A Presentation On

Disaster Management Plan

District - Nashik

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Disaster Management Plan

Introduction :

At the very outset, disaster refers to a serious disruption of the functioning of a society, causing widespread human, material, or environmental loss, which exceeds the ability of the affected society to cope using its own resources. To put it in other words, it is the occurrence of a sudden mishap/ calamity/ grave occurrence that disrupts the basic fabric and normal functioning of a society (or community).

Objective of the plan :

The District of Nashik, situated on the North-West side of Maharashtra is vulnerable to various kind of hazard like flood, earthquake, fire hazard, drought, road & railway accidents, chemical hazard, communal violence, epidemic, hailstorm, heat wave & cold wave , stamped etc. Keeping in mind of these very possible disasters in the district that may cause major setbacks to lives, livelihoods and property (both movable and immovable), the District Administration, Nashik felt the urgency of the need of preparing an emergency response planning. The devastation caused by various kinds of natural and man-mad hazards has posed a challenge before the Nashik district administration to analyse each and every decision making process to gear up the rescue and restoration during such situations as well as building up the capacity to face further calamities in future. The District Administration has realized the necessity to compile a plan to facilitate faster recovery during an emergency of this kind. This plan is more of a guidebook, which can help the administration, remains better prepared for both natural and man-made disasters to safeguard lives, livelihoods and property.

Scope of the plan

The emergency planning process has evolved significantly and taken more importance in the last decade as a result of emergencies and disasters having a greater impact on government industry and agriculture. Today, organizations have an abundance of emergency planning resources and training options available to them. Cooperation between government and industry in the planning process is also high. Consequently, there presently exists an excellent opportunity for organizations to increase their level of preparedness & mitigation.

Most experts today advocate a comprehensive "all hazards" approach to emergency preparedness. A comprehensive emergency response plan that takes into account potential natural, technological, and man-made threats and involves key personnel in the planning process can assist an organization to systematically manage emergencies in an effective and efficient manner. The planning process is a key element that forces District Magistrates and staff to explore viable options that can be employed in the event of an emergency or disaster. These contingencies can ultimately help to save lives, reduce property loss, as well as lessen an organization's potential liability.

Need of Plan

Being prepared for critical incidents DM Plan involves four important components: planning, reviewing, training, and testing. These are the cornerstones of any emergency response plan and it should be noted that it is a circular rather than linear process.

Effective emergency response planning begins with the following:

- Defining an emergency in terms relevant to the organization doing the planning
- Establishing an organization with specific tasks to function immediately before, during, and after an emergency
- Establishing a method for utilizing resources and for obtaining additional resources during the emergency .
- Providing a recognizable means of moving from normal operations into and out of the emergency mode of operation Regardless of the type of crisis, there are a series of common requirements that must be taken into account for an organization to be successful when a critical incident occurs. These include:
- Deciding policy
- Assessing threat
- Identifying resources
- Selecting crisis team personnel
- Locating the crisis management center
- Equipping the crisis center
- Training crisis team personnel
- Testing contingency plans and emergency procedures
- Dealing with the media
- Dealing with victims and their families
- Dealing with other affected persons (such as employees)
- Getting the organization's normal work done during the crisis
- Returning to normal after the crisis (both operationally and in human terms)

Mandatory provision of DM Plan

Under Section 31 of DM Act -2005 The District Plan -

- There shall be a plan for disaster management for every district of the State.
- The District Plan shall be prepared by the District Authority, after consultation with the local authorities and having regard to the National Plan and the State Plan, to be approved by the State Authority.

The District Plan includes -

a) The areas in the district vulnerable to different forms of disasters;

b) The measures to be taken, for prevention and mitigation of disaster, by the Departments of the Government at the district level and local authorities in the district;

c) The capacity-building and preparedness measures required to be taken by the Departments of the Government at the district level and the local authorities in the district to respond to any threatening disaster situation or disaster;

d) The response plans and procedures, in the event of a disaster, providing for-

   i) Allocation of responsibilities to the Departments of the Government at the district level and the local authorities in the district;

   ii) Prompt response to disaster and relief thereof;

   iii) Procurement of essential resources;

   iv) Establishment of communication links; and

   v) The dissemination of information to the public;

e) Such other matters as may be required by the State Authority.

- The District Plan shall be reviewed and updated annually.

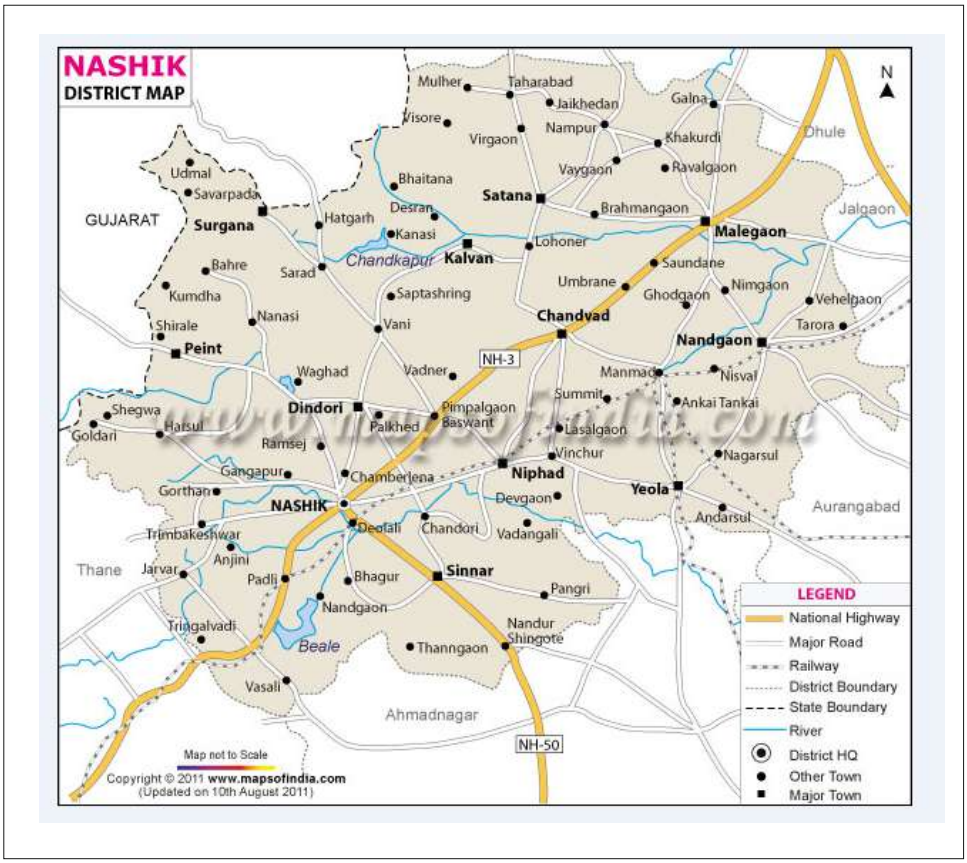
- The copies of the District Plan referred to in sub-sections and shall be made available to the Departments of the Government in the district.

- The District Authority shall send a copy of the District Plan to the State Authority which shall forward it to the State Government.

- The District Authority shall, review from time to time, the implementation of the Plan and issue such instructions to different departments of the Government in the district as it may deem necessary for the implementation thereof.

Information about Nashik District

Historical Perspective : Nashik has a mythological importance. It is believed that some drops of the nectar that was being carried by the Gods fell at Nashik, in the waters of Godavari River. This belief has resulted in holding of Kumbha Mela at Nashik every 12 years. It is also believed that God Shri Ram spent his years in exile at Nashik, on the banks of Godavari River. This has made Nashik a place of pilgrimage. In Nashik District Trambakeshwar is an ancient Hindu temple in the town of Trimbak, in the Trimbakeshwar Tehsil. It is dedicated to Lord Shiva and is one of the twelve Jyotirlingas. Nashik developed during the medieval period of Peshwa's rule and it started developing as a business centre. Thus, today, Nashik has developed into an industrial, agricultural, religious, tourist, educational and medical facilities centre in North western Maharashtra. Nashik is also a communication centre and developed as a military centre since the British rule. Nashik was considered as a gateway to the Western Coastal belt of Maharashtra and Gujarat as well as to the Central Maharashtra for all the invaders descending from the North, during the Mughal period. Nashik District is located at Latitude: 19°-33' and 20'- 53' North Longitude: 73° -16' and 75° -16' and 75° - 6' East" in North-Western part of Maharashtra and shares its borders with Ahmednagar, Aurangabad, Jalgaon, Thane and Dhule districts of Maharashtra and also shares its borders with Dadra- Nagar Haveli Union Territory and Gujarat State (Valsad, Navsari and Dang districts). The district is spread over an area of 15,503 sq. km. The district is a fairly well developed and ranks third in Maharashtra in terms of industrialization and Economic activities, after Mumbai and Pune.

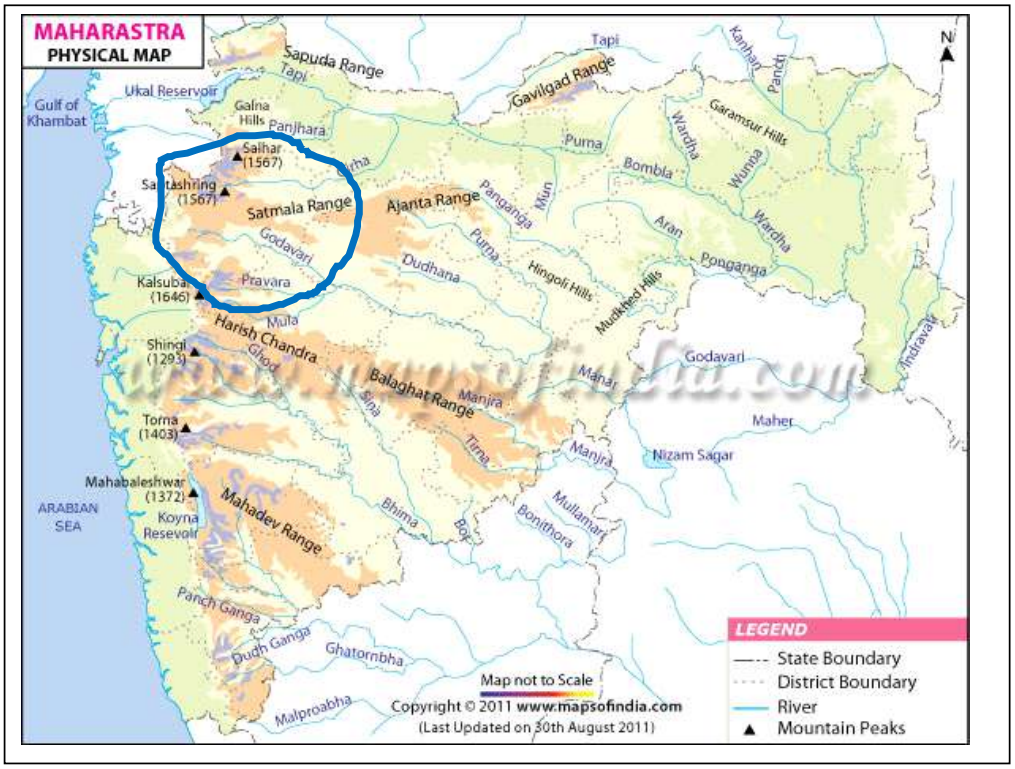


Nashik District is part of Nashik Division. The district headquarters and the Divisional headquarters are located at Nashik City. The district is administratively divided into 15 Taluka that have been grouped into Nine sub-divisions.

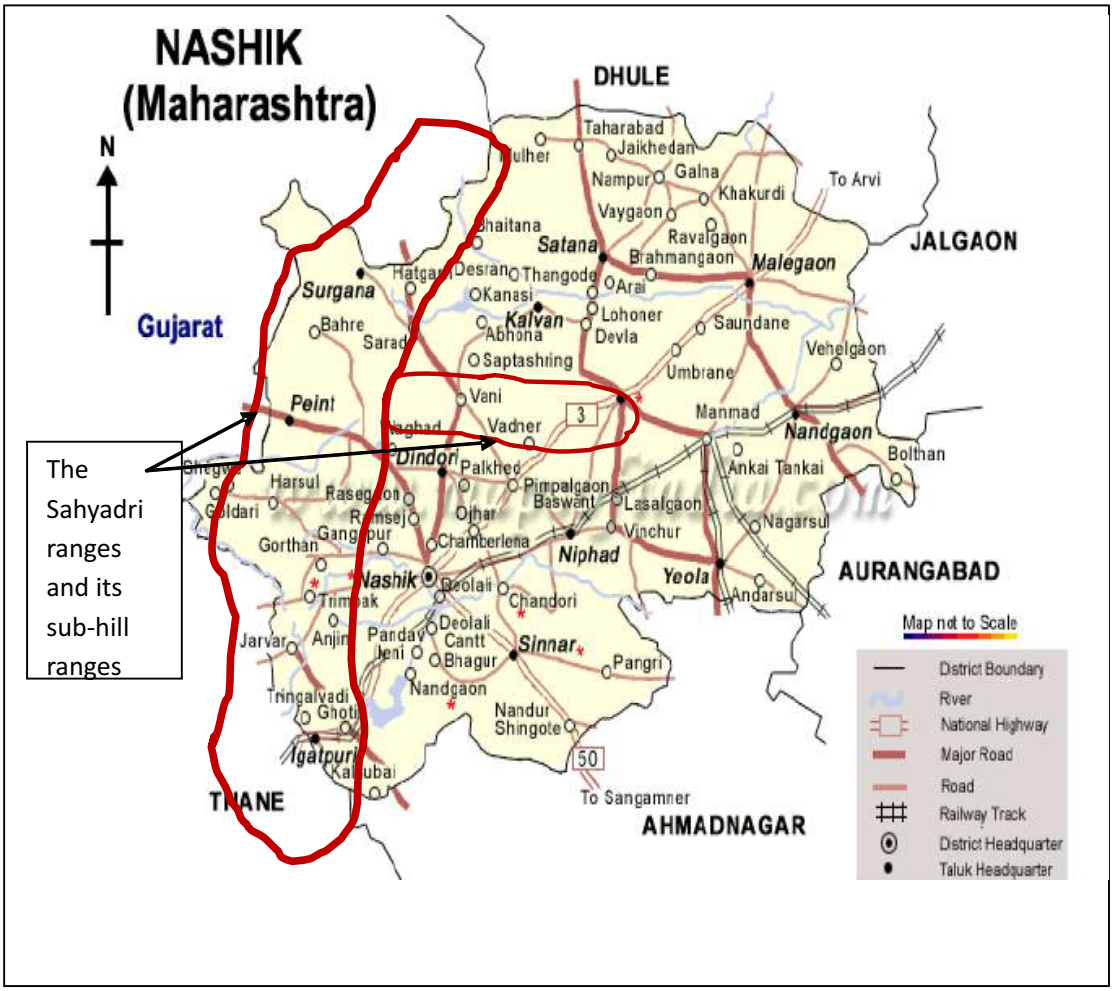
The Political Map of Nashik District showing positions of Taluka is shown below:

Geography

of Nashik District



Physical Geography : Nashik District is situated astride the Eastern flank of Sahyadri Ranges. The district boasts of some of the highest peaks of the Ranges like Kalsubai, Salher and Saptashrungi. Satmala sub-ranges originate from the main Sahyadri ranges, near the peak of Saptashrungi. The Sahyadri ranges on the western flank of Nashik District are also the origins of West and East flowing river systems of the region. Major east flowing rivers are – Girna, Godavari, Darana. The highest elevation in the district is Kalsubai range and Salher. The general land slope is in East-Southeast direction and is indicated by Godavari basin slope. The ranges have igneous rock structure in the crust with Red soil top surface. The eastern plains of the district have basalt base with large parts covered by black soil. The western slopes of the Sahyadri ranges in this district bear moderately thick vegetation.



The Sahyadri ranges and its sub-hill ranges

Geology : The District has a geological fault that runs along the Sahyadri Ranges, on the western flank. Satmala sub-range runs from Sahyadri main range, originating at Saptashrungi and Salher, running eastwards. This also brings geological effects to the northern part of the district. To the North of the district the Satpura fault runs in East-West direction through Nandurbar and Dhule districts and about less than 150 km from Nashik District. The district falls in the seismic zone III. The basalt structure lends the district to moderate dampening effect of seismic waves. The hills ranges also make the western and northern hill tracts of the district amenable to landslides. The district has a mix of red and yellow soils as well as black soil. Godavari, Girna and Darna rivers have a gradual slope as they descend from the mountainous part on the west. The rivers tend to bring considerable silt from the hills and this has caused accumulation of the gravel and silt astride and within the river line. The accumulation has resulted in making the basins shallow and it has enhanced the water spread during monsoons.

Climatology : Nashik district experiences moderate temperatures that averagely range from 120C to 300C (max being 42.50C. Winters are fairly cold and temperatures are known to drop down to 20C. The annual rainfall is 1013.39 mm. The eastern portions experience drought conditions frequently. Wind conditions are moderate and cyclonic turbulences are not known, mainly due to the Sahyadri Ranges and Satmala sub-ranges.

Irrigation and Water-ways : The district is drained by two chief rivers, the Girna and Godavari, and their tributaries.

The rivers of this district are given below:

Rivers & their Length in Nashik District

Sr. No	Name of the River	Length (km)	Talukas through which flows
1.	Godavari	111	Nashik, Niphad
2.	Girana	114	Surgana, Kalwan, Baglan, Nandgaon
3.	Vaitarana	40	Igatpuri
4.	Darna	80	Igatpuri, Nashik, Niphad
5.	Kadwa	74	Dindori
6.	Manaid	48	Nandgaon
7.	Mosam	98	Baglan, Malegaon

[Source: http://www.nashik.nic.in]

There are 12 Dams are constructed on Girna, Godavari, Darna, Kadwa and Pravara River (Pravara actually does not fall within the district boundary. However, the dam does irrigate the district and to some extent has an effect on flooding and thus, has been given here). These 12 dams play a very important role in agricultural development and designed live storage is 38979 (Mcft). The rivers have a history of flooding and these 12 dams play an important role in flood control in the district. List of Large and Medium projects is given in the table below:

List of Dams Major Dams in Nashik District

Sr.no	Taluka	Name of the Dam	Capacity m.c.ft
1	Igatpuri	Darna	7149
2	Nashik	Gangapur	5630
3	Dindori	Palkhed	750
		Karanjwan	5371
		Ozerkhed	2130
		Waghad	2502
		Punegaon	621
		Tisgaon	450
4	Kalwan	Chankapur	2714
5	Baglan	Kelzer	572
		Haranbari	1166
6	Malegaon	Girna	18500

List of Dams Major Dams in Nashik District

Sr.no	Name of the Dam	Capacity m.c.ft
1	Kashyapi	1852
2	Gautami Godavari	1883
3	Bhavali	1434
4	Mukane	7239
5	Waldevi	1133
6	Nandurmadhymeshvar	257
7	Kadwa	1869
8	Aalandi	970
9	Bhozapur	361
10	Punad	1404
11	Nagasakya	397

Vulnerability assessment

- **Heavy rainfall and water released from the dams increases water level in the river bed creating flood situation in the villages situated on river bank.**

Identification of flood prone areas

Dam	River	Capacity (m.c.ft)	flood level (m.c.ft)	Flood prone villages	
				Left bank	Right Bank
Gangapur	Godavari	5630	5630	Jalalpur, Nashik, Nandur, Manur, Panchale, Odha, Lakhalgaon (Nashik Tahsil) Darnasangvi, Gondegaon, Kothare, Katharagaon, Chehadi, Varhedarna, Lalpadi, Shimpi Takli, Chanduri (Niphad Tahsil)	Govardhan, Gangapur Anandvalli, Nashik, Dasak panchak,Eklahare, Gangapadakalwi,(Nashik Tahsil) savli, Angave, Saykheda, Shingve, Karanjgaon, chapadgaon, Manjargaon, Chatori, (Niphad Tahsil)

Identification of flood prone areas

Dam	River	Capacity (m.c.ft)	flood level (m.c.ft)	Flood prone villages	
				Left bank	Right Bank
Mukane	Mukane	4426	4426	——— ———	——— ———
Darna	Darna	7149	7149	Bhagur, Sansari, Belatgavan, Chehedi, Chadegaon, Kotamgaon, Samangaon, Hinganvedhe, Darnasangvi, (Nashik Tal.)	Sakur, Shenit, Belu, Rahuri, Dowde, Jakhori, Manegaon, Shevgedarna, palse, Bableswar, Mohgagaon, Jogaltembhi (Nashil Tal.)
Kadwa	Kadwa	1869	1869	Pimpalgao Durka, Shenit	Pimpalgaon Cha Belu
Waldevi	Waldevi	667 mt	667 mt	Ambebahula, Gaulane, Deolali	Dadhegaon, Pipalgaon Khamb, Vadner, Vihitgaon, Chehedi

Water from all dams reachers to Godavari river through above rivers

Identification of flood prone areas

Dam	Capacity (m.c.ft)	flood level (m.c.ft)	prone villages	
			Left bank	Right Bank
Palkhed	750	750	Lokhadewadi, Palkhed, Raulas, Sunderpur, Niphad	Jopul, Rajapur, Kundewadi,
Karanjwan	5870	5870	Lakhamapur	Parmori
Waghad	2550	2550	Wada, Hattore, Dindori	Balked, Nilewadi, Pilga
Ozerkhed	2130		Ozerkhed, Ambeadi	Balkhed, Karar
Nandur madhame shwar	570	90,000	Khedlezunge, Vadgaon, Kanalde, Kapargaon	

Identification of flood prone areas

Dam	Capacity (m.c.ft)	flood level (m.c.ft)	Flood prone villages
Chankapur	2714	2714	Chankapur, Gorasane,Bhadwan, Bagdu, Pilkos, Kahmkheda,Sawki, Abhona, Dahyane, Pale, Eklahare, Bej, Lohner, Mahalpatne, Nimbola, Thengona,Dhandri, Patne, Tehre, Malegaon.
Kelzer	572	572	Kelzer, Ttani, Nikwel, Chaundhane, Munjawad, Malgaon, Dangsaudane, Budhate.
Haranbari	1166	1166	Eklahare, Askheda, Nampur, Malegaon, Jaukheda.

The flood level can be assessed :

Name of Dam/River	Comes/ meets to river	Discharge causing min.flood level (Cuses)	Dangerous to the city/village
Gautami, Gadavari Kashyapi Gangapur Alandi	Godavari	20,000	Nashik city
Mukane Darna Kadwa Wldevi	Darna	35,000	Darna, Sangvi, Chandori, Saykheda

The flood level can be assessed by using the Following table

Name of Dam/River	Comes/ meets to river	Min.flood level causing discharge (Cuses)	Dangerous to the city/village
Waghad Karanjwan Punegaon	Kadva	35,000	Nandur Madhmeshwar Khedelezunge, Vadgaon Kanalde, Kopargaon

The flood level can be assessed:

Name of Dam/River	Comes/ meets to river	Min.flood level causing discharge (Cuses)	Dangerous to the city/village
Total discharge of above three rivers at Nandur Madhmeshwar creates flood situation	Godavari	20000+35000 + 35000 =90000	Back Water affects Chandori, Saykheda. Khedlezunge, Vadgaon Kanalde, Kopargaon submerg in flood water

Agriculture : Nashik district is known for Grapes, Onion and Tomato. The district experiences a large variation in soil and precipitation conditions and availability of irrigation facilities. 70% of the population of the district is engaged in agriculture related activities. The variations in climate, irrigation facilities and temperatures have resulted in multiple cropping patterns. The cropping pattern is as under:

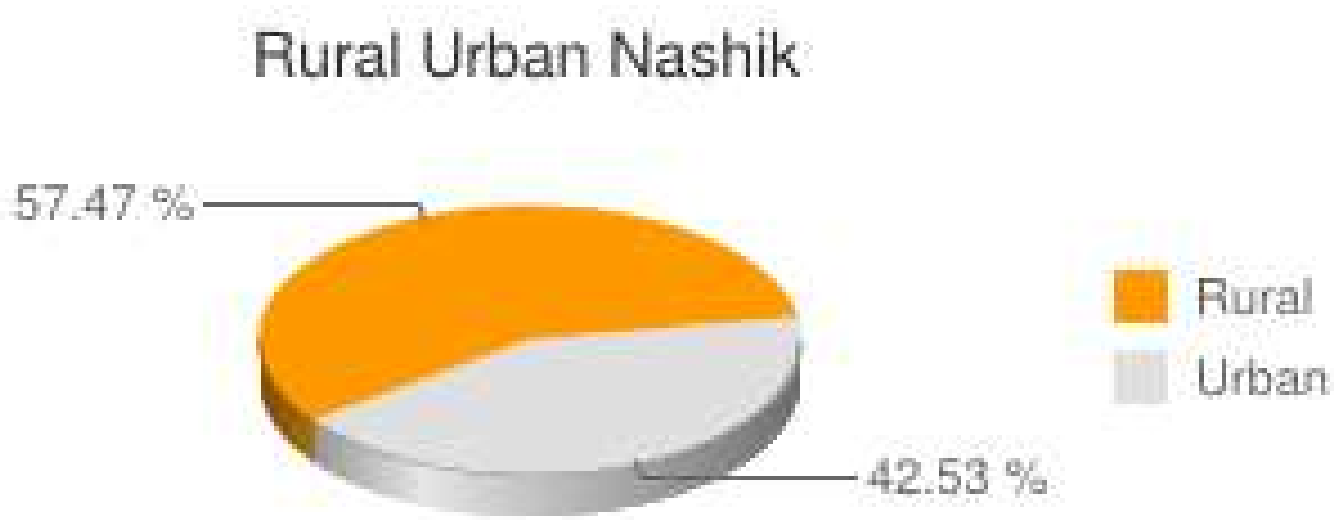
Crop Combination and average rainfall **Table No.5**

Tahsil	Total Area	Crop Combination	Name of The Crop	Average Rainfall
Malegaon	1825.13	3	Bajra, Maze, Pomegranate	440.80
Baglan	1477.83	3	Bajra, Maze, Pomegranate	419.20
Kalwan	859.71	4	Maze, Bajra, Paddy, Onion, Sugracane	664.10
Nandgaon	1089.82	2	Bajra, Onion	467.00
Surgana	845.65	3	Paddy, Ragi, Vari	1743.90
Nashik	810.57	5	Wheat, Paddy, Nachani, Javari, Onion, Grapes	614.20
Dindori	1342.19	9	Grapes, Tomato, Wheat, Paddy, Sugracane, Groundnut, Ragi, Gram, Brigal	695.90
Igatpuri	846.32	2	Paddy, Gram	3325.60
Peth	560.60	4	Mango, Ragi, Wari, Paddy	2194.00
Niphad	1053.65	5	Grape, Maze, Sugarcane, Onion, Wheat	427.40
Sinnar	1352.61	2	Bajra Wheat	492.20
Yeola	1064.47	4	Bajra, Onion, Maze, Wheat, Gram	433.50
Chandwad	958.75	2	Bajara, Onion, Pomegranate	518.30
Trimbak	874.7	3	Paddy, Ragi, Wari	2194.00
Deola	568.00	4	Bajara, Maze, Onion, Pomegranate	570.80

Nearly 20% of the district is under forest area. The forests are by and large a mix of deciduous and non-deciduous trees.

Industries : In the past one decade, industrial development has picked up speed, particularly after declaration of a five star mega industrial estate on 2700 ha. land in Sinnar block. There are 174 medium and large industrial units employing 75,834 people. Many reputed and large companies like Mahindra & Mahindra, MICO, Siemens, Crompton Greaves, Kirloskar, and Raymond steel, Jindal, Brook Bond, L&T, Ceat, VIP, Carbon Everflow, Garware, Jyoti Structures, Samsonite, Datar Switch Gears, and Glaxo India etc. have established their units in the District. Prestigious project IDEM of Mahindra & Mahindra is established in Nashik very recently. Some of the important Public Sector establishments like India Security Press, Hindustan Aeronautics Ltd., Currency Note Press and Thermal Power Station etc. are also located in the District. These industries have brought the District on the National & International map. In addition to these industries the District also has national level institutes like (i) Dr. Babasaheb Ambedkar Institute of Rural Technology & Training run by KVIC and (ii) Indian Institute of Numismatic Studies & Research at Trimbakeshwar. While the outskirts of Nashik city boast of Industrial agglomerate, the towns of Dindori, Sinnar, Malegaon and Yeola also have industries and these small towns have been experiencing steady growth. Some of the industries are also chemical industries or storing hazardous chemicals for intermediate processing of products.

Population : As per the census of 2011, the population of Nashik District 6,107,187. This was approximately 22% more than the one in 2001. The population density stands at about 393 persons per sq. km. The population ratio of Rural to Urban is 57.43% to 42.53%. Demographically, the district has a majority of Hindu population. However, there are pockets where Muslims and Neo-Buddha population also exists in a fair percentage. Other communities like Sikhs and Christians are sparse in number. Nashik is a politically fairly active district (because of growth and economic importance). Nashik District has a large Tribal population and is thus recognised as a tribal district.



Communications :

Nashik District has a good network of road communications. The main road arteries are – Agra to Mumbai National Highway No 3 that runs diagonally through Malegaon and Nashik cities; Pune Nashik Highway that runs through Sinnar; Highways going through Dindori, Peint and onward to Maharashtra; Highway through Nandgaon – Malegaon, Yeola – Niphad – Satana - Dhule. There are railway lines – Igatpuri – Nashik – Manmad - Malegaon - Agra and Manmad – Yeola – Pune. The cities of Nashik and Ojhar have airstrips, mainly used for defence purpose.

Demography:

Geographical Area	
Total Area	15440 Sq.Km.
Area Under Agriculture	8600 Sq.Km.
Climate & Rainfall	
Average Rainfall in Nashik	1013.39 MM
District	10.6 Degree Celsius
Minimum Temperature	40.1 Degree Celsius
Geographical Location	
North Altitudes	10.33 to 20.53
East Altitudes	73.16 to 75.16
Population (2011 Census)	
Total	6,109,052
Male	3,157,186
Female	2,950,001
Ubran	2,597,373
Rural	3509814
Litracy	
Total	82.31%
Male	88.17%
Female	76.08%
Administrative	
Revenue Subdivision (9 Nos)	Nashik, Niphad, Malegaon, Kalwan, Chandwad, Dindori, Yeola, Igatpuri-Trimbak, Baglan
Tehsil Offices (15 Nos)	Nashik, Igatpuri, Dindori, Peint, Surgana, Deola, Satana, Kalwan, Chandwad, Niphad, Sinnar, Yeola, Malegaon, Nandgaon, Trimbakeshwar

Demography:

Geographical Area	
Municipal Corporations (2 Nos)	Nashik Municipal Corporation, Malegaon Municipal Corporation.
Municipal Councils (8 Nos.)	Manmad, Nandgaon, Satana, Sinnar, Igatpuri, Trimbak, Bhagur, Yeola.
Cantonment Board	Deolali Cant
Panchayat Samities (15 Nos.)	Nashik, Dindori, Igatpuri, Trimbak, Peint, Surgana, Deola, Chandwad, Sinnar, Niphad, Yeola, Malegaon, Nandgaon, Kalwan, Satana
Gram Panchayats	1376 Nos.
Villages	1960 Nos.
Police Stations	41 Nos.
Police Out Posts	35 Nos.
Total Cultivable Area	1563600 Hector
Net Area Sown	809000 Hector.
Major Crops in District	Onion, Grapes, Sugarcane, Cotton, Rice, Jowar, Bajra, Wheat, Pomegranate
Area Under Irrigation	419000 Hector Nos.
Major Projects	13 Nos.
Medium Projects	8 Nos.
Small Projects	44 Nos.
HEALTH	
Dispensary	154 Nos.
Medical Colleges	1 Nos.
Regional Super Speciality Hospital	1 Nos.
Civil Hospital	1 Nos.
Rural Hospital	75 Nos.
Primary Health Centres	112 Nos.
POWER SECTOR	
Electrified Villages	1921 Nos.
Electrified Pump Sets	203797 Nos.

Demography:

Geographical Area	
ROAD DEVELOPMENT	
National Highways	13903 Kms.
State Highway	236 Kms.
District Roads	1728 Kms.
Villages Connected by Roads	1266 Nos.
Total Railway Tracks	287 Kms.
ANIMAL HUSBANDRY	
Total Live Stock	2595000 Nos.
Total Cow & Buffalo	144000 Nos.
EDUCATION	
University	1. Maharashtra University of Health Sciences 2. Yashwantrao Chavan Maharashtra Open University.
Primary Schools	3342 Nos.
Secondary Schools	721 Nos.

Infrastructure details

Transport :

Roads

Nashik is on the intersection of two National Highways: the Mumbai–Agra Highway NH-3 and the Nashik–Pune Highway NH-50. Apart from these, other major cities like Aurangabad are connected via a state highway which is also 4 lane highway. Nashik is easily accessible by road from Gujarat state in western India. There are other numerous State Highways which offer very good road connectivity to Nashik. Nasik is well connected to Mumbai through Mumbai Nashik Expressway which is a part of Mumbai-Agra Highway (NH3)connects Dhule and Indore to the city on the other side of the highway. Pune is connected through NH 50 which is to be upgraded into a four lane road soon.

Railways

Nashik Road Railway Station is the major railway station in the city which is around 10 km (6.2 mi) from the central area of the city. Deolali railway station is around 20 km from the city which serves the military cantonment area. Nashik Road railway station is an important railway station for Central Railway it generates highest revenue in Bhusawal division.Manmad railway station comes under Nasik district and serves huge importance for visitors travelling towards Shirdi from North and South India.Igatpuri railway station is another major railway station where DC to AC conversion of electric lines are carried out by changing the engine. It has four major platforms. Nashik Road falls on the Mumbai–Bhusawal route of the Central Railways. Nashik is directly connected to various major cities in India like Mumbai, New Delhi, Kolkata, Nagpur, Kanpur, Guwahati etc. There are a few trains connecting Southern and Northern parts of India which travel via Nashik. Nashik will also be getting a rail connectivity to Pune through Nashik Pune Rail line and to Indore by Manmad Indore Rail Line and a new platform as announced in Rail Budget debate recently.

Air

Nashik's Ozar Airport (IATA: ISK, ICAO: VAOZ) is located at a distance of 20 km (12 mi) from the city center. This will boost the connectivity and tourism. The flights will soon start from the new terminal. Nashik also has another airport, namely Gandhinagar Airport (IATA: VANR), with a shorter runway, and hence unfit for modern-day passenger aircraft. The government run Vayudoot used to operate a service to Mumbai from, that airport during the 1980s. A military airport is present in Deolali Cantonment.

Departmental Information
(linkages with other stakeholders):

The mitigation strategy of the district plan can be linked to the all concern departmernts to ensuring that all new houses that are built contain seismic safe features and the mason's building these houses are trained in seismic safe construction. This is one example, other examples are: flood and earthquake shelter to be constructed from the existing developmental Programme, rising of the plat form of school building etc. some of them are listed:

1. Raising platform for new building in low lying or flood prone areas.

2. Alternate income generation activities to the risk group through Self-help Groups.

3. Raising the platform of tube well in flood areas.

4. Strengthening and abiding the local coping mechanism.

5. Construction of high raised plat forms from Forest for animal resources.

6. Road & bridges to be constructed and repair based on to reduce the vulnerability.

7. Provision of communication facility to the vulnerable areas.

8. Provision and promotion of grain bank facilities and alternative storing facility for food grains.

9. Developing the skill and capacity of various Disaster Management Teams to meet the disasters.

Linking of the departmental plans with long term developmental activity in the district as well as regular updating and mock drills can ensure long term sustainability.

List of departmental information

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 an 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 re-establish 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 needs in the affected communities.
9. Power	Provide the resources to re-establishnormal 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 healthcare 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 shelter for disaster-affected populations
13. Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.
14. Survey (Damage Assessment)	Collect and analyse data on the impact of disaster, develop estimates of resource needs and relief plans, and compile 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 electronic media on early warning and post-disaster reporting concerning the disaster.

Coordination of Control room

Sr.	Task Force	Task Force Leader	Supporting Members / Organizations	ICS/GS Section/Unit
1.	Planning and Coordination	Collector	CEO, SP, Chief Officer, RDC & Thasildar.	Planning
2.	Administration & Protocol	Collector	CEO, SP, Chief office, RDC & Thasildar.	Planning
3.	Damage Assessment / Survey	Collector	Exe. Engineer - PWD, Irrigation, DAO, SDO, Thasildar	Planning
4.	Warning	RDC	RDC, RNT, Control Room, District Information Officer	Operation
5.	Communications	RDC	RNT, Mobile Operators, TV, Radio, Police, Forest	Logistics
6.	Media	District Information Officer	Information Department, Print, Media, TV, Journalists, NGOs	Public Information
7.	Logistics	Collector	RTO, DSO, FPS, Private & Public sector, Municipal water supply board, Tahsildar, Dist. Supply Tahsildar	Logistics
8.	Law & Order	SP / CP	Home Guards Commandant, NGOs, Para-militaryand Armed Forces	Law & Order
9.	Search & Rescue	Dy. Director, Civil Defense	Tahsildar, BDO, Police, Executive Engr., Fire Brigade, RTO, State Transport, Health Deptt.	Operation
10.	Public Works	SE (PWD)	Ex. Engr. - PWD, NGOs, Water Supply Board, Municipalities, Home Guards, Police	Operation
11.	Shelter	Dist. Primary Education Officer	School Principal, Teachers, Health, PHC, State Transport, Water Supply, RTO, Tahsildar, BDO.	Operation
12.	Water Supply	SE Irrigation	Dy. Ex. Engr., Tahsildar, BDO,	Operation
13.	Food & Relief Supplies	Dist. Supply Officer	FPS, PDS, Tahsildar, NGO, RTO, State Transport, Municipality, Police, Home guard	Logistics
14.	Power	Supt. Engr. MSEB	Ex. Engr. - MSEB	Operation
15.	Public Health & Sanitation	Dy. Director Health	Supt. Govt. Hospital, Municipalitiy PHCs, Fire Brigade, Civil Deafens, Tahsildar, Doctors, BDO	Operation
16.	Animal Health & Welfare	Dy. Director Animal Husbandry	Veterinary Inspector, NGOs	Operation

SEOC-DEOC-TEOC-Other control room (Irrigation, police, Municipal Corporation etc)

District Control Room (DCR)

The SEOC is supposed to help the members of District Emergency Operation Centre (DEOC) to understand the structure and functioning of District Control Room. Following the important Three C's i.e. Command, Control and Communication for effective response in an emergency, we will be able to minimize the hardships of the community and improve the quality of the process of recovery. This control room will be able to provide timely, supported and well thought of interventions to the grass root staff as well as volunteers as it will be the hub of three C's.

Purpose of the DCR

The District Control Room under the control of District Collector, Nashik will operate round the clock and will be the nerve centre to Monitor, Co-ordinate, Implement the actions / activities for Disaster Management.

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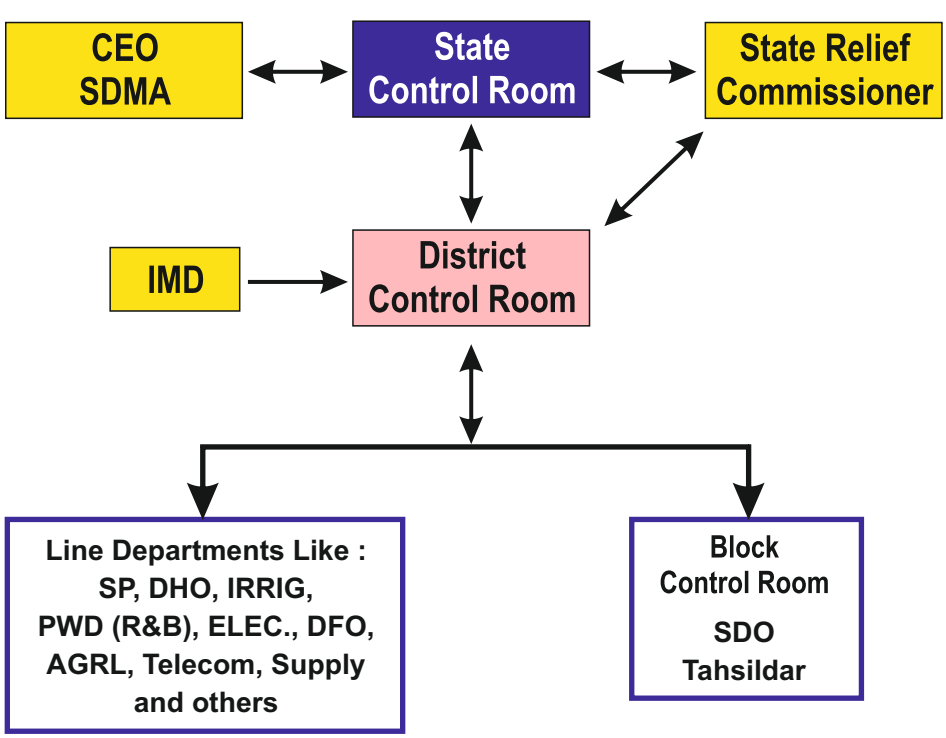
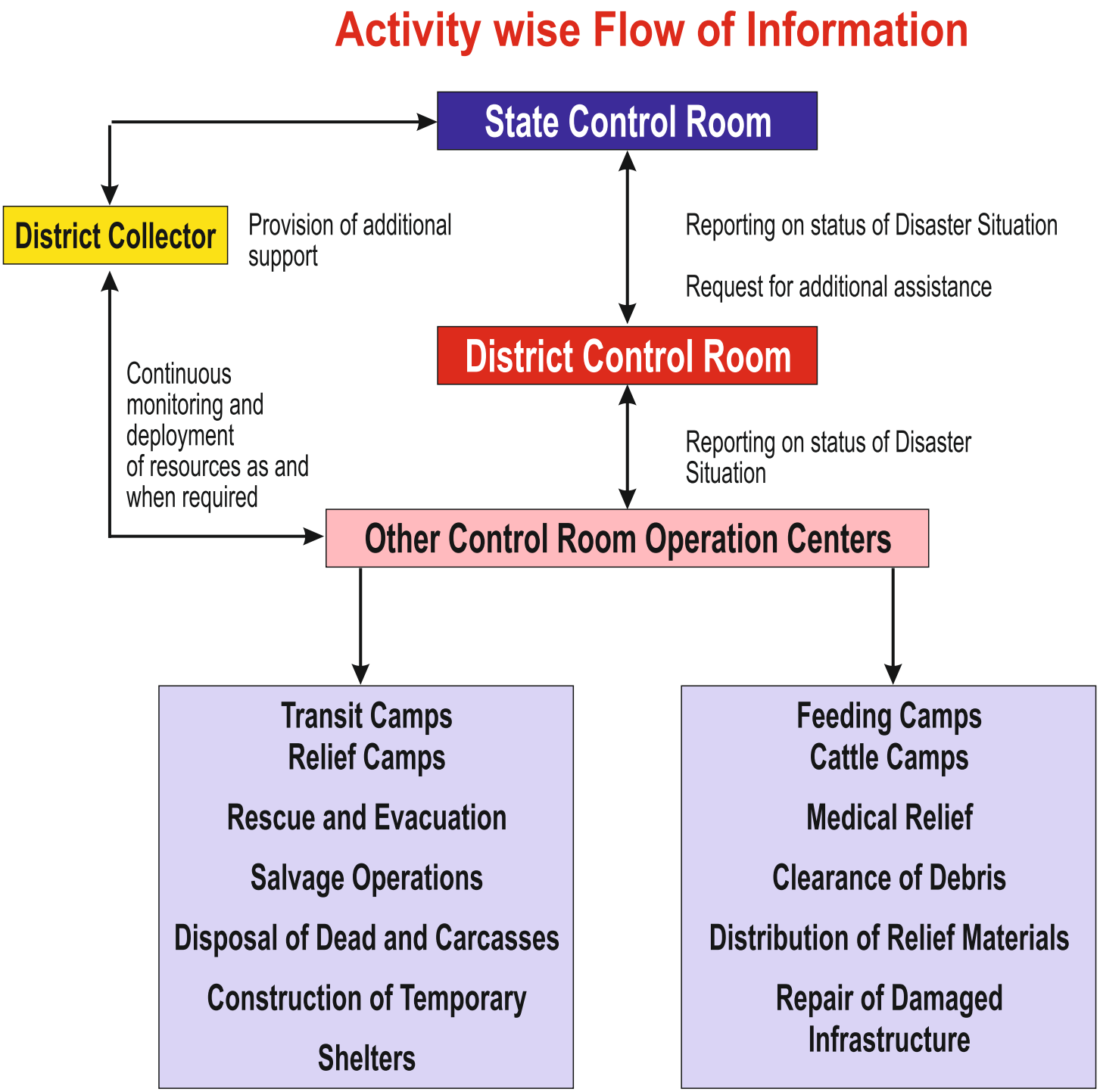
In a disaster time, the District Control Room will operate under the central authority of the District Collector, exercising emergency power to issue directives to all departments to provide emergency response service. He will also co-ordinate with the State Response Machinery. The Control Room is manned round the clock. The District Control Room is placed in the Relief Section of the District Collectorate.

Information Flow Chart of the State Control Room



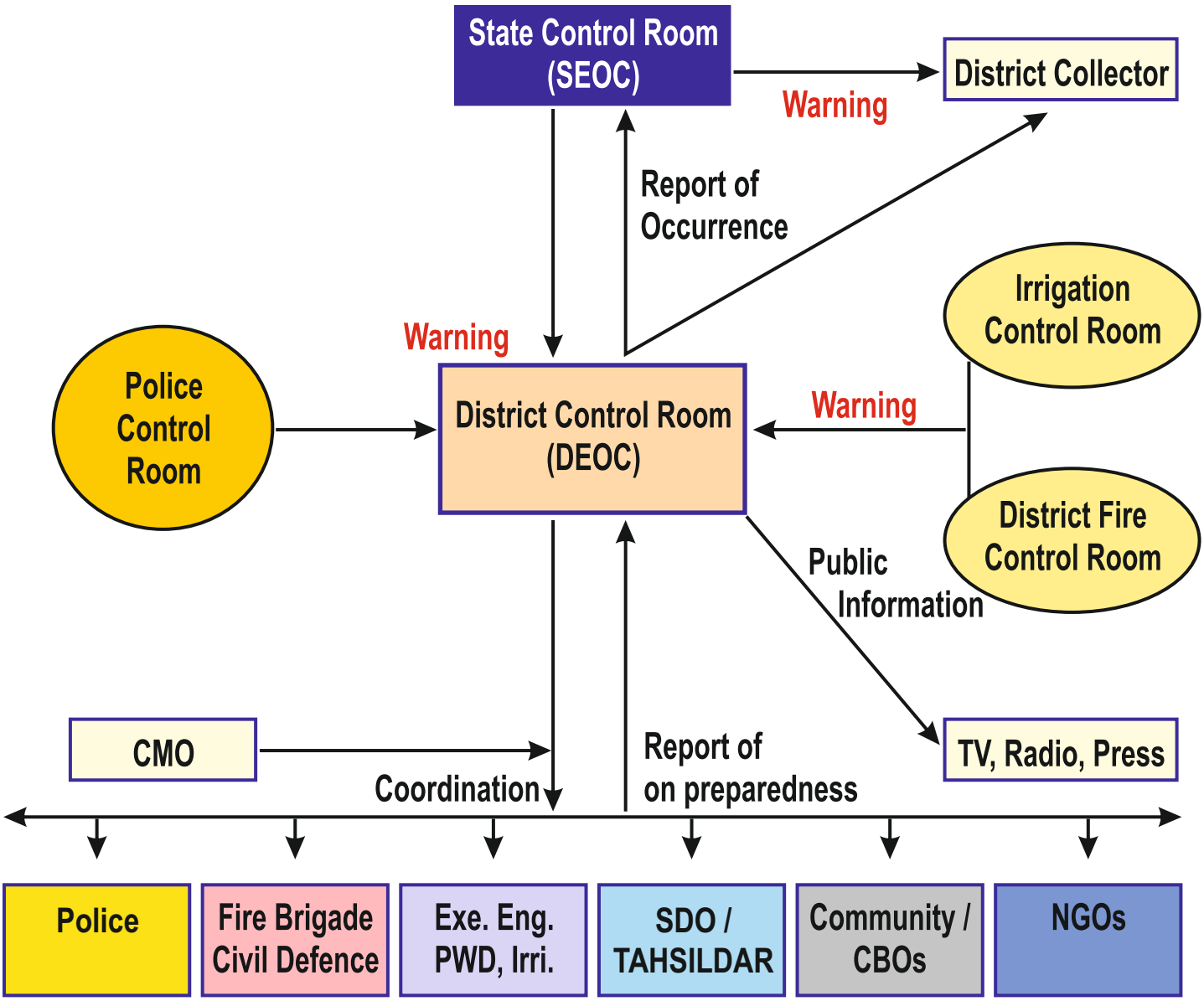
Activity wise Flow of Information Among State Control Room, DEOC and Other Control Room Operation Centers:



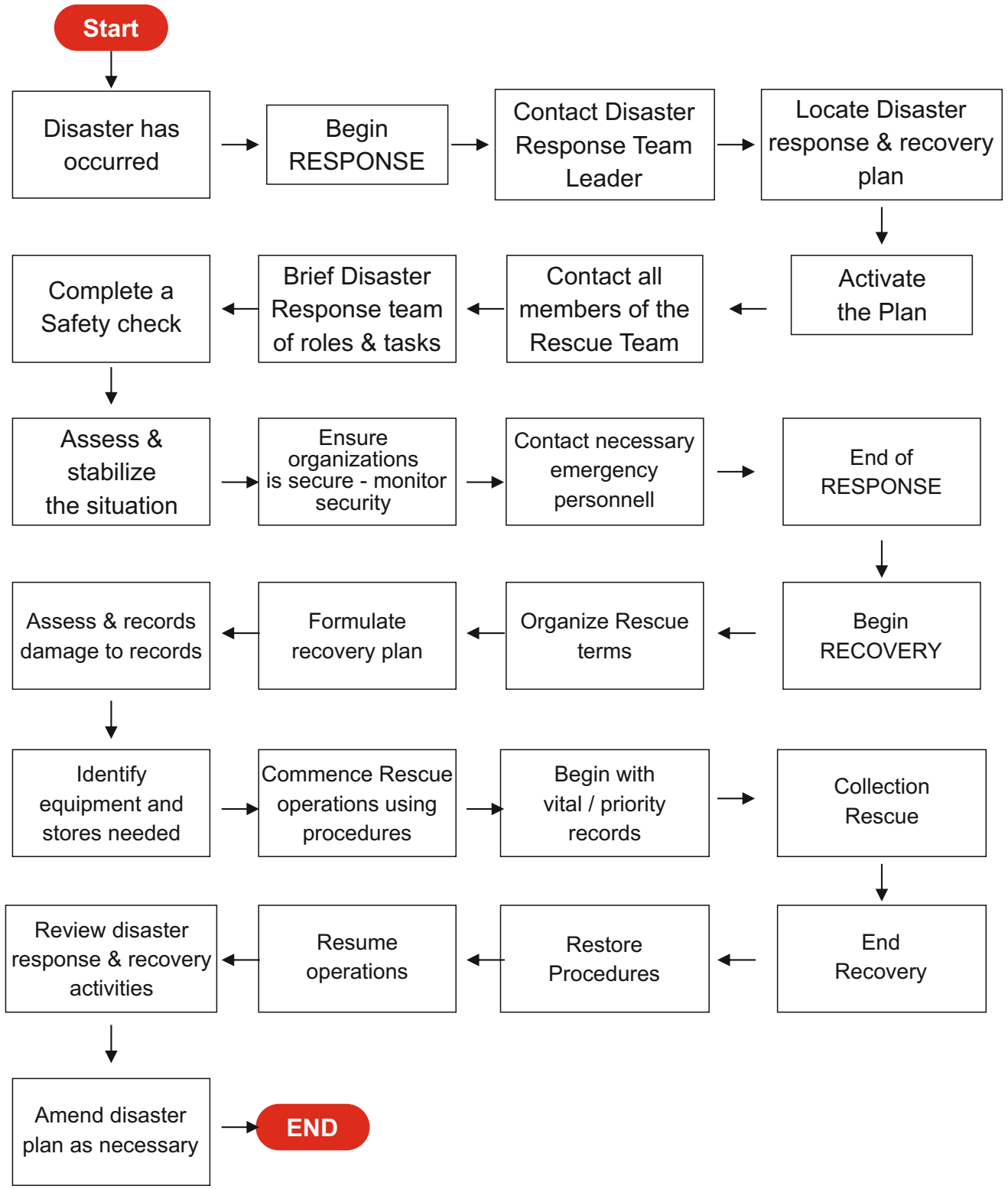
Scope of Work of the District Control Room

Time Frame	Activities
NORMAL TIMING	● Ensure that all warning and communication systems, instructions are in working condition ● Receive information on a routine and regular basis from the departments on the vulnerability of the various Gram panchayats and Villages to disaster ● Receive reports on preparedness from the relevant district level departments and other departments, as per as the formats. Based on these reports, the DEOC will forward the Preparedness Measures details on behalf of the Collector to the State Control Room, Relief Commissioner ● Upgrade and update District Control Room system according to changing scenarios in the district update data bank and maintain an inventory of resources. ● Update all information on the SDRN / IDRN Inform State Control Room, Relief Commissioner of any changes, including updating of data bank and annexure. ● Monitor preparedness measures including simulation exercises undertaken by various departments. ● Ensure proper dissemination of information about District Control ● Room System at the district level, local level and disaster prone areas. ● Identify appropriate NGOs/Private Sector Organizations, which can be assigned the task of community level preparedness. ● Organize post-disaster evaluation and update District Control Room System accordingly Prepare reports and documents on district level disaster events and submit the same to State Control Room, Relief Commissioner.
DISASTER TIME	● Weather tracking and early warning dissemination. ● To collect and transmit information regarding matter relating to natural calamity. ● Mapping of vulnerable areas. ● Database on civil society organizations and their activities Database on volunteers ● Facilitate regular meetings of civil society organizations and issue updates Flow of information to State control room in Relief Commissioner's office ● District level training of officials and NGOs in emergency response Men and material management in emergencies with proper inventorization.

Early Warning Dissemination



Emergency Response Structure



Risk and Vulnerability analysis:

Impact-Probability- Vulnerability- area- population with context to district specific hazards.

The threat (risk) and possible impact (vulnerability) which can be actualized from these hazards ranges from minor impacts affecting one village to events impacting larger than the state alone.

The table below summarizes the results of an analysis of hazard, risk and disaster impact in Nashik. This analysis indicates that disaster planning at the Nashik district level should first focus on the functional response to the Flood and Accident. Typical responses to these disaster events also can apply to fire, industrial accidents, failure of critical infrastructure and building collapse.

Risk and Vulnerability Analysis (Nashik District)

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/Talukas
Flood	4	4	16 (High)	**Godavari Basin - Nashik City, Nashik Taluka, Niphad, Chandori, Saykheda, Girna Basin - Malegaon, Baglan, Deola.**
Earthquake	4	4	16 (High)	**Zone- III : Kalwan, Surgana**
Road Accidents	4	4	16 (High)	**Villages & Towns of Nashik District That are on NH– 3 & NH 50, Vinchure Praksha Highway (SH–7)**
Fire	4	3	12 (Moderate)	**Mostly urban pockets and industrial areas (including rural area)**
Industrial Area	3	4	12 (Moderate)	**Industrial Area of Nashik – Satpur – Ambad, Dindori, Sinnar, Gonde, Malegaon, Panewadi, Manmad.**
Epidemics	3	3	12 (Moderate)	**Anywhere in District**
Drought	4	4	16 (High)	**Baglan, Deola, Malegaon, Sinnar, Yeola, Nandgaon, Niphad, Chandwad.**

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/Talukas
Building Collapse	1	2	2(Low)	**Anywhere in District – Mostly concern at Old Nashik City & Old Malegaon City.**
Risk during Festivals & Fairs	4	4	16 (High)	**Nashik, Trimbakeshwar – Kumbhmela Days(Shai Snan & Procession Days), Saptashrugi Devi Yatra, and various fairs**
Landslides/Rock fall	4	4	16 (High)	**Saptashrungi Garh, Kasara Ghat**
High wind	1	2	2 (Low)	**Anywhere in District**
Dam Failure	1	2	2 (low)	**Anywhere in District**
Civil Unrest	1	2	2 (low)	**Anywhere in District**

Nashik District Hazard Vulnerability Risk Analysis												
Taluka	E Q	Landslide	Flood	Cyclon	Drought	CBRN	Industrial	Fire	Road Accident	Stamped	Epidemics	Terrorist Attack & Bomb Blast
Dindori	Low	Low	High	Low	Low	Low	High	High	High	Low	Medium	Low
Kalvan	High	High	High	Low	Low	Medium	Low	High	High	High	Medium	Medium
Peth	High	Medium	Low	Low	High	Low	Low	High	Medium	Low	Medium	Low
Surgana	High	Medium	Low	Low	High	Low	Low	High	Medium	Low	Medium	Low
Baglan	Low	Low	High	Low	High	Low	Low	High	High	Low	Medium	Low
Deola	Low	Low	High	Low	High	Low	Low	High	High	Low	Low	Low
Malegaon	High	Low	High	Low	High	High	High	High	High	High	High	High
Chandwad	Low	Low	Low	Low	High	Low	Low	High	High	Medium	Medium	Low
Niphad	Low	Low	High	Low	High	Low	Low	High	High	Low	Medium	Low
Nandgaon	Low	Low	Low	Low	High	High	High	High	High	Low	Medium	Low
Yeola	Low	Low	Low	Low	High	Low	Low	Medium	Medium	Low	Medium	Low
Sinner	Low	Low	Low	Low	High	High	High	High	High	Low	High	Medium
Nashik	High	Medium	High	Low	High	High	High	High	High	High	High	High
Trimbakeshwar	High	High	Low	Low	Low	Low	Low	High	High	High	High	High

Prevention, Mitigation and Preparedness Strategies : District Specific

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.

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

The Collector, assisted by the CEO ZP, 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 Accidents
- Improvement of Off-site Preparedness near Industrial sites.

A. Preventive measure (for all disasters)

The principle of prevention and mitigation is to reduce both exposure and vulnerability. Environmental management, site selection, urban planning and sound construction are critical to the safety of communities, where as socio-economic measures can be used to increase resilience, spread risk and responsibility, create redundancy, and minimize impact.

B. Mitigation measure (for all disasters)

Mitigation efforts attempt to prevent hazards from developing into disasters altogether, or to reduce the effects of disasters when they occur. The mitigation phase differs from the other phases because it focuses on long-term measures for reducing or eliminating risk. The implementation of mitigation strategies can be considered a part of the recovery process if applied after a disaster occurs.

Mitigative measures can be structural or non-structural. Structural measures use technological solutions, like flood levees. Non-structural measures include legislation, land-use planning (e.g. the designation of nonessential land like parks to be used as flood zones), and insurance. Mitigation is the most cost-efficient method for reducing the impact of hazards, however it is not always suitable. Mitigation does include providing regulations regarding evacuation, sanctions against those who refuse to obey the regulations (such as mandatory evacuations), and communication of potential risks to the public. Some structural mitigation measures may have adverse effects on the ecosystem

C. Preparedness Strategies (for all disasters)

Preparedness is a continuous cycle of planning, organizing, training, equipping, exercising, evaluation and improvement activities to ensure effective coordination and the enhancement of capabilities to prevent, protect against, respond to, recover from, and mitigate against natural disasters, acts of terrorism, and other man-made disasters.

In the preparedness phase, emergency managers develop plans of action to manageand counter their risks and take action to build the necessary capabilities needed to implement such plans. Common preparedness measures include:

- Communication plans with easily understandable terminology and methods.
- Proper maintenance and training of emergency services, including mass human resources such as community emergency response teams.
- Development and exercise of emergency population warning methods combined with emergency shelters and evacuation plans.
- Stockpiling, inventory, and maintain disaster supplies and equipment
- Develop organizations of trained volunteers among civilian populations. (Professional emergency workers are rapidly overwhelmed in mass emergencies so trained; organized, responsible volunteers are extremely valuable.

Another aspect of preparedness is casualty prediction, the study of how many deaths or injuries to expect for a given kind of event. This gives planners an idea of what resources need to be in place to respond to a particular kind of event.

Emergency Managers in the planning phase should be flexible, and all encompassing - carefully recognizing the risks and exposures of their respective regions and employing unconventional and atypical means of support. Depending on the region - municipal or private sector emergency services can rapidly be depleted and heavily taxed. Non-governmental organizations that offer desired resources, i.e., transportation of displaced homeowners to be conducted by local school district buses, evacuation of flood victims to be performed by mutual aide agreements between fire departments and rescue squads, should be identified early in planning stages, and practiced with regularity.

SDMA DRM activities

Disaster Risk management (DRM) Programme have well thought out strategy for vulnerability reduction, social inclusions, gender justice and sustainability.

DRM programme is being implemented in most hazard prone districts of Maharashtra state by SDMA with the HR support. The main aim of the programme is to minimize losses of development gains from disaster and reduce vulnerability. It will demonstrate a sustainable model for main streaming of disaster risk management at all level with focus on district and community level activities. Maharashtra has implement DRM programme in most hazard prone districts with the aim of strengthening the response capability of various stakeholders of disaster management.

DRM Component contains, Multi Level Plan Preparation, Capacity Building at Various levels through Trainings, Community Awareness, Create Resources Database with Coordination at District Administration and Line Departments, Multi Sector and Multi disciplinary actions for mitigate disasters with Pre-During and Post disaster Activities, Resource mobilization and technical assistance with HR supports.

Response Planning (Framwork) :

In India, the role of emergency management falls to National Disaster Management Authority of India, a government agency subordinate to the Ministry of Home Affairs. In recent years there has been a shift in emphasis, from response and recovery to strategic risk management and reduction, and from a government-centred approach to decentralized community participation.

The District Disaster Management Committee, headed by District Collector is responsible for developing the DDMP before any hazard season based on the vulnerability of the district. They are also responsible for up-dation of the DDMP before all possible hazard season. DM plan has to be approved by the DDMC and district development committee.

a. DDMA

While developing the district disaster management plan the District Collector is responsible to call a meeting of suggestive members on the above and form the district disaster management authority (DDMC) under his/her chairmanship. The district disaster management team has to form with all possible line dept. Officers to carry out various activities during normal time, pre disaster, during and post disaster. The possible suggestive district disaster management teams for a district based on the need: Information management team, rescue and evacuation team, emergency health management team, Food [relief, feed, fodder, civil supply] team, transportation mgmt team, infrastructure management team, animal resource management team, etc.

b. TDMC

Taluka Disaster Management Committee will act at Block level under chairmanship of Zonal Officers. Tahsildar and BDO are the Zonal Officers who shares responsibilities of villages with support of Sub Divisional Officers and all Taluka level Departmental Head of each Line Departments.

c. MCDMC

Municipal Corporation Disaster Management Committee will act at Municipal Cities chaired by Municipal Commissioners, who is responsible to call a meeting of suggestive members along with Mayor and Cooperators on the above and prepares Municipal Disaster Response Plan (MDRP) under his/her chairmanship. The Municipal disaster management team has to form with all possible line dept. officers to carry out various activities in City.

d. CDMC

City Disaster Management Committee will act at Cities chaired by Chief Officer, who is responsible to call a meeting of suggestive members along with President of Nagar Palika and Counselors on the above and prepares City Disaster Response Plan (CDMP) under his/her chairmanship. The city disaster management team has to form with all possible line dept. officers to carry out various activities at Nagar Palika Area.

e. VDMC

Village Disaster Management Committee is the sub part of TDMC and act under the chairmanship of Sarpanch / Talati. Village disaster management committee prepares and update VDMP (Village Disaster Management Plan) for submit it to Taluka officers. They also take care for informing / update taluka officers to each and every critical situation arise or might be occurs for concerned village.

f. Role & Responsibilities of each department.

Normal Time :

- Responsible for Plan preparation
- Task force and Committee formation
- Training of Staff, Volunteers and Committee members.
- Mock drills
- Updating of Various level specific Plans
- Linkage with developmental programme
- Fund allocation for mitigation activities
- Procurement and deployment of equipments

Pre [after warning :

- Check the plan is up dated or not
- Up date the resource inventory
- Coordination with all departments for various activities
- See the proper warning dissemination
- Functional of all control room

During :

- Situation analysis
- Coordination with all Departments for effective response
- Coordination with state if the situation is worst
- Coordination with nearest district for more resources
- Suggest appropriate steps to minimise the loss and early recovery

Post disaster :

- Assessment of damages
- Request for more resources for reconstruction
- Promotion of disaster mitigation activities

Roles & responsibilities of Police Department :

1. The overall responsibility of police is to maintain law and order during and post disaster situation in the context of disaster management.
2. Prepare a departmental disaster response plan and SOP, at district, in which roles and responsibilities are clearly defined. The plan and SOP should be submitted to the concerned District Disaster Management Authority [DDMA] respectively.
3. Prepare a database of nodal person at State, District and taluka level and share with the MSDMA & respective DDMA.
4. The plan should cover response measures as well as long-term measures such as construction of multi-hazard resistant police stations in future and retrofitting of existing hospitals.
5. Police personnel should be trained in search & rescue (flood rescue, collapse structure, rope rescue, etc) during normal time and database of such trained personnel should be shared with the State EOC.
6. Overall traffic management (access roads to disaster site, roads to be made one-way, to be blocked, alternate routes, etc).and patrolling
7. Provide security in transit and relief camps, affected areas, hospitals and medical centres and identify areas to be cordoned off.
8. Establish communication with the State EOC, Divisional Control Room, District Control Room and nearest Police station to the disasters site.
9. Additional deployment of police, if required, to inquire into and record of deaths.
10. Security arrangements provided for visiting VVIPs and VIPs
11. Provide convoys for relief materials.
12. A public information system to be activated for passing information related to injured, dead, missing persons, etc
13. Regularly conduct mock drill by simulating different disasters to check preparedness, coordination and scope of improvement. The report should be submitted to the SDMA & concerned DDMA respectively.
14. Assist the authorities in evacuation of people from the vulnerable areas
15. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Health Department :

1. The overall responsibility of health department is to effectively and efficiently undertake the emergency heath activities in the aftermath of disasters and take measures to check the outbreak of epidemic in the post disasters situation.

2. Prepare a departmental Emergency Health Management Plan including, hospital specific plan should also be prepared. Apart from plan, SOP should be prepared which clearly delineates the roles and responsibilities.

3. The plan should cover mass casualty management, triage (prioritization of patients), trauma counselling, mobile team which may be deployed at sites, procedure for coordinating with private hospitals and availing its services, etc. It should also cover long-term measures such as construction of multi-hazard resistant hospitals, blood banks, etc in future and retrofitting of existing hospitals, blood banks, etc.

4. A database of nodal officer at State, district and hospital specific should be prepared for emergency health services should be prepared and shared with the MSDMA & concerned DDMAs respectively.

5. Periodic review of the stock emergency medicines and equipment required during the disasters.

6. The epidemic surveillance and water quality monitoring should done at transit camps, relief camps, affected areas and feeding centres.

7. The central warehouse should be kept informed for dispatch of supplies likely to be needed, to hospitals, on an emergency priority basis.

8. Establish communication with the State EOC, Divisional Control Room, District Control Room, Police and the medical team at the disasters site.

9. A public information system to be activated for passing information related to patients admitted at the hospital.

10. Mock drill on mass casualty management at hospital level and district level should organize twice in year. The mock drill should check the activation and response time of emergency medical teams, coordination with other agencies, areas of improvement, etc. The report should be submitted to the SDMA & concerned DDMA respectively.

11. The medical officers and staffs should be trained in triage (system for prioritization of patients).

12. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Electricity department :

1. The overall responsibility of Electricity Board is to restore the power supply at the earliest in the aftermath of disasters and ensure uninterrupted power to all vital installation, facilities and sites.

2. Prepare a departmental and district specific disaster management plan and submit it to the MSDMA and concerned DDMAs respectively. In addition to the plan, SOP should be prepared which clearly delineates the roles and responsibilities.

3. The plan should basic information, vulnerability analysis, response plan, preparedness measures and long-term measures. The long-term measures include construction of multi-hazard resistant future power facilities and premises and retrofitting of existing department buildings.

4. A disaster management team and emergency tool kit comprising cable cutters, pulley blocks, jungle knives, axes, crowbars, ropes, hacksaws and spanners should be kept in the state of readiness at each sub-station. Tents for work crews should also be part of the kit.

5. A database of nodal officer at State and district should be prepared for emergency power services should be prepared and shared with the DDMA respectively.

6. Standby arrangements for temporary electric supply or generators made for hospitals, water department, Collectorate, police stations, telecommunications buildings, transit camps, feeding centres, relief camps and other critical buildings and installations in case warning for disaster is received.

7. Immediately undertake inspection of high tension lines, towers, substations, transformers, insulators, poles and other equipment .from the time of receipt of alert warning.

8. Establish communication with the State EOC, Divisional Control Room, District Control Room and teams at the disasters site.

9. Mock drill on mass casualty management at state and district level should organize twice in year. The mock drill should check the activation and response time of emergency power restoration teams, coordination with other agencies, areas of improvement, etc. The report should be submitted to concerned DDMA.

10. The officers and staffs should be trained in emergency management.

11. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Irrigation Department :

1. The overall responsibility of irrigation department is water discharge at dams, monitor and protect irrigation infrastructure and restore damaged infrastructure.

2. Prepare a departmental disaster management plan and submit it to the State & District. In addition, dam & watershed specific plan should also be prepared and submitted to the concerned DDMA. Apart from plan, SOP should be prepared which clearly delineates the roles and responsibilities.

3. The plan should cover basic information, vulnerability analysis, dam water discharge analysis, mobile team which may be deployed at sites, procedure for coordinating with agencies and availing its services, etc. It should also cover long-term measures such as construction of multi-hazard resistant irrigation department structures, flood modelling models, flood mitigation measures, etc.

4. A database of nodal officer at State, district and dam/watershed specific should be prepared and shared with the MSDMA & concerned DDMAs respectively.

5. Identify flood prone rivers and areas and activate flood monitoring mechanisms in all flood prone areas from 1st of June every year.

6. The inlet and outlet to tanks should be cleaned and ensured that waterways are unobstructed by trees or vegetation on an on-going basis.

7. Round the clock inspection and repair of bunds of dams, irrigation channels, bridges, culverts, control gates, overflow channels, repair of pumps, generators, motor equipment and station buildings.

8. In case of possibilities of flooding in the downstream due to water discharge from dam or any other reason, the settlements should be forewarned, and necessary warnings for evacuation should be given to the adjoining districts and to those districts beyond the state borders.

9. In case of possibilities of flooding in the downstream, the settlements should be forewarned, and necessary warnings for evacuation should be given to the adjoining districts and to those districts beyond the state borders.

10. Establish communication with the State EOC, Divisional Control Room, District Control Room and Police.

11. Mock drill on warning system and information dissemination should be organized at district level and dam/watershed level at least once in year. The report should be submitted to the SDMA & concerned DDMA respectively.

12. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Agriculture Department :

1. The overall responsibility of agriculture department is to restore the agricultural operations (including soil conditions), crop protection and restore agriculture produce market in the event of a disaster.

2. Prepare a departmental disaster management plan and submit it to the concerned DDMA. Apart from plan, SOP should be prepared which clearly delineates the roles and responsibilities.

3. The plan should cover basic information, vulnerability analysis, damage assessment methodology & team which may be deployed after the disaster

4. A database of nodal officer at State and district should be prepared and shared with the State & concerned DDMAs respectively.

5. Carry out the surveillance for pests and diseases.

6. Organise transport, storage & distribution of seeds, fertilizers, pesticides & labour.

7. Establish communication with the State EOC, Divisional Control Room, District Control Room and other concerned departments.

8. A public information centre should be established with a means of communication, to assist in providing an organized source of information. It may keep the community informed of its potential and limitations in disaster situations.

9. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Water Supply Department :

1. The overall responsibility of animal husbandry department is ensure supply of regular water.
2. Prepare a departmental and district specific disaster management plan and submit it concerned DDMA. Apart from plan, SOP should be prepared which clearly delineates the roles and responsibilities.
3. The plan should cover basic information, water supply plan in the event of disasters, prioritization of water supply services to the critical installations, water supply restoration plan in the event of disaster, formation of emergency team. Plan should also have long-term measures such as construction of multi-hazard resistant water supply department structures.
4. A database of nodal officer at State and district should be prepared and shared with the MSDMA & concerned DDMAs respectively.
5. Several teams of engineers and assistants for restoration of water supply services should be constituted as precautionary measure.
6. It should also make provisions to acquire tankers and establish other temporary means of distributing water on an emergency.
7. Required stock of lengths of pipe, connections, joints, hydrants and bleaching powder. Adequate tools should be on hand to carry out emergency repairs. Also generators should be identified for the emergency.
8. In case of receipt of warning of disaster warning, wells, intake structures, pumping stations, buildings above ground, pumping mains and treatment plant should be monitored.
9. After any repair on the distribution system, the repaired main should be flushed and disinfected with a chlorine solution.
10. Establish communication with the State EOC, Divisional Control Room, District Control Room and other concerned departments.
11. A public information centre should be established with a means of communication, to assist in providing an organized source of information. It may keep the community informed of its potential and limitations in disaster situations.
12. Mock drill on emergency water management should be conducted at State and district level at least once in year. The report should be submitted to the MSDMA and concerned DDMA respectively.
13. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of School Education Department

1. The overall responsibility of school education department is to inculcate culture of preparedness among students and make school a safe place.
2. All future schools should be constructed earthquake resistant.
3. Preparation of school disaster management plan and school disaster management committee may be made mandatory in each school.
4. A school safety initiative mainly covering non-structural measures such as poster competition, essay, debates, etc to be held on disaster themes to create awareness. Also formation of disaster management clubs in school may be formed.
5. For preparedness, search and rescue and first-aid team can be formed in schools. These can be trained by the health department, civil defense, home guards, Red Cross, St. John Ambulance, etc.
6. Also mock drill and evacuation drill may be organized in school for better response during the disasters.

Roles & responsibilities of Higher & Technical Education [H&TE] Department

1. The overall responsibility of H&TE department is to encourage the research in the field of disaster management in technical institutes and create pool of trained engineers in seismic engineering.
2. The syllabus of engineering and polytechnic should be revised and seismic engineering should be incorporated.
3. The capacity building of the existing faculties of engineering and polytechnic college should be done in seismic engineering.
4. The institute should prepare their disaster management plan and also constitute the disaster management committee.
5. For preparedness, search and rescue and first-aid team can be formed in institutes. These can be trained by the health department, civil defense, home guards, Red Cross, St. John Ambulance, etc.
6. Also mock drill and evacuation drill may be organized in institutes for better response during the disasters

Roles & responsibilities of Public Works Department :

1. The overall responsibility of public works department [PWD] is to restore the damaged public buildings and structures.

2. Prepare a departmental and district specific disaster management plan and submit it Concerned DDMA. Apart from plan, SOP should be prepared which clearly delineates the roles and responsibilities.

3. The plan should cover basic information, response structure of PWD team, restoration plan for public utility structures in case of disasters, formation of emergency team. Plan should also have long-term measures such as construction of multi-hazard resistant PWD structures.

4. A database of nodal officer at State and district should be prepared and shared with the MSDMA & concerned DDMAs respectively.

5. Several teams of engineers and assistants for restoration of PWD structures & roads should be constituted as precautionary measure.

6. It should prepare database and stock the emergency equipment such as cranes, dumpers, earth movers, crosscut saws, axes, power chain saw with extra fuel, oil, sharpening files, chains and tightening wrenches, pulley with chain, ropes etc..

7. It should inspect all buildings and structures of the state government (including hospital buildings) by competent engineer once in a year and may be before monsoon.

8. Establish communication with the State EOC, Divisional Control Room, District Control Room and other concerned departments.

9. A public information centre should be established with a means of communication, to assist in providing an organized source of information. It may keep the community informed of its potential and limitations in disaster situations.

10. Mock drill on emergency management should be conducted at State and district level at least once in year. The report should be submitted to the MSDMA and concerned DDMA respectively.

11. Submit a report on the amount spent on disaster management in pursuance of these relief activities, after receipt of warning or disaster strike to the Relief Commissioner for reimbursement.

Roles & responsibilities of Planning Department

1. The overall responsibility of planning department is to make budgetary provision under planned budget for disaster management.
2. The planning department should encourage the other department to make disaster management under their regular activities.
3. The planning department should prepare a vision document on disaster risk reduction in association with the R&R department.

Roles & responsibilities of Housing Department

1. The overall responsibility of housing department is to make create disaster resistant habitat.
2. All future houses should be constructed with seismic features.
3. Model earthquake resistant demonstration houses should be constructed at City level.
4. The construction of houses in landslide and flood prone zones should be avoided.

Collectorate District Control Room :

- Checked the functional of all equipment's and systems Job rotation of the staff members
- Vulnerability map of the Block/ Taluka. Resource Inventory, Capacity analysis.
- List of cut off areas with safe route map for communication. List of storage facilities, dealers of food.
- Control room setup / Assignment of control room duty.
- Arrangement of alternative communication/generator sets etc. Arrangement of vehicles/boats of for evacuation.
- Dissemination of warning/ coordination with Taluka control room.

Irrigation Department :

- Communication established with District and Taluka Control Rooms and departmental offices within the district.
- Activation of flood monitoring mechanism
- Communication arrangement of alerting officers on various sites established
- Mechanism evolved for warning settlements in the down stream/ evacuation/ coordination with other dam authorities
- Water level gauges marked
- Watch weak embankments & stock pilling of repair materials at vulnerable points
- All staff informed about the disasters, likely damages and effects

Electricity Department :

- Communication establishment with District and Taluka control rooms and departmental offices within the division
- Standby arrangements for temporary electric supply or generators
- Order for Inspection and repair of high-tension lines/substations/transformers/poles
- Identification of materials required for response operations.
- All staff informed in-formed about the disasters, likely damages and effects.

Agriculture Department :

- Communication establishment with District and Taluka Control Rooms and departmental offices within the division .
- Organized transport, storage and distribution of seeds/fertilizers/pesticides Order for Cleaning operation carried out to avoid water-logging and salinity Surveillance for pests and diseases being carried out as and when need.
- Identification of different areas to be affected by different hazard Listing of irrigation sources with status.
- All staff informed in-formed about the disasters, likely damages and effects.

Police :

- Communication establishment with District and Taluka Control rooms and departmental offices within the division.
- Identification of antisocial elements
- Order for provision of security in transit camps/feeding centers/relief camps/cattle camps/cooperative food stores and distribution centers.
- Assistance to district authorities for taking necessary action against hoarders, black marketers and those found manipulating relief material.
- Officers made available to inquire into and record of deaths
- Assisting the community in organizing emergency transport or injured
- All staff informed in-formed about the disasters, likely damages and effects

Chief District Health Officer :

- Communication establishment with District and Taluka control rooms and departmental offices within the division
- An officer has been appointed as nodal officer
- Stockpiling of live saving, anti-diarrhea drugs, de-toxicants, anesthesia, and adequate disinfectant for safe drinking water.
- Order for Arrangement of ambulance/generators
- Order to prepare In-house emergency medical teams to ensure that adequate staff available at all times to handle emergency causalities.
- Listing of private health facilities
- Identification of sites in probable disaster areas for site operation areas Order for Proper storing of immunization vaccines at Block level
- Awareness generation
- All staff informed in-formed about the disasters, likely damages and effects

Public Works Department :

- Communication establishment with District and Taluka control rooms and departmental offices within the division
- Prepares a list of heavy equipments, such as front-end loaders/ towing vehicles/ earth moving equipments /cranes etc.
- Route strategy for evacuation and relief marked
- Community assistance mobilized for road clearing.
- All staff informed in-formed about the disasters, likely damages and effects

Tele Communication Department :

- Communication establishment with District and Taluka control rooms and departmental offices within the division
- Standby arrangements for temporary electric supply or generators Inspection and repair of poles.
- Identification of materials required for response operations.
- All staff informed in-formed about the disasters, likely damages and effects.

Water Supply & Sanitation Department :

- Communication establishment with District and Block control rooms and departmental offices within the division
- Order for Arrangement of water tankers and other temporary means of distribution & storage water.
- Order to be prepare for Adequate arrangement to provide water to relief camps/ affected villages, alternate water supply arranged in cattle camps etc..
- Identification of appropriate potable water supply and keep list at EOC.
- All staff informed in-formed about the disasters, likely damages and effects

Veterinary Officer :

- Communication establishment with District and Taluka Control Rooms and departmental offices within the division
- Listing of animal population with category
- Stock pilling of emergency medicines and medical equipments
- Order for arrangement of anesthetic drugs/vehicle for transport of injured animals Identification of places for opening of operational sites
- All staff informed in-formed about the disasters, likely damages and effects.

VDMP :

- Ensuring the functions of VDMC
- Approval of Village DM Plan in the Panchayat Samiti.
- Awareness generation at Village Level.

TDMP :

- Vulnerable and risk assessment map Cut off areas with safe route map
- List of volunteers
- Consolidate VDMP Data, Resources and Manpower detail in TDMP Control room set up
- Boat and transportation for rescue Transportation for food supply
- Pre-positioning of staff, Order for Zonal and Sub Zonal Officers Evacuation and rescue of people
- Coordination and linkage with Taluka level Departments. Damage assessment
- Address and telephone list
- Alternative communication system
- Pulling resources from out side if required

Disaster Store Checklist

Below is a list of suggested disaster recovery items that could be included in an agency disaster store. The list should include the various types of items to be included and also where these items can be located.

Please note : This is only a suggested list of items to include in your disaster store and should be referred to as a starting point only for the brainstorming of other items to include in disaster store. As each agency is different in terms of function and size, items in disaster stores will vary. Some of these items are expensive and depending on your agency, it may be more cost effective to hire these as needed.

	ITEM	USE
1	Signage	Warning signs for people eg. slippery
2	Battery operated radio	Communication
3	Bread trays	Moving 7 air drying materials
4	Brooms, outdoor	Move mud, dirt, dust, water
5	Clean rags/towels	Mopping up, drying textile items, etc.
6	Crates, plastic	Transporting materials
7	Dehumidifiers	Drying the building
8	Dining canopies	Temporary work space
9	Disposable overalls	Personal protection
10	Distilled water	Supply of clean water
11	Electrical safety switches	Turns power supply off if there is a power surge
12	Emegency tape	Section off areas
13	Environmental monitoring equipment	Ensure stability of environment
14	Extension leads with safety switches	
15	Fire extinguishes	For all fires
16	Fire blanket	For fire management
17	Flashing hazard lights	
18	Garden hose on a roll	Clean out mud
19	Generator on trolley & petrl	Emergency power supply
20	Gloves, leather	Personal protection
21	Hammer	
22	Hard hats with lights	
23	Ladders	Easy access to hard to reach places
24	Lights on stands	
25	Lights to fit on a persons head	
26	Methylated spirits	Drying off metal items etc.

27	Packing foam	
28	Pedestal fans	Dying off the building
29	Plastic rubbish bins	
30	Plastic sheeting	
31	Pliers	
32	poles and hooks	Keep extension leads off the ground
33	Rain coats	
34	Respirators	Personal safety
35	Rope	
36	Sand bags	
37	Saw	
38	Screwdriver	
39	Screws and nails	
40	Self adhesive paper labels	
41	Shifting spanner	
42	Spare torch globes & batteries	For 'Dolphin' torches
43	Spray bottles	
44	Spun polyester (Reemay) cloth	Separate & carry fragile objects
45	Squeegees, large on a handle	Move quanitities of water
46	Staple gun	
47	Steel capped rubber boots	
48	Tarpaulins	Covering during wet incidents
49	Trestle Tables	
50	Trolley (sack truck style)	Moving larger items
51	Trolley with table height platform	Move items around
52	Weights	Slow drying of materials
53	Wet & Dry Vacuum cleaner	