime MAR operations of SRRs for which other nations are responsible. However, the Participants may provide and support maritime MAR operations in such areas when:
 - a) Assistance is requested (normally this should be in accordance with MRCC to MRCC procedures prescribed in the IAMMAR Manual).
 - b) Indian citizens are involved or Indian facilities become aware of a distress situation to which no other suitable facilities are responding, or where other available MAR services appear to be inadequate.
6. When assisting maritime MAR authorities of other nations, or agencies or organisations supporting these authorities, Participants to this Plan should ensure that : -
 - (a) Have expertise and appropriate agreement to do so.
 - (b) Provisions of conventions or agreements to which India is Party are not violated.
 - (c) Relevant procedures set forth in the IAMMAR manual, National Maritime MAR manual and other relevant directives are known and complied.
 - (d) Such efforts are carried out in consultation with Participants to this Plan.
 - (e) Authorities assisted in that country are responsible for the MAR functions.
7. Policies on rendering assistance in neighbouring States'

territorial waters must have the objective of balancing concerns for saving Lives, for sovereignty, and for national security. Provisions for territorial entry should be addressed in international MAR agreements as discussed below, and care should be taken to ensure that such agreements are compatible with the national policies.

8. Participants to this Plan if addressing maritime MAR-related inquiries or proposals from other nations or organisations outside India, or when hosting or attending international meetings on maritime MAR, care should be taken that interested Indian agencies, organizations, or persons are consulted and involved as appropriate.

National Search and Rescue Board

The National Search and Rescue Board is the patron of this Plan. The Board, insistent with applicable laws and executive orders is to :-

- a) Formulate and promulgate National MAR Plan.
 - b) Co-ordinate measures to be adopted by Participating agencies and formulate contingency plan.
 - c) Review and update matters relating to the Plan affecting more than one Participant, including recommendations for Plan revision or amendment.
 - d) Define functions to be performed by participating agencies.
 - e) Attending to matters relating to Maritime MAR as per IMO requirements in consultation with Ministry of Shipping.
9. The Board in particular, is intended to accomplish the following :-
 - a) Oversee this Plan and develop and maintain National Maritime MAR Manual. The applicability of the rules for MAR for defence forces should be in conformity with the provisions as enshrined in their respective Acts and practice in vogue.
 - b) Provide a standing national forum for co-ordination of administrative and operational Maritime MAR matters.
 - c) Provide an interface with other national, regional, and

international organisations involved with providing or supporting maritime MAR services.

- d) Develop and maintain suitable guidance for implementation of this Plan, such as a National Maritime MAR manual, supplement to the IAMMAR Manual.
- e) Promote effective use of all available national resources for support of M-MAR.
- f) Promote close co-operation and co-ordination with Armed Forces and other MAR communities for provision of effective maritime MAR services.
- g) Improve co-operation among Maritime and Aeronautical MAR communities for the provision of effective Maritime MAR services.
- h) Determine other ways to enhance the overall effectiveness and efficiency of M-MAR services, and to standardize procedures, equipment, and personnel training where practicable.

Maritime MAR Services

10. This Plan covers maritime MAR operations such as :-

- a) Provision of initial assistance at or near the scene of a distress situation.(e.g., initial medical assistance or advice, medical evacuations, provision of needed food or clothing to survivors etc)
- b) Delivery of survivors to place of safety or where follow up assistance can be provided.
- c) Saving of property when it can be done in conjunction with saving lives.

11. Maritime MAR does not include operations such as :-

- a) Air ambulance services, which did not result from a rescue or recovery operation.
- b) Military operations, such as combat MAR or other

types of recovery by military operations to remove military or civilian personnel.

- c) Salvage operations.
- d) Overall response to natural or man-made disasters or terrorist incidents.

Mutual Assistance

12. The Participants agree to co-operate :-

- a) Support each other by pooling relevant facilities and resources as appropriate for M-MAR operations within the SRR
- b) e, and respond to, requests for operational assistance between the designated MRCCs, MRSCs, of the Participants as capabilities permit.
- c) Develop procedures, communications, and databases appropriate for coordination of facilities responding to distress incidents, and for co-ordination between the MRCCs, MRSCs of the Participants.
- d) Follow applicable guidance of the IMO or other relevant international laws regarding M-MAR operational procedures and communications.

Charging for M-MAR Services

13. In accordance with customary international laws, when a nation requests help from another nation to assist a person(s) in danger or distress, if such help is provided, it will be done voluntarily, and India will neither request nor pay reimbursement of cost for such assistance.

14. Participants agree that maritime MAR services they provide to persons in danger or distress will be without subsequent cost-recovery from the person(s) assisted.

15. Participants are to fund their own activities in relation to this Plan unless otherwise arranged by the Participants in advance, and will not allow a matter of reimbursement of cost among them to delay response to any person in danger or distress.

PRINCIPLES ACCEPTED BY THE PARTICIPANTS

General

16. Participants coordinating operations should, consistent with applicable laws and executive orders, organise existing agencies and their facilities through suitable agreements into a basic network to assist military and non-military persons and property in actual or potential danger or distress, and to carry out obligations under customary international laws and instruments to which India is or may become a Party.
17. Participants will seek to keep political, economic, jurisdictional, or other such factors as secondary when dealing with lifesaving matters, i.e., where possible, what is best for lifesaving will govern their decisions.
18. Consistency and harmonisation will be fostered wherever practicable among plans, procedures, equipment, agreements, training, terminology, etc., for the various types of lifesaving and recovery operations, taking into account terms and definitions adopted internationally as much as possible.
19. If a distress situation appears to exist or may exist, rescue or similar recovery efforts will be based on the assumption that a distress situation does actually exist until it is known differently.
20. Assistance will always be provided to persons in distress without regard to their nationality, status, or circumstances.
21. Generally, cost-effective safety, regulatory, or diplomatic measures that tend to minimize the need for M-MAR services will be supported.
22. Recognising the importance of reduced response time to the successful rescue and similar recovery efforts, a continual focus will be maintained on developing and implementing measures to reduce the time

required for :-

- a) Receiving alerts and information associated with distress situations.
- b) Planning and coordinating operations.
- c) Facility transits and searches.
- d) Rescues or recoveries.
- e) Providing immediate assistance, such as medical assistance, food and clothing to survivors, as appropriate.

Research and Development

- 23. Research and development efforts for MAR need to be undertaken for improvements in MAR services. The focus of such efforts usually, is to develop data, procedures or equipment which enables MAR services to be more effective. Finding ways to exploit new and emerging technologies for MAR to make it a common focus for research and development.
- 24. Research and development results should be shared with other maritime nations to reduce the risk of duplicated efforts and to maximize the benefits of the results.

Training, Qualification and Certification

- 25. Training and experience are crucial for effective MAR response and efficient conduct of any operations. Officer-in-charge, MRCCs and MRCC/MRSC staffs need specialized training in watch keeping, coordination of available resources, search planning and rescue planning. MAR co-ordinator has the responsibility to ensure an effective overall training programme. It will normally be the responsibility of the Officer-in-Charge (O i/c) of the MRCCs to ensure that personnel manning RCCs/MRCCs are adequately trained for undertaking MAR Operations. Qualification and certification processes are to be ensured, so that, sufficient experience, maturity and judgments are gained. During a qualification process, the individual must, by demonstration of abilities, show mental

and physical competence to perform as part of a team. Officer-in-charge, MRCCs/MRSCs need to issue a certificate to all personnel prior independent watch keeping in MRCCs/MRSCs.

Validation of National MAR Plan

26. (a) The requirement of a MAR mission is called for without any prior notice or appointment. The agencies likely to be involved in the MAR operations are to be geared up in all respects so as to be ready to render assistance, if required. Also, the procedures involved in undertaking such an operation with various agencies on the scene are to be very well known to the agencies and also to the personnel of every faculty. Therefore, to ensure that everyone is prepared in all respects and work in cohesion, MAR training and exercises involving all the agencies are to be conducted periodically by simulating a MAR scenario. This will enhance the capabilities of the MAR system further and allow every agency to evaluate their capabilities to respond to any actual MAR requirement. The frequency of exercises will be as follows:-

- | | | | |
|------|---|---|------------|
| (i) | National level exercise | - | biennially |
| | Involving national and international participants | | |
| (ii) | Regional level exercise | - | annually |

(b) Inter Agency Liaison.

(i) All personnel involved in the MAR operations should maintain constant liaison with the MRCC and the co-ordinating MRCC should, in turn, maintain constant touch with the military authorities providing SRUs and other MAR agencies involved in the operation to help coordinate the activities, provide briefing and debriefing and keep Search & Rescue Mission Co-ordinator (SMC) informed on the SRU availability. Adequate background information must be provided so as to develop a picture on,

what actions might have been taken by the missing craft and provide expertise about the craft to aid in search planning during all joint operations. This will also enable conduct of co-ordinated studies, review of procedures and equipment and recommendation of better method of operation. Any development in this regard should be informed to the SMC in an ongoing operation.

- (ii) The inter agency liaison will enable review of MAR matters affecting more than one agency, including recommendations of participating agencies for revision and amendment of the plan. This will also encourage all the agencies involved to develop equipment and procedures to enhance the national MAR capability and promote coordinated development of all national MAR resources.

Maritime Search and Rescue (M-MAR)

- 27. Personnel associated with the MAR activities should be familiar with the International Convention on Maritime Search and Rescue, IAMMAR manual, National maritime MAR manual and other information applicable to M-MAR.
- 28. MAR principles and procedures of relevant customary international Conventions and IAMMAR Manual will serve as guidelines for co-ordination and conduct of MAR operations especially when dealing with other countries, organisations or jurisdictions. National maritime MAR manual and the MAR plan will be consistent with these international provisions to the extent practicable.
- 29. Indian Coast Guard will operate and maintain a ship reporting system (INDMAR) exclusively for maritime MAR operations, which is voluntary for ships transiting the Indian SRR. The information collated would enable identification of potential ship in the area to quickly respond to the distress situation. The ships send their data through the INMARSAT on entering SRR and every 24 hours thereafter and prior

exiting the SRR. (This system will be used only for MAR with its information being treated as “commercial proprietary” as promised to the ships reporting).

30. Operational responsibilities for maritime MAR will generally be associated with internationally recognised geographic maritime SRR. Indian Coast Guard has been” assigned the responsibility for co-ordinating M-MAR operations in Indian SRR with other agencies and organisations providing support as appropriate.

31. Distress situations involving airborne aircraft ditching in sea, will be handled by the maritime MAR authorities (i.e. Coast Guard) in co-ordination with the aeronautical MAR authorities.

32. Agencies responsible for MAR operations under this Plan will :-

- a. Keep information readily available on the status and availability of key MAR facilities or other resources, which may be needed for MAR operations.
- b. Keep each other fully and promptly informed of operations of mutual interest, or which may involve use of facilities of another Participant.

33. MAR Co-ordinator will delegate to their MRCCs the authority to :-

- a. Request assistance via the MRCC/MRSC of other nations, and to provide all pertinent information on the distress situation and the scope of assistance needed.
- b. Promptly respond to requests for assistance from other MRCC/MRSC, including those of other nations.
- c. Grant permission for entry into Indian waters for MAR facilities of other nations if need arises.
- d. Make arrangements with customs, immigration, health or other authorities to expedite entry of foreign MAR facilities as appropriate.

34. MAR Co-ordinator will authorise the MRCCs to arrange promptly or in advance for entry of foreign rescue units into India should it ever become necessary. Such arrangements should involve appropriate authorities in India as well as proper authorities of the nation or MAR facility involved with the entry. Such entry may include over flight or landing of MAR aircraft, and similar for surface MAR units as circumstances dictate for fuelling, medical, or other appropriate and available operational support, or delivery of survivors. It could also be in response to a request made by the Indian MRCC to the MRCC of another nation for assistance of those facilities.
35. Operations of MAR facilities committed to any MAR mission normally should be coordinated, and directed, by an appropriate MRCC or MRSC consistent with the provisions of this plan.
36. On-scene co-ordination may be delegated to any appropriate unit participating in a particular incident by the MAR mission coordinator of a MRCC.
37. No provision of this Plan or any supporting plan is to be construed as an obstruction to prompt an effective action by any agency or individual to relieve distress whenever and wherever found.
38. MAR Co-ordinator shall arrange for the receipt of distress alerts originating from within SRR for which they are responsible, and ensure that every MRCC and MRSC can communicate with persons in distress, with MAR facilities, and with other MRCCs/MRSCs.

Armed Forces - Civilian Relationships

39. Arrangements between Armed Forces and civilian agencies should provide for co- operation among themselves, consistent with statutory responsibilities and assigned MAR functions.
40. Co-operative arrangements involving Navy, Air Force and Coast Guard commands should provide for the effective use of their facilities for maritime MAR on a not-to interfere basis with military missions, consistent with statutory responsibilities and assigned agency functions.

41. Participants with operational responsibilities should develop plans and procedures for effective use of all available MAR facilities and for contingencies to continue maritime MAR operations if military forces are withdrawn because of another emergency or a change in military missions.

42. Navy and Air force responsibilities under this Plan include support of maritime MAR on a not-to-interfere basis with primary military duties, in accordance with applicable national directives, plans, guidelines, agreements, etc.

43. To optimise delivery of efficient and effective MAR services, and, where practicable and consistent with agency authorities, provide the organisations and persons interested in supporting these services the opportunity to do so, all available resources will be used for maritime MAR. Certain state and local governments, civil and volunteer organisations, and private enterprises have facilities, which contribute to the effectiveness of the over-all MAR network, although they are not participants to this Plan.

44. To help identify, locate and quantify primary MAR facilities, Navy, Air force and Coast Guard commands may designate facilities which meet international standards for equipment and personnel training as MAR units (SRUs). (Such facilities need not be dedicated exclusively to the associated type of operations, and this designation is not intended to preclude use of other resources).

45. Recognising the critical role of communication in receiving information about distress Situations and co-coordinating responses, and noting that such responses sometimes involve multiple organisations and jurisdictions, the participants will work aggressively to develop suitable MAR provisions for :-

- a) Interoperability.
- b) Means of sending and receiving alerting.
- c) Means of identification.
- d) Effective provisions for equipment registration and continual access to registration data by MAR authorities.
- e) Rapid, automatic, and direct routing of emergency communications.
- f) High system reliability.
- g) Pre-emptive or priority processing of distress communications.

Assistance During National Disasters

46.

National Disasters Management (NDM) Policy 2009 also stipulates general responsibilities for the armed forces during a national disaster. The NMMAR Board forms an important part of the Government's response capacity and the resource agencies are the immediate responders in all serious disaster situations along the coast and at sea. On account of its vast potential to meet any adverse challenge, speed of operational response and the resources and capabilities, the NMMAR Board through its resource agencies in past, has played a major role in emergency support functions including communication, search and rescue operations, health & medical facilities and transportation, especially in the immediate aftermath of a disaster. NMMAR Board will always remain prepared and will coordinate Search and Rescue (MAR) operation at sea by the resource agencies during national disasters like Tsunami and provide assistance to neighbouring countries whenever called upon by the Government.

Mass Rescue Operation (MRO)

47. Mass Rescue Operations (MROs) often need to be carried out and coordinated within a broader emergency response context that may involve

hazards mitigation, damage control and salvage operations, pollution control, complex traffic management, larger-scale logistics, medical and coroner functions, accident-incident investigation, and intense public and political attention, etc. Efforts must often start immediately at an intense level and be sustainable for days or weeks.

48. MAR Authorities should co-ordinate MRO plans with companies that operate aircraft and ships designed to carry large number of persons. Such companies should share in preparation to prevent MROs and to help ensure success if they become necessary.

49. Since opportunities to handle actual incidents involving mass rescues are rare and challenging, exercising MRO plans is particularly important.

Suspension or Termination of Operations

50. Maritime MAR operations shall normally continue until all reasonable hope of rescuing survivors or victims has lapsed.

51. The responsible MRCC/MRSC concerned shall decide when to discontinue these operations. If no such centre is involved in coordinating the operations, the OSC may take this decision. If there is no OSC involved, the decision will be made at appropriate level of the chain-of-command of the MAR facility conducting the operations.

52. When a MRCC/MRSC or an appropriate authority considers, on the basis of reliable information that a rescue or recovery operation has been successful, or that the emergency no longer exists, it shall terminate the MAR operations. The authority terminating should inform the authority, facility or service which has been activated or notified.

53. If an operation on scene becomes impracticable and the MRCC/MRSC or an appropriate authority concludes that survivors might still be alive, it may temporarily suspend the on-scene activities pending further developments. They

should promptly inform the authority, facility or service which has been activated or notified. Information subsequently received shall be evaluated and operations resumed when justified based on the information.

Entry into Force Amendment or Termination

This Plan:-

- a. Shall enter into force effective from 05 Apr 2013.
- b. May be amended by written agreement among the Participants.
- c. May be terminated or superseded by a new Plan or by written agreement among the Participant.
- d. This Plan will be reviewed after five years.

1. Some of the important crisis are as under

- (a) Hostage or terrorist situation requiring specialized handling.
- (b) Attempts by terrorists / extremists to create a major scare of poisoning or use of nuclear / biological / chemical weapons.
- (c) Assassination or attempted assassination or kidnapping or disappearance of an Indian or Foreign high dignitaries.
- (d) Mutiny.
- (e) Migration / Exodus / Infiltration.

2. Composition and Function of the various committees

(1) State crisis management committee: -

To deal with the crisis situation in the state, Gujarat State Government has constituted the state crisis management committee with the following members.

Sr. No.	Name & Address (Member)	Name & Address (Alternate Member)
1	Chief Secretary, Blook-1, III Floor, Sachivalaya Gandhinagar. T.No.(O) 079- 23250313	Addl. Chief Secretary, Home, Block-2, Ist Floor, Sachivalaya Gandhinagar. T.No.(O) 079- 23250502,3,5
2	Addl. Chief Secretary, Home, Block-2, Ist Floor, Sachivalaya Gandhinagar. T.No.(O)079-23251501,591,507	Secretary L&O, Block-1 9th Floor, Sachivalay Gandhinagar. T.No.079-232522156
3	Principal Secretary (Revenue) & Rilif Commissioner, Blook-11 IV Floor, Sachivalay Gandhinagar. T.No.079-23251509,06	Director of Rilif/Dy.Sec. Rilif, Blook-11 7th Floor, Sachivalay Gandhinagar. T.No. 079- 23251611,12
4	C.E.O., G.S.D.M.A Udhog Bhuvan Gandhinagar. T.No.079-23259502	Addl. C.E.O. G.S.D.M.A, Udhog Bhavan Gandhinagar.
5	DGP & IGP, Police Bhavan Ist Floor Gandhinagar. T.No.079-23246333,23259989	Addl. D.G.P. L & O, Police Bhavan Ist Floor, Gandhinagar. T.No.079-23254222
6	The I.G.P. Inte., Police Bhavan Ist Floor, Gandhinagar. T.No.079-23254301	DIGP (Coastal Security), Dafnana Ahmedabad. T.No.079-23254314
7	Joint Director, Central IB, Sagar Appartment, SVP enclave, Bodakdev, Ahmedabad. T.No.079-22685880	Dy. Director, Central IB, Sagar Appartment, SVP enclave, Bodakdev, Ahmedabad. T.No.079-22685880

State level police control room is activated at Gandhinagar whose telephone No, is 079-23251914, 23251912, 23251900, 23251916, 23251902 and fax no. is 079-23246329. It could be contacted any time during any type of crisis.

The Nodal department will be mainly responsible for taking all action to deal with a particular crisis situation. Home Department will be the Nodal Department for the above crisis situation.

Nodal Department will establish a crisis group for dealing with crisis which fall within the ambit of its responsibility. The crisis group will be mainly responsible for dealing with a crisis situation and for reporting all developments to the state crisis management committee seeking its direction and guidance as and when necessary. Nodal Department will have a well-equipped Control Room for quick receipt of information and dissemination of command instructions. As soon as a crisis situation develops and it warrants attention of the state crisis management committee it will be the responsibility of the secretary of the Nodal Department to report it to the state crisis management committee, who in turn will inform to the Intern:" Crisis Management Committee and the District Crisis Management Committee.

INCIDENT COMMAND SYSTEM OVERVIEW

For major incidents, crisis management for the overall response may also be needed. The Incident Command System (ICS), one widely used means of meeting this need, but works best with some advance familiarization and exercising within and among the transportation and emergency response communities. Since SAR and transportation authorities are likely to encounter use of the ICS within emergency response communities, this Appendix provides general information for familiarization with ICS. The following terms are relevant to the ICS:

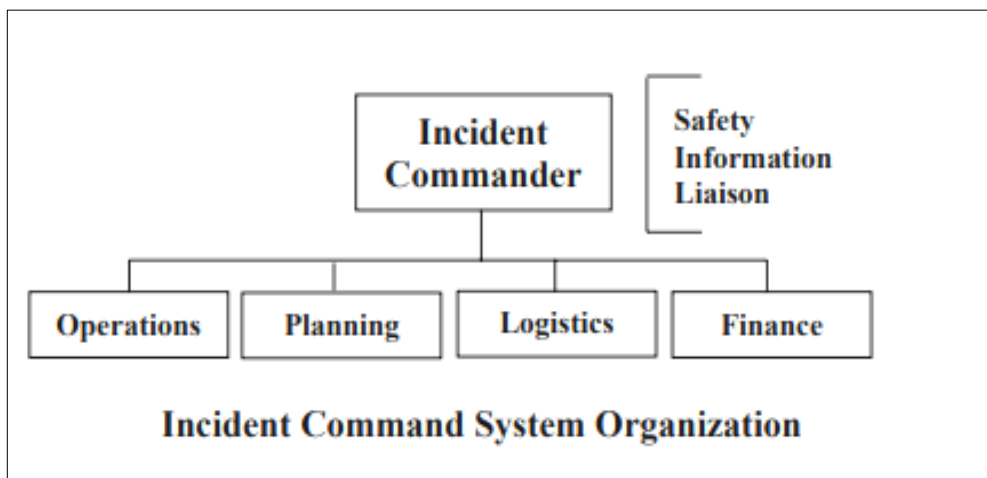
Incident Commander (IC): the primary person functioning as a part of the incident command system, usually at or near the scene, responsible for decisions, objectives, strategies and priorities relating to emergency response

Incident Command Post (ICP): location at which primary functions are carried out for the Incident Command System

Incident Command System (ICS): on scene emergency management concept that provides an integrated organizational structure adaptable to the complexity and demands of an major incident involving multiple missions, response organizations or jurisdictions

Unified Command (UC): the incident commander role of the incident command system expanded to include a team of representatives that manages a major incident by establishing common objectives and strategies and directing their implementation

The following Figure illustrates the basic ICS organization



District Crisis Management Committee:-

To deal with the crisis situation in Bhavnagar District, the District Crisis Management Committee will consist of the following members.

Sr.No.	Name & Address (Member)
1	Shri R.K.Mehta(IAS) D.M. (Chairman) Office of the District Collector, Bhavnagar. Mob.No. 9978406206
2	Shri Harshad Patel(IPS) DSP, Office of the Supdt. of Police, Bhavnagar. Mob. No. 9978405067
3	Dr. Jayeshkumar Brahmhatt Superintendent of Civil Hospital, Bhavnagar Mob.No.9898141114

Post of Addl. Collector and Other officers can be co-opted in need basis.

Bhavnagar District Crisis management Committee will function from the D.M. Office or Bhavnagar District Control Room. Immediately on the occurrence of the crisis the local action plan would be put into effect by the Dist. Committee. Most of the action in a crisis situation will be taken at the district level hence district committee will remain in contact of with Internal Committee and state crisis management committee and give information regarding crisis situation and will follow the instruction received from the above committees and will act

according to the advise and other of the above committees. The District Committee will meet minimum once in every six months in normal circumstances and will discussed the problems likely to arise during crisis situations and suggest measures for modernization of different plans.

(1) Search and Rescue Team :-

If any crisis situation rise, 'E' Coys of SRP will work as search and rescue team. They will be called through Addl. DG of Police Arms, G.S, Gandhinagar. Telephone No. of SRP group- V, is 02876-262859.

(2) Chetak Commandos :-

Four units of SRP Group-v, Gandhinagar are prepared and trained as Chetak Commandos they are capable to drill with heavy crisis like terrorist attack. If this type of crisis raise in this district these commandos will be called through Addl. DG of Police Arms, GS, Gandhinagar. Telephone No. of SRP group- V, is 02672-262859.

(3) Trigger Mechanism :-

If any such situation arises, district crisis management plan will be implemented as per the directions of the Chairman, District Crisis Management Group

(4) E.O.C.

As per emergency management planning, EOC which is established in the office of the DM will be treated as main EOC when any crisis takes place as also when the law and order situation in the district is jeopardized, the District Control Room will act in coordination with the District EOC Control Room. The incharge of this EOC Control Room will the not Granted but Disaster Dy Mamlatdar, District level EOC will be manned by Disaster Mamlatdar, DPO-GSDMA, Deputy Mamlatdar, Clerk and Equipments. All taluka has their own control room.

(5) Media Management :-

In consultation with Director of Information, Bhavnagar immediate steps will be taken for media management.

Chapter-12 Miscellaneous

Evacuation plan

- (1) White Signal - Alert condition
- (2) Blue Signal - Ready for Evacuation
- (3) Red Signal - Immediate Evacuation

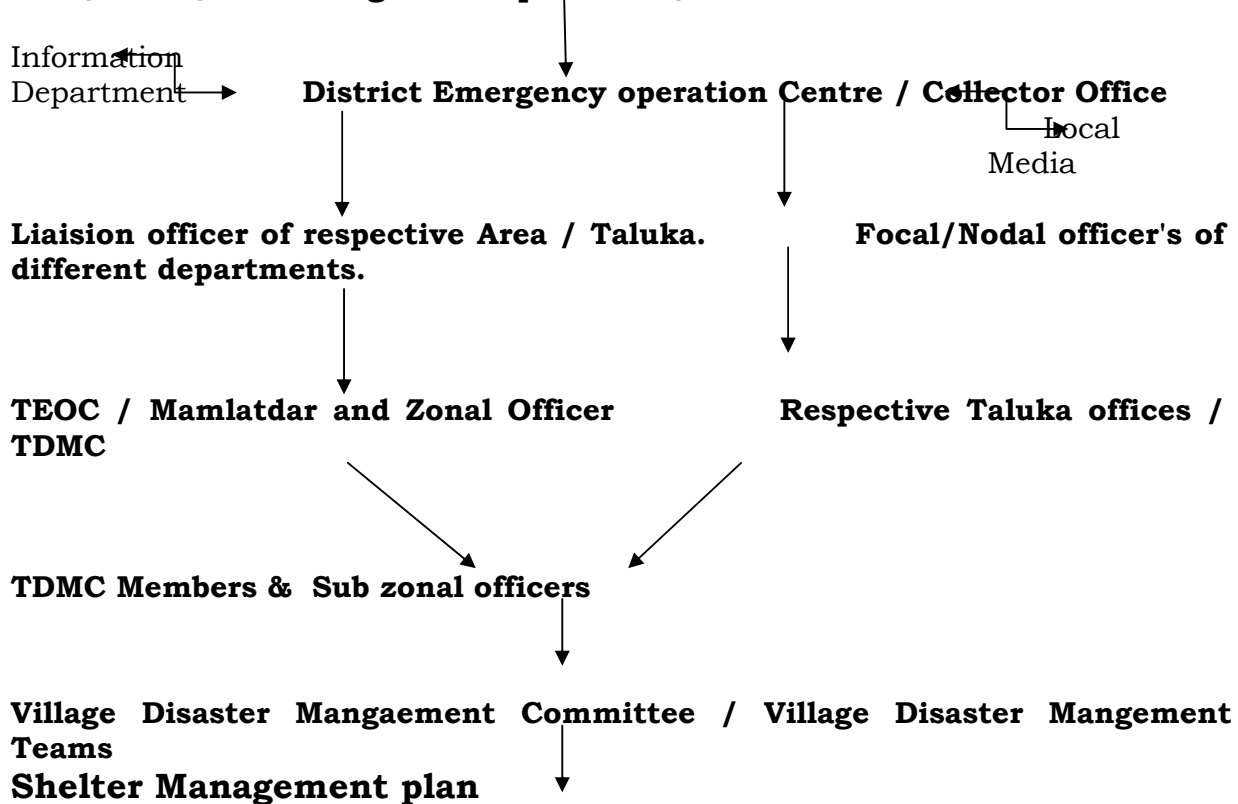
As and when the warning come from Indian Metrological department (IMD) , or from Irrigation department regarding heavy rainfall or water release the following channel has been intimated and appropriate message conveyed to the concerned department / official / control rooms /community members using tele communication , wireless message , by fax or in written by DEOC.

In city area the route has been finalized for early warning , accordingly early warning task force leading by fire and emergency services personals spread the message of alert in respective low line areas , in villages local methodologies of early warning has been used (by bitting up of drums etc.) to communicate the message of alert to the affected population of the village.

The following channel has been intimated and appropriate message conveyed to the concerned.

Early Warning & Communication Chart :

IMD / CWC / State Irrigation Department / SEOC



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 Bhavnagar 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 etc. Detail List in VDMP Plan. Also find list on SDRN. District /Taluka/Village Level - District /Taluka /Village Disaster Management Team directly responsible to Evacuate affected people at Safe Place

Medical and Hospital Management plan

Disaster: Health Impacts

Disaster causes negative impact on the overall health of the community besides interfering in its sustainable development. Direct health implications of disaster are death and injury. Disruption of human ecology and environmental concerns are of prime importance due to:

Disruption / damage to sanitation and sewage facilities creates enabling environment favorable for occurrence of vector borne and water borne diseases,

The affected communities living in temporary shelters / resettlements have limited or no access to safe drinking water, food etc. In addition, prevailing unhygienic sanitary conditions make it conducive for spread of food and water – borne disease.

Overcrowding in temporary shelters results in spread of communicable diseases.

Effects on mental health include Post Traumatic Stress Disorder; excessive grief, sleep disorders; exaggeration of existing illness; death wish & suicidal ideation.

Reproductive Health – Pregnant mothers and newborns become vulnerable and require additional care.

Among all the adverse health impacts, the impact of communicable disease is often delayed for weeks or months after the acute event. Water and food-borne disease transmission potential increases immediately and week after the disaster. Vector borne diseases may appear after four weeks or more due to disruption of vector control efforts, washing away of residual insecticides, increased number of vector breeding sites and more man-vector contact. Nutritional problems appear after months. Table (see next slide) gives the summary of health effects according to the type of hazard.

Post disaster public health intervention

Emphasis on post disaster public health measures is necessitated by the following additional factors:

Destruction of health care infrastructure.

Interference in public health services specially for:

Safe drinking water

Sanitation measures

Immunization

Rodent/mosquito control

Ecological changes and its effect on vector populations

High population density due to displacement Public health interventions to prevent disease outbreaks after disaster should

Essentially focus on:

Post disaster sanitation measures for:

Safe water supply

Food hygiene

Proper sewage systems/disposal of excreta

Vector/rodent control

Public health education

Media Management Plan

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

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

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.

Relief

Establish Information Support Centre for information sharing and logistic distribution

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

Disaster Zonation

Cyclone

Sr. No.	Name of Taluka	No. of Villages
1	Mahuva	13
2	Talaja	10
3	Bhavnagar	08
4	Ghogha	03
Total:-		34

Flood (water logging villages)

Sr. No.	Name of the Taluka	No. of Villages
1	Mahuva	5
2	Talaja	5
3	Sihor	3
4	Gariyadhar	2
5	Bhavnagar	17
6	Umrالا	4
7	Jesar	2
Total :-		38

Flood (river affected villages)

Sr. No.	Name of the Taluka	No. of Villages
1	Mahuva	6
2	Talaja	4
3	Palitana	10
4	Gariyadhar	3
5	Vallabhipur	19
6	Bhavnagar	13
7	Ghogha	4
8	Umrالا	17
9	Jesar	4
Total :-		80

Earthquake

Bhavnagar district comes under Zone-III for earthquake

Industrial Hazard (MAH industries in Bhavnagar District)

Sr. No.	Name of MAH industries	Chemical being utilized by the industries	Remarks
1	Sumitomo Chemicals (I) Pvt.Ltd.	Epchoro hydrine	Bhavnagar
2	Indian Oil Corporation Ltd.	LPG	Bhavnagar
3	Ship Recycling Industrial Association (Odaraka village)	LPG	Ghogha
4	Sunfire Petrochemicals (P) Ltd. (Vadia village)	LPG	Sihor
5	Nirma Ltd. (KalaTalav village)	Clorine (Liquid), Hydrogen Gas	Bhavnagar
6	Archit Organosys Limited (Narmad village)	Clorine, Hydrogen Gas	Bhavnagar
7	Renaissance Industries (GIDC-Vartej)	Clorine	Bhavnagar

Projects for prevention of disaster

- 1. Disaster Risk Management Programme (DRM)**
- 2. Gujarat School Safety Programme (GSSP)**
- 3. Aapada Mitra project/Up Scalling AapdaMitra Project**

Part-2

Annexure-1

Bhavnagar District Profile

History

Around 1260 AD, they moved down to the Gujarat coast and established three capitals; Sejakpur, Umralla and Sihor. In 1722–1723, forces led by Khanthaji Kadani and Pilaji Gaekwad attempted to raid Sihor but were repelled by Maharaja Bhavsinhji Gohil. After the war Bhavsinhji realised the reason for repeated attack was the location of Sihor (old Bhavnagar). In 1823, he established a new capital near Vadva village. 20 km away from Sihor, and named it Bhavnagar. It was a carefully chosen strategic location because of its potential for maritime trade. Naturally, Bhavnagar became the capital of Bhavnagar State Bhavnagar Boroz.

The old town of Bhavnagar was a fortified town with gates leading to other important regional towns. It remained a major port for almost two centuries, trading commodities with Mozambique, Zanzibar, Singapore, and the Persian Gulf. The current Royal Family of Bhavnagar comprises Maharaja Vijayraj Singh Gohil and Maharani Samyukta Kumari, Prince Yuvraj Jaiveerraj Singh Gohil and Princess Brijeshwari Kumari Gohil.

Until the independence of India in 1947, Bhavnagar was an independent state ruled by the Rajput Gohil family. In 1947, the Deputy Prime Minister of the newly independent Indian Union Sardar Vallabhbhai Patel undertook the ambitious and complex process of unifying 565 princely states with the Union of India. The last Maharaja of Bhavnagar, Krishnakumar Sinhji handed over the administration of his Bombay State to the people's representative in 1948, and Bhavnagar was the first state to join the Indian Union. The erstwhile royal family of Bhavnagar continues to lead an active role in the public eye as well as in business (hotels, real-estate, agriculture & ship-breaking) and is held in high regard by the population both in the city as well as areas that comprised the former princely state of Bhavnagar.

Micro Regions

Geographically, the Bhavnagar district is in agro climatic zone VI (South Saurashtra) and VIII (Bhal and Coastal area) sub region of Gujarat. The general slope dips towards the north-east at the apex of Gulf of Khambhat. A small non-perennial river named Kansara Nala passes through the outer area of the city.

Mahuva, Talaja, Bhavnagar, Ghogha talukas are situated at costal line of Gujarat as well Bhavnagar district.

Boundry

Bhavnagar borders with Ahmedabad District to the northeast, Botad District the northwest, the Gulf of Cambay(Gulf of Khambhat) to the east and south and Amreli District to the west.

Umarala taluka, Palitana, Sihor well connect with railway line as well State highway. Ghogha taluka of Bhavnagar is Developing Taluka of Bhavnagar district (By State Government).

The area covered by the district is 7034 sq. km. Bhavnagar District rank 6th among the districts in terms of area. Density of population is 289 per sq.km.

Geographical details

Bhavnagar is placed in the southwestern corner of Gujarat State. Its mainland extends between 21-47 degree southeast at North Pole and 71-15 degree longitude. It is bounded by Gulf of Khambhat in east and south and Amreli district in the west, Rajkot and Surendranagar districts in the northwest, Ahmedabad in northeast and Arabian Sea in the east and south.

Bhavnagar, in the Indian State of Gujarat, is a port of city on the coastal region of the Saurashtra peninsula abutting the picturesque Gulf of Cambay.

Sr. No.	Name of Taluka	Total Villages	Total Village Panchayats	Total Geographical area (sq. km)	Total Forest area (sq. km)
1	Bhavnagar	60	52	1039.68	11.35
2	Ghogha	48	36	437.85	8.28
3	Gariyadhar	50	48	484.33	0.73
4	Jesar	37	37	490.13	69.67
5	Mahuva	118	115	1255.61	26.39
6	Palitana	83	78	734.74	39.16
7	Sihor	82	78	720.87	46.03
8	Umrالا	43	43	407.33	0.87
9	Vallabhipur	60	53	593.39	11.35
10	Talaja	118	118	869.72	23.56
	Total	699	658	7034	237.39

(Source- Village Profile)

Bhavnagar town is district head quarter and has one Municipal Corporation in the state out of 8 Municipal Corporations. There are 10 Talukas (Bhavnagar, Ghogha, Umrالا, Jesar, Mahuva, Talaja, Sihor, Palitana, Gariyadhar and Vallabhipur), 6 Nagarpalikas (Mahuva, Talaja, Sihor, Palitana, Gariyadhar and Vallabhipur).

Forestry

Out of the total reported district area of 7034 sq.km, 237.39 sq.km is the forest area. its accounts for about 3.37% of the district area.

Victoria Park is a reserved forest range in the heart of Bhavnagar city. This park is one of the oldest manmade forest in India and also the only city forest of Guajrat, thus its maintenance is prioritized by the Indian government. The government has taken the entire responsibility to maintain this beautiful park in Bhavnagar. Victoria Park is spread across a sprawling 500 acres of land which is filled with rare species of flora and fauna. The park is also connected to Gaurishankar Lake and the lake view from the park is spectacular and this spot is highly popular among the tourists.

This park acts as a green lung for Bhavnagar city which shelters foxes and antelopes. Not only this, you can also see many other mammals like porcupine, hyena and nilgai. Gaurishankar lake in Victoria Park is where plenty of water birds can be seen. It is a treat and paradise for all bird lovers. You can spot birds like green beeaters, bulbuls, robins, silverbills, treepie, blackwinged stilts, tailorbirds, spotted owlets, sunbirds, roseringed parakeets, shikra, egrets, common peafowl, pelicans, darters and herons.

The park is open throughout the day however; early morning is the best and perfect time to visit this place. There is no entry fee to the park. If you are lucky enough, then you might get to have a close view of a scampering fox and nilgais.

Black Buck national park is situated at Velavadar(Bhal)region of Bhavnagar district, at a distance of 72 km from Bhavnagar airport of Gujarat. It was established in the year 1976. spreads over an area of 34.08 sq. km and has appropriate grasslands ecosystem. This has helped in the conservation of Black Buck, Wolf and Lesser Florican (a bustard). Black Buck Wildlife Sanctuary has the maximum population of Black Bucks in India. This animal is more beautiful and graceful as compared to any other species.

Jesar taluka of Bhavnagar district is new Home for Asiatic Lion. The new conservation area of Jesar taluka, territories near Bhavnagar and Amreli.

Land development: Non-agricultural use

In the coastal areas, (Ghogha, Mahuva, Bhavnagar Rural, Talaja) salinity as well as in some parts water logging, make the land infertile. Hence this area is valuable for industrial and other uses and enhanced the aspirations of people for prosperous future. like Bhal-kharapat area of Bhavnagar taluka has strongly potential for Chemical Industry / Chemical Zone because it has biggest waste land of Asia and most Suitable for Chemical Industry.

The scale of special programmers to generate wage employment like MGNREGA and self employment like SJSY and Vajpayee bankable yojana has increased in terms of number of beneficiaries as well as the amount of land works of capital

formation such as approach roads, water harvesting structures have helped to strengthen the economic base and also environment.

Important Crops

The Bhavnagar is agriculture dominated district. Groundnut, Cotton Wheat, Bajra, Onion sesame, Pulses and Sorghum are the major field crops grown in the district. The major field crops cultivated in KHARIF season are Groundnut, Cotton, Pulses, Bajra, and Sesame. Wheat, Gram, Cumin, Onion, and other vegetables are important Rabi crops of the area.

District is now taking to horticulture and to value added cropping pattern. Considerable focus is placed on the water economizing techniques of irrigation and on water use efficiency and on water conservation.

Horticulture mainly dominated in Mahuva, Talaja, and Ghogha talukas of district, planting Coconut plantation.

Mahuva taluka of district is major hub of Onion grow and Onion Dehydration plant. Maximum dehydrated Onion (Onion Powder) export to overseas which helps to earn foreign currency to India.

Demographic details

Sr. No.	Name of Taluka	Population		
		Male	Female	Total
1	Bhavnagar	409978	377341	787319
2	Ghogha	51861	49116	100977
3	Gariyadhar	58669	56218	114887
4	Jesar	43222	41563	84785
5	Mahuva	206965	200294	407259
6	Palitana	107424	103142	210566
7	Sihor	110343	101893	212236
8	Umrالا	44391	41932	86323
9	Vallabhipur	41335	38857	80192
10	Talaja	174482	151185	325667
	Total	1248670	1161541	2410211

(Source- Census-2011)

Climate

Bhavnagar has a hot semi-arid climate with hot, dry summers from March to mid-June, the wet monsoon season from mid-June to October during which it receives heavy to moderate rainfall, and mild winters from November to February. The semi arid classification is due to its high evapotranspiration. The average temperature from November to February is around 20 °C, with low humidity. Due to proximity to the sea, the climate remains fairly humid throughout the year. The highest record temperature was 54 °C (129 °F) on 26 May 1988, while the lowest record temperature was 2 °C (36 °F) on 11 December 1973.

Rainfall

The district mainly receives the rainfall through south-west monsoon which normally starts from middle of June, July and August are the richer months of rainfall.

Minerals

Major Minerals products of Bhavnagar district are; Lignite, Dolomite, Lime stone and Monor minerals are Black trap, Bentonite, Ordinary sand, Hard murrum, B.lime stone, Soft murrum, Ordinary clay, Brick earth, Sand stone.

Soil

The soils of the district may be broadly classified into following categories;

- Medium black soils
- Alluvial soils
- Alkaline soils

Medium black soils are wide spread and are found in all the talukas of the district, they are more productive and are rich in lime, magnesium and alumina and poor in phosphorous, nitrogen and organic matters. They can retain considerable moisture and are much suitable for agriculture. Alluvial soils are found along the Shetrunji river covering parts of Gariyadhar and Palitana taluka. Soils in this area are less productive as they are saline. Alkaline soils are found in the parts of Gariyadhar taluka. They consist of both productive and non productive soils.

Drainage

Bhavnagar district is drained by a number of rivers, namely Shetrunji river and its tributaries viz., Kalubhar, Ghelo, Vagad, Kalbi, Padala, Keri, Goma, Utavli, Dhantarvadi, Surajvadi, Malan and Bagad. Most streams are ephemeral. The drainage is southeasterly except in Mahuva taluka, where it is drained by southerly flowing 5 streams. Shetrunji is the main river that flows towards Southeast and meets with the Arabian Sea. The River Shetrunji drains the south-central of the district covering Gariadhar, Palitana and Talaja talukas. Originating in the Dundhi hills in the Gir, it enters the district about 1.5 km north of Karjala and flows almost towards east and northeast to east of Palitana and takes a southeasterly turn afterward and debouches in the Gulf of Cambay near Sultanpur. The total length of the river in the district is about 98 km. The other important rivers that drain the central and northern part of the districts include the Kalubhar, Ghelo, Bagad etc. The above rivers have generally easterly and southeasterly flow and debouch in the marshy land adjoining the Gulf of Cambay in the north-eastern part of the district. The Kalubhar has a total flow length of 45 km, the Ghelo 72 km and the Bagad 38 km in the district. A number of rivers/streams originate and flow in a southerly direction in the southern part of the district south of Shetrunji basin-divide and debouches in the Gulf of Cambay. Important among them are Dhantarvadi, Nadhi, Surajvadi, Nandh, Malan Nadi and Bagad Nadi.

Transportation

- 1) The district has 987 Kms. length of State Highway, 3847 Kms. length of pakka roads connection to approximately 700 villages / towns in the district. Kachchha roads are of 1843 kms. And 108 villages accessible only in fair weather.

Out of the total 824 inhabited villages, 633 villages are connected by State Road Transport facilities.

- 2) Total length of railway track is 282.68 kms. In the District of broad gauge, and 34 railway stations are on the district.

Gariyadhar, Vallabhipur, Ghogha, and Talaja talukas have not the railway facilities.

- 3) District has airport facility too.
- 4) Gogha-Dahej RO-RO ferri Service open the door of new horizon in the district, Bhavnagar become the saurashtra's transportation hub.

Education

The district has 75.52% literacy rate. The district has total 1039 Primary schools, 347 Secondary and Higher Secondary Schools and 1 university (there is more than 25 colleges under the Bhavnagar university).

Animal Husbandry

Live Stock

Sr. No.	Place	Cattle	Buffalo	Sheep	Goat	Total
1	Bhavnagar	31483	33621	15032	8075	88211
2	Gariyadhar	11560	6286	1959	4390	24195
3	Ghogha	14964	29248	11162	11563	66937
4	Jesar	15208	19417	9260	11716	55601
5	Mahuva	29748	55564	22370	29821	137503
6	Palitana	27316	29077	5081	8452	69926
7	Sihor	32990	28189	8579	12287	82045
8	Talaja	30151	74679	56551	17035	178416
9	Umrالا	14374	6903	856	3592	25725
10	Vallabhipur	18613	8946	1301	3202	32062
	Total	226407	291930	132151	110133	760621

Fisheries

Fishing Center Details

There are total 11 fishing centers. Most of Coastal area is active in fishing activity.

Sr. No.	Taluka Name	Fishing Center Name	
		Sr.No.	Name
1	Bhavnagar	1	Nirma Khadi
		2	Nava Bandar
		3	Juna Bandar
2	Ghogha	4	Ghogha
		5	Osaara
		6	Mithi viridi
3	Talaja	7	Sartanpar
		8	Reliya
		9	Gadhula
4	Mahuva	10	Katpar
		11	Mahuva Bandar

Boat Details

Sr.No.	Fishing Center Name	Number of Boats
1	Bhavnagar	31
2	Ghogha	85
3	Sartanpar	96
4	Gadhula	08
5	Mathavada	06
6	Jasapara	02
7	Sosiya	02
8	Alang	02
9	Mahuva Bandar	35
	Total	267

Active Fishermen Details

Sr.No.	Taluka Name	Number of Fishing Family	Number of Fishermen
1	Bhavnagar	582	2870
2	Ghogha	279	1416
3	Sihor	15	153
4	Palitana	130	1613
5	Talaja	283	2018
6	Mahuva	202	2214
	Total	1491	10284

Search & Rescue Details

Sr.No.	Taluka Name	Number of Availale Boats for Rescue work	Number of Fishermen Swimmers
1	Bhavnagar	12	10
2	Ghogha	10	10
3	Talaja	10	10
4	Mahuva	10	10
	Total	42	40

Salt pan

Due to large seashore in the District, Salt Industries has developed very well. There are many salt factories in the district.

Sr. No.	Name of Unit
1	Shri Nilkamal Salt Chemical (Agariya) Sahkari Mandali Ltd.
2	The Bhavnagar Salt & Ind. Works pvt.Ltd.
3	Marchant Salt Pvt.Ltd.
4	Nandi Salt Works
5	Patel Salt and Marine Chemicals Pvt.Ltd.
6	Nilkanth Salt Chemicals
7	Pavansut Salt Works
8	Shree Shyam Salt Product Ltd.
9	Rina Salt & Marine Chemicals
10	Maruti Salt Works
11	Akhandanand Salt & Marine Chemicals
12	Jay Bhagwati Salt Works LLP
13	The Modern Salt Works Pvt.Ltd.
14	Sanvriya Chemicals Ltd.
15	Darshan Salt Works Pvt.Ltd.
16	Jagdish Salt
17	Shree Khariya Hanuman Salt Works Pvt.Ltd.
18	Khodiyar Salt Works
19	Mahavir Salt Works
20	Malhotra Salt & Chemicals Pvt.Ltd.
21	Bhupatbhai Ramjibhai Koli
22	Adarsh Salt works
23	Bip Salts & Allied Chemicals
24	Tithal Trading Pvt. Ltd.
25	Sagar Salt Works
26	Shri Sharda Mitha Utpadak Sahkari Mandali Ltd.
27	Usmangani Sulemanbhai Hamidani (Gujarat Salt Works)
28	Akwada Mitha Utpadak Sahkari Manli Ltd.
29	Nayankumar Parshottambhai (Kalubhai)
30	Kiran Salt Works
31	Chandan Salt Works Pvt.Ltd.
32	Shree Chamunda Salt Works (Ganeshgadh)
33	Ashok Salt Works (Ganeshgadh)
34	Dhavdi Salt Works (Ganeshgadh)
35	Meladi Salt Works (Ganeshgadh)
36	Rajshakti Salt works (Ganeshgadh)
37	Gayatri Salt Works (Ganeshgadh)
38	Naklank Salt Works (Ganeshgadh)
39	Shakti Salt Works (Ganeshgadh)
40	Devraj Salt Works (Ganeshgadh)

41	Umiya Salt Works (Ganeshgadh)
42	ShivSakti Salt Works (Ganeshgadh)
43	Bhagwati Salt Works (Ganeshgadh)
44	Ambuja Salt Works (Ganeshgadh)
45	Shree Ram Salt Works(Ganeshgadh)
46	Jay Mahashakti Salt (Kumbharwada)
47	Laxmi Salt (Kumbharwada)
48	Gayatri Salt(Kumbharwada)
49	Kishan Salt (Kumbharwada)
50	Gita Salt (Kumbharwada)
51	Chamunda Salt works (Akwada)
52	Ashapura Salt Works (Akwada)
53	Khodiyar Salt (Akwada)
54	Momai Salt (Ganeshgadh)
55	Bhavna Salt (Ganeshgadh)

Culture and Arts, Socialism

Home to socialism, reforms, and cultural legacy, Bhavnagar is considered a city of education and culture, and is known as the cultural capital of Saurashtra. People of Bhavnagar are considered to be easy-going, and art-loving. The artists and literary luminaries of Bhavnagar have immensely contributed to the culture of the city. Gujarati is the language of normal life, although Hindi is commonly understood. Knowledge of English is limited to the more educated population of the city.

Tourism

- **Takhteshwar Temple** is one of the prime places to see in Bhavnagar. Takhteshwar Temple (1893) is a white marble temple, on a high plinth, offering a commanding view of Bhavnagar. The high shikhara rising above the pillared rectangular mandapa makes it an important landmark. Lord Shiva is worshipped as the main deity of this shrine
- **Nilambag Palace:** The residence of the current Maharaja of Bhavnagar, HH Maharaol Vijayrajsinhji Virbhadrasinghji Gohil & his family; is now also a heritage palace hotel.
- **Mangalsinhji Mahal Palace:** This palace is the residence of the members of the Bhavnagar royal family (family of Maharajkumar Mangalsinhji Takhatsinhji of Bhavnagar). It is a historical property in the heart of Bhavnagar city and is designed on traditional Kathiawari architectural principles. It is now the formal residence of the descendants of Rajkumar Chandrajitsinhji Mangalsinhji of Bhavnagar.

- **Bhav Vilas Palace:** This palatial property was formerly the club-house for the royal family of the erstwhile princely state of Bhavnagar, now the residence of Maharajkumar Shivbhadrasinhji Krishnakumarsinhji Gohil & his family. It is famous for its wildlife collection & lake-side views.
- **Gaurishankar Lake** is beautiful lake between small hills. It was made by Shree Gaurishankar Oza, the Deewan of Bhavnagar. There is Balvatika for Children, and temple of Lord Shiva. There is a big palace for Highness Family. It is peaceful and lovely place.
- **Seashore at Ghogha (About 22 km. from Bhavnagar):** Sea-side palace retreat of the Bhavnagar royal family, also now a hotel-guesthouse for travellers with excellent sea-side views & cuisine.
- **Victoria Park:** It covers an area of about 500 acres (2 km²) with diverse flora and fauna. This park attracts bird watchers and nature lovers. It is a forest conserved by the Indian Government within the boundary of the Bhavnagar city. The forest has varieties of Indian birds like waders, raptors and perching birds that attract bird watchers and nature admirers.
- **Gopnath Beach** offers colorful bird life, limestone cliffs, a sea breeze, and scenic views. It also houses the world's biggest ship breaking zone, and the Talaja temple, which is built on a 350 foot high volcanic hill.
- **Barton Library** (Bhavnagar City)
- **Darbagadh:** Once the seat of the Bhavnagar royal family, now rented out to the State Bank of India is also their headquarters (formerly the State Bank of Saurashtra)
- **Ganga Deri (Ganga Jalia Talav):** This monument is a miniature of the Taj Mahal constructed entirely in marble and is one of the masterpieces of old times given by the Maharaja.
- **Alang Ship Breaking Yard:** (About 50 km from Bhavnagar on the way to Talaja)
- **Gandhi Smriti:** A memorial, with a library of Gandhian books and photographs about the life of Mahatma Gandhi. It also has a fine collection of art objects representing the culture of the Saurashtra region.
- **CSMCRI (Central Salt and Marine Chemicals Research Institute):** The only constituent laboratory of CSIR (Council of Scientific and Industrial Research) in Gujarat. A significant research effort is being carried out here to develop Bio-Diesel from Jatropha.

- **Ghogha Beach (19 km away from Bhavnagar):** It is a favourite spot for local trips.
- **Oldest Mosque** during the period of Hazarat Muhanmad Paygambr of Gujarat is in Ghogha.
- **Piram Bet (About 20 km away from Ghogha Beach)** treasured fossils and old caves
- **Malnath Shiv Temple** (About 15 to 20 km from Bhavnagar)
- **Khodiyar Mata Temple** (near Sihor)
- **Pillgarden:** A beautiful garden in the city, also called Sardar Baug.
- **Palitana:** Famous for its beautiful Jain temples. A pilgrimage place for Jains.
- **Velavadar:** Blackbuck National Park.
- **Sihor Brahm Kund** Made By Siddhraj Jaysinh Rathod.
- **Gautmeshwar Temple** (Gautam Rushi Do the Sadhna)
- **Sihori Mata Temple** (Sihor)
- **Mongal Mata Temple** (near Mahuva)
- **Nishkalnk Mahadev** (Koliyak)
- **Bhavani Mata Temple** (Katpar-Mahuva Taluka)
- **Bajarangdas Bapa Temple** (Bagadana)
- **Zanzmer Beach** (Talaja)

Men of letters

Bhavnagar has produced many Reformists, Thinkers, Socialists, Poets, Writers, Artists, Educationists, and Independence activist. A few of these are mentioned below:

- **Narsinh Mehta**– A poet-saint and exponent of Hindu devotional religious poetry, author of the popular bhajan 'Vaishnav Jana To', was born in the village of Talaja taluka in Bhavnagar district.
- **Gangasati**– A medieval Gujarati saint poet who wrote many devotional songs, hailed from Samadhiyala village of Umralla Taluka of Bhavnagar district. The shrine of Gangasati and Panbai is situated on the river belt of the Kalubhar river.
- **Kavi Kant**– Royal poet of Bhavnagar state was born in Chavand village of Bhavnagar district.
- **Nanabhai Bhatt (Lokbharti)**– Founder of Lok Bharti, educationist, creative writer, thinker.
- **Gijubhai Badheka**– Educationist and reformer.
- **Jhaverchand Meghani**– Gujarati poet and writer of Gujarati folk literature.
- **Ravishankar Raval**– A painter, art teacher, art critic, journalist, and essayist, was born in Bhavnagar.
- **Manubhai Pancholi "Darshak"**– An educationist, writer, and politician
- **Prahlad Parekh and Krishnalal Shridharani**– Poets
- **Dula Bhaya Kag**– Renowned poet, social reformer and freedom fighter, born in Mahuva town of Bhavnagar district.
- **Morari Bapu**– A Hindu preacher, famous for Ram Charit Manas Katha, from a small village Talgajarda near Mahuva of Bhavnagar district.
- **Govardhanram Tripathi**– Gujarati novel Saraswatichandra written by him based on locations of Bhavnagar and Sihor. A few chapters were written during his stay in Bhavnagar.
- **Somalal Shah**– Painter
- **Mulshankar M. Bhatt**– Educationist
- **Ambashankar Bhatt**– Educationist
- **Kanti Bhatt**– Journalist and Columnist in leading News paper
- **Harbhai Trivedi**– Educationist
- Kismat Qureshi, Nazir Dekhaiya, Barkat Virani are writers of Ghazals.

Commerce

- Exports of cotton, ship machinery and dehydrated onions.
- Diamond cutting, polishing, and marketing.
- Manufacture of diamond jeweler.
- Manufacture of plastic rope, yarn, twine.
- Re-rolling mills driven by the ship-breaking yard at Alang.
- Manufacture of Investment Castings with lost wax process (Ferrous and Non Ferrous)
- Other large scale manufacturing industries like fertilizer, soda-ash, steel casting etc.

Workers and Industrial Classification

Census 2011 data reveals that total 40.98% are workers in the district, out of that 33.7% are main workers and 7.38% are workers. Cultivators are 21.99%, Agriculture laborers 27.61%, Workers in household industry 1.39% while a significant percentage of 49.0%, Are classified as other workers.

Industrial Development

Industrial development of Bhavnagar district could be attributed to the presence of a large number of diamond cutting and polishing units, salt and marine chemicals, plastics, ship building and breaking industries. Ship breaking is the biggest industry in the district. Bhavnagar stands second in diamond cutting & polishing industry after surat in india.

MAH industries in Bhavnagar District

Sr. No.	Name of MAH industries	Chemical being utilized by the industries	Remarks
1	Sumitomo Chemicals (I) Pvt.Ltd.	Epchoro hydrine	Bhavnagar
2	Indian Oil Corporation Ltd.	LPG	Bhavnagar
3	Ship Recycling Industrial Association (Odaraka village)	LPG	Ghogha
4	Sunfire Petrochemicals (P) Ltd. (Vadia village)	LPG	Sihor
5	Nirma Ltd. (KalaTalav village)	Clorine (Liquid), Hydrogen Gas	Bhavnagar
6	Archit Organosys Limited (Narmad village)	Clorine, Hydrogen Gas	Bhavnagar
7	Renaissance Industries (GIDC-Vartej)	Clorine	Bhavnagar

Ports (Gujarat Maritime Board)

Out of 1600 Kms. Length of Coastal line of Gujarat the coastal belt of Bhavnagar District blessed with 152 Kms.

Bhavnagar Port

Bhavnagar port is all-weather lighterage port for bigger cargo vessels. It is located in the Gulf of Cambay on the West coast of India. The port is having a lock gate for tidal advantage. Presently Coal, Lime Stone, and Salt are being handled.

The port is well connected with the state highway and broad gauge railway line. The city of Bhavnagar is about 10 km from the new port. air services are available between Bhavnagar and Mumbai. Nearest international Airport is Ahmedabad.

Alang Port

Alang is the world's largest ship recycling yard. It has been in operation since 1982. It comes under the administrative control of Gujarat Maritime Board(GMB) which was established by the government of Gujarat in 1982 under the Gujarat Board Act, 1981.

Alang-Sosiya Ship Recycling Yard stretches over a approximately 10 km of coastline along the western shore of the Gulf of Khambhat. It can be approached from the nearest city Bhavnagar by NH-8E (up to Trapaj) and SH-37 (from Trapaj). A concrete service road runs along the entire length of the SRY. GMB has developed 153 plots for ship recycling which have been leased to private entrepreneurs. Out of total 153 plots 90 plots are in the Alang area (Southern part of the yard) and 63 are in Sosiya area (Northern part of the yard).

Alang-Sosiya Ship Recycling Yard

Background:

The ship breaking industry performs two major roles. It adjusts Ship tonnage for the shipping industry by way of disposal of old ships and it also supplies substantial quantities of re-rollable and scrap steel. It also increases the availability of some finished material/ products which otherwise would have to be produced by the iron and steel industry using the natural ore. Thus, the ship breaking industry helps in conservation of natural resources.

In India till 60's ship breaking activity was confined mainly to dismantling of small barges and coastal wrecks. The activity grew as a full-fledged industry by 1979 when the Government of India recognized it as a Manufacturing Industry. Though ship-breaking activities are carried out at West Bengal (Kolkata), Kerala (Beyport, Azical), Maharashtra (Mumbai) and Gujarat (Sachana) etc. however the main centre lies on the west coast of Gulf of Cambay at Alang-Sosiya, Bhavnagar, Gujarat. The large tidal range and

other geomorphological characteristics of the beach at Alang make it an ideal location for the ship breaking industry. As many as 173 plots are developed by Gujarat Maritime Board along a 10 km long coast with total breaking potential of 3-5 MMTA.

MATERIALS OBTAINED ON RECYCLING OF SHIP:

During the recycling of ship, precious material is obtained which can be used either directly or after altering it. Some of the important materials obtained due to ship dismantling are:

- Steel plates, pipes, beams, angles, channels etc.
- Engines, D.G. Set, A.C. Unit and spare parts.
- Refrigerators, washing machines, TVs etc.
- Wood (doors, panels, furniture)
- Cables (Copper and Aluminum cables)
- Glass wool, Thermocol, PUF etc.
- Oils (Furnace oil, lubricating oil, transformer oil, diesel)
- Lead acid batteries.
- Gear boxes, machineries, pumps, valves etc.

BREAK UP OF MAJOR END PRODUCTS OF SHIP RECYCLING:

The percentage wise break up of important end products shows that only 2-3% waste is generated thereby proving it environment friendly process of getting steel.

Re-roll able scrap	: 70 - 80 %
Melting scrap	: 6 - 10 %
Non-Ferrous scrap	: 0.25 - 0.75 %
Machinery & other material	: 4 - 5 %
Furniture	: 1 %
Weight loss	: 8 - 10 %
Solid disposable waste	: 2 - 3 %

TYPE OF SHIPS COMING FOR RECYCLING ACTIVITY

Committee of Technical Experts in its report categorized ships in to 1) Ships of special concern and 2) General ships. However mainly following type of ships comes to Alang for dismantling.

- 1) Bulk Carrier (Cargo)
- 2) Tankers (Oil, Chemical, LPG etc.)
- 3) Passenger Ships (RORO Passenger/ Big Passenger liner)

- 4) Factory Ships (Fish/Cement Factory)
- 5) War ships
- 6) Research vessel
- 7) FPSO/Offshore fixed or floating Platforms

HAZARDOUS WASTE MANAGEMENT:

The following activity leads to generation of hazardous/non-hazardous wastes

Removal of oil : used oil/waste oil

Cleaning of oil tanks : oily sludge/oily rags/contaminated oily sand

Dismantling of cabins/passage : waste asbestos/glass wool/ thermocol/floor tiles/ glass pieces

Dismantling of pipes : waste asbestos/glass wool/PUF

Removal of cables: pieces of waste cables

Removal of Lead acid batteries: used batteries

Cutting of massive pieces of vessels : paint chips

Cutting of large pieces of plates in to smaller pieces: paint chips/scale

The Hazardous waste management scenario was observed to have improved significantly, as compared to the previous years, on account of the following measures:

Removal of oil:

Ship Recycler submits the tentative schedule of removal of oil to Regional Office, Bhavnagar. During the period of removal of oil, GPCB officials monitor the facility ensuring no leakage of oil. Used oil recovered from ships is sold to the oil reprocessing units registered with CPCB and copy of manifest is submitted to Regional Office.

Cleaning of oil tanks:

Oily sludge is sent to common incinerator facility where as oily rags and contaminated oily sand is disposed off to TSDF site.

Various types of oils in the ship:

Type of oils	Source	density	Flash point	Application
Fuel Oil	Engine	0.94	110	Sold as fuel oil
Marine gas Oil (Diesel)	Generator set	0.87 0.84	230+10	Sold as fuel oil
Lubricating oil	Various mechanical/ Hydraulic system	0.87	Total Base number 7-13	Sold as lube oil
Used oil	Sump tank	0.90 to 0.92	180 Water contaminant 2 to 50%	Disposed to Re Refining units
Waste oil	(Heavy fuel bottom tank) (Gas oil bottom tank)	0.94 0.80		Disposal to re refining units/incineration depending on the quality

4. Handling of asbestos: Following practice was adopted prior to Hon'ble Supreme Court order dtd.6/9/2007. Pipe and other parts containing asbestos is dismantled from the ship and brought to the asbestos handling area at the plot. The Pipe/parts containing asbestos is made wet by spraying the water on it and than Scrapped off to minimize the generation of air borne asbestos fiber. Waste asbestos thus generated is solidified in the cement pipe with the help of cementing material before disposal to the TSDF site. On site handling & solidification facility is provided in all the operative plots.

Many of the Plots have provided special asbestos handling facility (negative pressure system) containing facility of providing negative air, HEPA filter system along with air pollution control measures and a waste water treatment.

Proper collection, segregation, storage and disposal of pieces of glass wool, thermocol, floor tiles and other wastes including waste cables/rubber tubes, etc. to a secured land fill site at Alang.

Stopping haphazard dumping of solid/hazardous waste generated from the ships.

The landfill site at Alang developed by GMB is commissioned in October 2005 and made operational in March-06. It is expected to cater to the solid/hazardous waste disposal requirement for around 5 years. This site is outsourced by GMB to GEPIL, Surat for operation and maintenance for the period of three years which is further extended for another two years. So far about 6760 tons of waste is received at this site. These contain 185 MT of ACM/asbestos waste.

The ship breaking units at Alang-Sosiya had disposed around 3868 MT of such wastes up to February 2006 at the Naroda TSDF site. Till August-08, 4922 MT of hazardous & non-hazardous waste is received whereas 1838 MT of MSW is received at the site. The waste segregation and storage facilities for these wastes are provided on plots basis. The recoverable sheets of glass wool, asbestos containing material (ACM) and thermocol are recovered and sold for reuse.

Hazardous Waste/Solid Wastes from Ship Recycling Yard and its disposal methodology:

Sr. No.	Waste/Waste stream	Mode of disposal	Remarks
HAZARDOUS WASTE			
1	Oily sludge	Disposal by selling at TSDF or by incineration	
2	Asbestos	Disposal at TSDF	
3	Paint Chips	Disposal at TSDF	
4	Used Oil	Disposal by selling to registered re-refiners	
5	Waste Oil	Disposal by selling registered re-refiners or by incineration	
6	Used Batteries	Disposal by selling to Registered Recyclers	
SOLID WASTE			
1	Cementing Material	Disposal by selling to end users	Unusable pieces of tiles and other cementing material goes to TSDF
2	Iron scaling	Disposal by selling to end users	Unsellable goes to TSDF
3	Chicken mesh	Disposal by selling to end users	Unsellable goes to TSDF
4	Cardboard & packing Material	Disposal by selling to end users	Unsellable material goes to TSDF
5	Glass	Disposal by selling to end users	Unsellable broken glass pieces goes to TSDF
6	Rexene	Disposal by selling to end users	Unsellable small pieces goes to TSDF
7	PVC & Plastic & Cable	Disposal by selling Registered recycler	Unsellable small pieces goes to TSDF

Annexure-2

Disaster History of District

Year	Description
1982	<p>On 8th November 1982 Bhavnagar faced a tropical cyclone of the speed of 150 kms / hours. Instead of it there was heavy rain in the district on 7th and 8th. Because 250 mm rain falls in two days there was the situation of flood in the rivers that cause the death of 125 people at the site of Kalubhar dam in Gadhada Taluka. Same day 25 people felt in the grip of death of Umratal Taluka.</p> <p>In the same cyclone the Kashmir of Saurashtra MAHUVA lost its beauty because thousands of trees fell down and there was heavy loss of human being, resources, property and livestock.</p>
1999	<p>Again the Bhavnagar District copied a cyclone of 80-100 kms / hour with heavy rain. It's taken the 5 innocent people's life.</p>
2000	<p>In August – 2000 the topple of Bhavnagar experienced the earthquake. The epicenter of the quake was near to the 8 kms far from circuit near Malanka village.</p> <p>From August 2000 to 25th January – 2001 the people of Bhavnagar experienced 175 to 200 light earthquakes.</p> <p>Because of the waves of those quakes there was heavy loss of buildings in the Bharatnagar area of Bhavnagar.-</p>
2001	<p>The destructive earthquake of 26th January 2001 badly affected the Bhavnagar district. Because of earthquake 4 people and one cattle dead and 24 people were injured. In the same earthquake 9752 kuchcha and pukka houses were partially damaged and 239 house were totally damaged.</p>
2002	<p>In Bhavnagar district during 6th June 2002 to 30th June 2002 the heavy rain created flood in Palitana, Bhavnagar and Sihor Taluka of the district, during the flood 19147 people were affected and 8 people were dead and there was heavy loss of buildings and property in Bhavnagar, Sihor and Palitana Taluka.</p>
2007	<p>During this session heavy rain became the main cause of flood. Seven taluka of the District were adversely affected city and total 40 people dead in different area within district. Similarly other adjoining taluka were also affected. There was heavy loss public and private property.</p>
2015	<p>There was heavy rain in district and it cause of flood. It affected whole district especially some area of Palitana city and Talaja city and also 4 villages of Gariyadhar and Jesar taluka.</p> <p>8 people were dead and there was heavy loss of property. Administration also done evacuation during flood situaion.</p>
2018	<p>Villages of Mahuva, Talaja and Jesar taluka have affected due to heavy rain. There was situation of evacuation and heavy rain also result to property damage.</p>
2019	<p>Heavy Rainfall in “BHAL” area of Bhavnagar taluka. Water logging issues occurred due to the same. There was also situation of evacuation in some of villages.</p>
2021	<p>“Taukte”- due to this cyclone district faced many difficulties; Human Death, Cattle death, House damage, Road damage, Heavy damage of Electrical pole and Thousands of trees fell down. Wind speed was 120 kms/hours.</p>

Sr. No.	Taluka	Particular			
		Sr. No.	Public Gathering Place	Remarks	Management
1	Bhavnagar City	1	Takhteshwar Mahadev Temple	During Public Holidays especialy in Shravan Month	Low and order look after by Government
		2	Ruvapari Temple	During Holidays	Low and order look after by Government
		3	Jashonath Mahadev Temple	In Shravan Month	Low and order look after by Government
		4	Aksharvadi Temple	“Ravi Sabha” and Holidays.	Management by BAPS
		5	Akwada Lake	During Holidays	Management by BMC
		6	Bortalav	During Holidays	Management by BMC
		7	Victoriya Park	During Holidays	Forest Department
2	Bhavnagar Rural	1	Koliyak Beach (Nishkalank Mahadev)	Holidays, Festivals, Fair	Low and order look after by Government
3	Ghogha	1	Kuda Beach	Holidays	Low and order look after by Government
		2	Hathab Beach	Holidays	Low and order look after by Government
4	Umrالا	1	Dadava (Randal Mata) Temple	Sunday, Tuesday, Festivals Holidays and Fair in “Maha” Month	Management by Trust
5	Sihor	1	Rajapara (Khodiyar Mata) Temple	Sunday, Tuesday, Festivals and Holidays Especially “Poonam”	Management by Trust
		2	Sihori Mata Temple	Sunday, Tuesday, Festivals and Holidays	Management by Trust
		3	Gautmeshwar Mahadev	During Public Holidays especialy in Shravan Month	Management by Trust
6	Palitana	1	Shetrunjay Jain Temple	Kartik Sud Poonam “Hemchandracharya Jayanti”, “Dev Diwali”	Management by Jain Trust
		2	Hastgiri	Public Holidays and Festivals	Management by Jain Trust

		3	Kadanbgiri	Public Holidays and Festivals	Management by Jain Trust
		4	Bhairavnath Temple	Holidays	-
7	Mahuva	1	Uncha Kotada (Chamunda Mata) Temple	Holidays and Festivals	Management by Trust
		2	Katpar (Bhavani Mata) Temple	Holidays and Festivals	Management by Trust
		3	Bhaguda (Mongal Mata) Temple	Holidays and Festivals	Management by Trust
		4	Bagadana (Bajarangdas Bapa) Temple	“Poonam” Holidays and Festivals	Management by Trust
8	Talaja	1	Gopnath Mahadev Temple	Holidays, Festivals, Fair especialy in Shravan Month	Management by Trust
		2	Zanjmer Beach/ Mastram Dhara	Holidays and Festivals	Management by Mastaram mandir

Annexure-3

Details of Public Gathering Places

Annexure-4

Details of Public Fairs

Sr. No.	Village Name	Place Of Public Fair	Day	Estimated Public
1	Koliyak	Nishkalank Mahadev	Bhadaravi Amas	200000
2	Koliyak	Nishkalank Mahadev	Rushi Panchami	100000
3	Reliya	Gopnath Temple	-	20000
4	Bhaguda	Mogal Dham	April	150000
5	Bagadana	Bajarangdas Bapa Ashram	Posh Vad-4, Punyatithi	300000
6	Bagadana	Bajarangdas Bapa Ashram	Ashadh Sud-15, Guru Purnima	300000
7	Mahuva	Gandhi Baug	-	181000
8	Uncha Kotada	Chamunda Maa Temple	Chaitra Sud-4, Shraavan Vad-8, Bhadaravi Amas	50000
9	Adpur	Adpur	March	145000
10	Palitana	Shetrunjay Parvat	Fagan Sud-13	200000
11	Nasitpar	Hadika	Bhadaravi Amas	5000
12	Lundhara	Pavathi	Bhadaravi Amas	4000
13	Ranghola	Bhavanath Temple	Bhadaravi Amas	2500
14	Timbi	Timbi	Bhadaravi Amas	2000
15	Umrala	Shitala Mata Temple	Shitala Satam	800
16	Samdhiyala	Gangasati Panbai Ashram	-	1000
17	Dhola	Dhanabapa Jagya	-	1200
18	Rajapara (Kho)	Khodiyar Mata Temple	Bhadaravi Amas	50000
19	Sihor	Gautmeshwar	Janmashtami	3000
20	Sihor	Brahmkund	Bhadaravi Amas	2500

Annexure-5

Rainfall Data of last 10 Years

Sr. No	Taluka	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	Bhavnagar	651	672	668	659	483	1184	1056	906	668	1076
2	Gariyadhar	359	366	604	370	178	502	515	601	565	464
3	Ghogha	516	451	631	503	433	932	562	768	332	604
4	Jesar	420	675	753	546	528	425	701	589	400	409
5	Mahuva	542	592	778	750	745	873	896	832	880	1113
6	Palitana	354	627	639	735	406	729	634	669	486	422
7	Sihor	458	554	499	471	371	754	585	460	597	890
8	Talaja	466	493	697	637	615	617	519	458	503	439
9	Umrالا	596	682	542	566	352	961	903	621	652	974
10	Vallabhipur	540	581	660	613	379	1002	999	599	709	892
	Total	4902	5693	6471	5850	4490	7979	7370	6503	5792	7283

Annexure-6

Dam Details of District

S.N.	Name of the Dam	Village Name	Taluka	Capacity (In feet)	Danger point (In foot)
1	2	3	4	6	7
1	Shetrunji	Nani Rajasthali	Palitana	34.00	41.00
2	Hanol	Hanol	Palitana	12.30	12.30
3	Kharrodam	Sonpari	Palitana	21.70	22.14
4	Rajaval	Mandavda	Palitana	22.14	27.81
5	Ranghola	Ranghola	Umrالا	30.00	31.00
6	Malan	Mota Khutavada	Mahuva	34.00	34.00
7	Rojki	Thorان	Mahuva	32.50	38.50
8	Bagad	Khumbharia	Mahuva	16.60	26.56
9	Hamirpara	Hamirpara	Talaja	17.50	17.50
10	Lakhanaka	Lakhanka	Ghogha	30.30	32.80
11	Pingali	Pingali	Talaja	51.30	51.30

Annexure-7

List of Dam Affected Villages

Sr. No	Name of Taluka	Village name	Dam Name	River Name	Distance from Village	Poppulation Of Village
1	Palitana	Nani Rajshthali	Shetrunji Dam	Shetrunji	5	5505
		Lakhanka			7	1082
		Maydhar			8	1034
		Lapaliya			8	1645
		Medha			10	2365
		Chok	Khodiyar	Shetrunji	97	1833
		Dungarpur			110	2272
		Hathasani			94	1402
		Jaliya(ma)			112	1275
		Jeevapar			109	702
		Ranparda			89	2652
		Rohishala			102	1259
		Moti Paniyari	Kharo	Kharo	2	3267
		Nani Paniyari			2.5	2354
		Bhutiya			3	2020
		Palitana (uparvas)			6	64497 (city)
		Mandavda	Rajaval	Rajaval/Shetrunji	0.5	2333
		Anida			4	1591
		Lakhavad			6	1082
		Hanol	Hanol Irrigation Scheme	Hanol	1	2693
		Jaliya			5	642
		Aakolani			5	2054
		Juna-Loichhada			7	227
Nava-Loichhada	7	715				
Senjaliya	8	2571				
Khijadiya	9	580				
Mokhadaka	11.5	3565				
Randola	13	2845				

		Bhundarkha			15	1262			
		Sagapara			15.5	711			
		Piparadi-1			15.5	1841			
		Piparadi-2			15.5				
		Bhadavav			16	2179			
		Bhandariya	Bhandariya Nani Shinchai Yojana	Local River	0.2	1851			
		Vadal	Vadal	Local River	4	1212			
		Chonda	Chonda Nani Shinchai Yojana	Kharo	0.4	578			
		Panch Pipala			1.7	1307			
		Ranparada			1.7	2652			
		Lilivav			2	628			
		Dudhala			3	2274			
		Gheti			8	7260			
		Sandhkhakhara			3.02	-			
		Aadpur			Aadpur Nani	Local River	0.3	3353	
		Gheti	shinchai Yojana	4	7260				
2	Talaja	Pingali	Shetrunji Dam	Shetrunji	9	2898			
		Shevaliya			12	331			
		Bhegali			14	1105			
		Datrad			16	1415			
		Timana			16	4231			
		Makhaniya			20	2479			
		Royal			28	2955			
		Talaja			30	27882(city)			
		Gorakhi			30	5990			
		Lilivav			32	1067			
		Tarsara			32	3541			
		Saratanpar			36	12490			
						Hamipara	Hamirpar	Utavali	0.5
				Dihor	1	7305			
				Shamadhiyala	4	1514			
				Neshiya	8	1153			
		Moti	9	1145					

		Babariyat				
		Nani Babariyat			10	424
		Habukvad			12	2443
		Mandava	Jasapara-Mandavada	Jasapari/Manari	1.5	1040
		Sosiya			2.5	3467
		Manar			3	4464
		Kharadi	Bagad Sinchai Yojana	Bagad	1	1381
		Padargadh			3	1938
		Boradi			4.5	592
		Datha			14	5510
		Valar			16.5	1416
		Pingali	Pingali Irrigation	Pingali	1	2898
		Dihor	Utavali Nani Sinchai Yojana	Utavali	1.5	7305
		Mamasi	Mamsi Nani Sinchai Yojana	Local River	1	898
		Bhadravad	Moti Mandavali Nani Sinchai Yojana	Utavali	1	5062
3	Mahuva	Gundarda	Bagad Sinchai Yojana	Bagad	3.5	4661
		Moti-Jagdhar			7.5	5526
		Lilavan			9.5	586
		Nani-Jagdhar			10	1457
		Mota Khutavada	Malan Sinchai Yojana	Malan	4.5	10334
		Goras			7.5	2801
		Sanganiya			10.5	470
		Kumbhan			11	5426
		Lakhupara			12.5	392
		Nana Jadra			15	2200

Taveda			17.5	2031
Umaniyavadar			20	4413
Mahuva			23	98519(city)
Katpar			30	8677(census city)
Thorala	Rojaki Sinchai Yojana	Rojaki	0.5	959
Goras			7.5	2801
Sanganiya			10.5	470
Kunbhan			11	5426
Lakhupara			12.5	392
Nana Jadara			15	2200
Taveda			17.5	2031
Umaniyavadar			20	4413
Mahuva			23	98519(city)
Katapar			30	8677(census city)
Thaliya	Kotiya nani sinchai Yojana	Local River	2	-
Kantasal	Bhadrodi pick up wear	Bhadrodi	0	2196
Chokava			1	1515
Khatsura			4	3123
Bhadrod			7	9601
Vaghanagar			10	6691
Belampar	Khari Nani shinchai	Bhadrodi	5	2672
Chuna			8	1727
Kantasar			11	2196
Chokava			12	1515
Khatsura			15	3123
Bhadrod			18	9601
Vaghnagar			21	6691
Kalamodar	Ratanpar-Bagdana nani shinchai Yojana	Bagad	3	653
Ralgon			4	-
Dudana			7	1545

		Dharai	Dharai pick up Wear	Hadamatala	0.2	2082
		Bhaguda	Bhaguda Nani		1	1626
		Moti-Jagdhar	Sinchai Yojana	Local River	4	5526
		Vaghvadarada	Vaghvadarada Nani Sinchai Yojana	Bhadrodi	2	1641
		Bagadana	Karamadiya		4	6764
		Dharai	Nani Sinchai Yojana	Hadamatala	8	2082
4	Gariyadhar	Juna Gujarda	Khodiyar Dam	Shetrunji	74	2084
		Ranigam			81	2236
		Satpada			86	2356
		Thaasa			70	1580
		Saringpur	Paladi Nani	Local River	1.6	845
		Paladi	Sinchai Yojana		2	1347
5	Bhavnagar	Adhevada	Lakhanka	Maleshree	3	8082
		Akavada			5	6879
		Malanaka			6	4765
		Tarsamiya			6	5604
		Navagam	Chirodanala	Maleshree	1	-
		Vartej	Nani Sinchai		2	11354
		Kardej	Yojana		2.5	7764
		Vartej	Solmatiya	Maleshree	1	11354
		Kardej	Nani Sinchai Yojana		3	7764
		Nagdhaniba	Nagdhaniba	Local River	0.5	3050
		Ratanpar (J)	Shinchai Yojana		2	806
6	Umralla	Ranghola	Ranghola Irrigation Scheme	Rangholi	1.5	6136
		Devaliya			4.5	1164
		Langala			9	3750

		Janjmer			11.5	1206
		Piprali			14	1414
		Dharuka			20	2106
		Malpara			16	559
		Danbhaliya			25	263
		Chogath			28	7397
		Samdhiyala			6	1830
		Bhojavadal			9	1773
		Vangdhra			12	945
		Hadmatala			13	821
		Tarpala	Kalubhar	Kalubhar	15	681
		Umrالا			19	8044(CENSUS TOWN)
		Chogath			25	7397
		Ratanpar			20.5	887
7	Sihor	Bhangath	Ranghola Irrigation	Rangholi	39	443
		Valavad	Valavad nani	Local River	0	1678
		Mota surka	sinchai		0.5	3535
		Nana surka	Yojana		1.5	1683
		Aambla	Aambala Nani Sinchai Yojana	Local River	0	5652
		Ramdhari	Ramdhari Nani Sinchai Yojana	Local River	1	2967
		Chorvadala	Chorvadla	Local River	0.5	1584
		Ramdhari	Nani Sinchai		1.5	2967
		Ishwariya	Yoyajana		2	2612
		Shongadh	Ekaliya Nani	Local River	1.5	6027
		Amargadh	Sinchai Yojana		2	4178
		Thorali	Thorali Nani	Local River	0	1628
		Bakhalaka	Sinchai Yojana		2.5	-

		Sanosara	Sandhida Nani Sinchai Yojana	Local River	3	9340
		Zariya	Zariya Nani Sinchai Yojana	Local River	1	1921
		Toda	Doda Nani sinchai Yojana	Local River	0	766
		Todi			2.5	569
		Madhada			3.5	4106
		Pipardi	Pipardi Nani Sinchai Yojana	Local River	0.5	2536
		Todi	Doda Nani Sinchai Yojana	Local River	1	569
		Panchvada	Panchvda Nani Sinchai Yojana	Local River	0	1012
		Shongadh			4	6027
		Varal	Varal Nani Sinchai Yojana	Local River	1	6842
		Thorali			3	1628
8	Vallabhipur	Rajsthali	Kalubhar Irrigation	Kalubhar	17	843
9	Ghogha	Badi padva	Badi-Padava Nani Sichi Yojana	Maleshri	0.5	
		Suraka			3	
		Hoidad			3.5	
		Kukad	Odarka Nani Sinchai Yojana	Local River	0.3	
		Garibpara	Manari Nani Sinchai Yojana	Manari	1	
		Bhankhal			1.5	
		Manar			2	

		Chhaya Bhesvadi	Chhaya Nani Sinchai Yojana	Utavali	0.8 1	
10	Jesar	Jesar	Jesar Nani Sinchai Yojana	Ranigalo	1.5	13578
		Virpur	Virpur Nani Sinchai Yojana	Sibeti	0.2	1333
		Juna Padar	Virpur Nani Sinchai Yojana	Sibeti	3	2243

Annexure-8

List of Coastal Villages

Sr.No.	Taluka	Village		
		SN	Name	Population
1	Bhavnagar	1	Kalatalav	3854
		2	Hathab	7930
		3	Narmad	624
		4	Koliyak	4740
		5	Jashvantpur	597
		6	Kotda	639
		7	Kheta khatli	220
		8	Ganeshgadh	920
2	Ghogha	1	Kuda	3002
		2	Ghogha	12208
		3	Avaniya	3245
3	Mahuva	1	Nicha Kotda	9188
			Uncha Kotda	
		2	Dayal	7238
		3	Kalsar	9230
		4	Naip	5682
		5	Nikol	753
		6	Vaghnagar	691
		7	Katpar	8677
		8	Khared	4250
		9	Gadhda	2792
		10	Gujarda	3496
		11	Dudheri	3544
		12	Doliya	3224
13	Padhiyarka	1495		
4	Talaja	1	Alang	8309
		2	Mithivirdi	2753
		3	Sartanpar	12490
		4	Reliya	3777
		5	Gadhula	
		6	Zanzmer	4779
		7	Methala	2129
		8	Madhuvan	832
		9	Juna-rajpara	4149
		10	Tarasra	3541

Total-34

Annexure-9

List of Water Logging Villages

Sr.No.	Taluka	Village		
		SN	Name	Population
1	Bhavnagar	1	KalaTalav	3854
		2	Velavadar	1275
		3	Keta Khatli	220
		4	Narmad	624
		5	Paliad	997
		6	Devalia	815
		7	Jasvant Pura	597
		8	Kotda	639
		9	Sanesh	1357
		10	Ganeshgadh	920
		11	Saviakot	54
		12	Madhia	-
		13	Savainagar	1060
		14	Bhadbhid	1131
		15	Adhelai	960
		16	Rajgadh	1302
		17	Mithapar	364
2	Sihor	1	Bhangadh	443
		2	Ukhrala	919
		3	Navagam Mota	753
3	Gariyadhar	1	Bhamaria	1150
		2	Sarambhada	540
4	Umrala	1	Ratanpar	887
		2	Chogath	7397
		3	Tarpala	681
		4	Hadmatala	821
5	Mahuva	1	Katpar	8677
		2	Gadhda	2792
		3	Khared	4250
		4	Sathra	3462
		5	Nikol	753
6	Talaja	1	Valar	1416
		2	Sartanpur	12490
		3	Tarasara	3541
		4	Gorakhi	5990
		5	Mangela	1304
7	Jesar	1	Pa	1153
		2	Ranigam	2236

Total-38

Annexure-10

List of River Affected Villages

Sr.No.	Taluka	Village		
		SN	Name	Population
1	Bhavnagar	1	Shedhavadar	1134
		2	Fariyadka	3029
		3	Vartej	11354
		4	Undavi	2333
		5	Adhevada	-
		6	Malanka	4765
		7	Kala talav	3854
		8	Narmad	624
		9	Kheta Khatli	220
		10	Paliyad	997
		11	Devaliya	815
		12	Jashvantpur	597
		13	Kotda	639
2	Ghogha	1	Lakhanka	-
		2	Odarka	-
		3	Kareda	-
		4	Garibpura	-
3	Vallabhipur	1	Nasitpur	2101
		2	Totniyana	1636
		3	Monpur	2641
		4	Pipaliya	917
		5	Navagam {Gayakvadi}	794
		6	Kanpur	2051
		7	Jalalpur	817
		8	Juni Rajashthali	843
		9	Navi Rajashthali	-
		10	Pati	569
		11	Juna Rampar	1177
		12	Chamardi	3658
		13	Nava Rampar	331
		14	Dared	2006
		15	Mevasa	1065
		16	Loliyana	859
		17	Kheta Timbi	971
		18	Pachhegam	2744
		19	Rajapara Bhal	435
4	Gariyadhar	1	Gujarda Juna	2084
		2	Thansa	1580
		3	Satpada	2356
5	Talaja	1	Juni Kamrol	899
		2	Lilivav	1067
		3	Shobhavad	3654
		4	Navi Kamrol	1441

6	Palitana	1	Nani Rajashali	5505
		2	Maydhar	1034
		3	Lapaliya	1645
		4	Medha	2365
		5	Lakhavad	1082
		6	Moti Paniyani	3267
		7	Bhutiya	2020
		8	Nani Paniyani	2354
		9	Mandavada	2333
		10	Anida	1591
7	Jesar	1	Ranigam	2236
		2	Piparadi	1307
		3	Depala	1710
		4	Ranparada(Chok)	1555
8	Umrالا	1	Bhojavadar	1773
		2	Chogath	7397
		3	Dhamanka	524
		4	Vangdhra	945
		5	Tarpala	681
		6	Ratanpar	887
		7	Samdhiyala	1830
		8	Hadmatata	821
		9	Timba	248
		10	Ranghola	6136
		11	Piprali	1414
		12	Malpara	559
		13	Langala	3750
		14	Zanzmer	1206
		15	Dharuka	2106
		16	Dambhaniya	263
		17	Devaliya	1164
9	Mahuva	1	Samdhiyala	532
		2	Sendarada	6795
		3	Kantasar	2196
		4	Vadli	6080
		5	Bhadrod	9601
		6	Khatsura	3123

Total-80

Annexure-11

Government Health Facilities

Sr. No.	Hospital	Fone Number	Contact person	Mobile Number
1	Sir T. General Hospital	0278 2423250	Dr. Jayeshkumar Brahmbhatt	9898141114
2	Railway Hospital	0278 2445502	-	-
3	ESI Hospital	0278 2424664	-	-

Sr. No.	Taluka	CHC/SDH	Fone Number
1	Bhavnagar	Vartej	0278-2540642
2	Bhavnagar	Koliyak	0278-2884341
3	Ghogha	Ghogha	0278-2882126
4	Talaja	Talaja	02842-222266
5	Talaja	Datha	02842-283330
6	Talaja	Thaliya	02842-284432
7	Mahuva	Mota Khutavada	02844-287441
8	Mahuva	Bagadana	02844-284470
9	Mahuva	Mahuva SDH	02844-223109
10	Jesar	Jesar	02845-281476
11	Palitana	Palitana SDH	02848252175
12	Gariyadhar	Gariyadhar	02843-252970
13	Vallabhipur	Vallabhipur	02841-222449
14	Umrala	Umrala	02843-235236
15	Sihor	Sihor	02846-222063

Annexure-12

Private Health Facilities

List of Private Hospital (District Code No. 0278)

Sr. No.	Hospital	Fone Number
1	Ram mantra mandir hospital	2569100, 2564191
2	Bajarangdasbapa hospital	2512353, 2521001
3	Red cross hospital	2424761, 2430700
4	Aanandvatika Bhagini mandal hospital	2561366, 2563796
5	P.N.R. hospital	2431150, 2431160
6	Suchak hospital	2422184
7	HCG hospital	6640000, 6640108
8	BIMS hospital	9152652544
9	Pulse hospital	9152699011
10	Sachapara multy speciality hospital	7778999774
11	Swami vivekanand homeopathy	2470055,56
12	Nirmal children hospital	2424111
13	Radhe krishna general hospital	2562224

Annexure-13

List of Blood Bank (District Code No. 0278)

Sr. No.	Name	Contact Number
1	Sir T. Hospital Blood Bank	2423250
2	Bhavnagar Blood Bank	2561526, 2565663
3	Bambhaniya Blood Bank	3004744
4	Indian Red Cross Society Blood Bank	2427286

Annexure-14

List of Ambulance (District Code No. 0278)

Government Ambulance

Sr. No.	Name of organization	Contact Number	Number of Ambulance
1	Sir T. general hospital	2423250	6
2	Railway hospital	2445502	1
3	108 services	108	18
4	ESI Hospital	2424664	1
5	Fire & Emergency services	2424814	2
6	CHC	-	12
7	PHC	-	22
8	SDH	-	4

Private Ambulance

Sr. No.	Name of organization	Contact Number	Number of Ambulance
1	Ram mantra mandir hospital	2569100, 2564191	2
2	Bajarangdasbapa hospital	2512353, 2521001	1
3	Indian red cross society	2424761, 2430700	2
4	HCG hospital	6640000,6640108	1
5	BIMS hospital	9152652544	2
6	Pulse hospital	9152699011	1
7	Meru Nursing Home	9429974005	1
8	Nirmal children hospital	2424111	1
9	Radhe krishna general hospital	2562224	1
10	Lodhavala Hospital	2424179	1
11	Sitaram General Hospital	2573999, 2569095	1

Annexure-15

List of NGOs/CBOs/CSOs/YOs/VOs (District Code No. 0278)

Sr. No.	Name	Address	Contact Person	Contact Number
1	Indian Redcross Society	Bhavnagar	Sumitbhai Thakkar	2427286, 9825566642
2	Shri P.N.R. Society for Relief	Bhavnagar	Anantbhai Shah	9328286402
3	Samajik Nyay Sangathan	Bhavnagar	Bhavinbhai Hariyani	9327999999
4	Chember of Commerce	Bhavnagar	Kiritbhai Soni	2244279, 9824245360
5	Gujarat Ship Recycling Association	Bhavnagar	Vishnukumar Gupta	2428696
6	Sweemer Association	Bhavnagar	Bulbulbhai Vyas	3299309
7	Engineer Association	Bhavnagar	Ravjibhai Pandaya	98251327729 825309825
8	Doctor Association	Bhavnagar	Bharatbhai Trivedi	9825205464
9	Diomand Association	Bhavnagar	Vithalbhai Mendapara	2429391, 9426210351
10	Jwel Star	Bhavnagar	Nayanbhai Golkiya	9978349970
11	Shri Ram Mantra Mandir Trust	Bhavnagar	R.P.Shah	2422205, 9825868633
12	Sai Seva Samaj	Bhavnagar	B.J.Udaviya	99984234509 427202408
13	Shishuvihar	Bhavnagar	Hareshbhai	2568823
14	Shaishav	Bhavnagar	Falgunbhai Sheth	9825209679
15	Mavtar Senior Citizen Councelling Centre	Bhavnagar	Vibhavariben Dave, Vijaybhai Dave	2565018, 9426463146
16	Nand Kunvarbaa Balashram	Bhavnagar	Anilaben pandya	2445521
17	Ramvadi	Bhavnagar	Kiritbhai Pandya	9925006888
18	Lions Club of Bhavnagar	Bhavnagar	Maheshbhai Dave	2513709
19	Shree Chamunda Mataji Mandir Trust	Mahuva	-	9979050421
20	Shakti Kunj Aasram Khodiyar Mandir	Mahuva	-	9016707061
21	Samast Sedarda Gam	Mahuva	-	9974818016
22	Chamunda Mitra Mandal	Mahuva	-	9727993085
23	Triveni Foundation	Mahuva	-	9726646046
24	Global Education Cheritable Trust	Mahuva	-	9913079217
25	Chitrakut dham Trust	Mahuva	-	2844246400
26	Swami Bhaktitanaydasji	Mahuva	-	9879932833
27	Shri Prabhav Hem Kamghenu Girivihar Trust	Palitana	Dineshbhai Rathod	9867931348
28	Samaj Ratna Chinubhai Manjula	Palitana	Dolarbhai Kapasi	9428492373

	Bhagini Mitr Mandal			
29	Sadbhavana Trust	Palitana	Bhagirathsinh Sarvaiya	9925889999
30	Sardar Patel Social Group	Palitana	Ghanshyambhai Sihora	9428856755
31	Shri Aanandaji Kalyanji Pedhi	Palitana	Manubhai Shah	9428000615
32	Palitana Education Sociaty	Palitana	Mayurbhai Sarvaiya	9586300600
33	Valam Jal Sanchay Abhiyan	Gariyadhar	-	9426811890
34	Gram Nirman Trust	Gariyadhar	-	8980084884
35	Sitaram Trust	Gariyadhar	-	9546713350
36	Lians Club	Sihor	Dr.Prajapati	-
37	Jiants Club	Sihor	Dr. Bharat Pandey	9825629696
38	J.C.I.Sihor	Sihor	Samirbhai	9998062191
39	Bhagavan nu Ghar	Sihor	Dipakbhai Dholakiya	9328232181
40	Hanumandhara Cheritable Trust	Sihor	Ashwinbhai Golakiya	9429912562
41	Ganesh Mitr Mandal	Sihor	Dipakbhai Nakum	9016948833
42	Shri Krushn Yuvak Mandal	Sihor	Lalabhai Aashtik	9624733636
43	Sihor Doctor Association	Sihor	Dr.J.T.Mojapara	9825222598
44	Rajapara (Kho) Mandir Trust	Sihor	-	02846-223242
45	Sihor Muslim Samaj Seva Sangathan	Sihor	Ayumal Mehatal	7373738971
46	Bajarangdas Bapa Seva Sangathan	Sihor	Dipakbhai Soni	9977493926
47	Indian Red Cross Society Sihor	Sihor	Dr. Prasantbhai	9426461190
48	Shivanand Aasharam	Sihor	Nitinbhai	9825556083
49	Shri Gautmeshwar Mahadev	Sihor	Swarupanandji Maharaj	9376181008
50	Narayan Seva Sansatha	Sihor	Ashokbhai Jani	9173457100
51	Sardar Aabad Cheritable Trust	Vallabhipur	-	9824354994
52	Jamanaben BHagavanbhai Cheritable	Vallabhipur	-	9879505031
53	Jain Aarya Tirth, Ayodhyapuram	Vallabhipur	-	9824741062
54	Jain Aarya Tirth, Mahendrapuram	Vallabhipur	-	9428184128
55	Jain Sangh	Vallabhipur	-	9173440054
56	Jindaas Dharamdas Ni Pedhi	Vallabhipur	-	02841222433
57	Shri Dhanabapa Seva Sansatha	Umralla	Hirabhai Goyani	9925998451
58	Swami shri Nirdoshanandji Seva Trust	Umralla	Jagdishbhai	9879978615
59	Aadhyatmik Saadhana Kendra	Umralla	Dharmendrabhai	9898245201
60	Shri Shankar Mandal/ P.M. Sarvoday Kelavani Mandal Trust	Umralla	Rasikbhai	9879648326
61	Punruthan Jan Jagruti Seva Trust	Umralla	Bhagirathbhai Gohel	9712907272

Annexure-16

List of Gaushala/Panjarapol (District Code No. 0278)

Sr. No.	Taluka	Gaushala/Panjarapol			
		Name	Number of Animals	Contact Person	Contact Number
1	Bhavnagar	Gangamaiya gau seva trust, Budhel	40	A.V.Lumbhani	9824753834
		Vasundhara aauseva cheritable trust, Hathab	27	R.M.Baraiya	9924259512
		Bhagat gaushala trust, Sidasar	170	N.J.Pavaiya	7359299740
		Aum shiv kamghenu gaushala cheritable trust	256	K.B.Patel	9428108902
		Shri Bhavnagar panjarapol shakha Kumbharvada	174	M.V.Shah	9427344499
		Shri manavata gaushala and cheritable trust	125	P.D.Aal	9601697778
		Shri nand nandan gaushala trust	28	R.O.Kakadiya	9825272373
		Shri omnath mahadev aadhyatmik gauseva trust	9	Ramdas babu	9737800476
		Shri mahajan gaushala trust	153	N.J.Modi	9426970202
		Shri Sarveshwar gaudham trust, Kobadi	543	J.J.Pujari	8140344801
		Shri surabhi gauseva and gaushala trust, Nari	183	G.D.Jadeja	9898630277
		Shri gauganga gauseva sansthan trust	192	S.R.Nakarani	9879738545
		Jivdaya gauseva cheritable trust, Adhewada	95	G.V.Hadgarada	9016673535
		Shri khodiyar mataji gauseva jivdaya trust, Vartej	83	Jaydas babu	7016383706
Bochasanvasi shri axarpurusottam gaushala trust	56	K.V.Rana	9998994044		
2	Ghogha	Shri Bhavnagar Panjarapol, Samdhiyala	1618	M.V.Shah	9427344499
3	Umralla	Shri radhamadhav gauseva charitable trust, Bochadava	309	R.N.Gohil	9879132832
4	Jesar	Sheth aanandji kalyanji panjarapol, Chhapariyali	1796	A.C.Gandhi	9824035448
5	Talaja	Shri gauseva jagruti trust, Makhaniya	495	L.V.Beladiya	9499557258
		Shri lok nicketan trust, Bela	102	J.D.Chauhan	9427432272
		Shri ambika aashram cheritable trust, Mota Sangada	93	V.R.Sarvaiya	9265887727
		Shri gram dakshinamurti, Aambala	69	S.P.Chauhan	9925632304
		Nilkanth mahadev kamghenu	75	N.J.Bhandari	9426979968

		gaushala cheritable trust, Dharadi			
		Shri mota gopnath mahant jagya trust, Motagopnath	22	M.B.Ladumor	9904797245
6	Mahuva	Shri Mahuva panjarapol	229	K.D.Shah	9824778269
		Doshi bhanaji devaji gaushala and panjarapolsarvajanik trust, Bhanavav	140	H.P.Doshi	9426924443
		Shri siddhganesht ashram trust, Mota khuntavada	112	Bhardwajgiri Madhusudangiri	9825333684
		Shri chitrakutdham trust, Talgajrada	276	C.P.Hariyani	9428190027
		Shri gopal trust	65	P.J.Kumbhani	9227066920
		Shri laxminarayan mandir trust	23	N.J.Agaravat	9825555140
		Triveni kalyan education trust, Kalsar	35	P.R.Ruparel	9898908651
7	Palitana	Shri prabhav hem kamghenu girivihar trust, Vadai	872	D.B.Rathod	9867931348
		Vinay vihar kelavani mandal, Valukad	59	N.M.Shiriyi	9426395215
		Shri laxmandham gauseva cheritable trust	103	N.M.Rathod	7016781342
		Gram vidhyalay, Dudhala	31	B.P.Bhalala	9428855196
8	Gariyadhar	Shri dasht visha vanik mahajan	74	D.V.Shah	9426374640
		P.M.cheritable trust, Paravadi	717	P.M.Kheni	9820061274
		Shri sitaram gaushala trust, Viradi	164	G.B.Koladiya	9426989075
9	Sihor	Shri gram daxinamurti, Aambala	31	Surasangbhai	9925632304
		Shri koya bhagat jagya	112	Jinaramji Guruji	9428993371
		Shri ganesh ashram cheritable trust, Agiyali	24	C.M.Pandaya	9374621636
10	Vallabhipur	Vallabhipur Panjarapol	238	N.C.Shah	9664689489
		Shri hardevkrupa ashram cheritable trust, Navagam	28	N.A.Gosai	9825109825

Annexure-17

List of Community Hall-City (District Code No. 0278)

Sr. No.	Name of Community Hall	Address	Remarks
1	Shri modh vanik gnati nana tadani vadi	High court road, Bhavnagar	
2	Shri modh chaturvediy chuntha samvay gnati mandal	Vadala talavadi, Bhavnagar	
3	Shri shamji gopalaji raval audichya vidhyarathi bhavnan	Takhteshvar plot, vaghavadi road, Bhavnagar	
4	Shri gujarat audichya sidhpura sampraday brahaman gnati nagarpol	Bhagatalav, Bhavnagar	
5	Shri dasa ghoghari porvad gnati, Chakubag vadi	Opp: Bhid bhanjan mahadev, Bhavnagar	
6	Shri rajput gnatini vadi	opp: Gov. Qaurters. Navapara, Bhavnagar	
7	Shri bhavnagar delvadiya kapol gnati	Amrutvadi, Diwanpara road, Bhavnagar	
8	Shri bhavnagar shrimali soni gnati trust	Sherdipithna delama, desaifali, Bhavnagar	
9	Shri bhavnagar ghoghari lohana mahajan mandal	Khargate, Bhavnagar	
10	Shri bhavnagar samast gurjar sutar gnatini vadi	Shri vishwakarma mandir, Bhavnagar	
11	Shri brahama kshtriya panchni vadi	Station road, Bhavnagar	
12	Leuva kanabi gnatini vadi	Vadava paliyadhar chauk, near vijay taukiz, Bhavnagar	
13	Ratilal vithaldas gosaliya jain bhavan	Meghani circle, Bhavnagar	
14	Shri variya chovisi prajapati gnatini vadi	Prabhudas talav, Bhavnagar	
15	Shivshakti hall	Sarpattani road, crescent, Bhavnagar	
16	Anand hall	Ramnagar, Kaliyabid, Bhavnagar	
17	Doctor hall	opp: mahila college, Bhavnagar	
18	Shri dasa shrimali sthanakvasi jain gnatini vadi	Masjid chauk, navapara, Bhavnagar	
19	Shri bhavnagar dasa shrimali Kanthibandh vanik gnatini vadi	Ghogha gate, Bhavnagar	
20	Shri modh agiyaras brahaman gnatini vadi	Near alka taukiz, Bhavnagar	
21	Shri jalavadi rami mali gnatini vadi	Piparvali sheri, navapara, Bhavnagar	

22	Lakhubhai hall	Ramnagar, Kaliyabid, Bhavnagar	
23	Sahakar party plot graphed	Vijayrajnagar, behind nilambug hotel, Bhavnagar	
24	Jagad ambe party plot	Sir pattani road, cresen, Bhavnagar	
25	Shri sihor sampraday audichya agiyaras brahaman gnatini vadi	Ramvadi, opp bhidbhanjan mahadev, Bhavnagar	
26	Shri bhavnagar ghoghari kapol gnatini vadi	Opp railway station, Bhavnagar	
27	Shri ghogha bhavnagar vadnagara nagara brahamn gnatini vadi	Near nilkanth mahadev mandir, bhagatalav, Bhavnagar	
28	Luharvadi	Sutarvad, near railway station, Bhavnagar	
29	Luharvadi	Near ranika bhang karkhana, Bhavnagar	
30	Shrimali brahaman gnatini vadi	Diwanpara road, Bhavnagar	
31	Rotery club society of bhavnagar hall	Ghogha circle, Bhavnagar	
32	Dipak hall	Atabhai road, Bhavnagar	
33	Meladima hall	Hadanagar, Bhavnagar	
34	Shri modh agiyaras brahaman gnatini vadi	Near alka taukiz, Bhavnagar	
35	Shri alvatani gujarat leuva patidar gnatini vadi	Dhajagaravali sheri, Kanabivad, Bhavnagar	
36	Shri andhariya kachhiya gnatini vadi	Paliyadhar, Vadava, Bhavnagar	
37	Memam moti jamatkhana hall	Jogivad tanki, Bhavnagar	
38	Shri swetambar visha shrimali odhad ramjini vadi	Panavadi road, vadava, Bhavnagar	
39	Shri modh chaturvediy rajgor samvay	Haluriya chauk, Bhavnagar	
40	Shri bhavnagar dasha zarola vanik gnatini vadi	Opp Bartan library, Bhavnagar	
41	Shri lokagachchh jain sangh	Opp Bhidbhanjan, Bhavnagar	
42	Shri dasha shrimali jain sangh swetamber	Hajur payaga road, Bhavnagar	
43	Shri parekh mota tadani vadi	Opp darbari kothar, Bhavnagar	
44	Shri desai sai sutarvadi	Matava chauk, Bhavnagar	
45	Shri gohilvad vanand gnatini vadi	Kalanala, Uparkot, Bhavnagar	
46	Shri mochi gnatini vadi	Near vadava jain derasar, Bhavnagar	
47	Shradhavadi	Masjid chauk, navapara, Bhavnagar	
48	Shri modh chaturvediy chuntha samvay gnatini vadi	Vadava talavadi, charbati cauk, Bhavnagar	

Annexure-18

List of Ham Radio Operator (District Code No. 0278)

Sr. No.	Name	Mobile Number	Office Number
1	Dr. B.U.Tekani	9376769088	2422388
2	Rajesh Vyas	9426882688	-
3	Lalitbhai Divakar	9427181973	-
4	Anopsinh Gohil	9825209972	-
5	Virbhadrsinh Gohil	8000434013	-
6	Mihir Mehta	9427511865	-
7	Haresh Kalavadiya	8866035453	-
8	Vishakhaben Dave	9408728323	-

Annexure-19

List of Cable Operator (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	So Lucky Cable	Ghogha Circle, Bhavnagar	2227222
2	C.C.N. Cable	Kalanala, Bhavnagar	2524163
3	Sunny Cable	Crescent, Bhavnagar	3056315
4	Braham Cable	Bhavnagar	9428078151

Annexure-20

List of Media Person (District Code No. 0278)

Sr. No.	Name	Contact Number
1	Show Time News	2201199, 2427777
2	City News	2200210
3	News Time	2431111, 2203122
4	ETV Gujarati	2518600, 2447373
5	Hello Saurashtra News	9426211806
6	Zee Alfa	2524500
7	Durdarshan Ahmedabad	2515001, 2569577
8	Samay Media News	2525222
9	Stya Media	2414004
10	Asian News International	9426901212,
11	Sky News	2202275
12	City Watch News	3007172, 2203999
13	Nidar News	2414733
14	IBN 7	2203999, 6540208
15	UNI	2423572

Sr. No.	Name	Contact Number
1	Saurashtra Samachar	2422577, 2516558
2	Gujarat Samachar	2430555, 2431199
3	Sandesh	2519941, 2519942
4	Divya Bhaskar	2516558, 2516559
5	Fulsab	2561299
6	Times of India	9879372149
7	Ajkal	2470177, 2470188
8	Saurashtra Aspas	2513777,
9	Sanj Samachar	2512828
10	Pagdandi	2421133
11	Akila	2560105
12	Lokraj	9978227463
13	Jay Hind	2512828
14	Avadh Times	3007172
15	Saurashtra Kesari	9375888666

Annexure-21

List of Private Travels (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	Tanna Travels	Bhavnagr	9724014831
2	Raaj express	Bhavnagr	9824291211
3	Toter Travels	Bhavnagr	9428182274
4	Mohada Travels	Bhavnagr	9978484848
5	Gujrat Travels	Bhavnagr	9824289000
6	Leemda Travels	Bhavnagr	8401021858
7	Modarn Travels	Bhavnagr	9824287676
8	R.A.Travels	Bhavnagr	9428991372
9	Navrang Travels	Bhavnagr	9825836585
10	Gurukrupa Travels	Bhavnagr	9428522261
11	Ganesh Travels	Bhavnagr	9375555959
12	Sakti Travels	Bhavnagr	9974153333
13	Laxmi Travels	Bhavnagr	9979300285
14	Raajdhani Travels	Bhavnagr	9925269999
15	Khodiyar Travels	Bhavnagr	9898264590
16	ShivBhoomee Travels	Umralla	9879225743
17	Chand Travels	Jesar	8154815984
18	Hareedham Travels	Jesar	9714138392
19	Kajal Travels	Jesar	9924259791
20	Lucky Travels	Mahuva	028442225624
21	Shree Ram Travels	Mahuva	02844224612
22	Aasha Travels	Mahuva	02844223166
23	Khodeeyar Travels	Mahuva	02844228686
24	Marutee Travels	Mahuva	02844222838
25	Seetaram Travels	Mahuva	028442223481
26	Bhagvatee Travels	Mahuva	02844222895

27	Meena Travels	Mahuva	02844222121
28	Jalaram Travels	Mahuva	02844223939
29	Chamunda Travels Mini Bus	Mahuva	971414650 971257343
30	Dwarka Travels	Mahuva	83499553953
31	Tanvi Travels	Talaja	7069659009
32	Shree Sakti	Talaja	7990440506
33	Maya Travels	Talaja	9879221111
34	Shree Khodeeyar Travels	Talaja	9033552535
35	Bhoomi Travels	Talaja	9978321111
36	Shivam Sagar	Talaja	9033552535
37	Balar Travels	Talaja	9925332331
38	Vishwanath Travels	Talaja	9426957360
39	Guruvandan Travels	Palitana	9427560345
40	Guruchhaya Travels	Palitana	9737223797
41	Balganesh Travels	Palitana	7878077722
42	Varuniraj Travels	Palitana	9898366580
43	Santdarashn Travels	Palitana	6392921219
44	Maruti Travels	Palitana	9427263583
45	Meera Travels	Palitana	9898338686
46	Maruti Tour & Travels	Palitana	9727495353
47	Khodiyar Tour & Travels	Palitana	9909734741
48	Shiv Travels	Palitana	9428431451
49	Raj Chamunda Travels	Palitana	9824839123
50	Maruti Travels	Palitana	9427263586
51	Gopinathji Travels	Palitana	9924646666
52	Madhvanad Travelsv	Palitana	9428229882
53	Gurudarshan Travels	Palitana	9601377277
54	Sant Chhaya Travels	Palitana	9898807407
55	Gangotri Travels	Palitana	9737242200
56	Sant Chhaya Travels	Palitana	9895981210
57	Aadinath Travels	Palitana	9898629111

58	Rushabh Travels	Palitana	9426271682
59	Jyoti Travels	Palitana	9427232685
60	Vimal Travels	Palitana	9431587118
61	Bhoomee Travels	Palitana	9528591900
62	Paras Travels	Palitana	9427119999
63	Jay Khodiyar Bus Sarvice	Palitana	9898338686
64	Jay Valam Travels (Dilaks)	Palitana	9924023886
65	Jay Ganesh Travels	Palitana	9925185739
66	Saidarsan Travels	Gariadhaa	7774640071
67	Karimbhoomi	Gariadhar	9429622244
68	Guruchhaya	Gariadhar	97144683680
69	Yogidhar	Gariadhar	9408139015
70	Yogibaba	Gariadhar	9427112824
71	Sant	Gariadhar	9426853012
72	Jyoti Travels	Gariadhar	9879430945
73	Meera Travels	Gariadhar	6349498282
74	H.M.T. Travels	Gariadhar	7043303132
75	Brammani Travels	Gariadhar	9714975557
76	Rajhans Travels	Gariadhar	9429864091
77	Rajmoti Travels	Sihor	7623066163
78	Geetanjali Travels	Sihor	9898877570
79	Aashapura Travels	Sihor	9537868686
80	Sadaguru Travels	Sihor	02846286286
81	Gebee Travels	Sihor	02846222880
82	Maaruti Nandan Travels	Sihor	9426164842
83	Jay Vadvaalaa Travels	Sihor	94274331607
84	Vishwanaath Travels	Sihor	9825107586
85	Saineeek Travels	Sihor	9998929136

Annexure-22

List of Private Transport (District Code No. 0278)

Sr. No.	Name	Address	Mobile Number
1	Narayanji Peraj Transport	Bhavnagar	2516601 9824086601
2	India Road Carring Corporation	Bhavnagar	2427264 9377113476
3	New Khodiyar Transport	Bhavnagar	2429489 9825206448
4	New Mahesh Transport	Bhavnagar	2428872 9879006825
5	Nondhanvadar Transport	Bhavnagar	2428095 9825205328
6	V.R.L. Logistic ltd.	Bhavnagar	2426638 9426910801
7	V-Trans (India) ltd.	Bhavnagar	2424203 9375606300
8	Navyug Transport Corpo.	Bhavnagar	2423017 9825278677
9	Shri Khodiyar Transport Co.	Bhavnagar	2524310 9824289999
10	Savani Transport	Bhavnagar	2424981 9377100710
11	Gautam transport	Bhavnagar	2434922 9426917475
12	Tavakkal Transpot	Mahuva	02844223344
13	Shubh Mangalam Roadways	Mahuva	9998164065
14	Sefesh Express	Mahuva	9998164065
15	Nonghanvadar Transport	Mahuva	9428992440
16	Jalaram Transpot	Mahuva	9824451159
17	Sarvaiya Transport	Mahuva	-
18	Reejavan Transport	Mahuva	9428992440
19	Jay Khodeeyar Kantraksan	Mahuva	8200942700
20	Vipulbhai Beejalbhai Chauhan	Mahuva	9909085785
21	Viramdevsingh/Baavubha sukhubha Rathod	Mahuva	9924168916
22	Fafabhai Chakurbhai Raghubhai Dhaapaa	Mahuva	9428352105
23	Sureshbhai Shyamjeebhai Bheel	Mahuva	7046266395
24	Ghughaabhai Ghusaabhai gohil	Mahuva	9687157229
25	Kaalubhai Baabubhai Chauhan	Mahuva	9824950850

26	Shubh mangal Transport	Talaja	9427748383
27	Nondhanvadar Transport	Talaja	9824490538
28	Shree Khodiyar Transport	Talaja	9924089009
29	Kuldeep Kargo Pra.Lee	Palitana	9428989603
30	Palitana Transport	Palitana	9998204815
31	Nondhanvadar Transport	Palitana	9926462825
32	Deepak Transport	Palitana	02848-242225
33	Khodeeyar Transport	Palitana	9924089005
34	Nondhanvadar Transport	Gariadhar	9553222722
35	Darshan Transport	Gariadhar	9426462226
36	Shobharaaj Transport	Gariadhar	9427432057
37	Laabh/Bhadukaali Transport	Gariadhar	9429974753
38	G.G.Transport	Gariadhar	9426943637
39	Devabhai Nanubhai Chauhan	Sihor	9724478080
40	Bheemjibhai Jeenabhai Dangar	Sihor	9662639911
41	Neeleshbhai Kuvadeeya	Sihor	9998485858
42	Umeshbhai Rodveiz	Sihor	9825856362
43	New Khodiyar Transport	Sihor	9825742576
44	Vishal Transport	Sihor	9974015448
45	Valbhipur Transpot	Valbhipur	9979741484
46	Satnaam Transpot	Umarala	9428787097
47	Nondhanvadar Transport	Umarala	6355770055
48	Guru Krupa Transport	Umarala	9574702020
49	New Momai Transport	Jesar	9898134598
50	Aashapuraa Transport	Jesar	9898613392

Annexure-23

List of Private Water Tenker (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	Ramapir Water Supply	Bhavnagar	9427751466
2	Shiv Water Supply	Bhavnagar	9426912628
3	K.K.Water Supply	Bhavnagar	9909606959
4	Sitaram	Bhavnagar	9824995031
5	Mahendrabhai	Bhavnagar	9725579615
6	Yograjsinh	Bhavnagar	9879565327
7	Lalajibhai	Bhavnagar	9429234173
8	Ajitbhai	Bhavnagar	9824186825
9	Vinubhai	Bhavnagar	9925914530
10	Vajabhai	Bhavnagar	9825592676
11	Jamsangbhai	Bhavnagar	9924672223
12	Dhirubhai	Bhavnagar	9426253190
13	Panchaa Bhai Dhapa	Mahuva	9574333997
14	Vitthalbhai Mohanbhai Joleeya	Mahuva	9898101764
15	Deelipbhai Chauhan	Mahuva	9537346396
16	Param Kuteeya Aashram	Mahuva	-
17	Hardevsingh	Mahuva	9427555784
18	Arunbhai Velaaree	Mahuva	-
19	Ebrahimbhai Fakir Mahmad	Mahuva	9879625160
20	Gungaraani Prakaashbhai	Mahuva	9725998195
21	Bharatbhai Baaraiya	Mahuva	9924632782
22	Chandrkant Dhedhi	Mahuva	9723485245
23	Mukesh Gondaliya	Mahuva	9228125804
24	Praveenbhai Zala	Mahuva	7567377677
25	Ombhai	Talaja	9426212498
26	Ramesh Bhai	Talaja	9925943701

27	Santkrupa Water Supply	Palitana	9723400452
28	Bloch Tenkar	Palitana	9426469268
29	Moradiya Tenkar	Palitana	9426388445
30	Shambhu Bhai Kaanjibhai	Gariadhar	9913501218
31	Mahesh Bhai Baabu Bhai	Gariadhar	7980254579
32	ArajanBhai DevrajBhai Raddiya	Gariadhar	9712214365
33	Bhupatbhai Jivrajbhai Rajani	Gariadhar	9909196552
34	Vinubhai Shamjibhai Viranee	Gariadhar	9427171862
35	Kalubhai Dungarbhai Gujrati	Gariadhar	9909189937
36	Bhanubhai Saavaliya	Gariadhar	9428340424
37	Paabuji Water Supply	Sihor	9427750586
38	Harbhole Water Supply	Sihor	9427263551
39	Shankhnaad Water Supply	Sihor	9016325725
40	Raamfulvaadi Water Supply	Sihor	9376741313
41	Jay MuraleeDhar Water Supply	Sihor	9925667677
42	Yandunandan Water Supply	Sihor	9998606364
43	Krishana Water Supply	Umarala	9913237423

Annexure-24

List of Petrol Pump (District Code No. 0278)

Sr. No.	Name of Petrol Pump	Address	Contact Number
1	Marutinandan Transport	Tansa	9925203330
2	Satyasai Petroleum	Mamsa Neswad Road	9825205004
3	Ashapura Petroleum	Nathugarh Vawadi Road	9426255351
4	Ashapura Petroleum	Tagdi	9427215257
5	Sadguru Kishan Seva Kendra	Padva	9824999999
6	Sitaram May.	Padava	9942599999
7	Essar	Tagdi	9426389593
8	Mehta Automobile	Vartej	9426918487
9	Kirit Traders	Vartej	9424211644
10	Shah Petroleum	Vartej	9824215387
11	Yajnik automobile	Sanes	9426223100
12	Ketan Automobile	Budhel	2782883443
13	Ashwini Petroleum	Vartej	9428009768
14	Yogeshwari Trading	Bhumbali	9825187779
15	marg fuel point	Budhel	9825275603
16	JK Petroleum	Sanes	9824870772
17	Rajhans Earthmovers	Kardej	9429554177
18	Yuvraj Petro	Adhelai	9099539999
19	Siddhivinayak	Bhumbali	9913134813
20	Relince Petroleum	Vartej	9228002449
21	RK Petroleum	Vartej	9879522424
22	Mahadev Petroleum	Hatab	9879507758
23	Rajeshwari Petroleum	Bhadi	9586861616
24	pitru Ashish Petro	Gundi	0
25	Jai Shri Khodiyar Petro	Lakhnaka	0
26	Harakhji Bhanji & Sons	Dhola Jn.	9925448051
27	Kothari Auto Mobile	Rangola	9375779393
28	Kothari Auto Mobile	Limda	9375779393
29	Reliance Industries	Dhola Jn.	9429094012
30	Royal Petro	Rangola	9601571257
31	Essar Nuri Petro	Rangola	9426938487

32	Guru Ashish Petro	Chogath	9879565327
33	KN Petro	Timbi	8154000024
34	Jai Jalaram Petro.	Limda	9909028206
35	Nandani Petroleum	Dedkadi	0
36	Heaven Petro	Station Road, Mahuwa	9825205651
37	Shri Shakti Kisan Seva Kendra	Kojnli	9624965120
38	Arjun Petro	Dudhala No.2	9624963896
39	Sant Bhumi Petro	Bagdana	9426910738
40	Jalaram Fuel Centre	Neswad	9825622401
41	Bajrangdas Bapa Petro	Moti jagdhar	9429165343
42	Abhishek Petro	Neswad	9909910980
43	Ratilal Pranjivandas & Co	Umaniyavdar	9426940786
44	Bapa Sitaram Petro	Gudarana	9428811110
45	Vijayalakshmi Petro	Mota aasarana	9879897700
46	Seeraj & Co	Vadli	9328214432
47	Agwan Petro	Devliya	9825491694
48	Reliance Petro	Bhadrod	9824819981
49	T.C. Brothers Petrol Pump	Citizen Guest House, Mahuva	9924181471
50	Ranchoddas Parekh & Sons	Parshivalpara, Mahuva	9429264555
51	Devangi Petro	Bhadra	9737456569
52	Bapasitaram Petro	Bagdana	9879027644
53	Paras Petro	Bhavnagar Somnath Highway, Mahuva	9824234477
54	Hariom Petro	Bordi	9824556489
55	honest Petro	Otha	9824394302
56	Mangal maa petro	Nana khutvada	9687915008
57	Shri Raj Chamunda Petro	Kalasar	9426454898
58	Start Petro	Belampar	9898156194
59	shree Somnath Fuel	Bagdana	9904094193
60	Maya Petro	Sartanpar Road, Thalaja	9427262023
61	HF Bhurani	Mahuwa Road, Talaja.	9825206611
62	Jay Khodiyar Petro	Borda-Mahuwa Highway, Borda	9426271897
63	Sudarshan Petro	Kathwa-Alangyard, Mahadevpara	9925872727
64	Agricultural industry commodity conversion and food processing	Bapada-Mahuwa Highway, Bapada	9879027644
65	Akshar Petro	Panchpipla Mahuva Highway Talaja	9925872727

66	Shiv Fuel Supply Petro	Panchpipla Mahuva Highway Talaja	9377515179
67	Rajani Petro	Thalia Bagdana Road, Thalia	9426456286
68	Sainath Petro	Pithalpur-Gopnath Road, Pithalpur	942634505
69	Lakshayvir Petro	Survey No.57/2 Alanyard Road Kathwa	9723976351
70	Reliance Petro	Panchpipla-Mahuwa Highway, Panchpipla	9228010547
71	Krishna Petro	Bhavnagar-Somnath Highway, Bhalar	9879221111
72	Krishna Petro	Socia, Talaja	9925669999
73	Viking Petro	Social Yard, Pool	9825209972
74	Shamla Petro	Datha, Talaja	9586050060
75	Raj Petro	Talaja-Mahuwa Highway,Sakhdasar 1	9979872303
76	Tanvi Petro	Talaja-Palitana Highway, Talaja	9909791414
77	Aarti Petro	Timana	9426640621
78	Sagar Lakshmi Petro	Sartanpar (Port)	9723356600
79	V Shell Petro	Panchpipla	9033099301
80	Messrs Petro	Subhash Road, Beside Taluka School, Gariyadhar	9426462243
81	Prakash Petro	Opposite Valam School, Palitana Road, Gariyadhar	9426462046
82	Mahavir Petro	Palitana Road, Gariyadhar	8530418484
83	Shriji Kisan Seva Kendra	Navagam Road, Gariyadhar	8141606800
84	Nandani Petroleum	Panchtobara Gariyadhar	9925730333
85	Mahadev Fuel	sukhpar	9016490777
86	Valam Petro	Naniwadi Road, Gariyadhar	9824174710
87	Sagar Petro	Parvadi, Gariyadhar	9429290003
88	Shree Agwan Petroleum	Tavar paase,	9825491694
89	shree Rajamomai Petro	Dadani vaav pase	9825540948
90	shree Sahara Petro	Tana	9427750081
91	Shree Raj Chamunda Petro	Tana	9426454898
92	Jay Petro	Tana	9998848421
93	Nandani Ben Petro	Valavad	8160132377
94	Vishwa Kalyani Petro	Songarh	9979236890
95	Omkar Petro	Mota surkha	9979236890
96	Ankur Petro	Mota surkha	9426246278
97	shree Sitaram Petro	Ghangli Chamardi Road	9375779393
98	Jai Gopal Petro	Sanosara	7600282828
99	shree Somnath Petro	Sanosara	9925482909

100	shree Boricha Petro	Ghaghli	8490998661
101	shree Gurukrupa Petro	Vadiya	9427320012
102	I Shree Khodiyar Petro	Shihor	9427202882
103	Mr. Khodiyar Kripa Petro	Rajpara (Khodiar)	9712989999
104	Maharishi Enterprises	Bhavnagar-Rajkot Road Shihor	8511107087
105	Shree Rameswaram Petro	Sihor	9016333376
106	Hari Om Petroleum, Nondhanvadar	Nodhanvadar	9426464011
107	Bapa Bajrangdasji Petroleum, Nondhanvadar	Nodhanvadar	9376601459
108	Eklingji Petroleum, Palitana	Palitana	9426034777
109	Entertainment Sales Petroleum, Malpara	Malpara	9427753707
110	Chamunda Petroleum, small watershed	Nana panyali dem	9426989159
111	Parth Feeling Petroleum, Palitana Talaja Road	Palitana Thalaja Road	9426261997
112	Neha Petroleum, Sonpari-2	Sonpari-2	8238174575
113	Mahaveer Petroleum, Palitana Town Hall	Palitana Town Hall	7990511132
114	Babji Petroleum, Bhavnar Road	Bhavnagar Road	9824052821
115	Chamunda Filling Petroleum, Chonda	Chonda	8160209195
116	Bholanath Petroleum, Gariyaghar Road	Gariyaghar Road	9898951432
117	Shiv Petroleum, Bhandaria	Bhandaria	9427752169
118	Muralighar Petroleum, Thadach	Thadach	9427752169
119	Shiv Shakti Petroleum, Mokhadka	Mokhdka	9978954000
120	Bhupatarai and Braghers, Bhairavapara area Palitana	Bhairavpra area, Palitana	9426455800
121	Jai Drarkaghigh, Thadach	Thadach	9825679584
122	JK Petroleum	Kanpar	9913386057
123	Kashtabhanjan	Lakhanka	9099296069

	Petroleum		
124	Bhumi Petro	Lakhanka	9723522611
125	Anandham Petro	Vallabhipur	9824233945
126	Bhagwati Petroleum	Vallabhipur	9724088288
127	Shree Lakshmi Petroleum	Vallabhipur	8154000024
128	Sitaram Petroleum	Lakhanka	9879576276
129	Radha Petroleum	Panavi	9067571033
130	Mahaveer Petroleum	Chamardi	9033806070
131	CHITRA TRANSPORT CO.A-SITE	DESAI NAGAR BHAVNAGAR PARA	9909006969
132	MARU AUTOMOBILES A-SITE	OLD PORT ROAD Bhavnagar	9558984545
133	SANT SHREE BAJRANGDASJI PET.	Opp Neelambag Bhavnagar	9825132450
134	SATYANARAYAN PETROLEUM CO.- BHAV	Opp Jilla panchayat BHAVNAGAR	9825234590
135	PLANET PETROLEUM	PLOT NO: 15 SURVEY NO: 469/1 JEWEL CIRCLE ISCON MEGACITY, BHAVNAGAR	9427909192
136	SATYANARAYAN PETROLEUM CO.	Nari Chowkdi BHAVNAGAR	9825234590
137	Shivaay Petroleum	SURVEY NO-191 PAIKI 2, SIDSAR BAYPAS ROAD.	9725641399
138	SWASTIK AUTO SERVICE (TALAJA)	juna jakatnaka talaja road, BHAVNAGAR	9898678660
139	MSHSD BHAVNAGAR MOTOR SANGH	Survey no. 21 MANGALSINHJI ROAD BHAVNAGAR	9104907484
140	MSHSD SIDSAR HAREKRISHNA PETRO CARE	SURVEY NO 164 AND 165P1 VARTEJ - BUDHEL HWY, BYPASS ROAD, SIDSAR	9898499759
141	MSHSD S B PETROLEUM	PLOT 4 & 5, SURVEY 116P BHAVNAGAR - GHOGHA RD, NEAR SHITALAMA MANDIR, TARSAMIYA,	9879544041
142	MSHSD HP SERVICE CENTRE, AXAR TRANSPORT, BHAVNAGAR	PLOT NO. 2557 BHAVNAGAR - TALAJA ROAD OPP. RAM MANTRA MANDIR	9726385726
143	MSHSD SHIV SHAKTI PETROLEUM	PLOT NO5 SURVEY NO 90 1P F P NO 2 T P S NO 12 GHOGHA ROAD SHIVAJI CIRCLE TARSAMIYA, BHAVNAGAR	9427511001
144	BHAVNAGAR SAHAKARI PETROL PUMP	VITHTHALWADI BHAVNAGAR	9825082242

145	KATHIAWAR MOTOR SALES & SERVICE	OPP-ST BUS STAND, BHAVNAGAR	9825366344
146	SHREE RAMDEV AUTOMOBILES	CHITRA, BHAVNAGAR	9426288828
147	JAY RAMAPEER PETROLEUM	SHIVAJI CIRCLE, GHOGHA JAKATNAKA, BHAVNAGAR	9824223571
148	SHIV PETROLEUM ADHOC	COLLECTOR OFFICE, BHAVNAGAR	9104711711
149	SAINATH PETROLEUM	LEELA CIRCLE, BHAVNAGAR	7567299595
150	JAYVEER AGENCY	CITY SARVEY NO.5684 PLOT NO.7,8 NILAMBAG PELES BHAVNAGAR	9825010202
151	SAI PETROLEUM	2107, ATABHAI ROAD, NEAR VIHAR COMPLEX, BHAVNAGAR.	9427748865
152	Rajeshwari Petroleum	Palitana Road, Jesar	7096979751
153	Ashirwad Pump	Jesar Mahuva Road, Jesar	9558750074
154	Hare Krishna Pump	Jesar Mahuva Road, Jesar	7878214838

Annexure-25

List of Kerrosine Diller (District Code No. 0278)

Sr. No.	Name of Agent	Address	Contact Number
1	Krishna Agency Mamsa	Plot-16, Ukharla Road, Post-Malpar Dt.Ghogha	9825413573
2	Rameshwar Petroleum	Near Golkhadi, Old Port Road,	9428079571
3	TC Brothers, Bhavnagar	Danapith	9426266003
4	Saurashtra Petroleum Bhavnagar	top na nake, near Khargate	9426261008
5	Sohilraj Agency, Bhavnagar	lati bazar	9825206096
6	KA Kotecha Gariyadhar	Nani Vavadi Road,	9426462046
7	Seeraj & Co. Mahuva	Opposite Girls School,	9328214432
8	JK Gandhi Talaja	Gorakhi Road, Mahajan Gaushala	9426908889
9	Boricha Petroleum Umrala	Sitaram Nagar, Chogath Road,	9825538983
10	Mukesh Traders Shihore	GIDC No.-1	9328248735
11	Mehta Auto Mobiles Bhavnagar	Old port	9426211300
12	RP & Co	Opposite Ashoknagar, Neswad	9825692392
13	Honest Petroleum Sutarwad	Near Railway Station, Sutar Wad	9426917334
14	Natwarlal & Sons, Rs.	Opposite Collector Office,	9898787777
15	RT Brothers, Bhav.	Waghawadi Road,	9426221182
16	Ranchoddas Parekh & Sons, Mahuva	Veerchand Gandhi Chowk,	9624103200
17	Thakkar Brothers Bhavnagar	Danapith	9913620990
18	Taj Petroleum Palitana	Bhairav Para	9274107552

Annexure-26

List of LPG Gas Diller (District Code No. 0278)

Sr. No.	Name of Diller	Address	Contact Number
1	GARIYADHAR INDANE	GARIYADHAR	9426212672
2	SHIV PRATHMIK GRAH.SAH GAS AGEN	BHAVNAGAR	9426212358
3	SHREE BAJRANGDASJI INDANE	BHAVNAGAR	9408518181
4	SIHOR GAS AGENCY	SIHOR	9426205333
5	MAHUVA TAL.SAH.KHARID VECH S.L	MAHUVA	7016580683
6	JAY SHAKTI INDANE GAS AGENCY	BHAVNAGAR	9428145558
7	BHAVNAGAR SAH HATT, BHAVNAGAR	BHAVNAGAR	8238571521
8	SWASTIK INDANE	VARTEJ	8980048350
9	DEEPTI GAS AGENCY	BHAVNAGAR	9428992288
10	SWETA INDANE	BHAVNAGER	9426819171
11	KEYUR INDANE GAS AGENCY	PALITANA	9426227939
12	GIGEV INDANE GRAMIN VITRAK	BHAVANAGAR	9824882355
13	CITIZEN INDANE GRAMIN VITARAK	BHAVNAGAR	9909265110
14	SATGURU INDANE DISTRIBUTORS	PALITANA	9426207550
15	AARSH INDANE	BHAVNAGAR	9712113737
16	VEER BAJRANG INDANE	VILLAGE TANA	9624098737
17	NILKANTH INDANE GAS AGENCY	PATANA	9998311895
18	JOGMAYA INDANE GRAMIN LPG VITRAK	MOTA KHUTAVADA	9913694777
19	GOPI INDANE GRAMIN VITRAK	ALANG	9979763207
20	OM SAI INDANE	AYAVEJ	6355179667
21	SIDDHI INDANE	SANOSARA	8160014114
22	INDRANI GAS AGENCY	TALAJA	9426271598
23	H.K.KAMDAR & SONS	BHAVNAGAR	9427559100
24	BAJRANG INDANE	VILLAGE MONPAR	9426440582

25	DOSHI GAS SERVICE	MAHUVA	9662780529
26	SHREE VADVALA INDANE	VILLAGE TANASA,	8347083546
27	JYOT INDANE	NONDHANVAD AR	9664828650
28	BARAIYA GRAMIN VITRAK HP GAS AGENCY	Kalsar	N/A
29	KAMALA RGGLVY HP GAS AGENCY	Rupawati	N/A
30	MAHADEV GAS AGENCY	Vallabhipur	9909969752
31	MARUTI GAS AGENCY	Timbi	9428638601
32	RAJDEEP GAS AGENCY	Bhavnagar	9898220592
33	AAYUSHI BHARATGAS	Bhavnagar	9925772727
34	ASTHA GAS AGENCY	Bhavnagar	9925116417
35	KRISHNA GAS AGENCY	Bhavnagar	9909264141
36	MAHADEV BHARATGAS GRAMIN VITRAK	Datha	9429165182
37	SHRI SITARAM GAS AGENCY	Bhavnagar	9924741133
38	YOGESHWAR BHARATGAS GRAMIN VITRAK	Ukhrala	9824554101

Annexure-27

List of Rescue Equipment Suppliers (District Code No. 0278)

Sr. No.	Name	Address	Contact Person	Contact Number
1	Star Fire Fighters	Vithalvadi, Bhavnagar	-	9067628313
2	Sidhi Fire Service	31, Lalapark, Jalaram Society, Bhavnagar	Bharatbhai	9898330083
3	Kanadiya Fire&Safety	Shihor GIDC	-	-
4	Navin Fire Safety	Eva Complex, Opp: Gulista, Bhavnagar	Ketanbhai	9825580782
5	Kazi Enterprize (Boats)	Alang	Ramzanbhai	8460110110

Annexure-28

List of Resources Available with Government

Equipment available with District Collector Office

Sr.No.	Item Name	Number of Items
1	Portable inflatable Emergency Lighting System	2
2	Life Jacket	25
3	Life Buoy	25
4	PP Ropes 26 MM (100ft)	5
5	PP Ropes 26 MM (200ft)	3

Equipment available with BMC

(Fire & Emergency Services)

Sr.No.	Item Name	Number of Items
1	Mini Fire Fighter	1
2	Foam Tender	1
3	Fire Bouser	8
4	Rescue Van (Pick up)	2
5	Ambulance	2
6	Dharma Rath	3
7	Fire Jeep	1
8	Fire Bullet	1
9	Life Buoya	120
10	Life Jacket	120
11	PP Ropes (200-M)	10
12	PP Ropes (100-M)	20
13	Portable inflatable Emergency Lighting System	5
14	Fibre Boat	1
15	Unse Water BA Set	2

Equipment available with Nagarpalikas

Sr. No.	Name of Nagarpalika	Portable inflatable Emergency Lighting System	Motorcycle Mounted Water Mist	Water Bowser	Mini Fire Tender	HDPE Boat	Tata Yodha
1	Gariyadhar	2	1	1	1	-	-
2	Mahuva	2	1	1	2	1	-
3	Palitana	2	1	1	2	-	-
4	Sihor	2	1	2	1	-	1
5	Talaja	2	1	1	1	-	-
6	Vallabhipur	2	0	1	0	-	-

Equipment available with Alang Fire Station

Sr.No.	Item Name	Number of Items
1	Water Bowser	2
2	Water Tanker	2
3	Fire Hoses-15 mtr	18
4	Fire Hoses-30 mtr	35
5	BA Sets	2
6	Fire Suits	4
7	Mini Fire Tender	1
8	Portable Fire Pump	1

Equipment available with GMB

Sr.No.	Item Name	Number of Items
1	Emergency Lights and Tourches	2
2	Radio	1
3	Radio on Internet Protocol	1
4	Binocular	1

Equipment available with Forest

Sr.No.	Item Name	Number of Items
1	Man Force	87
2	Cutter	10
3	Axe	32
4	Rope	13
5	Chain Saw	9
6	First Aid Kit	2
7	Uniform Jacket	20
8	Walki-Talki Hand Set	13

Annexure-29

List of Resources Available with Corporate Sector

Equipment available with Nirma Company

Sr.No.	Item Name	Number of Items	Remarks
1	Water tender	1	

Equipment available with Sumitomo Pvt. Ltd. Company

Sr.No.	Item Name	Number of Items	Remarks
1	Mini fire fighter	1	

Annexure-30

List of Private JCB Suppliers (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	MAKWANA VELABHAI	AT-KHARED,TA-MAHUVA,DIST-BHAVNAGAR,Bhavnagar,Gujarat,364290	7984173237
2	KUVADIYA MUKESHBHAI	130,VADI VISTAR,SAGWADI,SIHOR,Bhavnagar,Gujarat,364240	9316097983
3	SARVAIYA BHAGIRATHSINH	AT-SAKHADASAR NO-1,TA-TALAJA,BHAVNAGAR,Bhavnagar,Gujarat,364140	6351067275
4	VALA LALUBHA	DARBAR SHERI 2,AT-DUDHALA NO 1,TAL-MAHUVA,Bhavnagar,Gujarat,364290	9723181484
5	TRIVENI ENTERPRISE	SURVEY NO 113 P2 TARED SEDARDA ROAD,AT BORDI TA MAHUVA,VADI VISTAR,Bhavnagar,Gujarat,364280	9428401310
6	BHARVAD SEJIBEN BOGHABHAI	AT.RATANPAR,TA.VALLABHIPUR,VALLABHIPUR,Bhavnagar,Gujarat,364001	7096017085
7	GOHIL PRADIPSINH JITUBHA	AT.TANSA,TA.GHOGHA,GHOGHA,Bhavnagar,Gujarat,364120	9638332081
8	SHREENATHJI COTTON INDUSTRIES	AT.SUR NO.457/449 PAIKEE,BHAVNAGAR ROAD NATIONAL HIGHWAY 8E,BHADROAD TA.MAHUVA,Bhavnagar,Gujarat,364290	7096017085
9	VAGHELA NARSHIBHAI	AT SHEVALIYA,TAL TALAJA,TALAJA,Bhavnagar,Gujarat,364001	9638332081
10	BHIKADIYA VALJIBHAI	AT SCHEDULE CASTE AREA CHADA,TA VALLBHIPUR,BHAVNAGAR,Bhavnagar,Gujarat,364310	6352983985
11	VIJAYBHAI	AT JUNA RATANPUR,TA VALLBHIPUR,BHAVNAGAR,Bhavnagar,Gujarat,364310	6352983985
12	GAMARA GOVINDBHAI	AT BHARVAD STREET JUNARATNPUR,TA VALLBHIPUR,BHAVNAGAR,Bhavnagar,Gujarat,364310	6352983985
13	PANKAJ REFACTORIES	SR NO-194, BLOCK NO-152/5 & 153/1,AT-MALPAR,TA-GHOGHA,Bhavnagar,Gujarat,364070	9898656575
14	GAMARA VIPULBHAI NAGAJIBHAI	AT.JUNA RATANPAR,TA.VALLABHIPUR,VALLABHIPUR,Bhavnagar,Gujarat,364001	7984108710
15	VISHAVRAJSINH GOHIL	AT.RATANPAR,TAL UMRALA,UMRALA,Bhavnagar,Gujarat,364001	7777940677

16	MAKWANA MAHESHBHAI	98 KAILAS SOCIETY,BHAVNAGAR,GHOGHA ROAD BHAVNAGAR,Bhavnagar,Gujarat,364001	9909885612
17	GAMARA JETHIBEN SATABHAI	AT.JUNA RATANPAR,TA.VALLABHIPUR,VALLABHIPUR, Bhavnagar,Gujarat,364310	9909444103
18	MEVADA GHARABHAI GIGABHAI	AT.MAKHANIA,TA.TALAJA,TALAJA,Bhavnagar, Gujarat,364001	7096017084
19	HUMBAL SAGARBHAI	AT ZANZAMER,TAL UMRALA,BHAVNAGAR,Bhavnagar,Gujarat,364 320	9924238044
20	SHJJADHUSEN HAIDARALI RAJANI	PLOT NO 25 FIRDOS SOCIETY NAVA BUS,STAND SAME UMNIYAVADAR NI NAL,MAHUVA BHAVNAGAR,Bhavnagar,Gujarat,364290	9429433030
21	KAMLIYA DADUBHAI	AT 199 SOLANKI SHERI AND MANGALMANI,SHERI BHAGUDA,BHAVNAGAR,Bhavnagar,Gujarat,3 64295	9426463121
22	CHAUHAN TULSHIBHAI	00,AT, JAMWALI-1,TAL, PALITANA,Bhavnagar,Gujarat,364270	9033447763
23	SHAH COTTON INDUSTRIES	AT KONJALI ROAD UMNIYAVADAR,TA MAHUVA DIST BHAVNAGAR,MAHUVA,Bhavnagar,Gujarat,36 4290	9925425411
24	NIRUBHA MANGALSINH GOHIL AND CO	OFFICE NO309 NIRMALPLAZA COMPLEX,BHAVNAGAR,TALAJA ROAD ,NEAR SANSKARMANDAL CHO,Bhavnagar,Gujarat,364001	9979848438

Annexure-31

List of Private Crain Suppliers (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	Jaswantsinh	Bhavnagar	9825205583
2	Shahidbhai	Bhavnagar	9898086263
3	PuranSinh	Bhavnagar	9426211553
4	Gafarbhai Aarab	Bhavnagar	9824220819
5	Salimbhai Sadikbhai	Bhavnagar	9825212621
6	Harunbhai	Bhavnagar	9327753627
7	Manojbhai M.lalani	Bhavnagar	9601259798
8	Crain Supply	Mahuva	9824229858
9	Jeram Bhai	Talaja	8000528891
10	Arvind Bhai	Talaja	9879181333
11	Chetansingh	Talaja	9723379999
12	Sahdevsingh Gohel	Talaja	9328434445
13	Kareem Bhai	Palitana	9824849888
14	Ramchandr Crain	Sihor	9825409093
15	Bapasitaram CrainPravinbhai	Sihor	9825219837
16	Krishna Crain	Sihor	9825650606
17	Yadav Crain Ramchandrbhai	Sihor	9724392158
18	Hareshbhai Jetaani	Valbhipur	9925951990

Annexure-32

List of Private Gas Cutter Suppliers (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	Abbdulabhai Solanki	Bhavnagar	9904765292
2	Sohilbhai Bilakhiya	Bhavnagar	9825131292
3	Ashwinbhai Parmar	Bhavnagar	9824212268
4	Nav Shakti Velding	Mahuva	9428618168
5	Shree Bhagvati Gas Velding	Mahuva	9825570311
6	Haamaabhai Baaraiya	Mahuva	9909353938
7	Deepakbhai Velajee Kavaa	Mahuva	8141345571
8	S&.V.U.Mustufaa	Mahuva	9727535353
9	Mangabhai Makwana	Talaja	9723567420
10	Peerambhai	Palitana	9904493250
11	Parmaar Arvindbhai	Palitana	9106850004
12	Laabhupopat Meestri	Palitana	9714813502
13	Kanubhai jeevaraajbhai Meestri	Palitana	9429638222
14	Rooleengmil Aesoshiyan	Sihor	9825205053
15	Rajubhai Adaniya	Valbhipur	9724881413
16	Deepakbhai Ranabhai	Valbhipur	9924089722

Annexure-33

List of Private Generator Suppliers (District Code No. 0278)

Sr. No.	Name	Address	Contact Number
1	Zen Engineering	Bhavnagar	9825307900
2	Nigam Electricals	Bhavnagar	9824242122, 2221332
3	Gandhi Electric Store	Bhavnagar	9427211521, 2425467, 2513046
4	Sigma Engineering	Bhavnagar	9825205934, 2436943, 2433434, 2429865, 2436943
5	Rahul Electric	Bhavnagar	9824397391
6	Baraiya Sound and Light	Bhavnagar	9824390971
7	Dipak Bhai Rangani, Kamlesh Bhai Rangani	Mahuva	9426830394, 9408728518
8	Chhanabhai Manggabhai Chauhan	Mahuva	9904029707
9	Vipulbhai	Mahuva	9904075352
10	Bharatbhai Baaraiyaa	Mahuva	9537065541
11	Jasubhai Baambhaniyaa	Mahuva	8238739661
12	Mukeshgeeri Goswami	Mahuva	9737275792
13	Geegabhai Haajaabhai Kaamaliya	Mahuva	9879218061
14	Jitu Javer Naakaraanee	Mahuva	9825407948
15	Bhupatbhai Geerdhanbhai	Mahuva	9898529684
16	Sahdevsingh Gohil	Talaja	9328434445
17	Kanji Bharwad	Talaja	9924596618
18	Pankaj Bhai Dhandhliya	Talaja	9428811134

19	Kanji Bhai Dhapa	Talaja	9726204989
20	Dipak Bhai	Palitana	9324856622
21	Hitesh Bhai	Palitana	9898216060
22	Manubhai Chavda	Sihor	9426040514
23	Lalitbhai	Sihor	9714837541
24	Saileshbhai Vegad	Valbhipur	9979309948
25	Prakashbhai paramar	Valbhipur	9426569462
26	Dhanjibhai	Valbhipur	9727625240
27	Ghanshyambhai Baariya	Valbhipur	9824369979
28	Rashmeenbhai Vaghaseeya	Valbhipur	9426852012
29	Ikbalbhai Agareeya	Bhavnagr	9825852685
30	Navrang Mandap Service	Umarala	9925668511

Annexure-34

Contact details of Aapda Mitra (Up Scalling Aapda Mitra)

Sr. No.	Name	Mobile Number	Sr. No.	Name	Mobile Number
1	Joshi Dharmikbhai Rajubhai	8141909578	151	Pandya Jitendrakumar Bhanushankar	9638003646
2	Dhapa Shamajibhai Dudabhai	9909247267	152	Goswami Nareshgiri Chandugiri	9723837054
3	Makwana Mansukhbhai Premajibhai	9558228426	153	Galani Nareshbhai Surabhai	8690415152
4	Chauhan Narsangbhai Aanandbhai	9429641815	154	Vala Tejpalsinh Gautamsinh	8866639191
5	Dabhi Jivanbhai Keshavbhai	9265776580	155	Malankiya Hareshbhai Arjanbhai	9978773341
6	Rathod Bharatbhai Bhupatbhai	7016579931	156	Parmar Gautambhai Odhadbhai	8980697592
7	Anjara Premjibhai Raghavbhai	9726160571	157	Rathod Vipulbhai Karshanbhai	7016424558
8	Jani Nayankumar Nathabhai	9904291549	158	Rathod Bharatbhai Dudabhai	6355704771
9	Baraiya Sureshbhai Harbhimbhai	9727911890	159	Vagh Bharatbhai Govindbhai	9558004264
10	Kantariya Dipakbhai Tulsibhai	9537642997	160	Chotiya Pareshbhai Jinabhai	9537724791
11	Gohil Mehulbhai Bharatbhai	8758903769	161	Rathod Maheshbhai Dulabhai	7069752182
12	Baraiya Parasbhai Gordhanbhai	7567021619	162	Talajiya Tusharbhai Bipinbhai	9723233804
13	Baraiya Mukeshbhai Ravajibhai	9924164852	163	Gurjar Hareshbhai Naranbhai	9898678708
14	Gohil Vijaybhai Bhupatbhai	9726529543	164	Gohil Mahavirsinh Hemantsinh	9558552608
15	Baraiya Dipakbhai Himmatbhai	8980087181	165	Dabhi Harshad Dhanjibhai	8154844209
16	Baraiya Bharatbhai Labhubhai	7678604074	166	Dangi Nikul Mahendrabhai	7096643013
17	Chauhan Hiteshbhai Navinbhai	8000394966	167	Chavada Bhaveshbhai Vinubhai	9904973723
18	Sarvaiya Rakeshbhai Mangalbhai	9512311389	168	Jadav Kantibhai Ramjibhai	9924551723
19	Rathod Maheshbhai Himmatbhai	8140159921	169	Bambhaniya Ashokbhai Khimjibhai	9265941898
20	Gohil Abhaysinh Bharatbhai	6356424498	170	Gohil Majbutsinh Lalubha	9510734987
21	Saida Patubhai Hamubhai	8140539936	171	Jethava Shaileshbhai Vikrambhai	7698834820

22	Shiyal Bholabhai Panchabhai	9586959552	172	Kanatariya Vijaybhai Ghanshyambhai	7041553080
23	Makwana Kanjibhai Ramjibhai	9662435413	173	Shiyal Arvindbhai Samnatbhai	8141005209
24	Makwana Mukeshbhai Samantbhai	9724309497	174	Baraiya Vijaybhai Chhaganbhai	9726634313
25	Makwana Jaysukhbhai Jivrajbhai	9714313670	175	Boricha Muljibhai Manubhai	9879997659
26	Mer Dipakbhai Jivrajbhai	9737366586	176	Bariya Vikrambhai Rameshbhai	8141240361
27	Kureshi Asifbhai Inusbhai	9714791829	177	Sarvaiya Aslambhai Gafarbhai	7662782926
28	Makwana Prafulbhai Babubhai	9737738439	178	Vatukiya Sajanbhai Nathabhai	9586458895
29	Parmar Dipakbhai Premjibhai	7069916006	179	Makwana Balawantbhai Babubhai	9974040041
30	Gohil Mahipalsinh Lalubha	9712214313	180	Purohit Devangbhai Bhaskarbhai	9824841420
31	Makwana Bahadurbhai Kalubhai	7096425802	181	Shiyal Bhaveshbhai Panchabhai	9824444397
32	Baraiya Kishorbhai Bhupatbhai	7046839822	182	Baldhiya Muneshbhai Chhaganbhai	9879797011
33	Shiyal Bavchandbhai Nanubhai	8306095944	183	Vala Tushar Chhanabhai	9924712217
34	Makwana Vikrambhai Samarathbhai	7878775084	184	Baraiya Bhimbhai Madhubhai	8154071315
35	Makwana Pravinbhai Ramjibhai	6354617177	185	Gohil Bharatbhai Jorubhai	8469208584
36	Bhil Bhaveshbhai Jivanbhai	9624201229	186	Chauhan Sunilkumar Nareshbhai	9510771473
37	Bhaliya Bhaveshbhai Khatabhai	6354054562	187	Parmar kishansinh Kalubhai	9428854472
38	Chudasama Lalajibhai Dhanjibhai	9925480027	188	Agravat Manojkumar Harkishanbhai	9714681331
39	Bambhaniya Kishorbhai Keshubhai	8154066080	189	Dabhi Rameshbhai Mansukhbhai	9723710432
40	Chauhan Vashrambhai Mathurbhai	9722224050	190	Parmar Hirabhai Damjibhai	9924017448
41	Gadhadara Shaileshbhai Dhirajlal	9624887040	191	Sarvaiya Bhaveshbhai Babubhai	9913105263
42	Makwana Bharatbhai Nathabhai	9313078234	192	Agravat Mahasukhram Narotamdas	9723938072
43	Gohil Harishchandrasinh Dalpatsinh	8690801593	193	Gohil Natubhai Karshanbhai	9427801804
44	Gohil Kripalsinh Ramubha	6353408171	194	Chavada Yogeshbhai Gordhanbhai	9427348425
45	Dabhi Vikrambhai Bhupatbhai	9898873242	195	Sandesh Maheshbhai Lavjibhai	8487083732
46	ZalaDineshbhai Lavjibhai	9574950150	196	Baraiya Dipakbhai Chhaganbhai	9727442723
47	Vahjadiya Hemantbhai Kantibhai	9879026834	197	Makwana Govindbhai Raghavbhai	9328726636

48	Sagathiya Sandeshbhai Nathabhai	9909433662	198	Sarvaiya Chandrasinh Jasubha	9974442022
49	Shiyal Rahulbhai Jitubhai	7046047361	199	Sarvaiya Mohansinh Polubha	9725176483
50	Makwana Bhagvanbhai Haribhai	7623089408	200	Jaliya Dilawar Nurmahamadbhai	8469765764
51	Joshi Rohitbhai Bipinbhai	9824076121	201	Batiya Sanjaybhai Popatbhai	7567391743
52	Mer Bhagirathbhai Pravinbhai	6351555507	202	Shiyal Bhavinbhai Ranchhodbhai	9099198431
53	Mer Santoshbhai Hasmukhbhai	9714357549	203	Solanki Mehulkumar Bhopabhai	9726921389
54	Mer Alpeshbhai Hasmukhbhai	9723235630	204	Modhkiya Bhaveshbhai Dineshbhai	9537216641
55	Gujariya Santoshbhai Vinubhai	8154080498	205	Modhkiya Rahulbhai Bhratbhai	9664616601
56	Makwana Jugalbhai Gambhirbhai	8347624901	206	PRADIPBHAI KABABHAI GOHIL	9512132539
57	Mer Mukeshbhai Kanjibhai	9737890268	207	AKSHYBHAI DINESHBHAI MODHKIYA	9978214006
58	Chauhan Kishorbhai Jivabhai	6354134746	208	CHETANBHAI DULABHAI KAMBAD	6352191297
59	Chauhan Ghanshyambhai Jivabhai	6353930344	209	VIVEKBHAI BHOPABHAI CHAUHAN	9824879072
60	Makwana Nagjibhai Khatabhai	7359598415	210	DIVYESHBHAI RAMESHBHAI BARAIYA	7046835082
61	Makwana Chetanbhai Himmatbhai	9727658151	211	Vaghela Ashwinbhai Maganbhai	8141632154
62	Parmar Sureshbhai Vallabhbhai	7600343525	212	Kherala Nikulbhai Khimjibhai	7016978290
63	Makwana Manishbhai Savjibhai	9723953511	213	Baraiya Prakashbhai Khatabhai	9737356699
64	Makwana Vipulbhai Bhagvanbhai	7265989907	214	Dabhi Sagarbhai Jivanbhai	9099275588
65	Solanki Rajabhai Rupabhai	8141485401	215	Makwana Shaileshbhai Mansukhbhai	7984794686
66	Patadiya Pravinbhai Kadavabhai	9898413368	216	Sarvaiya Milan Kantibhai	9081660366
67	Bhatti Ramdevbhai Dulabhai	9624595133	217	Makwana Nitinbhai Gagjibhai	6353300310
68	Shingad Vinodbhai Babulbhai	8128554741	218	Satiya Sagarbhai Varhabhai	9426066631
69	Vaghela Tomeshbhai Babubhai	7698176624	219	Chauhan Amitbhai Shivabhai	9016885090
70	Baraiya Ajaybhai Makabhai	7874043704	220	JATINKUMAR BHAGVANBHAI JAMOD	9328530033
71	Goswami Mehulgiri Maheshgiri	9825705724	221	RAKESHBHAI JAYSUKHBHAI SATIYA	7817861213
72	Makwana Jagdishbhai Mangalbhai	9662435146	222	MIHIR DINESHBHAI DODIYA	7990279401
73	Bambhaniya Umeshbhai Dineshbhai	7096769107	223	HARSH BHARATBHAI CHAUHAN	8511192355

74	Gohil Labhubhai Polabhai	9586693845	224	PRAVINBHAI HIMMATBHAI MAKWANA	8306549097
75	Solanki Jayesh Veljibhai	9558584465	225	RAVIBHAI RAJESHBHAI MAKVANA	7383427012
76	Solanki Gautambhai Ishwarbhai	9998275350	226	GOPALBHAI ARVINDBHAI MAKAWANA	7600567475
77	Samanaka Jadav Merabhai	9898865182	227	AKASHBHAI MAGANBHAI CHUDASAMA	6351648585
78	Jambucha Vijaybhai Veljibhai	9099890523	228	JAYSUKHBHAI KESHUBHAI MAKWANA	7777907254
79	Chauhan Vijaybhai Babubhai	8511754898	229	AJAYBHAI ASHVINBHAI MAKVANA	6352639025
80	Gohil Kanabhai Jentibhai	8140085033	230	CHETANBHAI BHARATBHAI BARAIYA	7285094898
81	Chudasama Kishorbhai Hareshbhai	8849048014	231	RATHOD ABHAY LALJIBHAI	9974379985
82	Baraiya Vipulbhai Dhirabhai	6352519292	232	KAMALIYA AJUBHAI MAYABHAI	6351204399
83	Mevada Vijaybhai Hirabhai	9974948164	233	BAMBHANIYA BHARGAV PRAVINBHAI	9316159205
84	Vora Ashwinbhai Dalapatbhai	9825957619	234	GUJARIYA NARESHBHAI MANSUKHBHAI	7383408229
85	Baraiya Vallabhbhai Bhagawanbhai	9904529899	235	SANKHAT VIPUL HARIBHAI	7046568752
86	Vaghela Rahulbhai Gordhanbhai	6353608723	236	SANKHAT RAJUBHAI SHAMJIBHAI	7698126466
87	Baraiya Jerambhai Vasharambhai	6354964740	237	SOLANKI MOHITKUMAR BHUPATBHAI	7203870063
88	Chauhan Nanjibhai Popatbhai	9409220018	238	MORI JAYDIPBHAI HARESHBHAI	9426409407
89	Baraiya Arjunbhai Jabarabhai	9824771067	239	CHAUHAN SANJAYBHAI HIMMATBHAI	8200546586
90	Khasiya Kalpeshbhai Laxmanbhai	9510748567	240	BAMBHANIYA PRAVIN DHIRUBHAI	8347862105
91	Makwana Nileshbhai Ghanshyambhai	9924932025	241	BAMBHANIYA ANKESH ATUBHAI	9099430590
92	Makwana Jagdish Nanubhai	8905053332	242	SANKHAT DHAVAL KANUBHAI	9723086508
93	Sorthiya Natubhai Bhagwanbhai	9904449682	243	GOHIL RANJITBHAI GAMBHIRBHAI	9338769865
94	Singal Rupeshbhai Raghavbhai	9687823758	244	KAMALIYA KARANBHAI DADUBHAI	7862821554
95	Chauhan Vijaybhai Odhavbhai	9924733047	245	MAKAVANA DINESH KATHADBHAI	8401819525
96	Chavada Nandabhai Shmjibhai	9574339101	246	BARAIYA GOPALBHAI RASABHAI	9173259666
97	Chauhan Vikrambhai Jadavbhai	9924700325	247	GOHIL GHANPATSINH GAMBHIRBHAI	9586318891
98	Chauhan Sanjaybhai Jivrajbhai	9924398913	248	MAKWANA MAISUR BABUBHAI	7436015374

99	Gohil Bharatsinh Surubha	7096666896	249	BARAIYA PANKAJ RAMESHBHAI	7046713231
100	Gohil Bhayalubha Mahipatsinh	9714184593	250	GOHIL PRADIPSINH HANUBHAI	8140599338
101	Parmar Rajendrabhai Premjibhai	9824995115	251	MEET RAMESHBHAI TRIVEDI	8487939091
102	Gohil Narendrasinh Dasharathsinh	9724913232	252	PARESH SHARADBHAI MAKWANA	9016286184
103	Budhela Mehulbhai Jivabhai	9725232450	253	DHARMESHBHAI BHARATBHAI KANTARIYA	8758108194
104	Vala Bharatsinh Himmatsinh	9727558521	254	HITESHBHAI MEPABHAI SARVAIYA	9313549429
105	Jadav Rajubhai Shamajibhai	7600980238	255	UMESH JAGDISHBHAI KANTARIYA	9327565465
106	Parmar Nareshbhai Mavajibhai	9429024500	256	ANKITBHAI GAMBHIRBHAI KANTARIYA	9016941341
107	Gohil Ramatubhai Vikrambhai	9722187645	257	PANKAJ ASHOKBHAI KANTARIYA	6356403417
108	Sagathiya Nareshbhai Girishbhai	9662533816	258	PARASBHAI GILABHAI KANTARIYA	8160896921
109	Gohil Pinakbhai Rameshbhai	8000108605	259	KANABHAI MOHANBHAI KANTARIYA	6352227020
110	Chudasama Rushirajsinh Devsanbhai	9375023293	260	HITESHBHAI RAVAJIBHAI BARAIYA	6354960095
111	Budheliya Lakhabhai Bijalbhai	9512979360	261	PARMAR RONIT KANTIBHAI	8780213324
112	Vaghela Rameshbhai Bhimajibhai	9925661557	262	BHIL RASIK VANAJIBHAI	8980187036
113	Dave Dhruvkumar Himmatlal	9173824964	263	BHIL SUNIL TELIYABHAI	6351072546
114	Dabhi Bhavesh Mansukhbhai	8758176312	264	GOSWAMI OMPARI ASHWINPARI	9328441347
115	Jaypal Kuldip Vinodbhai	7874909033	266	PARMAR JAYDIP MAHESHBHAI	9016218203
116	Vadecha Kevin Bhimjibhai	9601619463	266	RATHOD HARSHAD MILESHBHAI	7041855859
117	Solanki Yogendra Ganpatbhai	9712590324	267	DUNGARABHIL MUNNABHAI FATESINGBHAI	6351508170
118	Dabhi Jignesh Manjibhai	9429505065	268	JANI RAHUL BATUKBHAI	8200008547
119	Vadher Bharatbhai H.	9427278295	269	HARSORA AMIT RAMESHBHAI	9023838606
120	Kher Sureshbhai M.	9737004241	270	SHIYAL GHANSHYAMBHAI SAVJIBHAI	6351262839
121	Daagla Girishbhai V.	9408274298	271	PANDYA SHUBHAM JAYESHKUMAR	9574083508
122	Dabhi Sureshbhai V.	9725413415	272	SHIYALIYA RAHUL GOKULBHAI	8490001841
123	Pitaliya Rajendra D.	9924062810	273	MALEK RAUFBHAI IRFANBHAI	9974894802
124	Dodiya Bhaveshbhai C.	9879734583	274	VADHER BIPIN GOVINDBHAI	9429155153
125	Popatani Shaileshbhai Maganbhai	9998772474	275	CHAUHAN AKRAM IMRANBHAI	9033402622

126	Parmar Rameshbhai Valabhai	9898420127	276	YADAV RAJKUMAR RAJESHBHAI	9998559539
127	Mori Madhubhai Bachubhai	9725533361	277	GALANI ASHIK PANCHABHAI	9601929315
128	Ramanuj Bhaveshbhai Sitarambhai	8128521568	278	VAJAPARA KALPESH ASHOKBHAI	9586747410
129	Makwana Rajubhai Kanabhai	9824209518	279	RAMANUJ HARSH DINKARBHAI	9157585020
130	Andera Sanjaybhai Dahyabhai	8140387668	280	DANGAR MILAN PRAVINBHAI	9727578324
131	Parmar Chandubhai Ashokbhai	9924052818	281	FARHAN JAVEDBHAI DASADIYA	9327637489
132	Chauhan Kishorbhai L.	9825361461	282	VIRAMBHAI HAKUBHAI BORSANIYA	7202877136
133	Makwana Niteshbhai Bijalbhai	8511936692	283	VIPUL VALLABHBHAI LANGALIYA	9925659668
134	Mujapara Ghanshyam B.	9033611769	284	VISHVRAJ JITUBHAI CHAUHAN	9327343818
135	Chavada Bhavesh M.	9879705123	285	ROHITBHAI LALJIBHAI ADANIYA	9624443424
136	Bhatt Prashant Nanalal	9727530092	286	PARTHKUMAR RAJESHBHAI PARMAR	7202905857
137	Solanki Mansukhbhai Chhaganbhai	9824910878	287	NILESHBHAI DIPAKBHAI MAKWANA	8140689126
138	Barad Tusharbhai Dhirubhai	9824762245	288	JAYDIP RAJENDRABHAI SOMANI	9429851247
139	Parmar Sunilbhai Jorsangbhai	8140924095	289	MANISHKUMAR MAGANBHAI MAKWANA	9313362256
140	Palaniya Vishal Nareshbhai	9904973933	290	HARDEEP RAJUBHAI CHUDASAMA	9725166476
141	Parmar Vishal Pravinbhai	8141531282	291	CHAUHAN PRADIP POPATBHAI	7698502270
142	Jotana Rahul Rajubhai	9904525555	292	CHUDASAMA GOVINDBHAI LAXMANBHAI	9924148899
143	Baraiya Vikrambhai Mohanbhai	9974338568	293	CHUDASAMA VIJAYBHAI BHIMAJIBHAI	9265787855
144	Sarvaiya Ashoksinh Bharatsinh	6352909494	294	BARAIYA RAHULBHAI VALABHAI	9016828268
145	Sarvaiya Jaypalsinh Mahavirsinh	7226935413	295	DABHI JAGDISHKUMAR VIKRAMBHAI	6353964584
146	Shiyal Gordhanbhai Ranabhai	9510988848	296	BARAIYA DILIPBHAI RAMAJIBHAI	7096953961
147	Chauhan Mahendrabhai Harkishanbhai	9664999707	297	SORATHIYA MAHENDIHASAN MASUMALI	7600439188
148	Bhava Mayubhai Ghohabhai	7990109193	298	BARAIYA RAHULBHAI GAMBHIRBHAI	9265138797
149	Vaghela Rameshbhai Dayalbhai	9974660707	299	SARVAIYA PRATIK NARSINHBHAI	9081378533
150	Mer Gopalbhai Govindbhai	9601320790	300	MAKVANA KARANBHAI GAJUBHAI	9825196438

Annexure-35

Contact details of State Government Offices

Sr. No.	Name	Contact Detail	
		Phone	Fax
1	State Emergency Operation Center, Gandhinagar	07923251914, 07923251900, 07923221902	07923251916
2	Gujarat State Disaster Management Authority, Gandhinagar	07923259503	07923259275
3	Irrigation Department, Gandhinagar	07923220954, 07923248735, 07923248736	07923240553
4	R&B Department, Ahmedabad	07926305296, 07926303490	-
5	Health Commissioner, Gandhinagar	07923253343, 07923250818	07923253343, 07923250818
6	Home Department, Gandhinagar (State Control)	07923252957, 07923252958	07923252075
7	DGP, Police Bhavan, Gandhinagar (State Control)	07923246328, 07923246330, 07923246331	07923246329
8	Gujarat Maritime Board, Gandhinagar	07923238346, 07923238348	07923234704
9	GSRTC, Ahmedabad (Central Office)	07925454102	07925453280
10	IMD (MET), Ahmedabad	07922865012	07922865449

Annexure-36

Contact details of Army, Airforce, Coast Gaurd, NDRF, SDRF

Sr. No.	Name	Place	Contact Detail	
			Phone	Fax
1	Army Exchange	Ahmedabad	079 22856251	-
2	Air Force Exchange	Gandhinagar	07923242600	-
3	Coast Guard	Gandhinagar	07923243147	07923241717
4	NDRF	Gandhinagar	07923201551	07923202540
5	SDRF	Gandhinagar	07923254376, 07923254414	07923259444

Annexure-37

Contact details of Elected Members (District Code No. 0278)

Sr.No.	Name	Designation	Contact Number
1	Shri Bharatiben Shiyal	MP, Bhavnagar	9726530182 9825211699
2	Shri Sejalben Pandya	MLA, (Bhavnagar city-East)	9925009011
3	Shri Jitubhai Vaghani	MLA, (Bhavnagar city-West)	9825207804
4	Shri Parsotambhai Solanki	MLA, (Bhavnagar Rural)	9978405318 9426404642
5	Shri Shivabhai Gohil	MLA, (Mahuva)	9426450757 9512407060
6	Shri Gautambhai Chauhan	MLA, (Talaja)	9428392791 7359618282
7	Shri Sudhirbhai Vaghani	MLA, (Gariyadhar)	9898607222 9510268774
8	Shri Bhikhabhai Baraiya	MLA, (Palitana)	9824933938 7016984336
9	Shri Raiyaben Miyani	President (District Panchayat)	9426451319
10	Shri Bharatbhai Barad	Mayor (BMC)	9726230720

Annexure-38

Contact details of Collector office (District Code No. 0278)

Sr. No.	Name	Designation	Contact Number	
			Office	Mobile
1	Shri R.K.Mehta (IAS)	Collector	2428822	9978406206
2	Shri N.D.Govani (GAS)	Resident Additional Collector	2421881	9978405178
3	Shri U.A.Patel	Dy. Controller, Civil Defence	2521556	9978405872
4	Shri C.M.Prajapati	DSO	2428908	7567010346
5	Shri R.N.Chaudhari	Dy. Collector, Election	2421819	9978405281
6	Shri N.G.Kevadiya	District Planning Officer	2565348	8264316429
7	Shri B.D.Mer	Chitnis to Collector	2425683	9428408449
8	Shri J.S.Gohil	Additional Chitnis to Collector	2425683	9137925126
9	Shri Anjaliba Jadeja	PRO	2433881	7046409717
10	Shri S.N.Vala	Mamlatdar, Disaster Management	2521555	9426464020
11	Shri Dimpal M.Teraiya	District Project Officer- GSDMA	2521554	9824438275
12	Shri Dinesh Chauhan	DIO-NIC	2429633	9408568156
13	Shri Chirag Vala	ICT Officer	-	9408303157
14	Shri Darshan Mehta	Legal Officer	-	9374814531

Annexure-39

Contact details of District Panchayat(District Code No. 0278)

Sr. No.	Name	Designation	Contact Number	
			Office	Mobile
1	Shri G.H.Solanki (IAS)	District Development Officer	2426810	9978406231
2	Shri Ranjitsinh Katariya	Dy.DDO (Mahekam/Vikas)	2428864	6357099090
3	Shri Satyen Bharvad	Dy.DDO (Panchayat/Ravanue)	-	7567017325
4	Shri J.N.Jaru	Director,DRDA	2427535	7567032839
5	Dr. Chandramanikumar	CDHO	2423665, 2512794	9727779661
6	Shri K.A.Patel	DPEO	2523582	9909971655
7	Shri S.D.Chaudhari	Execitive Engineer (R&B)	2422548	9979261664
8	Shri J.D.Vaghela	Executive Engineer (Irrigation)	2430155	9909957809
9	Shri Ashok M. Patel	District Agriculture Officer	2439931	9427632297
10	Dr.K.H.Baraiya	Dy.Director, Animal Husbandary	2524376	9427511553
11	Shri Arpitaben Pateliya	District Social Welfare Officer	2516766	9428125961
12	Smt. Sharadaben Desai	PO, ICDS	2519411	9879396232

Annexure-40

Contact details of DSP Office (District Code No. 0278)

Sr. No.	Name	Designation	Contact Number	
			Office	Mobile
1	Shri Gautam Parmar (IPS)	DIGP	2510810	9978407872
2	Shri Dr.Harshad Patel (IPS)	DSP	2520050	9978405067
3	Shri R.R.Sindhal	Dy.SP	2518091	9978407983
4	Shri R.V.Damor	Dy.SP	2513717	9978407982
5	Shri V.N.Zala	Dy.SP, SC-ST Cell	2513721	9825874122
6	Shri R.D.Chaudhari	PI- LIB	2513718	7490034363
7	Shri K.S.Patel	PI- LCB	2515101	9727772577
8	Shri A.R.Vala	PI- SOG	2521234	8140814070
9	Shri S.J.Katariya	PI- Highway Traffic	2518090	9106878810
10	Shri H.B.Bharvad	PI-Women Police Station	2518094	9726111222
11	Shri M.N.Vala	PSI-GRD	-	9979316101
12	Shri J.R.Sheikh	PSI-Band	2563724	9925893276
13	Shri D.B.Bagada	PSI-BDDS	-	9927369269
14	Shri V.B.Khimsuriya	PSI-MT	2563724	9925936898
15	Shri n.H.Rathod	PSI-QRT	-	9825672655

Annexure-41

Contact details of BMC (District Code No. 0278)

Sr. No.	Name	Designation	Contact Number	
			Office	Mobile
1	Shri N.V.Upadhyay(IAS)	Municipal Commissioner	2510532 2439900	9978404500
2	Shri G.B.Vasani	Dy.Commissioner(Admin)	2439292	9925224646
3	Shri G.B.Vasani I/C	Dy.Commissioner(General)	2439797	9925224646
4	Shri C.C.Devmurari	City Engineer	2511605	9879525199
5	Shri Pradyumansinh Jadeja	Chief Fire Officer	2424814	9978400381
6	Shri Nitin Bambhaniya	PO-GSDMA, BMC	-	8238928061
7	Shri Mahesh Hirpara	Flood Cell	-	9727712177
8	Dr.R.K.Sinha	Medical Officer, Health	2430249	9727776890
9	Shri Munjal Badmaliya	Shashnadhikari	2515646	9429701114
10	Shri Nutanben Baraiya	MDM	2433881	9726535563
11	Shri Bhanuben Parmar	PRO	-	9978400478
12	Shri Dhavalbhai Patel	Legal Officer	-	8469223366
13	Shri Bhanuben Parmar	Election Cell	-	9978400478
14	Shri Sharadaben Desai	PO, ICDS BMC	2424044	9879396232
15	Smt. Punamben Vadher	CDPO-1	2561711	9426260443
16	Smt.Pravinaben Pandya	CDPO-2	2421111	9227816911
17	Shri M.M.Hirpara	Garden Suprentendent	2433881	9727712177
18	Shri Umesh Dodiya	Town Development Officer	-	9879565626
19	Shri Ashok Vegad	Town Planning Officer	-	9879107980
20	Shri F.M.Shah	Exicutive Engineer (SWM)	-	9979945333
21	Shri K.S.Japadiya	Exicutive Engineer (Project)	-	9879792732
22	Shri R.M.Limbola	Exicutive Engineer (Roads)	-	9824112748
23	Shri N.B.Vadhwaniya	Exicutive Engineer (Drainage)	2430256	9825836369
24	Shri Priyankaben Devmurari	Exicutive Engineer (Building)	-	8128207404
25	Shri Dharmesh Kevadiya	Exicutive Engineer (Light)	2512929	8460442066
26	Shri P.J.Chudasama	Exicutive Engineer (Filter)	2424811	9925009293
27	Shri F.M.Shah	Exicutive Engineer (Water Works)	2430247	9979945333
28	Shri Rajesh Solanki	PA to Commissioner	-	9825780702

Annexure-42

Contact details of other Offices (District Code No. 0278)

Sr. No.	Name	Designation	Contact Number	
			Office	Mobile
1	Shri D.M.Solanki(IAS)	Regional Commissioner- Municipalities	2520600	9978404035
2	Shri Sadik Mujavar (IFS)	DCF-Forest	2428644	7567861778
3	Shri J.N.Jaru	CEO-BADA	2430748	7567032839
4	Dr.Jayeshkumar Brahmbhatt	Superintendent-Civil Hospital	2427524	9898141114
5	Shri R.U.Patel	Exe. Engineer-R&B State	2423383	9427264050
6	Shri C.A.Chavada	Exe. Engineer-Irrigation State	2430155	9574065205
7	Shri P.G.Makwana	Exe. Engineer - GWSSB	2425849	9978406939
8	Shri U.G.Vasava	Superintending Engineer-PGVCL	2524924	9879203840
9	Shri A.J.Rathod	Regional Officer-GPCB	2524108	8140944711
10	Shri Mitesh Menat	Ass.Director-DISH	2428473	9427508476
11	Cap.Rakeshkumar Mishra	Port Officer-Alang	02842 235622	9601254062
12	Shri Y.S.Tomar	Airport-Director	2212971	9427211500
13	Shri Ravishkumar	DRM-Railway	2445475	9724097000
14	Shri Surendrasinh Matroja	Divisional Controller-State Transport	2428264	6359919028
15	Shri Indrajit Tank	Regional Transport Officer	2424293	9737782289
16	Shri Pravin Saraswat	Regional Fire Officer	-	8451001350
17	Dr. Kannan Srinivasan	Director-CSMCRI	2569496	9426957357
18	Shri K.V.Ramani	Ass.Director-Fisheries	2427567	8141789262
19	Shri Chintan Raval	Dy. Director-Information	2424994	9537409098
20	Shri Shambhusinh Sarvaiya	District Homeguard Commandant	2423011	9998613672
21	Shri H.D.Padheriya	District Educatin Officer	2426629	9909970212
22	Shri Tapan D. Vyas	Principal-ITI	2424316	9824092923
23	Dr.Hemant Mehta	Dean-Gov. Medical College	2430808	9429503144
24	Shri Kaushik Bhatt	Register- M.K.University	2428014	9601825333
25	Shri G.J.Mehta	Assi.Charity Commissioner	2424171	9428706562
26	Shri Naresh Gohel	District Sports Officer (Rural)	2432765	9998318633
27	Shri Naresh Gohel	District Sports Officer (City)	2422765	9998318633
28	Shri K.J.Goswami	District Treusary Officer	2518908	9929014779
29	Shri Surabhi Bhappal	Assistant Labor Commissioner	2427985	9909891590
30	Shri Tanvi Patel	General Manager-DIC	2422225	7587177329

31	Shri V.D.Joliya	Head Post Master	2516875 2426972	9913102003
32	Shri Faruk Rathod	DGM-BSNL	2434000	9427029697
33	Shri M.M.Karmata	District Inspector-Land Record	2439784	8320516899
34	-	Circuit House	2560451 2560452 2560453	-
35	-	Majiraj Guest House	2422520 2422521	-
36	-	Pathikashram	2423997	-
37	-	Yashwantray Natyagruh	2202366	-
38	-	6 Guj. Btn.- NCC	2424995	-
39	-	3 Guj. Girls Btn.-NCC	2565336	-
40	-	3 Guj. Naval Unit	2565396	-
41	-	3 Guj. Air Unit	2515393	-

Annexure-43

Contact details of All SDM

Sr. No.	Prant Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva (Jesar)	Shri Ishita Mer	02844	222765	7567010268
2	Talaja	Shri J.R.Solanki	02842	222260	7567010274
3	Sihor (Umralla, Vallabhipur)	Shri Dilipsinh Vala	02846	222103	7567010355
4	Palitana (Gariyadhar)	Shri Ankit R.Patel	02848	243350	7567010276
5	Bhavnagar (Ghogha)	Shri H.M.Jankaat	0278	2428701	7567010346

Annexure-44

Contact details of All Mamlatdar

Sr. No.	Taluka Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	Shri J.C.Mehta	02844	223042	7567001646
2	Talaja	Shri A.D.Bakhalakiya	02842	222042	7567001823
3	Sihor	Shri R.G.Prajapati	02846	222009	7567001683
4	Palitana	Shri K.M.Valand	02848	243326	7567001737
5	Gariyadhar	Shri R.N.Kumbhani	02843	252922	7567001910
6	Vallabhipur	Shri K.G.Parmar	02841	222435	7567001868
7	Bhavnagar (Rural)	Shri B.N.Beldar	0278	2421885	7567001743
8	Ghogha	Shri P.D.Suva	0278	2882323	7567001895
9	Umralla	Shri P.A.Bhindi	02843	235230	7567001922
10	Jesar	Shri H.J.Maysuriya	02845	281400	9727769875
11	Bhavnagar (City)	Shri V.N.Bharai	0278	2422661	7567001897

Annexure-45

Contact details of All TDO

Sr. No.	Taluka Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	Shri Pravin Chaudhari	02844	223968	7567018926
2	Talaja	Shri D.T.Ladumor	02842	222036	7567018948
3	Sihor	Shri Preetiben Thakor	02846	222029	7567012759
4	Palitana	Shri Swetaben Trivedi	02848	242451	7567012714
5	Gariyadhar	Shri Dipak Khambhala	02843	252934	7567012743
6	Vallabhipur	Shri V.A.Gadhavi	02841	222469	7567012766
7	Bhavnagar	Shri P.K.Ravat	0278	2421898	7567012852
8	Ghogha	Shri Anirudhsinh Parmar	0278	2882339	7567019728
9	Umralla	Shri P.G.Makwana	02843	235596	7567012707
10	Jesar	Shri Vipul Devmurari	02845	223968	7567044321

Annexure-46

Contact details of All Chief Officer

Sr. No.	City Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	Shri N.P.Anghad	02844	222318	7567770246
2	Talaja	Shri R.C.Dave	02842	223173	7567770243
3	Palitana	Shri V.N.Pandit	02848	242555	7567770242
4	Gariyadhar	Shri K.J.Patel	02843	250053	7567770245
5	Sihor	Shri P.M.Bhatt	02846	222024	7567770241
6	Vallabhipur	Shri V.N.Pandit	02841	222432	7567770247

Annexure-47

Contact details of All Fire Station

Sr. No.	Fire Station	Taluka Code No.	Contact Detail		
			Phone No.	Name	Mobile No.
1	BMC	0278	2424814 2424815 2430061	Shri Pradyumansinh Jadeja	9825204004
2	Alang	02842	2235147, 222250	Shri P.D.Vyas	9925037626
3	Mahuva	02844	222250	Deepak Makwana	9924739376
4	Talaja	02842	222329	Vinodbhai Jethava	9426648101
5	Palitana	02848	242555	Mayankbhai Upadhyay	9408373974
6	Gariyadhar	02843	250053	Alpesh Rathod	9662525596
7	Sihor	02846	222024	Kaushikbhai Rajyguru	8264909090
8	Vallabhipur	02841	222432	Hemrajsinh	8849162020
9	Bhavnagar Airport	0278	2210743	K.V.Gohil	9824408191
10	Nirma	0278	2885301 to 5	Shaktidanbhai	8980026351
11	Sumitomo	0278	2212401 to 3	S.M.Patil	9426703457

Annexure-48

Contact details of All Police Station

Sr. No.	Police Station	Taluka Code No.	Fone No.
1	Mahuva	02844	222537
2	Talaja	02842	222033
3	Sihor	02846	222060
4	Palitana	02848	243301
5	Gariyadhar	02843	252999
6	Vallabhipur	02841	222431
7	Bhavnagar(R)	0278	2541633
8	Bhavnagar(C)	0278	2525858
9	Ghogha	0278	2882333
10	Umrالا	02843	235233
11	Jesar	02845	281433

Annexure-49

Contact details of All Vetarnary Hospital

Sr. No.	Taluka	Telefone Number
1	Bhavnagar	0278-2420433
2	Ghogha	0278-2882347
3	Talaja	02842-222332
4	Mahuva	02844-223088
5	Jesar	-
6	Palitana	02848-252897
7	Sihor	02846-222289
8	Umralla	02843-235208
9	Vallabhipur	02841-222189
10	Gariyadhar	02843250032

Annexure-50

Important Tollfree Numbers

Sr. No.	Name	Contact Details
1	SEOC-Disaster	1070
2	DEOC-Disaster	1077
3	Police	100
4	Fire	101
5	Ambulance	102
6	Emergency Ambulance	108

DOs and DONTs in various Disasters

Cyclone

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

Before Earthquake

- 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

Flood

- There is a possibility of spread of water borne diseases after flood, and hence
- Medical treatment should be taken immediately.
- Do not enter deep, unknown waters.
- Do not go near the riverbank even after the floodwater has receded.
- Sprinkle medicines in the stagnant dirty water.
- Inspect your house for any cracks or other damage. Check all the walls, floor, ceiling, doors and windows, so that any chance of house falling down can be known and you can be aware about the immediate danger.
- If the floodwater has entered the house or has surrounded the house, then it is advisable not to enter such house.
- Keep listening to weather forecast on radio and television. Move to your residence only when instructed by the competent authority. It is not safe to believe that the problems have ended after the flood water have receded
- Inform the competent authority/officer for restoration of the necessary connections like gas, electricity, telephone, drainage, etc.
- Beware of the various insects or poisonous snakes that may have been dragged inside the house along with the floodwater.
- Destroy the food commodities that have been affected by floodwater.
- Check properly all the electric circuits, floor level furnace, boilers, gas cylinders, or electric equipments like motor pump etc. Check whether any inflammable or explosive item has not entered along with the floodwater.

- Switch off the main electric supply, if any damage is noticed to the electric equipments.
- If you find any breakage in the drainage system stop using latrines and do not use tap water.
- Do not use polluted water.
- Sewerage system should be checked and any damage should be repaired immediately so as to curtail spread of diseases.
- Empty the water clogged in the basement slowly with help of water pump so that damage to infrastructure can be minimized
- Check gas leakage which can be known by smell of gas or by hearing the sound of leakage; immediately open all windows and leave the house.
- Boil drinking water before usage and drink chlorinated water.
- Eat safe food.
- Rescue work should be undertaken immediately after flood situation as per the instruction. Do not follow any shortcut for rescue work.
- Do not try to leave the safe shelter to go back home until the local officials declare normalcy after flood and instruction to return home are not given.

Tsunami

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

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

Before

- Be familiar with the tsunami warning signals. People living along the coast should consider an earthquake or a sizable ground rumbling as a warning signal. A noticeable rapid rise or fall in coastal waters is also a sign that a tsunami is approaching.
- Make sure all family members know how to respond to a tsunami. Make evacuation plans. Pick an inland location that is elevated.
- After an earthquake or other natural disaster, roads in and out of the vicinity may be blocked, so pick more than one evacuation route.
- Teach family members how and when to turn off gas, electricity, and water
- Children should be taught in advance about the evacuation plans
- Prepare emergency kit beforehand. The emergency kit should contain Flashlight and extra batteries, battery-operated radio and extra batteries, First aid kit
- Emergency food and water, Essential medicines etc

During

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

After

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

Fire

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

DON'Ts

- Don't burn crackers in crowded, congested places, narrow lanes or inside the house.
- Don't let children burst crackers unaccompanied by an adult
- Don't put fireworks in your pocket or throw them
- Don't cover crackers with tin containers or glass bottles for extra sound effect
- Don't dare to examine 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

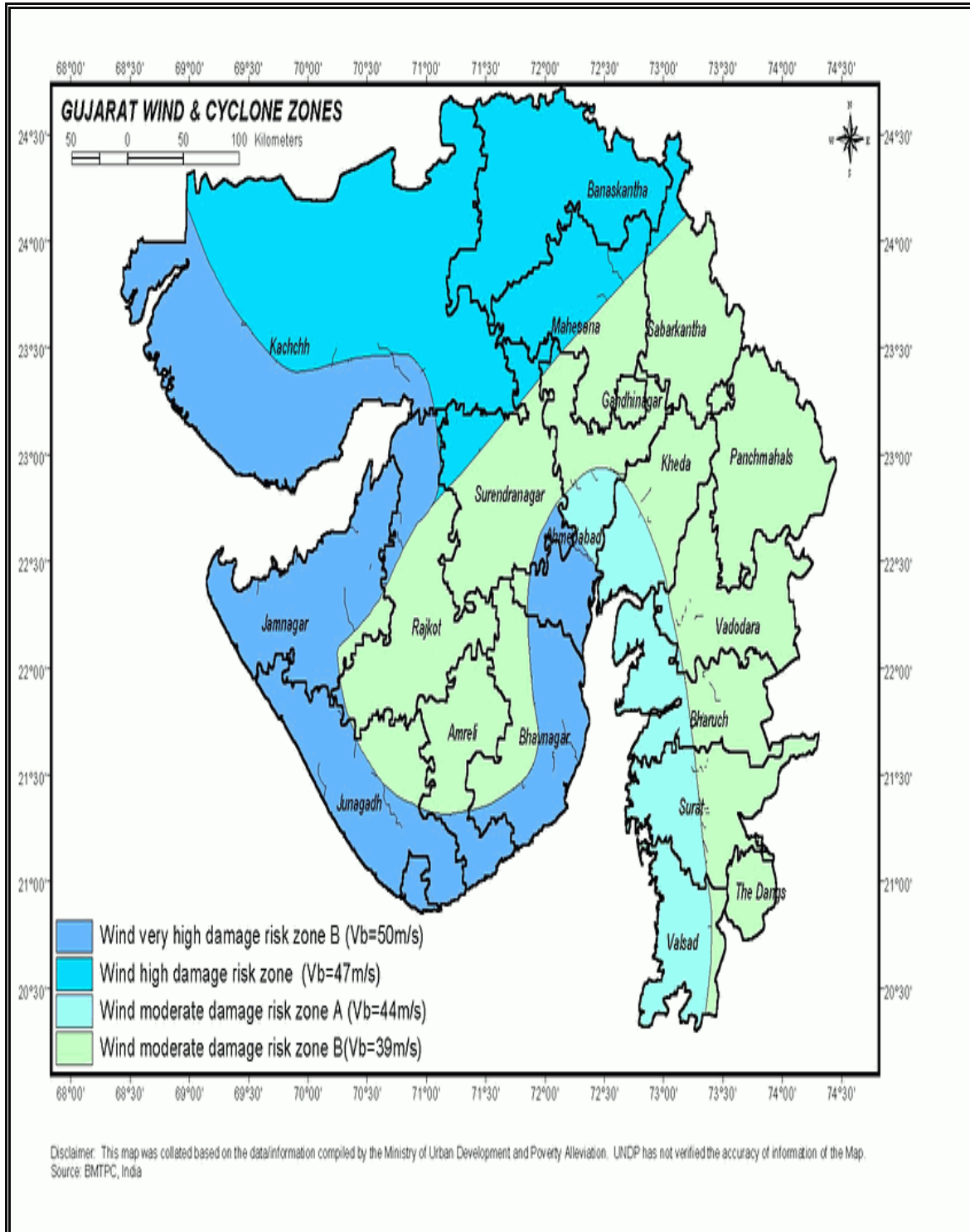
CATEGORIES OF FIRE

ABCD	CLASS	COMBUSTIBLE MATERIAL
A	Ordinary combustible solids	Paper, Wood, Cloth, etc.
B	Combustible liquids or liquifiable solids	Oils, Paints, Chemicals, Wax, etc.
C	Combustible gases	L.P.G., Acetylene, Hydrogen, Methane, Natural Gas, etc.
D	Combustible metals	Magnesium, Sodium, Uranium, Thorium, etc
E	Electrical equipment & installations	Switch gears, Transformer, etc.

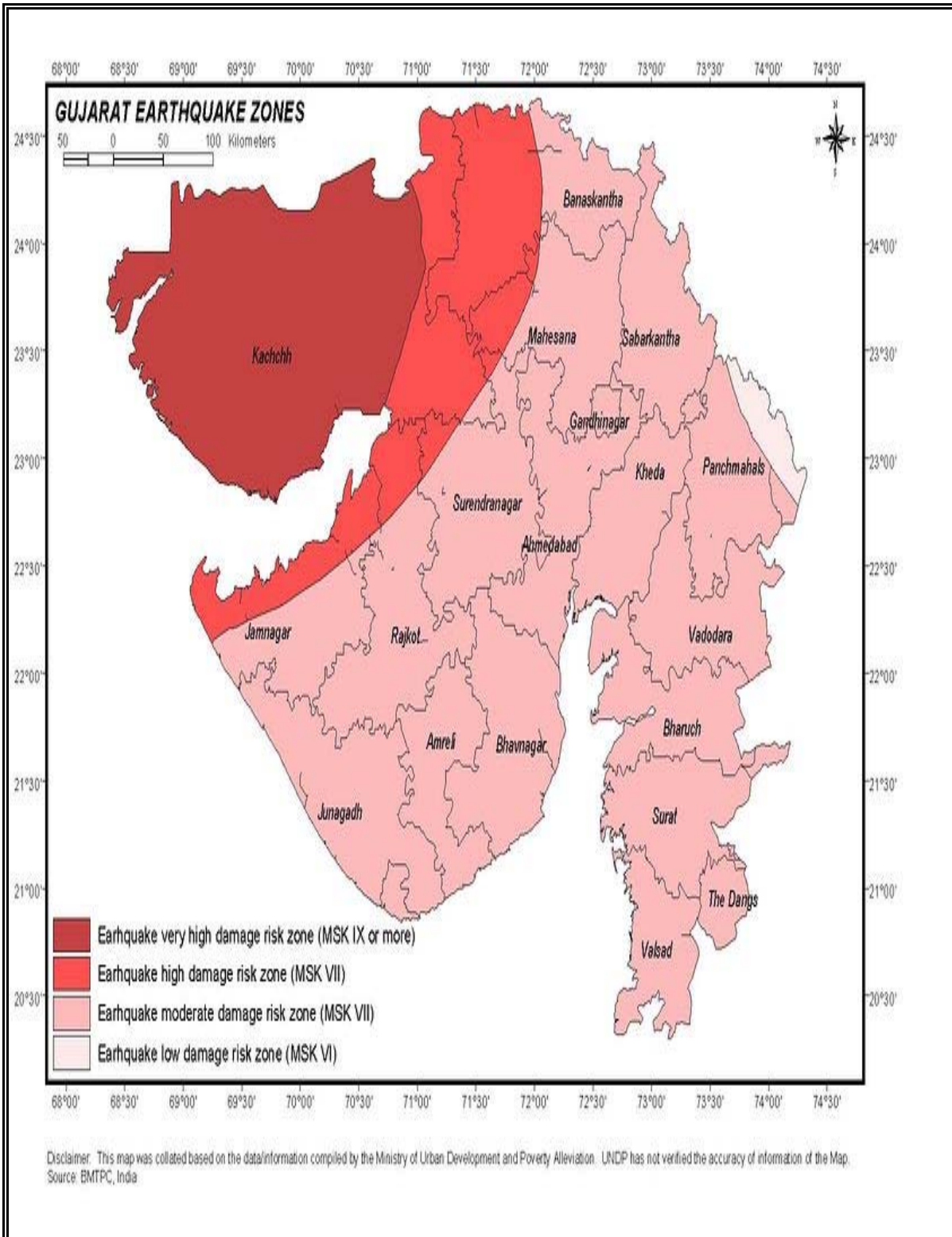
Maps

Hazard Maps

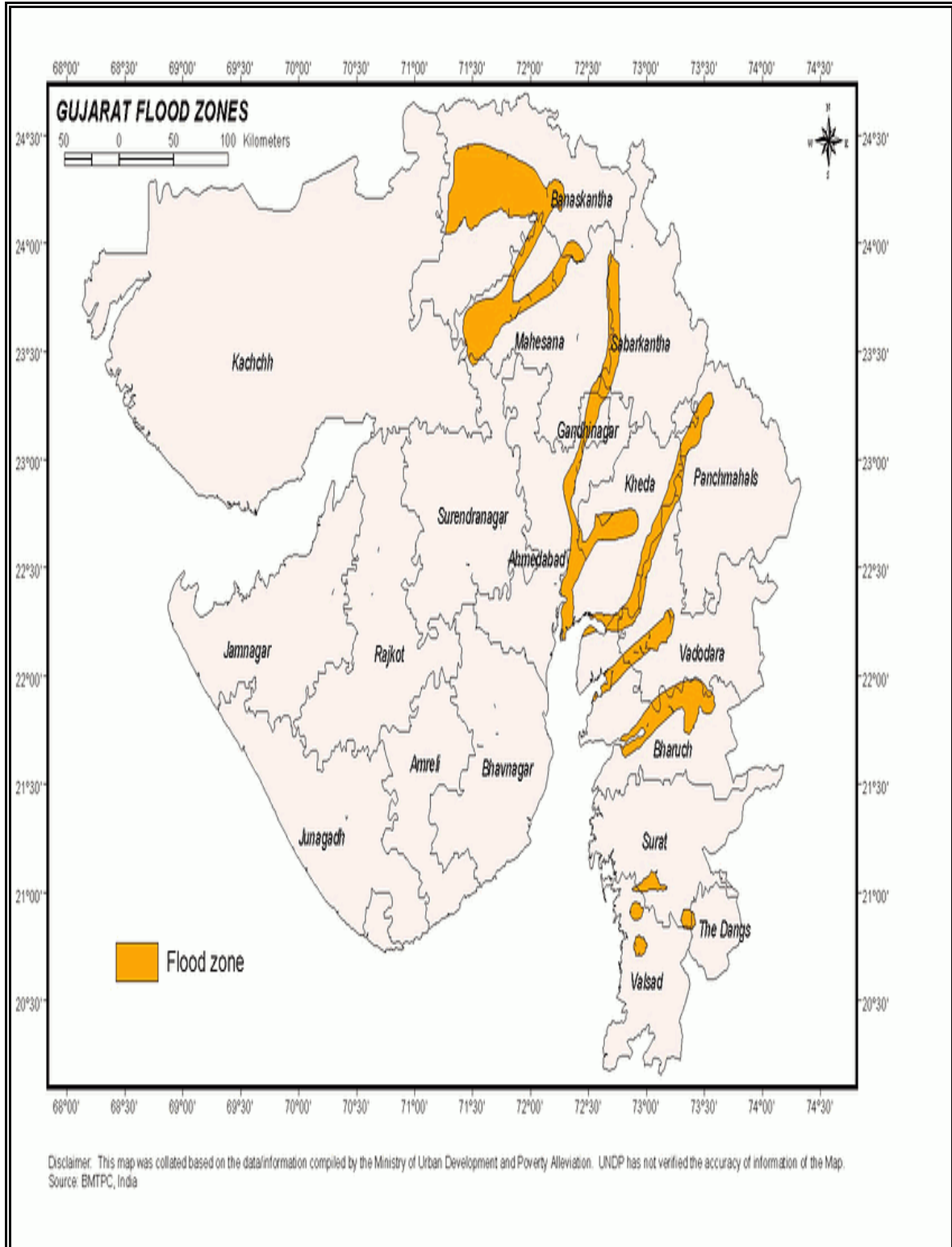
Gujarat Cyclone Hazard Map



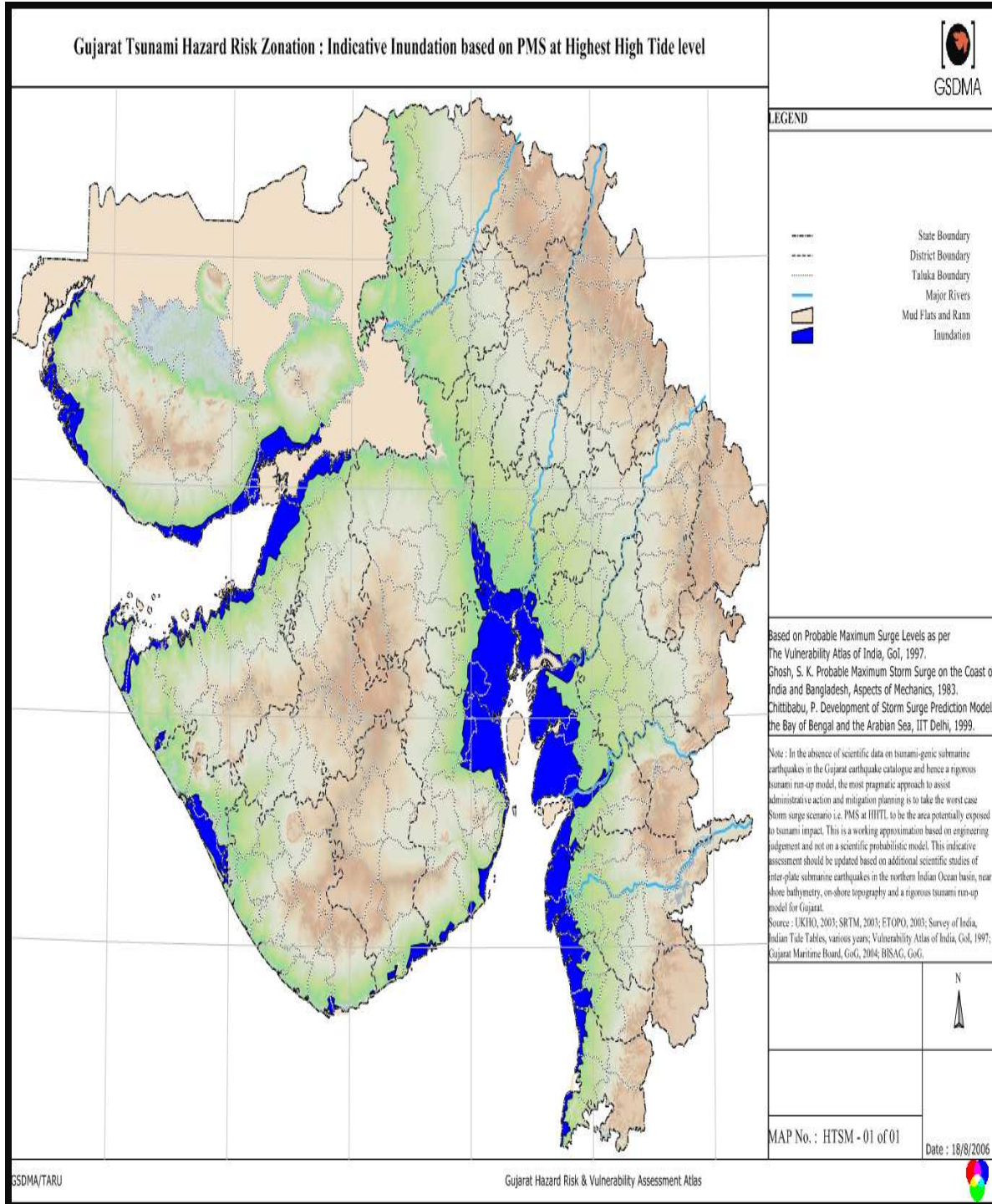
Gujarat Earthquake Hazard Map



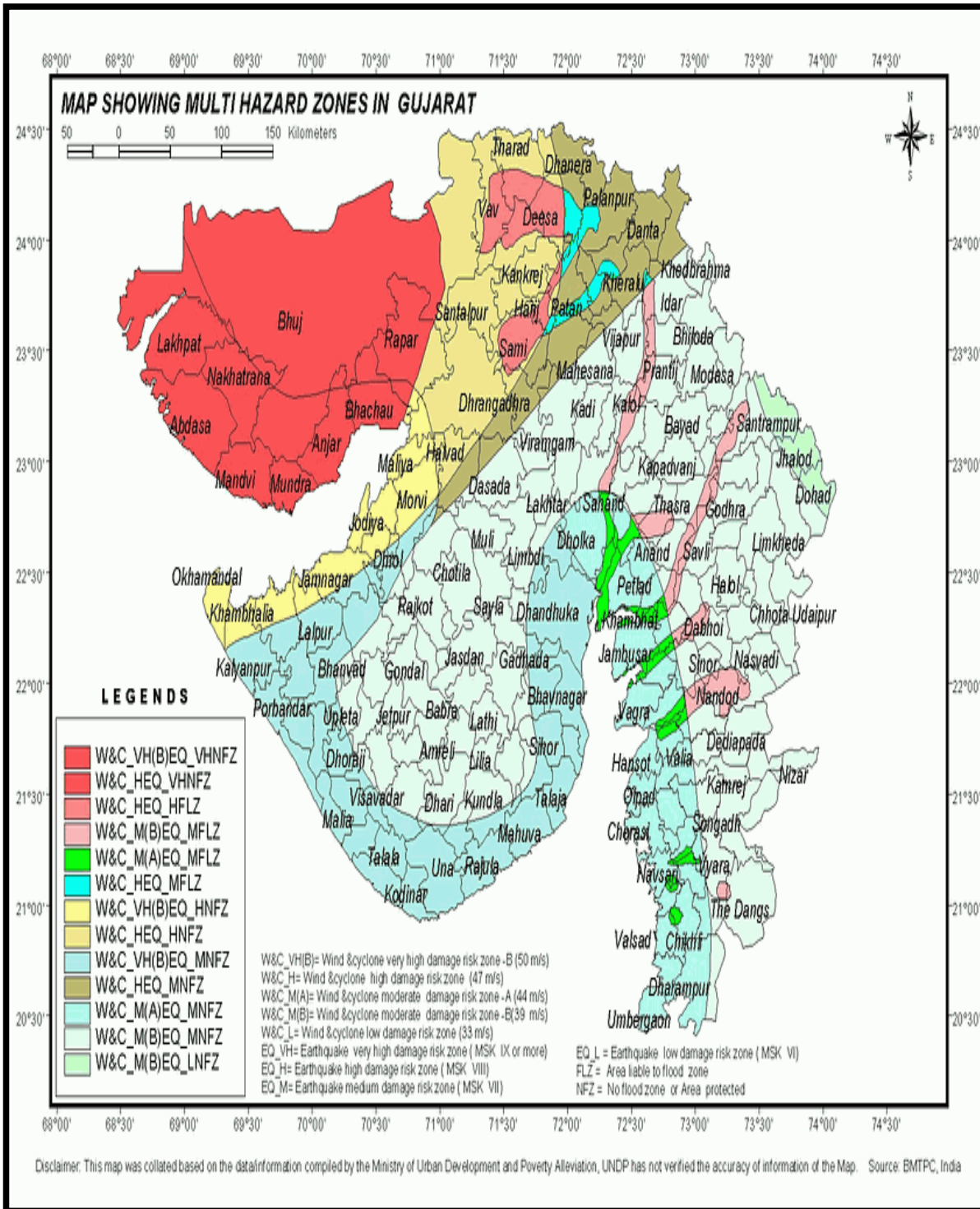
Gujarat Flood Hazard Map



Gujarat Tsunami Hazard Map



Gujarat Multy Hazard Map



District Disaster Management Authority



**Disaster Management Cell
Collector Office
Bhavnagar**