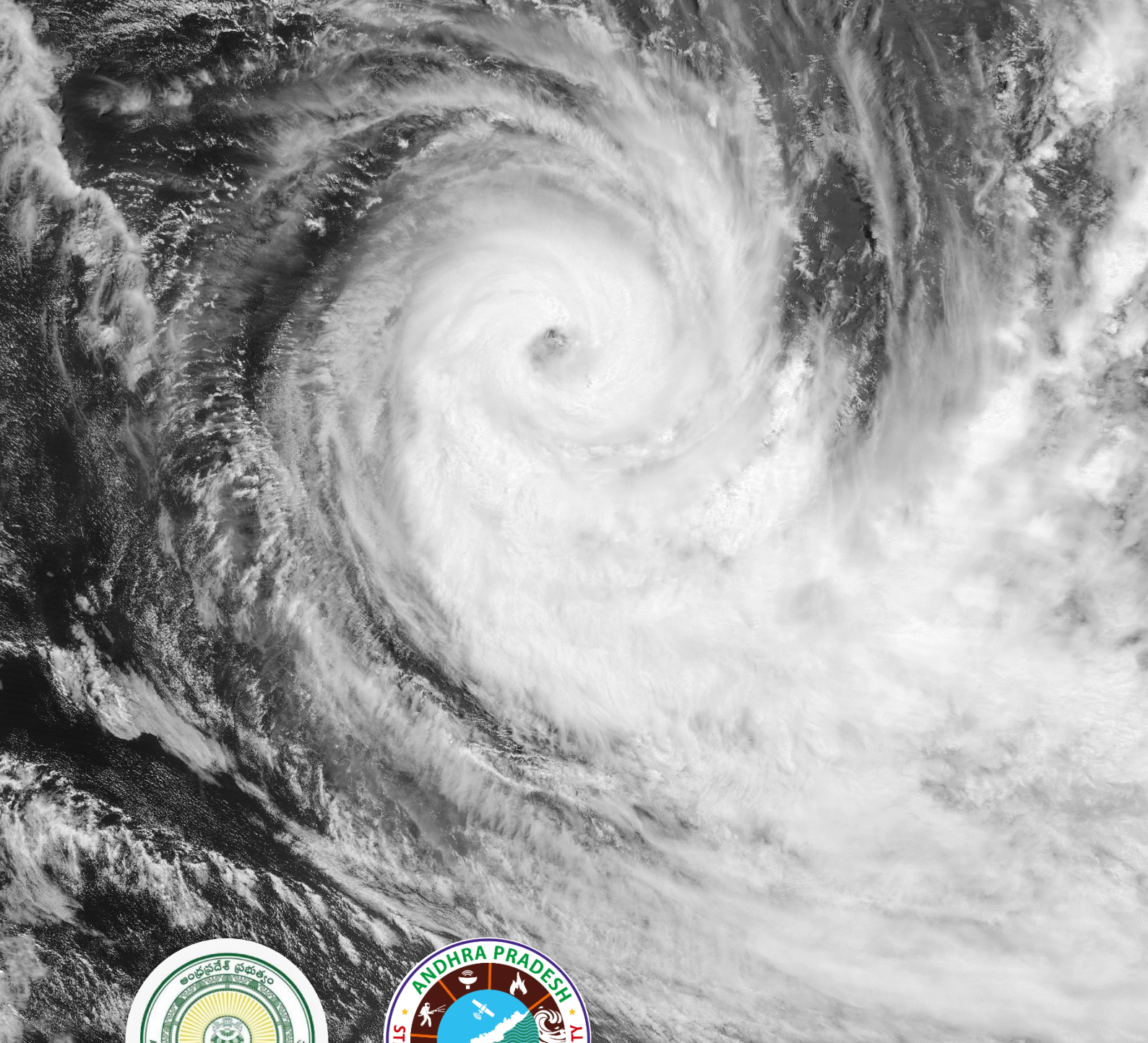




Government of Andhra Pradesh

CYCLONE

PREPAREDNESS AND

RESPONSE PLAN

A P STATE DISASTER MANAGEMENT AUTHORITY
REVENUE (DISASTER MANAGEMENT) DEPARTMENT

Andhra Pradesh CYCLONE PREPAREDNESS AND RESPONSE PLAN

Andhra Pradesh State Disaster Management Authority
Revenue (Disaster Management) Department,
Govt. of Andhra Pradesh

ANDHRA PRADESH STATE DISASTER MANAGEMENT AUTHORITY

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Y.S. Jaganmohan Reddy
Chief Minister of Andhra Pradesh



MESSAGE

I am extremely pleased to present to the people of Andhra Pradesh (AP), The Cyclone Preparedness and Response Plan, the endeavour of which is to make the state more resilient to Cyclones. It will definitely help to enhance the ability of the state to cope up with the hazard at its all levels of intensity by integrating disaster risk reduction measures in all developmental concerns and improved mitigation and preparedness strategies.

The natural hazard events are beyond our control, but our efforts to reduce risks from hazards by building our capability in the areas of preparedness, response and recover from the losses has improved significantly. We have considerably enhanced our technical know-how in forecasting and closely monitoring hazards like Cyclones. Nevertheless, we still have to make our disaster management system to rank among the very best in the country.

I commend the AP-SDMA to embark on a comprehensive plan; and thereby, integrating mitigation, preparedness and response measures. It is a matter of great fulfilment that the department has prepared Cyclone Preparedness and Response Plan, an admirable planning outline for the state. I heartily applaud the AP-SDMA for preparing a progressive document; and, wish the authority a grand success in all its activities in the time to come.

Y.S Jaganmohan Reddy
Chief Minister of Andhra Pradesh

Mekathoti Sucharitha

Minister of Home and Disaster Management
Government of Andhra Pradesh



MESSAGE

Andhra Pradesh has a coastline of 974 km, and it is highly prone to cyclones of various degrees. Nine districts out of thirteen districts in the state are coastal districts and thus vulnerable to Cyclone and related disasters. Frequency and intensity of cyclones are increasing every year, recently the state has experienced cyclones at its different coastal districts. Loss of lives, livelihood opportunities, damage to public and private property and severe damage to infrastructure are the resultant consequences, which can disrupt the process of development of the state. Climate change and the resultant sea-level rise is also likely to exacerbate the seriousness of this problem in the coming decades.

This preparedness and response plan call for a participatory approach involving all stakeholder groups to strengthen the state vision of moving towards a more proactive pre-disaster preparedness and mitigation-centric approach. The plan will help to guide all the stakeholder departments and agencies to plan and implement measures to deal with Cyclones. Once all the activities, as laid down in state plan are implemented, we will be much better prepared to mitigate the impacts of cyclones. I hope that the new Cyclone Preparedness and Response plan will empower all the associated stakeholders in preparing themselves with their own cyclone risk management plans. The document also explains about the vulnerability of the state, areas of preparedness and early warning dissemination systems.

I am pleased to place on record my sincere appreciation to Andhra Pradesh State Disaster Management Authority for preparing a dynamic plan integrating preparedness and response measures. I would appreciate the efforts of all the stakeholders in making use of the Cyclone Preparedness and Response Plan to work as one, in order to make Andhra Pradesh, without doubt a strong disaster resilient state in the country.

Mekathoti Sucharitha
Minister of Home and Disaster Management

Nilam Sawhney, I.A.S

Chief Secretary to Government,
Government of Andhra Pradesh



MESSAGE

It is an inspirational movement to inform that Andhra Pradesh State Disaster Management Authority (APSDMA), Revenue (DM) department has taken a good initiative on preparing the “Cyclone preparedness and Rescue plan”.

Weather related natural disasters like cyclones, floods, droughts etc. are a perennial reality which humankind faces endemically. Climate change is expected to worsen the frequency, intensity, and impacts of some types of extreme weather events, resulting in increased physical and social impacts.

Andhra Pradesh, as per the National Disaster Risk Index by MHA and UNDP, falls at 8th position among other states in India. Andhra Pradesh is exposed to cyclones, storm surges, floods, droughts and heat waves. Once in every two-to-three years, AP experiences a moderate to severe intensity cyclones. In past few years, Andhra Pradesh has faced various intensities of cyclones. But the preparedness measures carried out by the state helped recover from all odds in a short span of time.

Awareness about cyclone and monsoon is very important for disaster management agencies in taking up necessary steps for effective mitigation and response. Various aspects of warnings and forecasts and other information on weather and climate related events are vital in disaster management.

I would like to appreciate the sincere efforts of Andhra Pradesh State Disaster Management Authority for taking this initiative and bringing out the “Cyclone preparedness and Response plan.” This document will help strengthen the capacity of the State by way of inter-agency coordination, preparedness and enhanced decision-making.

Nilam Sawhney
Chief Secretary to Government

V. Usha Rani I.A.S.

Principal Secretary to Government,
Revenue (Disaster Management) Department,
Government of Andhra Pradesh



MESSAGE

Scientists are detecting a strong link between global warming and its changing weather patterns. Damages resulting from extreme weather events already impose a heavy toll on the society that few economies are easily able to absorb. These random extreme weather conditions affect everyone in every state and local communities across the country, particularly the most vulnerable people.

It is inspiring to inform that Andhra Pradesh State Disaster Management Authority (APSDMA) has taken a good initiative in preparing the “Cyclone Preparedness and Response Plan”. This plan clearly envisages the responsibilities and the roles of all the stakeholders concerned to prepare and manage in reducing the hazards in case of a cyclone. This document clearly discusses the e-communication system and institutional arrangements for the dissemination of the alerts and warnings to the State and District functionaries and for the public as well. I am confident that this document would enable all the stakeholders concerned to develop a more efficient cyclone response and relief mechanism effectively and managing the disasters in the State.

I congratulate APSDMA, Revenue (DM) Department for bringing out this concise document.

V. Usha Rani,
Principal Secretary to Govt.

K. Kanna Babu, IAS

Spl. Commissioner (Disaster Management) &
Ex-Officio Addl. Secretary to Government and
Managing Director,
Andhra Pradesh State Disaster Management Authority (APSDMA)
Revenue(Disaster Management) Department



FOREWORD

The State of Andhra Pradesh is prone to many natural disasters such as cyclones, tsunamis, heavy rains, floods lightning and heatwaves. Andhra Pradesh having a coastline of 974 km with nine coastal districts is more vulnerable to cyclones and the associated storm surges compared to the other natural disasters.

In Andhra Pradesh, both the coastal and inland districts are affected by the strong winds and rains, the coastal districts are additionally at risk by the storm surge created by the strong winds of the cyclones. The number of more-intensifying cyclones is increasing in the recent past due to climate change and global warming leading State Disaster Management Authority (APSDMA) is the designated nodal agency for the formulation of policies, long-term planning, coordination and monitoring in mitigating the effects of all the disasters. As soon as a cyclone warning is given by the India Meteorological Department (IMD), APSDMA gears up in giving warnings to the concerned stakeholders to take up the necessary actions.

The present cyclone preparedness and response plan is prepared to empower the stakeholders, policymakers, administrators, field level officers and the District Collectors to judiciously deal with the crisis in mitigating the adverse effects of the cyclones and the associated storm surges. I wish a successful implementation of the plan to further reduce the loss and enhance the resilience of the state.

K. Kanna Babu
Managing Director

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ABBREVIATIONS

APSDMA	: Andhra Pradesh State Disaster Management Authority
APSDPS	: Andhra Pradesh State Development Planning Society
APMB	: Andhra Pradesh Maritime Board
APSAC	: Andhra Pradesh Space Applications Centre
AIR	: All India Radio
BMTPC	: Building Materials and Technology Promotion Council
BOB	: Bay of Bengal
CAP	: Coastal Andhra Pradesh
CBO	: Community Based Organizations
CDRs	: Cyclone Detection Radars
CEO	: Chief Executive Officer
CWCs	: Cyclone Warning Centers
CWDS	: Cyclone Warning Dissemination System
DDMA	: District Disaster Management Authority
DEOC	: District Emergency operation Center
DM	: Disaster Management
DG	: Director General
DMR	: Digital Mobile Radio
DPM	: District Project officer
DRO	: District Revenue Officer
DWR	: Doppler Weather Radars
ED	: Executive Director
EDSS	: Expert Decision Support System
EOCs	: Emergency Operation Centers
EPDCL	: Eastern Power Distribution Company of AP Limited
EWDS	: Early Warning Dissemination System
FLCs	: Fish Landing Centers
GAD	: General Administration Department
GIS	: Geographic Information Systems
GoI	: Government of India
HFL	: High Flood Line
HODs	: Head of Department
I.A.S	: Indian Administrative Service
ICT	: Information and Communication Technology
IDRN	: India Disaster Resource Network
IG	: Inspector General
IMD	: India Meteorological Department
INCOIS	: Indian National Centre for Ocean Information Services
INSAT	: Indian National Satellite System
ISRO	: Indian Space Research Organisation
IST	: India Standard Time
IVRS	: Interactive voice response system

JC	: Joint Collector
MD	: Managing Director
MHA	: Ministry of Home Affairs
MPCS	: Multi-Purpose Cyclone Shelters
MRO	: Mandal Revenue Officer
NCRMP	: National Cyclone Risk Mitigation Project
NDMA	: National Disaster Management Authority
NDRF	: National Disaster Response Force
NGO	: Non-Government Organisation
NIDM	: National Institute of Disaster Management
NRSC	: National Remote Sensing Centre
PMO	: Prime Minister's Office
RDO	: Revenue Divisional Officer
SBMDVT	: Satellite Based Mobile Data Voice Terminal
SDRF	: State Disaster Response Force
SDRN	: State Disaster Response Network
SEOC	: State Emergency Operation Center
SOP	: Standard Operational Procedures
SPDCL	: Southern Power Distribution Company Limited
UNDP	: United Nations Development Programme
UTC	: Universal Time Coordinated
VHF	: Very High Frequency
VRO	: Village Revenue Officer
V-SAT	: Very-Small-Aperture Terminal

INTRODUCTION

1.1 Background

Andhra Pradesh is one of the most vulnerable States in India to multiple natural disasters like Cyclones, Heavy Rains and Floods, Hailstorms, Tsunamis on one hand and Drought on the other hand, because of its widespread and peculiar geographical location.

AP with its coastline of 974 km is more vulnerable to cyclones compared to other disasters like drought, storm surges and floods. As per IMD, all-together, 184 cyclones of all categories including depressions crossed the coast from 1891 to 2019. AP is at risk of at least one cyclone each year on an average and maximum during October and November. Cyclones with moderate to severe intensity occur every two to three years, which results in huge damage to the state. According to the Government of AP, 2.9 million people are vulnerable to cyclones as 3.3 million people are located within 5 km distance from the coastline. Thus, a storm surge with small wave length from the sea level results in effecting thousands of people in addition to the strong winds of the cyclones.

The very severe cyclonic storm “HUDHUD” is an example that created significant damage to the four districts of the state namely Visakhapatnam, Vizianagaram, Srikakulam and East Godavari. The cyclone made a landfall on 12th October, 2014 near Visakhapatnam with winds exceeding 185 kmph (115 mph). Unusually, the precipitation during this cyclone is very less causing less flooding.

Another very severe cyclonic storm “TITLI” caused extensive damage over north Andhra Pradesh and adjoining Odisha districts due to strong wind and flood caused by extremely heavy rainfall. Also, the storm surge of about one-meter height above the astronomical tide inundated the low-lying areas near the landfall point in Gopalpur, Odisha. As per IMD report, TITLI Cyclone was formed near Andaman and moved towards the Odisha coast with wind speeds of 140-150 kmph gusting to 165 kmph at the time of landfall. At the time of landfall in Odisha, Korlam Station of Sompeta Mandal in Srikakulam district has recorded wind speeds of 129.6 kmph as per APSDPS records.

The cyclone preparedness plan document provides measures to be undertaken by each and every department of the State Government such as the cyclone vulnerability, risk assessment, preparedness, the existing system of cyclone forecasting and warning dissemination to various stakeholders and the measures to be taken by the concerned departments for emergency response.

1.2 Objectives

- To protect and minimize the loss of lives and property/infrastructure from cyclones.
- To minimize the suffering of people due to cyclones.
- To build the capacity of all stakeholders in the State to cope up with the cyclones and promote community-based disaster management.
- Develop efficient cyclone response/relief mechanism in the state.
- To make available clarity on roles and responsibilities for all stakeholders concerned with cyclone management.
- To ensure co-ordination by promoting productive partnership with all other agencies related to cyclone management.

1.3 Trigger Mechanism

The plan would be put into action considering the situation prevailing at a given point of time as per the provision made in the Disaster Management Act, 2005 and Andhra Pradesh State Disaster Management Rules, 2007.

1.4 Plan Authority

The Revenue (DM) department is primarily responsible for emergency response and relief in the State, while the Andhra Pradesh State Disaster Management Authority (APDMA) is designated as the nodal agency for formulation of policies, long-term planning, coordination and monitoring body for mitigation, reduction and preparedness for disasters in the State as per Disaster Management Act, 2005. The responsibility for initiation and execution of emergency preparedness and response measures before, during and after the cyclone rests with the Commissioner of Relief in conjunction with other relevant Government departments.

1.5 Disaster Declaration

The Andhra Pradesh State Disaster Management Authority (APSDMA) will inform the State government to declare any area where cyclone had occurred or likely to occur as disaster affected area on the recommendations of the State Relief Commissioner or the District Collector. The purpose of declaration of disaster is to organize effective response in managing the effects of cyclone. Such a declaration provides wide powers and responsibilities to the State Relief Commissioner as per the Disaster Management ACT, 2005 and the District Collectors in order to handle the incident effectively.

1.6 Level of Disasters

“L” concept has been developed to define different levels of disasters in order to facilitate the responses and assistances to States and Districts.

L0 level denotes **normal times** which will be utilized for close monitoring, documentation, prevention and preparatory activities. Training on search and rescue, rehearsals, evaluation and inventory updation for response activities will be carried out during this time.

L1 level specifies disaster that can be managed at the **District level**; however, the State and Centre will remain in readiness to provide assistance if needed.

L2 level disaster situations are those, which require assistance and **active participation of the State**, mobilization of its resources for management of disasters.

L3 level disaster situation is in case of largescale disaster where the State and District authorities have been overwhelmed and require assistance from the **Central Government** for reinstating the State and District machinery as well as for rescue, relief, other response and recovery measures. In most cases, the scale and intensity of the disaster as determined by the concerned technical agency like IMD are sufficient for the declaration of L3 disaster.

1.7 Plan Activation

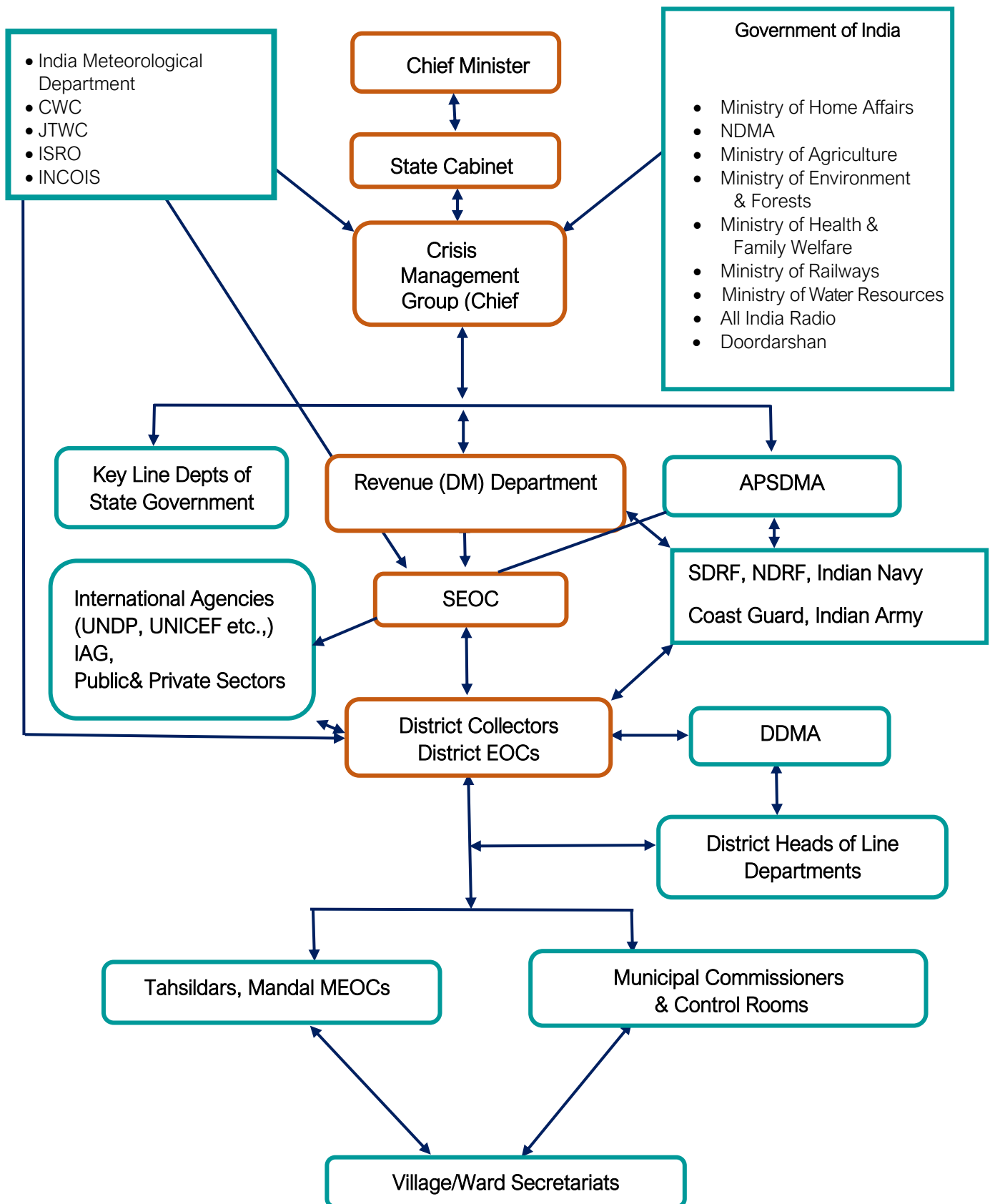
The cyclone response structure will be activated on the receipt of cyclone warning by the India Meteorological Department (IMD). The occurrence of a cyclone may be reported by the IMD to the Revenue (DM) Department/APSDMA by the fastest means. The Commissioner, Revenue (DM) Dept, will activate all departments for emergency response including the State EOC, District EOCs while issuing the following instructions.:

- Exact quantum of resources (in terms of manpower, equipments and essential items from key departments/stakeholders) that is required.
- The type of assistance to be provided
- The time limit within which assistance is needed
- Details of other Task/Response Forces through which coordination should take place

The State Emergency Operation Centre (SEOC) and other control rooms at the state level as well as District Emergency Operation Centers (DEOCs) and Mandal Emergency Operation Centres (MEOCs) should be activated with full strength for emergency situations in an efficient manner.

Once the situation is totally controlled and normalcy is restored, the Commissioner for Relief/Disaster Management declares End of Emergency Response and issues instructions to withdraw the staff deployed in emergency duties.

STATE LEVEL CYCLONE MANAGEMENT STRUCTURE



CYCLONE HAZARD, VULNERABILITY AND RISK ASSESSMENT

2.1 About Cyclone

A cyclone is a low- pressure area in the atmosphere in which winds spiral upward. All cyclones are characterized by (1) low pressure at the center, and (2) winds spiraling toward the center. The direction of the spiral is unique because in the northern hemisphere the winds blow counter-clockwise and in the southern hemisphere they blow clockwise.

Tropical cyclone is a storm system characterized by a low-pressure center and numerous thunderstorms that produce strong winds and heavy rain. Tropical cyclones fall under the purview of warm core system of storms. As far as India is concerned, cyclonic storm develops over tropical oceans like the Indian Ocean, Bay of Bengal and the Arabian Sea.

The whirling current that develops during tropical cyclone could be of size ranging from 200 to 2000 kilometers in diameter. Abnormally high-pressure gradient, strong wind and heated center are some of the basic features of tropical cyclone.

2.1.1 Formation of Cyclone

The ocean water itself will be warmer than a threshold temperature 28 °C, over Indian Ocean. The heat and moisture from this warm water, in the form of latent heat releases which is the source of energy for cyclones.

High relative humidity in the lower and middle troposphere is also required for cyclone development. The high humidity reduces the amount of evaporation in clouds and maximize the latent heat released because of more precipitation. A Wind shear is defined as the amount of change in the wind's direction or speed with increasing altitude. The vertical wind shear in a tropical cyclone's environment is also important.

When the wind shear is weak, the storms that are part of the cyclone grow vertically, and the latent heat from condensation is released into the air directly above the storm, supporting in development of the cyclone. When there is stronger wind shear, the storms become more slanted and the latent heat release is dispersed over a much larger area as a result of which the low-pressure systems cannot sustain.

2.1.2 Cyclone Movement

It is often difficult to forecast where a cyclone will hit. When it starts moving from oceans towards the land area, a cyclone can change track and hit areas other than those anticipated. The path of a cyclone depends very much on the wind patterns in which it is located. A cyclone originating in the eastern tropical Pacific, for example, is driven westward by easterly trade winds in the tropics. Eventually, these storms turn northwestward around the subtropical high and migrate into higher latitudes. In times, cyclones move into the middle latitudes and are driven northeastward by the

western-lies, occasionally merging with mid-latitude frontal systems. Cyclones draw their energy from the warm surface water of the tropics and latent heat of condensation which explains why cyclones dissipate rapidly once they move over cold water.

2.1.3 Frequency of Cyclone

Cyclonic disturbances that formed in Bay of Bengal between 1891 and 2015 are shown in Annexure 1 which shows the cyclone frequency and wind hazard map of India. Basic wind speed was taken from Building Materials and Technology Promotion Council (BMTPC).

Table 2.1: Different types of cyclonic disturbances formed in Bay of Bengal between 1891 and 2019 [Source: IMD]

Types of Disturbance/item	Cyclonic Disturbance	Depression/Deep Depression	Cyclonic Storm	Sever Cyclonic storm and Above
Number	184	92	48	44
Maximum	66 (Oct)	34 (Sep)	21 (Oct)	17 (Nov)
Minimum	0 (Feb & Mar)	0 (Jan, Feb & Mar)	0 (Feb & Mar)	0 (Jan, Feb, Mar, Apr, Jun, Jul & Aug)
Wind Speed (Km/h)	31 or less	31-61	62-88	89 and more

Table 2.2: Storm Landfall & Impact in Andhra Pradesh (1970-2019) [Source: IMD,CWC-Visakhapatnam]

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
1	07-14 Sep 1971	Severe Cyclonic Storm	10 Sep Between south Orissa and north Andhra	N.A	Srikakulam
2	20-25 Sep 1971	Severe Cyclonic Storm	22 Sep Near Gopalpur	N.A	Srikakulam
3	07-14 Sep 1972	Severe Cyclonic Storm	10 Sep NCAP near Baruva	N.A	Srikakulam
4	15-23 Nov 1972	Severe Cyclonic Storm	22 Nov Near Sriharikota	N.A	
5	03 - 06 Nov 1976	Severe Cyclonic Storm	04 Nov North of Machilipatnam	N.A	

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
6	15 - 17 Nov 1976	Severe Cyclonic Storm	16 Nov Between Nellore and Kavali	N.A	
7	28 Oct - 1 Nov 1977	Severe Cyclonic Storm	31 Oct Nellore	N.A	Nellore & Prakasam Districts
8	15 - 20 Nov 1977	Severe Cyclonic Storm with core of hurricane winds	19 Nov Diviseema	8 Districts, 24 lakh population affected, 10000 human loss, 2.5 lakh livestock loss and 10.14 lakh houses damaged. Total estimated loss was 172 cr.	Srikakulam to Guntur districts
9	05 - 13 May 1979	Severe Cyclonic Storm with core of hurricane winds	12 May Between Ongole & Bapatla	10 Districts, 37.4 lakh population affected, 706 human loss and 7.48 lakh houses damaged. Total estimated loss was 242.65 cr.	Nellore, Prakasam, Guntur, West Godavari to Visakhapatnam districts
10	24 - 25 Nov 1979	Cyclonic Storm	25 Nov Sriharikota	N.A	All coastal districts
11	16 - 18 Oct 1980	Severe Cyclonic Storm with core of hurricane winds	18 Oct Machilipatnam	N.A	Srikakulam to Krishna districts
12	16 - 18 Oct 1982	Cyclonic Storm Weakened	17 Oct Sriharikota	N.A	Srikakulam to East Godavari, Pakasam and Nellore districts
13	03 - 05 Oct 1983	Cyclonic Storm	4 Oct Bheemunipatnam	8 Districts, 1.58 lakh population affected, 58 human loss, 1726 livestock loss and 94218	Srikakulam to Guntur districts

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
				houses damaged. Total estimated loss was 89.56 cr.	
14	11 - 15 Nov 1984	Severe Cyclonic Storm with core of hurricane winds	14 Nov Sriharikota	3 Districts, 19 lakh population affected, 7 human loss, 3976 livestock loss and 8244 houses damaged. Total estimated loss was 55.53 cr.	Nellore district
15	10 - 11 Oct 1985	Cyclonic Storm	11 Oct Visakhapatnam	N.A	Srikakulam to West Godavari districts
16	11 - 13 Dec 1985	Severe Cyclonic Storm	13 Dec Sriharikota	11 Districts, 11.75 lakh population affected, 16 human loss, 4 livestock loss and 3196 houses damaged. Total estimated loss was 40.5 cr.	Nellore and Prakasam districts
17	15 - 16 Oct 1987	Cyclonic Storm	16 Oct Ongole	N.A	Prakasam and Nellore districts
18	02 - 03 Nov 1987	Severe Cyclonic Storm	2 Nov Nellore	10 Districts, 32.04 lakh population affected, 119 human loss and 1.1 lakh houses damaged. Total estimated loss was 126.48 cr.	Prakasam and Nellore districts
19	12 - 13 Nov 1987	Severe Cyclonic Storm	13 Nov Guntur-South of Machilipatnam	N.A	Whole coast
20	05 - 08 Nov 1989	Severe Cyclonic Storm with core of	8 Nov Kavali	N.A	Nellore and Prakasam districts

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
		hurricane winds			
21	05 - 10 May 1990	Severe Cyclonic Storm with core of hurricane winds	9 May Mouth of River Krishna	14 Districts, 77.81 lakh population affected, 817 human loss and 27,625 livestock loss and 14.39 lakh houses damaged. Total estimated loss was 2137.27 cr.	Whole coast
22	11 - 15 Nov 1991	Cyclonic Storm	14 Nov Nagapatnam	9 Districts, 0.18 lakh population affected, 192 human loss and 97,470 houses damaged. Total estimated loss was 367.32 cr.	Nellore district
23	03 - 06 Nov 1992	Cyclonic Storm	6 Nov Kakinada	N.A	Dissipated near Kakinada
24	29 - 31 Oct 1994	Severe Cyclonic Storm	31 Oct Near Chennai	7 Districts, 2.86 lakh population affected, 3 human loss and 79,172 houses damaged. Total estimated loss was 625.93 cr.	Nellore, Prakasam districts
25	09 - 10 Nov 1995	Severe Cyclonic Storm with core of hurricane winds	9 Nov Near Itchapuram	19 Districts, 2.3 lakh population affected, 229 human loss and 3663 live stock loss and 1.46 lakh houses damaged. Total estimated loss was 917 cr.	North coastal Andhrapradesh

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
26	12 - 16 Jun 1996	Cyclonic Storm	16 June Near Visakhapatnam	10 Districts, 0.22 lakh population affected, 100 human loss and 1607 livestock loss and 21,517 houses damaged. Total estimated loss was 129.1 cr.	North coastal Andhra Pradesh
27	05 - 07 Nov 1996	Severe Cyclonic Storm with core of hurricane winds	6 Nov Near Kakinada	4 Districts, 80.62 lakh population affected, 1077 human loss and 19856 livestock loss and 6.16 lakh houses damaged. Total estimated loss was 6129.25 cr.	East and West Godavari districts
28	28 Nov- 07 Dec 1996	Severe Cyclonic Storm with core of hurricane winds	6 Dec North TN Coast between Chennai and Pondicherry	3 Districts, 0.37 lakh population affected, 27 human loss, 293 livestock loss and 7,569 houses damaged. Total estimated loss was 53.59 cr.	SCAP
29	23-26 Sep 1997	Severe Cyclonic Storm	Skirting Andhra coast, moved north easterly direction and crossed Bangladesh coast	6 Districts, 9.47 lakh population affected, 40 human loss, 93 livestock loss and 7,725 houses damaged. Total estimated loss was 255.87 cr.	Visakhapatnam, Vizianagaram and Srikakulam districts
30	13-15 Nov 1999	Very Severe Cyclonic Storm	15 Nov South of Visakhapatnam	N.A	East Godavari, Visakhapatnam, Vizianagaram and Srikakulam districts

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
31	15-18 Oct 1999	Very Severe Cyclonic Storm	Crossed Orissa coast near Gopalpur	1 District, 1.89 lakh population affected, 3 human loss, 388 livestock loss and 3,425 houses damaged. Total estimated loss was 237.76 cr.	Srikakulam district
32	15-19 Oct 2000	Cyclonic Storm	Weakened in to Depression and then to well-marked low pressure area over West central Bay off SCAP	N.A	All coastal districts
33	27-29 Nov 2000	Very Severe Cyclonic Storm	29 Nov North TN Coast near Cuddalore	N.A	CAP
34	14-16 Oct 2001	Cyclonic Storm	16 Oct South Andhra coast near Nellore	N.A	Coastal Andhra Pradesh
35	06-09 Oct 2003	Depression	7 Oct North CAP near Kalingapatnam	N.A	North coastal Andhra Pradesh
36	11-16 Dec 2003	Severe Cyclonic Storm	15th mid night close to Machilipatnam	6 Districts, 42.68 lakh population affected, 44 human loss, 1.02 lakh livestock loss and 17,147 houses damaged. Total estimated loss was 765.92 cr.	
37	17-21 Sep 2005	Cyclonic Storm	19 Sep North Andhra coast close to Kalingapatnam	10 Districts, 35.0 lakh population affected, 107 human loss, 14,416 livestock loss and	Coastal Andhra Pradesh

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
				1.18 lakh houses damaged. Total estimated loss was 2697.97 cr.	
38	29-30 Oct 2006	Cyclonic Storm (Ogni)	30 Oct South Andhra coast between Ongole and Machilipatnam	5 Districts, 13.85 lakh population affected, 41 human loss, 3.5 lakh livestock loss and 95,218 houses damaged. Total estimated loss was 7173.25 cr.	Prakasam, Guntur and Krishna districts
39	13-17 Nov 2008	Cyclonic Storm (Khaimuk)	16 Nov North of Kavali	9 Districts, 1 lakh population affected, 37 livestock loss and 1190 houses damaged. Total estimated loss was 36 cr.	Coastal Andhra Pradesh
40	17-20 May 2010	Severe Cyclonic Storm (Laila)	20 May midnight Near Bapatla	14 Districts, 17.8 lakh population affected, 22 human loss, 2075 livestock loss and 14,298 houses damaged. Total estimated loss was 1603.22 cr.	Coastal Andhra Pradesh
41	05-07 Nov 2010	Severe Cyclonic Storm (Jal)	7 Nov 2010 Crossed North Tamil Naidu coast between 1700-1800 UTC	13 Districts, 16.98 lakh population affected, 63 human loss, 1140 livestock loss and 20,554 houses damaged. Total estimated loss was 2496.98 cr.	South Coastal Andhra Pradesh
42	25-31 Dec 2011	Very Severe Cyclonic	30 Dec Crossed North TN between Puducherry and	6 Districts, 1.58 cr. population affected, 63 human loss, 1140 livestock loss	

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
		Storm (Thane)	Cuddalore between 0100 To 0200 UTC	and 20,554 houses damaged. Total estimated loss was 2496.98 cr.	
43	28 Oct-1st Nov 2012	Cyclonic Storm (Nilam)	31 Oct Crossed North Tamil Naidu coast South of Chennai near Mahabalipuram between 1030 To 1130 UTC	N.A	
44	10-16 May 2013	Cyclonic Storm (Mahasen)	Crossed Bangladesh Coast between Chittagong and Feni	N.A	
45	08-12 Oct 2013	Very Severe Cyclonic Storm (Phailin)	12 Oct Crossed near Gopalpur between 1500-1600 UTC	3 Districts, 1 human loss, 99 livestock loss and 1720 houses damaged. Total estimated loss was 62.11 cr.	
46	20-22 Nov 2013	Severe Cyclonic Storm (Helen)	22 Nov Andhra coast close to south of Machilipatnam between 1300-1400 IST	10 Districts, 7.13 lakh population affected, 9 human loss, 85 livestock loss and 7,499 houses damaged. Total estimated loss was 620.20 cr.	
47	23-28 Nov 2013	Very Severe Cyclonic Storm (Lehar)	Andhra coast close to Machilipatnam as Depression	N.A	

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
48	07 -12 Dec 2013	Very Severe Cyclonic Storm (Madi)	TN coast close to Vedaranyam as a Depression	N.A	
49	07 -14 October 2014	Very Severe Cyclonic Storm Hudhud	North Andhra Pradesh coast over Visakhapatnam between 1200 and 1300 hrs IST of 12th Oct.	4 Districts, 92.78 lakh population affected, 63 human loss, 5,874 livestock loss and 2,00,673 houses damaged. Total estimated loss was 21908.49 cr.	Visakhapatnam, Vizianagaram and Srikakulam districts
50	17-22 May 2016	Cyclonic Storm Roanu	Bangladesh coast to the north of Chittagong around 1000 UTC of 21st May as a CS.	N.A	Rainfall over Coastal Andhra Pradesh
51	21-28 October 2016	Cyclonic Storm Kyant	Weakened into a well marked low pressure area over west central BOB off Andhra Pradesh coast in the morning of 28th	N.A	No damage was reported.
52	06-13 Dec 2016	Very Severe Cyclonic Storm Vardah	Near Chennai during 1500-1700 hrs IST of 12th Dec 2016	N.A	Heavy rainfall over Nellore, Chittoor, Anantapur & Kapappa districts
53	19-22 Sept 2018	Cyclonic Storm Daye	Close to Gopalpur 1900-2000 UTC of 20th Sept.	N.A	Rainfall over North Andhra

S. No.	Period	Maximum Intensity	Date & Place of Landfall	Damage/Loss	Area affected over CAP
54	08-12 Oct 2018	Very Severe Cyclonic Storm TITLI	Near Palasa, Srikakulam district 0430-0530hrs IST 11th Oct	8 Districts, 16.83 lakh population affected, 14 human loss, 62,913 livestock loss and 50,120 houses damaged. Total estimated loss was 539.52 cr.	Srikakulam and Vizianagaram districts
55	13 – 18 Dec 2018	Severe cyclonic storm PHETHAI	Near Katrenikona, East Godavari district 1330-1430 hrs IST 17 th Dec	6 Districts, 7.96 lakh population affected and 205 houses damaged. Total estimated loss was 94.38 cr.	North Coastal Andhra Pradesh

2.1.4 Classification of Cyclones

Tropical cyclones are classified in accordance with the World Meteorological Organization's recommendation by the maximum sustained wind speeds near the centre. In Hong Kong, the classification is defined in terms of wind speeds averaged over a period of 10 minutes. Indian classifications of these cyclonic disturbances are shown in Table 2.3.

Table 2.3 Indian Classification of cyclonic disturbances in the North Indian Ocean (Bay of Bengal and Arabian Ocean) [Source: IMD]

Types of Disturbances	Associated wind speed in the circulation
Low Pressure Area	Less than 17 knots (< 31 km/h)
Depression	17 to 27 knots (31 to 49 km/h)
Deep Depression	28 to 33 knots (50 to 61 km/h)
Cyclonic Storm	34 to 47 knots (62 to 88 km/h)
Severe Cyclonic Storm	48 to 63 knots (89 to 118 km/h)
Very Severe Cyclonic Storm	64 to 119 knots (119 to 221 km/h)
Super Cyclonic Storm	120 knots and above (222 km/h and above)

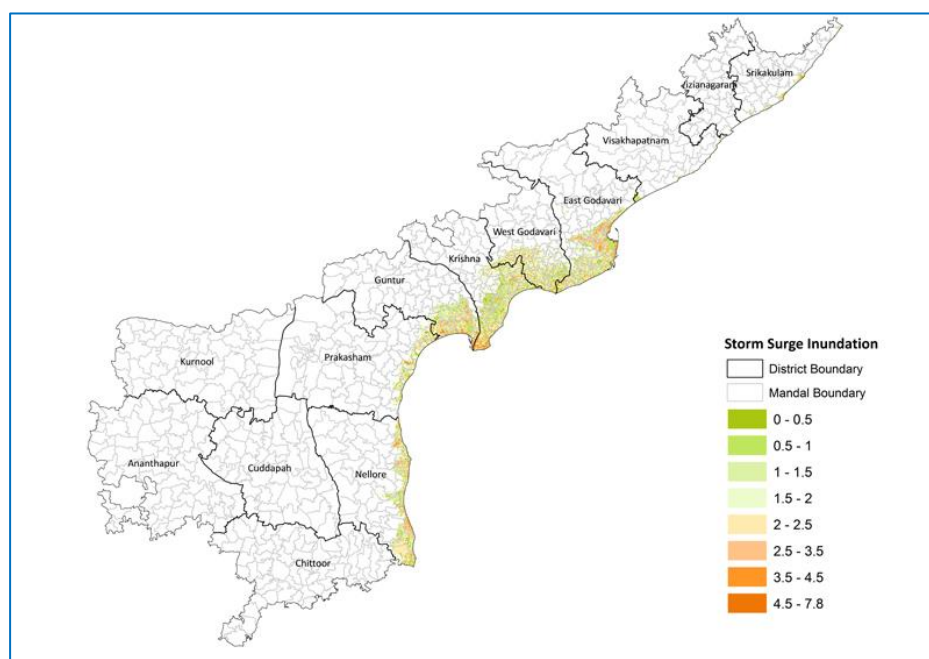
2.1.5 Impact

- The impact of tropical cyclones can be very significant in terms of the detrimental aspects.
- There are three main features of cyclone (high wind, rainfall and storm surge) which can cause wide spread damage.
- A major factor in the growing losses caused by meteorological hazards is the concentration of population and economic activity in coastal plains and low-lying areas that are subject to

storm surges and land-borne flooding.

- **High winds** can damage structures like houses and other infrastructure (bridges, dams, embankments etc.); uproot electricity supply and telecommunication lines etc.
- **Extremely heavy rain** can cause flooding. 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 carcasses and corpses and mixing of sewage. Movement of stored food supplies also gets severely affected due to floods as rail tracks and roads are breached. The floodwaters turn the field salty.
- **Storm surge** inundates low-lying coastal areas resulting in life loss and destruction of property; besides it destroys vegetation and reduces soil fertility. It also affects environment as coral reefs can often suffer damage. The Cyclone and Storm surge unit provides early warnings for cyclone / rainfall forecasts. The unit does real time monitoring of cyclones and also takes up continuous refinement of models for cyclone forecast and their calibration. All relevant information is collected and historical events documented by the unit for future reference. Storm surge inundation map was prepared by Andhra Pradesh State Development Planning Society (APSDPS) based on the simulation models is presented in fig.2.1

Fig.2.1. Storm surge inundation map cyclone with wind speed 235 kmph (T 6.5).



2.2 Geographic Vulnerability of Cyclone

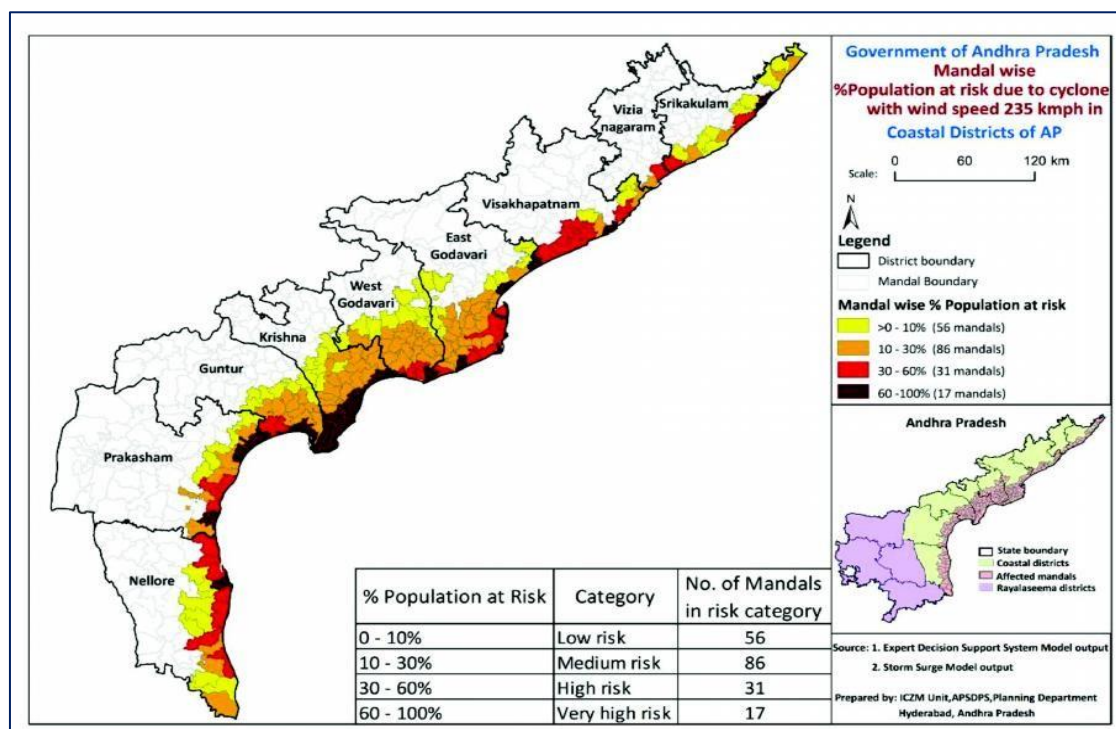
- Andhra Pradesh state has a vast coastline of 974 km and the total coastal area is spread over 92,906 sq. Kms in 9 coastal districts namely, Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasam, and SPS Nellore.
- Most of the cyclones affecting the State are generated in the Bay of Bengal. They move northwest and hit the coast.
- This makes coastal Andhra Pradesh highly vulnerable to cyclones with varying intensities. The

coastal Andhra Pradesh is known for frequent tropical cyclones and associated floods and storm surges causing human loss and property.

- Mostly Two cyclonic storm seasons are experienced in Andhra Pradesh: May to June (advancing southwest monsoon) and September to November (retreating monsoon).
- Many severe cyclones had originated in the Bay of Bengal and passed through the state in last 100 years.
- Mandal wise percentage population at risk for nine coastal districts are presented in the figure 2.2 based on the Expert Decision Support System (EDSS) available with Andhra Pradesh State Development Planning Society (APSDPS) based on the latest data sets.

Out of 430 mandals in 9 coastal districts of Andhra Pradesh, the affected mandals due to cyclone with a wind speed of 235Kmph are 190. The percentage of population with low, medium, high and very high category at risk are 56, 86, 31, and 17 mandals respectively. Out of total population in 9 coastal districts, 11% of population is at risk (7% - rural and 4% - urban). Out of total rural population, 10% rural people are at risk. This analysis enables the officials involved in disaster management and rescue operations to concentrate on the above identified affected mandals of population at risk during cyclone event and to identify safe places for evacuation during cyclones.

Fig.2.2. Mandal wise percentage population at risk for nine coastal districts.



2.3 Vulnerable coastal Mandals

- Coastal Andhra Pradesh state is consisting of 9 districts having 3.42 Million Population (69.3%). Andhra Pradesh has a vast 974 km long coastline and total coastal area spread over 92,906 km² comprising the nine coastal districts. Andhra Pradesh state is prone to various natural hazards, especially cyclone and associated storm surges.

- Andhra Pradesh coastal population is growing at a faster rate than the rest of the State due to rapid growth of ports, energy infrastructure. Due to economic opportunities, the growing coastal population faces increasing risk unless an appropriate techno-legal regime and appropriate zoning regulations are enforced.
- Cyclones, storm surge and associated flooding have devastating impact on agriculture, horticulture and animal husbandry in coastal Andhra Pradesh.
- Maximum damage has often been to standing crop, destroyed both by winds and floods. Wind damage to horticulture has been severe especially in coastal Andhra Pradesh where it is an important economic activity.
- Storm surge induced soil salinization and in extreme cases, sand casting is an important associated risk. This has severe long-term impacts, which can take many years to recover from, especially if a cyclone event is followed by drought, in which there is a lack of runoff to wash off the excess salt. Table 2.2 shows the cyclone event in Andhra Pradesh with impacts from 1891 to 2019.

2.4 Economic loss Due to Cyclone

Andhra Pradesh has a coastal area spread over 92,906 km² comprising the nine coastal districts. Andhra Pradesh state is prone to various natural hazards, especially cyclone and associated storm surges. There is an extreme loss of life and damage to properties caused by these cyclones.

During the past 40 years, Andhra Pradesh coast experienced more than 62 cyclones including depression, cyclone surge, and severe cyclone surges. Among these cyclones, there were 32 cyclones which affected the Krishna–Godavari region, comprising four districts, namely East Godavari, West Godavari, Krishna, and Guntur.

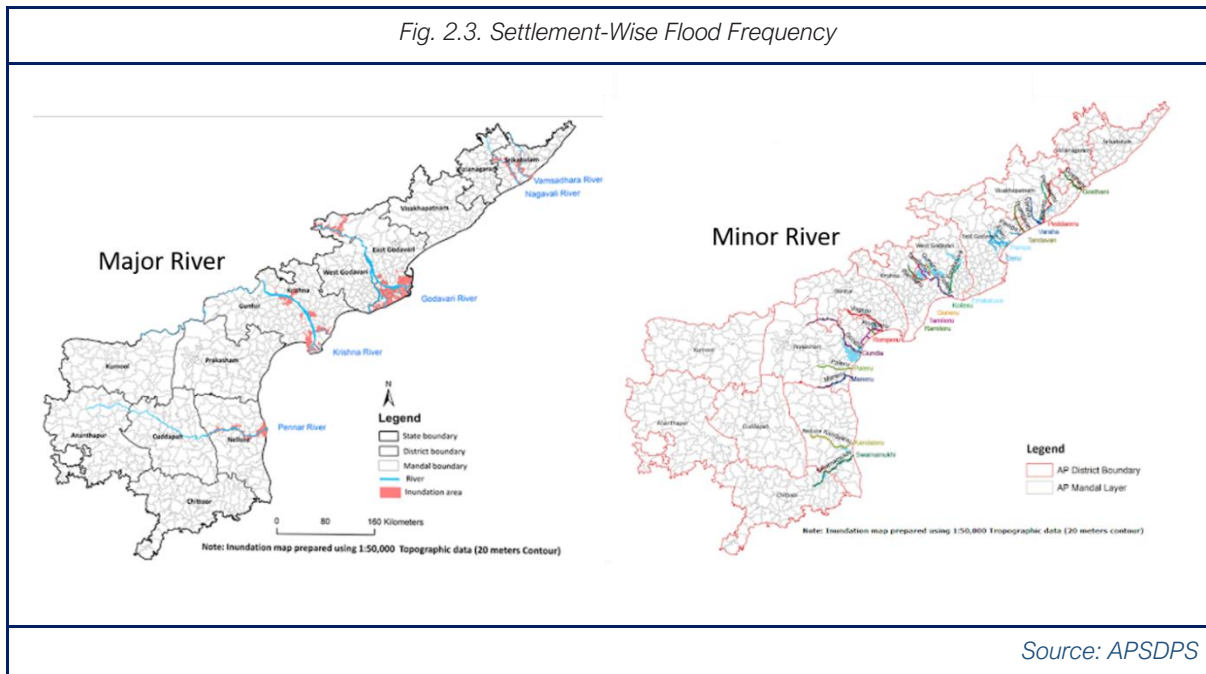
APSDMA estimated the loss due to cyclone and its related activity from the year 1977 to 2018 PETHAI cyclone over the Andhra Pradesh (pertaining to before and after bifurcation of state) region. Approximately Rs. 87,741.37 crore economic loss happened and highest loss occurred during HUHHD cyclone period. Around 77,78,547 houses were damaged during the said period. In Machilipatnam Cyclone, more houses were damaged comparative to remaining cyclones. 16,402 human loss occurred during last 40 years due to cyclones and 1,266.8 lakh people were affected. This type of natural hazards makes the state the loss of tremendous investment causing concentration of mitigation measures to increase the development of the state.

2.5 Flood Vulnerability

Cyclones and other extreme weather conditions in either Bay of Bengal is also responsible for incessant rainfall which may cause local flooding in coastal areas owing to the flat terrain of the State.

As it is pertinent to form cyclones and storm surge in coastal districts, shelters are primarily designed and constructed to provide shelter from high- speed winds and storm surges in these areas where often prone to flooding. It is suggested that they can also be utilized to provide shelter from local flooding too.

The frequency of flooding in the coastal areas is on the rise due to the modification of upstream drainage systems. Hence local flood risk also needs to be addressed by considering the HFL (High Flood Line). The flood hazard zonation for Andhra Pradesh (Fig. 2.3) shows flood prone areas. While a large number of medium and small check dams have been constructed all over the state, they are typically designed for 75 per cent availability of runoff and, therefore, involve emergency discharge during extreme rain fall events.



The rainfall is influenced by both South-West and North-East monsoons and the average annual rain fall along Coastal Andhra Pradesh (CAP) is 1078.0 mm. Andhra Pradesh, particularly coastal Andhra, is prone to cyclones, storm surges and floods. Moderate to high intensity cyclones occur every two to three years. According to UNEP, more than 40% of the state is vulnerable due to tropical storms, high winds, severe floods and other associated natural hazards.

The Godavari and Krishna River floods often contribute to serious disasters in the East and West Godavari and Krishna districts. The death toll and infrastructure damage due to these disasters is higher than other Indian coastal areas. According to the National Disaster Management Authority (NDMA) report (2016), Andhra Pradesh coast is the second-most cyclone affected Indian region after Odisha and second-largest vulnerable region to floods after Kerala. The Ministry of Environment & Forests, Govt. of India (2012) reported more frequent and intensified cyclonic activity and associated storm surges in CAP as a result of the impacts of climate change on air and sea-surface temperatures.

Taking a step forward, APSDMA also undertook a village level study of the area vulnerable to cyclones and prepared an action plan for cyclone risk mitigation project. A detailed survey of all the vulnerable villages to cyclone and storm surge along the coastal belt of the State was undertaken. In this survey, 2 kilometers from the coast line is one set as more vulnerable and between 2-5 kilometers from the coast line is another set as demarcated. Both the list of villages are falling in the Very high damage risk zone – B (Basic wind speed = 50 m/s) as per the BMTPC.

The study identified 692 coastal villages vulnerable to cyclone and storm surge to varying degrees. A district and mandal wise list of all 692 coastal villages prone to cyclone and storm surge is placed at **Annexure 2**.

Chapter

Preparedness

3.1 Introduction

Preparedness refers to the state of being prepared for specific or unpredictable situations. It is a continuous cycle of planning, organizing, training, equipping, exercising, evaluating and improving capabilities to ensure effective coordination to respond and to recover from natural and man-made disasters. In preparedness phase, disaster managers develop plans of action to manage and improve upon the necessary capabilities or infrastructure at hand. Common Cyclone preparedness measures include:

- Communication plans with easily understandable terminology and methods.
- Proper maintenance and training of cyclone disaster services, including mass human resources such as community-based disaster response teams.
- Development and exercise of cyclone warning methods combined with cyclone shelters and evacuation plans.
- Stockpiling and inventory, management of essential supplies and equipments.

As per the current policy of the State Government, disaster management is a continuous and an integrated activity. As such, the focus has shifted from response and relief activities in post disaster scenario to prevention and preparedness for all likely disasters which may affect the State. Emergency preparedness measures for cyclone disaster have been identified and given below:

3.2 Cyclone Preparedness Task and Responsibility

S. No.	Task	Responsibility	Activity
1	Development of Policies and Guidelines	APSDMA, Revenue (DM)Dept	Develop appropriate guidelines to ensure the implementation of the cyclone preparedness measures.
2	Development of Cyclone Preparedness and Response (P&R) Plan	APSDMA, Revenue (DM)Dept	Prepare, test and update State Cyclone P&R Plan periodically.
		APSDMA	Provide guidelines and help to all concern departments to prepare Cyclone P&R Plan.
		All Line Departments	To prepare, test and update department level Cyclone P&R Plan.

S. No.	Task	Responsibility	Activity
3	Establishment of cyclone forecasting and warning mechanism	IMD	- Issues daily weather bulletins and weather forecasts. - Issues 4- Stage warning to State Government, Port Authority, Fisheries Officials and other key depts. in case of cyclone formation.
		Revenue (DM) Dept.,	Conduct meetings with the HoDs before cyclone season to ensure fail-proof cyclone warning and dissemination system and cyclone preparedness measures. Establish a system of early warning and its dissemination to line departments and Other institutions who are likely to be affected by cyclone.
		APSDMA	Analyze the existing early warning and dissemination system, identify gaps and suggest advance system.
4	Ensure necessary safety measures along the Coastal areas	Revenue (DM)Dept.,	- Review the safety measures taken by concerned dept. before the cyclone season. - Establish continuous communication links with IMD, (CWC) for further verification of weather condition during the cyclone season. - Review and monitor an implementation of Coastal Zone Regulation. - Make prior arrangements with armed forces so that the people can be rescued in case of cyclone event.
		Fisheries dept. Port & Transport dept.	- Fisheries officials should be well equipped and ready for search and rescue of fishermen out of sea during cyclone situation. - Advance planning for getting the help of coast guards in search and rescue operations should be made.
		Tourism Dept	- Visitors/tourist should be informed about cyclone hazard who are visiting vulnerable coastal area during Cyclone season. - Take part in pre-cyclone season meetings and take all the safety measures are commended by Revenue (DM) Dept.,
		Panchayati Raj Education department, Department for Women, Children, Disabled and Senior Citizens, Department of health	- Ensure alternative measures for avoiding critical service delivery (health and nutrition, immunization) - Awareness to children and parents on safety measures. - Ensure the data base of vulnerable communities are updated and available with the departments to ensure services

S. No.	Task	Responsibility	Activity
			(medicine/other support) during response and relief phases.
5	Review and strengthening relief distribution system and stock piling	Revenue (DM)Dep. Collector Municipal Commissioner Civil Supply Dept	- Strengthening of relief distribution and accounting system at state and district level - Identification of centralized system for receipt, storage and distribution of relief - Rate contract, procurement and stock pile of relief material
6	Fail-safe communication and last mile connectivity	Revenue (DM)Dept/APSDMA District Collector	- Undertake study to establish fail-safe two-way communication – information system from state level to disaster site connecting state, district, Mandal, city and Village level. - Undertake study to establish alert/siren with multi-lingual recorded messages in coastal areas - To procure the system and run a pilot project
		Municipal Commissioner	- Establishment of multiple/alternative system - Training/IEC campaign for general public of the vulnerable areas. - Plan for re-establishment of disrupted system
7	Resource Mapping	Revenue (DM) Dept Line depts. Dist. Collectors APSDMA Other dist. Authorities of line dept.	- Identify available resources viz. Human, financial and equipment for cyclone disaster management with - State Level. - Dist. Level - Mandal level - Village level - Public sector - Private sector - Community level - Identification of gaps of resources as per the need - Process for procurement of lacking resources - Periodic upgradation, validation and maintenance of SDRN/IDRN* - List of the fire fighting and search& rescue equipments provided to various districts, municipal corporations, municipalities are attached at annexure and also available in

S. No.	Task	Responsibility	Activity
			https://idrn.gov.in/# a - Identification of safe shelter for evacuation in cyclone prone villages and updation in the level specific plans through SDRN/IDRN. (Alternative shelter spaces may also have to be identified to reduce density to reduce chances of COVID- 19 spread)

**SDRN/IDRN, a web-based information system, is a platform for managing the inventory of equipments, skilled human resources and critical supplies for emergency response. The primary focus is to enable the decision makers to find answers on availability of equipments and human resources required to combat any emergency situation. This database will also enable them to assess the level of preparedness for specific vulnerabilities.*

Total 226 technical items listed in the resource inventory. It is a nationwide district level resource database. Each user of all districts of the state has been given unique username and password through which they can perform data entry, data updation on IDRN for resources available in their district. The IDRN network has functionality of generating multiple query options based on the specific equipment, skilled human resources and critical supplies with their location and contact details.

S. No.	Task	Responsibility	Activity
8	Cyclone preparedness, training and capacity building/awareness measures	Revenue (DM)Dept./APSDMA I&PR Dept. Education Dept. Women and Child welfare department Health department All line dept. Dist. Collectors Other Dist. Authorities	- Arrangement for training to: - Trainers from the Districts - First Responders - Police including Traffic personnel - Home Guards - Civil defense personnel - Fire and Emergency services personnel - Medical Personnel - Port officers - ANM/ASHA - Anganwadi teachers/ school teachers/staff - Apata Mitra volunteers - MPCS management committees. - Local bodies/PRI - Advertisement, hording, booklets, leaflets, banners, shake-table, demonstration, folk dancing and music, jokes, street-play, exhibition, TV Spot, radio spot, audio-visual and documentary, school campaign, - Planning and Design - Execution and Dissemination

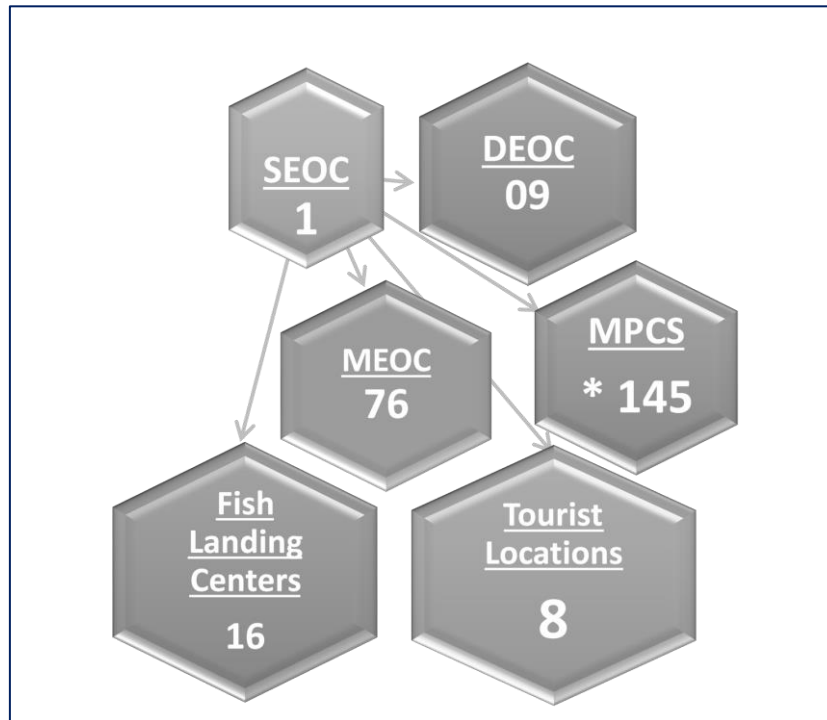
9	Medical Preparedness	Medical & Health dept. Commissioner/ Director of Health Medical Institutions	- o Preparation of authentic medical database for public and private facilities available in the State - Collection of Data - Mapping and gap analysis - Strengthening - o Resource management - Manpower, logistics, medical equipments, medicines, antidotes, personal protective equipments, disinfectant, vaccine - o Identification of medical incident command system - Incident Commander ▪ State Level ▪ Dist. Level ▪ Disaster site - Identification of each section head at each level ▪ Operation ▪ Planning ▪ Logistic ▪ Administration & Finance ▪ Media and Public information - Identification of key members of different taskforce - Control room arrangement ▪ Departmental control room ▪ State and district control room ▪ Appointment of liaison officer in shifts - Planning ▪ Preparation of medical management plan - State level - Dist. Level - Hospital preparedness plan - Training and capacity building ▪ Hospital preparedness, ▪ Pre hospital care, ▪ Relief shelter management considering special situation of COVID- 19 ▪ Hygiene practices ▪ Use of Personal Protective Equipments (PPE) - o Mass casualty management, etc.
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S. No.	Task	Responsibility	Activity
10	Community Preparedness	Revenue (DM)Dept. APSDMA IMD Finance Dept. All Dist. Collectors Municipal Commissioner All Mandal Tahsildars Local self Govt. Panchayat and Rural Development Health Department	- Selecting vulnerable community and most vulnerable groups at risk (keep gender issues in mind) - Disseminate information about vulnerability and risk to the community - Promote local level cyclone risk management planning through participatory approach - Advice and issue direction wherever necessary for community cyclone prevention, mitigation and preparedness through local resources and participatory approach - Provide necessary resources and support for cyclone risk reduction at community level - Promote community managed implementations - Review the preparedness at community level - Take appropriate actions to enhance community preparedness - Promote community education, awareness and training - Ensure fail safe mechanism for timely dissemination of forecasting and warning of impending cyclone to the community - Disseminate information to community to deal with cyclone situation. - Awareness to community on need of physical distancing at relief camps - Awareness training for community volunteers on COVID- 19/health emergencies during response and recovery. - Awareness for staff on managing physical distancing, mass gatherings in shelter/safe places. - Awareness on special care and use of PPE during first aid and regular treatment.

3.3 Early Warning Dissemination System (EWDS)

The Early warning Dissemination System is meant for communicating the Disaster alerts/warnings to reach general public, mainly residing at the Coastal belt of the State, within no time, on forecasting of probable disaster. This will help public to take precautionary measures before the Disaster strikes. The methods followed in dissemination are generally in electronic mode and as such no deviation/laxity would come in existence in spreading the warnings.

EWDS Project (Early Warning Dissemination System) envisages early warning to the people living in disaster prone areas. It will provide a warning system consisting of alert sirens, satellite based mobile data voice terminals (SBMDVTs), microwave connectivity to the affected areas. The State of Andhra Pradesh, is having a well-defined control and coordination structure supported with adequate and appropriate Information and Communication Technology (ICT) resources tools.



SBMDVT



Alert Tower Digital Mobile Radio



Wireless Sets

The robust network using in the State, District, Mandal and the local incidence point with a well-defined control and coordination structure supported with adequate and appropriate Information and Communication Technology (ICT) resources tools. This network is designed for integrating State Emergency Operation center (SEOC) at Amaravati with 9 District Emergency Operation Centers (DEOCs) at District level, 76 Coastal Mandal Emergency Operation centres (MEOCs) at Mandal level, 16 Fish Landing Centers (FLCs) at respective Mandal locations, 8 Tourist Locations (TLs) at respective tourist locations and 145 Multi-Purpose Cyclone Shelters (MPCS) in respective coastal area locations .

CYCLONE FORECASTING AND WARNING

4.1 Introduction

An effective cyclone forecasting, early warning communication network can prevent large part of the damage and suffering caused by cyclones and associated hazards, including, loss of human life, property etc. Timely warning is one of the critical short-term cyclone disaster mitigation measures. Cyclone predictions include time of arrival, location and magnitude of the event. The time of arrival is moderately predictable but the specific location of landfall and the storm strength at landfall is poorly known even a day or two in advance.

The India Meteorological Department (IMD) provides advance warnings about Cyclones at various stages. This system is well established at State Emergency Operation Centre (SEOC) of AP State Disaster Management Authority (APSDMA) and gear up for emergency operations soon after the first warning is received. The typical sequence of cyclone early warning is as follows:

- i. The IMD issues daily weather bulletins and weather forecasts both from Delhi and Amaravati.
- ii. Cyclone Warning Centre, Visakhapatnam issues cyclone warnings.
- iii. Cyclone Warning Radars Visakhapatnam, Machilipatnam and Chennai track the cyclones closer to their vicinity.



4.2 Organizational Set-Up

The Cyclone Warning Organization in India has a 3-tier system to cater to the needs of the maritime states. These are: Cyclone Warning Division set up at IMD Headquarters to co-ordinate and supervise cyclone warning operations in the country and to advise the Govt. at the apex level; Area Cyclone Warning Centers (ACWC) at Chennai, Kolkata and Mumbai and Cyclone Warning Centers (CWC) at Visakhapatnam, Bhubaneswar and Ahmedabad. The cyclone warning work is also supervised and coordinated by the Forecasting Division at Pune.

Area Cyclone Warning Centers (CWCs) – Visakhapatnam liaison with the Andhra Pradesh Government at state and district levels on cyclone-related warnings. The cyclone warning bulletins are communicated to the Chief Secretary, Revenue Secretary, Relief Commissioner, SEOC of APSDMA and concerned district collectors every three hours when there is a likelihood of a cyclone hitting parts of the State.

In Andhra Pradesh State, under the chairmanship of Chief Secretary, cyclone preparedness meeting will be held once in a year before monsoon either in late April or early May with all secretaries of key departments taking part.

At district level under the chairmanship of District Collectors, series of meetings are held from

April onward in which all the heads of district administrative units and other line department heads take part along with HoDs.

4.3 Dissemination Process



1. Cyclone/flood forecasting is generally the responsibility of the India 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.
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, APSDMA sends the warning to all Line Departments, the District administration and DG Police. Warning messages/alerts are transmitted through email, whats app to all districts and Mandals. District Collectors are provided with satellite phones and Satellite Based Mobile Devised Voice Terminals (SBMDVTs) to maintain effective communication, even if terrestrial and cell- phone communication fails. BSNL services are also being used for effective communication.
4. The SEOC 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.



4.4 Four-Stage Warning System for Tropical Cyclones

As far as cyclones are concerned, general expectations of Disaster Managers to mitigate the effects of cyclone are longer lead time and improved accuracy of landfall forecast. But the present system has limitations to make the above requirements go hand in hand. Lead time depends on the formation and duration of cyclone itself which may vary considerably from one cyclone to another. However, since pre-monsoon cyclone season of 1999, IMD introduced a 4- Stage warning system to issue cyclone warnings to the disaster managers. They are as follows:

Pre-Cyclone Watch

1

It is issued when a depression forms over the Bay of Bengal irrespective of its distance from the coast and is likely to affect Indian coast. The pre-cyclone watch is issued in the name of Director General of Meteorology and is issued **at least 72 hours in advance** of the adverse weather issued at least once a day.

Cyclone Alert

2

It is issued **at least 48 hours before** the commencement of the bad weather when the cyclone is

located beyond 500 km from the coast. It is issued every three hours.

Cyclone Warning

3

It is issued **at least 24 hours in advance** when the cyclone is located within 500 km from the coast. Information about the most likely time/place of landfall is indicated in the bulletin. Confidence in land fall estimation increases as the cyclone comes closer to the coast

Post landfall outlook

4

It is issued **12 hours before** the cyclone landfall when the cyclone is located within 200 km from the coast. More accurate & specific information about time/place of landfall and associated bad weather are indicated in the bulletin. In addition, the interior distraction likely to be affected due to the cyclone is warned in this bulletin.

4.5 Ways to disseminate Cyclone Warnings

The different telecommunication channels used for warning dissemination are as follows;



4.6 Warning to Various Stakeholders

APSDMA communicates the cyclone warnings to the media such as news-papers, TV scrolling, All India Radio. Weather bulletins are broadcasted in Andhra Pradesh daily as a routine from the AIR station at Vijayawada and Visakhapatnam. When there is a threat of cyclone, special weather bulletins are also broadcasted as soon as they are received from IMD Amaravathi. The do's and don'ts during a cyclone period are specified in Annexure 7. Dissemination of warning to the public at large in vulnerable areas is through print, radio, TV and other media.

Fishermen



The fishermen alerts are given to avoid capsizing of the boats due to strong winds and associated high seas, particularly, during the cyclone period. The list of Fisheries Officials is submitted by Commissioner of Fisheries, Andhra Pradesh for immediate communication of any cyclone

situation reported by CWC, Visakhapatnam. The warnings are issued when one of the following conditions of weather is expected along and off any coast:

- Strong off-shore and on-shore winds (with appropriate direction), speed exceeding 45 km/h
- Squally weather – frequent squalls with rain; or persistent type of strong gusty winds (>20kts; 36km/h) accompanied by rain.
- Gales
- State of sea with very rough weather having wave heights of four meters or more.

The warnings are disseminated to fishermen through:

- Fisheries department
- AIR which broadcasts routinely four times a day (morning (0600 hrs.), mid-day, evening (1800 hrs.) and mid- night) During a cyclonic storm, such warnings are covered in the cyclone bulletins sent to the air stations at hourly or 3 hourly intervals for frequent broadcast.

With regards to search and rescue operations for the fishermen out in the sea, the port department keeps powerful fully equipped rescue boats and take the help of Coast Guards if required.

Public



Weather bulletins are broadcasted in Andhra Pradesh daily as routine from the AIR station at Vijayawada/Visakhapatnam. When there is a threat of cyclone, special weather bulletins are broadcasted as soon as they are received from IMD, Amaravathi and repeated in subsequent transmission. The do's and don't are specified in **Annexure 7**. Dissemination of warning to the general public at large in vulnerable areas is through print, radio, TV and other media.

4.7 Cyclone tracking/warning Web Sites

For Cyclone tracking/warning, IMD's Web Site is official for the State government - www.imd.gov.in/section/nhac/dynamic/cyclone.htm

However, the following other renowned global Web Sites which can be helpful for Cyclone tracking;

National Hurricane Centre

www.nhc.noaa.gov/

Central Pacific Hurricane Centre
Japan Meteorological department
Bureau of Meteorology (Australia)
Cooperative Institute for Meteorological
Satellite Studies -
Fleet Numerical Meteorology and
Oceanography Center from (FNMOC) US
Navy Portal
Joint Typhoon Warning Centre (JTWC)

www.prh.noaa.gov/hnl/cphc/

www.jma.go.jp/jma/indexe.html

www.bom.gov.au/

www.cimss.ssec.wisc.edu/tropic2/

www.usno.navy.mil/FNMOC/tropical-applications

www.metoc.navy.mil/jtwc/jtwc.htm



CYCLONE RESPONSE

5.1 Introduction

Response measures are those which are taken instantly prior to, and following a disaster aimed to 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 disaster event is imminent and lasts until the disaster is declared to be over.

Since response is conducted during periods of high stress in a highly time-constrained environment and with limited information and recourses (in majority of the cases), it is by far, the most complex of four functions of disaster management.

Response includes not only those activities that directly address the immediate needs, such as search and rescue, first aid and shelters, but also includes systems developed to coordinate and support such efforts. For effective response, all the stakeholders need to have a clear perception/vision about hazards, its consequences and actions that need to be taken in the event.

The Revenue (DM) 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 and other control rooms at the State level as well as district EOCs should be activated with full strength.

5.2 Institutional Arrangements

All disaster specific mechanisms would come under a single umbrella for preparedness to mitigate the cyclone devastation. The existing arrangements therefore will be strengthened by defining the administrative arrangements. The preparedness arrangement process will be reviewed by Chief Secretary as the head supported by the Relief Commissioner.

State Emergency Operations Centre:

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

APSDMA is in process of developing a comprehensive network for effective disaster management, which includes emergency communication, operation and response management. The network extends to District, Mandal and the local incidence point with a well-defined control and coordination structure supported with adequate and appropriate Information and Communication Technology (ICT).

The emergency network will work in all circumstances in synchronization with the dynamics of “type of emergency”. This network includes the State Emergency Operation Center (SEOC) at APSDMA with District Emergency Operation Centers (DEOCs) and Mandal Emergency Operation Centers (MEOCs) in addition to these EOCs, Control Rooms at Municipalities and respective Line Departments.

The SEOC will be the hub of activity in a disaster situation. The SEOC, the key organizational structure, is flexible to expand when demand increases, and contracts when the situation comes to normal.

Activities of SEOC

The SEOC is a nodal point for the overall coordination and control of Preparedness, Rescue and Relief work. In case of an L1 cyclone disaster the DEOC will be activated, in case of an L2 cyclone disaster SEOC will be activated along with the DEOC.

The primary function of SEOC

- Receive, monitor, and assess disaster information.
- Keep track of available resources.
- Monitor, assess, and track response units and resource requests.
- Manage resource deployment for optimal usage.
- Make policy decisions and proclaim local emergencies as needed.
- Provide direction and management for EOC operations through Standard Operation Procedure (SOP), set priorities and establish strategies.
- Coordinate operations of all responding units, including law enforcement, fire, medical, logistics etc.
- Augment comprehensive emergency communication from EOC to any field operation when needed or appropriate.
- Maintain EOC security and access control.
- Provide recovery assistance in response to the situations and available resources
- Keep senior, subordinate and tenant officials informed.
- Keep local jurisdictions (Village/town/City, district and State) informed.
- Operate a message center to log and post all key disaster information.
- Develop and disseminate public information warnings and instructions.
- Provide information to the news media.
- Manage donation /aids.

Command & Control of SEOC

The SEOC, its system, and procedures are designed in such a way that information can be promptly assessed and relayed to concerned parties. Immediate dissemination of information contributes to quick response and effective decision-making during emergency. Being the main coordination and control point for all disaster specific efforts, the EOC is the place of decision-making, under a unified command.

The EOC in normal circumstances will work under the supervision of Relief Commissioner/Managing Director, SDMA at the State level and under the District Collector at the district level. It is the nerve centre to support, co-ordinate and monitor the disaster management activities at the district level. In a disaster situation, the EOC will come under the direct control of Chief Secretary or any other person designated by the Chief Secretary as Chief of operations.

5.3 Alert Mechanism – Early Warning

The occurrence of the cyclone will be communicated to

At State Level:

Governor, Chief Minister, Home Minister, State Cabinet, In-charge Minister of the district, and non-officials namely MPs and MLAs from the affected district.

At the Central Level:

- PMO, Cabinet Secretary, Secretary-Home and Defense, NDMA, MHA

The occurrence of the cyclone would essentially bring into force the following:

- The Emergency Operation Centers (EOCs) and Control rooms will be put on full alert with responsibilities for specific tasks, depending on the extent of its impact.
- All Control rooms/ EOCs and Nodal Officers will work under the overall supervision and administrative control of the Chief of operations. All the decisions taken in the SEOC have to be approved by the Chief of operations.
- Immediate access to the cyclone affected sites through various means of communications such as mobiles, VSAT, SBMDVT, I-SAT phones, Walkie-talkie and VHF wireless communication.

The EOCs and Control rooms in its expanded form will continue to operate as long as the need for cyclone relief and operations continue for the longer term rehabilitation. For managing long-term rehabilitation programmes, such as reconstruction of houses, infrastructure and other social amenities, the responsibilities will be that of respective line departments through a well-structured R & R Programme. This will enable EOCs to attend to other disaster situations, if needed.

The following are the responsibilities of various stakeholders in the cyclone preparedness.

CYCLONE PREPAREDNESS ACTIVITIES AND THE RESPONSIBILITIES OF THE DEPARTMENTS:

Time Frame	Task	Responsibility	Activity
Time = 0 –72 Hours	Warning receipt and dissemination	Revenue (DM) Dept., / APSDMA	○ Report the generation of Cyclone in Bay of Bengal/ Indian Ocean after getting information from IMD to following officials; - Relief Commissioner - Principal Secretary (Revenue (DM) Dept.,) - Chief Secretary of the State - Members of Crisis Management Group - Hon. Chief Minister - Hon. Minister – Disaster Management - National Disaster Management Authority, Gol. - All concerned District Collectors as well as Control Rooms of the district/s likely to be affected as per preliminary warning of IMD. - Ministers and Secretaries of all line departments ○ Instruct all Collectors (of the districts likely to be affected) to activate DEOCs at full strength. ○ Alert all response teams in the State for deployment. ○ Remain in constant touch with control rooms at National & State Level. ○ Instruct and alert all HoDs of the key line departments to activate their Departmental plan and SOPs for Cyclone response.
	Interdepartmental Coordination	Revenue (DM) Dept. APSDMA GAD District Collector Municipal Commissioner All Line Departments	○ Instruct all State Government officers and employees in the State to report to their respective Head for emergency duties (Only if the warning is of a level 2 disaster or as per the decision taken in the meeting of the Crisis Management Group headed by Chief Secretary). ○ Alert the District Collectors of districts not likely to be affected to be prepared for providing: - Additional manpower - Additional resources ▪ Machinery & Equipment ▪ Relief material to the districts likely to be affected

Time Frame	Task	Responsibility	Activity
	Establishment of lines of Communication	Revenue (DM)Dept./ APSDMA Information Dept. All Line Departments District Collector Municipal Commissioner	- o Activate alternative communication equipments i.e. Satellite phones, VHF sets, Ham radio, VSAT, SBMDVT in State EOC and DEOCs and mandal level MEOC control rooms - o Establish communication links with EOCs and Search & Rescue Teams in all Municipal Corporations and alert them to be in stage of readiness. - o Establish communication links with villages likely to be affected as per the contact details available in SDRN/IDRN.
Time = 0 –48 Hours	Review of situation and reporting	Revenue (DM) Dept./ SDMA	- o Establish contact with IMD, ACWCs, CWC, ISRO and the defense ministry of Gol. for aerial / satellites imageries of the latest cyclone threat. - o Get the latest weather report from IMD/other international Web Sites to know the exact location of cyclone and the likely area where land fall will take place. - o After reviewing the weather report and satellite images issue instructions and orders for emergency response to areas likely to be affected. - o Alert following emergency response forces to remain in readiness: - Fire & Emergency Services - NDRF/SDRF - Village Disaster Management Teams - Police, Home Guards - State Reserve Police Force - Army (if required) - Air Force (if required)
	Management of EOC, ERCs and Cyclone Response	Revenue (DM) Dept./ SDMA District Collector/ Municipal Commissioner	- o Take over full command of SEOC and ERCs. - o Instruct line departments to depute representatives at the SEOC and DEOCs. - o Hold a meeting with leaders of task forces and entrust them their tasks. - o Ensure that Cyclone information is disseminated to all who are at danger. - o Arrange emergency meeting with State Crisis Management Group to devise a plan of action.

Time Frame	Task	Responsibility	Activity
			○ Arrange dissemination of information through various means of communication such as Radio, TV, Cable Network, SMS about Cyclone warning to districts/areas which are likely to be hit by Cyclonic Storm. ○ Alert following teams to remain in readiness: • Evacuation • Emergency Medical Services • Search and Rescue ○ Alert following emergency response forces to remain in readiness: • Fire & Emergency Services • NDRF • Village Disaster Management Teams • Police, Home Guards • State Reserve Police Force • Army (if required) • Air Force (if required)
		Port & Transport Dept.	Impose restriction on all transport activities heading towards coastal areas that are likely to be affected by cyclone.
	Cyclone response to coastal areas (likely to be affected)	Revenue (DM)Dept.,/SDMA Port & Transport Dept. District Collector Municipal Commissioner Panchayati Raj Department	○ Based on the warning issued by IMD, pin point the districts and villages likely to be affected by cyclone and start the procedure for identifying safe places/shelters for evacuation in those villages. ○ Village wise data of safe sheltering for evacuation available on SDRN should be referred and the dist. Collectors/Village level officers should be contacted to know the status of the shelters with the capacity of the shelter and other available facilities at the site. ○ Make transport arrangement for mobilization of all emergency. <i>(Priority would be given to older persons, persons with disabilities, pregnant women, children and girls to be evacuated first.)</i> ○ Make arrangements for logistic support to all emergency response team.

Time Frame	Task	Responsibility	Activity
		Commissioner of Fisheries	o Ensure arrangements are in place to evacuate fishermen and salt workers if needed.
		Tourism Dept.	o Ensure safety of tourists visiting beaches along the coastline
		Home Dept. District Collector	o Cordoning off coastal areas for restricting entries of rail or road traffic. o Ensure law and order is maintained in areas likely to be affected
		Concerned Line dept.	o Ensure that all critical activities (mainly industrial production) in areas likely to be affected are Shut down.
		Education Dept.	o Ensure that the schools and colleges are closed in areas likely to be affected by Cyclone and associated hazards.
		Information Dept. District Collector	o Ensure dissemination of information to remote areas by local means. o Ensure that local help lines are opened and effectively managed for public information, guidance and rumor control. o Ensure that the information to public and media about the progress of cyclone at periodic intervals is released.
		Health Dept. Department for Women, Children, Disabled and Senior Citizens,	o Health Department to activate their Departmental Cyclone Disaster Management Plan and Departmental SOPs for Management of casualties o Ensure alternative services for ensuring nutrition, immunization and special support to vulnerable communities
Time = 0 –24 Hours	Review of situation and reporting	Revenue (DM) Dept.,/SDMA District Collector Information dept. All Line dept.	o Establish contact with IMD, CWC, ISRO and the defense ministry of Gol. for aerial / satellites imageries of the latest Cyclone threat. o After reviewing the weather report and satellite images issue instructions and orders for emergency response to areas likely to be affected.

Time Frame	Task	Responsibility	Activity
			○ Review and monitor following activities: - Evacuation of people from coastal areas likely to be affected - Positioning of Search and Rescue Teams - Positioning of mobile communication units - Positioning of quick medical response teams - Mobilization of restoration teams of respective departments - Requirement of armed forces in rescue and relief operations - Dissemination of information to the vulnerable areas - All preparedness measures to be taken by various authorities ○ Keep in touch with National, District and Mandal EOCs ○ Release information at appropriate time to media and public regarding response measures organized by the Government.
	Emergency Response Management	Revenue (DM) Dept./SDMA District Collector Home Dept.	○ If reports regarding striking of Cyclone are confirmed by IMD and other sources, start the emergency response and relief operations. ○ Divert the emergency services to areas likely to be affected as per the warning issued by IMD. ○ Inform the public residing in areas likely to be affected to evacuate through various means such as SMS, AIR, FM Radio, Doordarshan, etc. ○ Start evacuation from the likely affected areas through Police support, if necessary.
		A P Maritime Board Coast Guard	To account for the exact number of fishermen in the sea and fishermen that have already reached the shore

Time Frame	Task	Responsibility	Activity
	Emergency Relief Management	Revenue (DM) Dept.,/SDMA	Ensure that the Relief Management work planned in the areas likely to be affected by the Cyclone are well Organized.
		Revenue (DM) Dept., Civil Supply Dept. Dist. Collectors Water Supply Dept. Energy Dept.,: SPDCL/EPDCL Health Dept.,	- o Ensure that the arrangement for basic amenities (shown below) at evacuation/relief centres are made by the respective departments: - Drinking water - Food - Clothing - Sanitation and hygiene, - Personal Protective Equipments - Lighting - o Medicines and HealthCare
		Revenue (DM) Dept.,/SDMA/DDMA	- o Inform following agencies to be in a state of readiness for assisting in the Cyclone response measures (if required): - Public sector agencies - Private sector agencies - NGOs - CBOs - Inter-Agency Groups (IAG) - Volunteer Organizations - o Request for help (if needed) to MHA/National Disaster Management Authority
		Information dept.	Make necessary arrangements for public information/guidance, public opinion and rumor control.
		Transport Dept. Dist. Collectors Home Dept.	Restriction may be imposed for transportation in threatened areas.
Time = 0 Hours	Disaster Declaration	Revenue (DM) Dept./SDMA Dist. Collectors	When cyclone makes a landfall, cyclone affected Dist. Collectors should send a communication to the State Govt. to declare the area as disaster affected, if necessary, (depending upon the nature and intensity of impact)

Time Frame	Task	Responsibility	Activity
	Preliminary assessment, deployment of emergency response teams and dissemination of information	Dist. Collectors	- Dist. Collector/s should send teams to the affected areas to take stalk of the effects of cyclone and associated rain. - District Collector/s should send sector wise situation reports to: - Revenue (DM)Dept./APSDMA
		Revenue (DM) Dept./SDMA Collectors Municipal Commissioner	- Deployment of following teams to cyclone affected areas: - Emergency Communication Teams - Emergency Medical Services Teams - Search and Rescue Teams (With Equipments) - Preliminary Damage Assessment Teams - Need Assessment Teams <i>(Ensure health protection gears should be included in the rescue personal/forces/volunteer personal equipment schedule)</i>
		Revenue(DM) Dept/APSDMA Dist. Collectors Information Department	- Establish communication link with affected districts by activating alternate communication equipments such as Satellite Phones, HF/VHF Sets, Ham Radio, V Set etc., in State/District EOCs and Mandal Control Rooms. - Arrange dissemination of information about occurrence of cyclone and areas that are affected by it to Media & Public.

Time Frame	Task	Responsibility	Activity
Time = 0 +24 Hours	Mobilization and Deployment	Revenue (DM) Dept. Dist. Collectors Municipal Commissioner	- o Remain in constant touch with IMD for updates on weather forecast for the coming hours and plan accordingly. - o Immediate mobilization of following units/teams to areas affected by Cyclone and associated rains: - S & R Teams of Fire and Emergency Services - Quick Medical Response Teams - Quick Damage & Loss Assessment Teams - Quick Need Assessment Teams - Road Clearance Teams - Teams for disposal of dead bodies - Teams for disposal of carcasses - Teams for debris clearance (if any) - Teams for maintaining Law & Order in the affected areas - Arrange for S & R teams of Air Force (If required). <i>(All preparedness and early actions should be customized as per the guidelines issued by GOI and GoAP on COVID- 19)</i>
	Measures for quick and organized response	Revenue (DM)Dept/APSDMA. Dist. Collectors Municipal Commissioner Line Dept.	SEOC, the Collectors of the affected District/s should ensure that the following response activities are carried out immediately:

	<i>i. Clearance of access roads to reach at the sites of affected areas</i>	TR & B Dept. PR Dept., Railways	○ To survey the access roads/routes leading to the affected areas and manage traffic for mobilization of equipments, machinery and volunteers. ○ Identify alternate roads/routes for evacuation. ○ Undertake repairing/restoration of damaged roads leading to the Affected areas. ○ Identify and declare unsafe buildings/structures in cyclone affected areas. ○ Evacuate people from unsafe buildings/structures and shift them to relief camps/sites. ○ Divert/stop transport activities (Rail + Road) heading towards cyclone affected areas.
	<i>ii. Necessary Arrangements at evacuation/ relief centres</i>	Revenue (DM)Dept/APSDMA. Civil Supply Dept. Dist. Collectors Municipal Commissioner Water Supply Dept. Health Dept., Power &Energy Dept. RWS Local Authorities Home Dept.	○ To ensure that necessary arrangements at evacuation/relief centers is made with sufficient availability of: - Food, - Water, - Blankets/Clothing - Medicines - Lighting - Personal Protective Equipments - Sanitation and hygiene etc. ○ To ensure necessary security arrangements for the personals (Emergency responders/relief teams) who are working at Relief Centers and involved in distribution of Relief Materials. ○ To ensure that law and order is maintained at evacuation/relief centers and in the affected areas as well. ○ Ensure safe shelters for people under observation/home isolation due to COVID-19. ○ Ensure possible social distancing and personal hygiene facilities at relief camps. Follow the guidelines of Gol.

	iii. <i>Safety of fishermen and salt workers</i>	Revenue (DM)Dept/APSDMA AP Maritime Board Fisheries Dept. Tourism Dept. Industrial Dept.	- o Immediate actions to be taken for safety of fishermen, salt workers and visitors at cyclone affected coastal areas. - o Ensure that all the fishermen and salt workers have returned from the sea or those who are in the sea are rescued and evacuated to
	iv. <i>Ensure immediate health and minimization of outbreak of disease (ensure safety of staff and volunteers during first aid and treatment as per COVID-19- frontline workers guidelines)</i>	Health Dept. Transport Dept.	- o To establish camp hospitals near the affected areas. - o To make transportation arrangements to shift seriously injured persons to nearest- - Camp Hospitals, - Mandal and District Hospitals, - Regional and State Hospitals
			- o Ensure that the hospitals are well prepared to deal with seriously injured persons. - o Ascertain that the required medical assistance/aid and medicines are provided to the affected people at site as well as at evacuation/relief centers in the affected area and necessary records are maintained. - o Take sanitation and epidemic control measures for preventing any water borne disease. - o Keep adequate stock of essential medicines, first-aid etc. at Mandal/district hospitals - o Take steps to purify drinking water sources - o If required, take the help of doctors/paramedics from the list of doctors/paramedics available at the Mandal/district level for immediate medical assistance.
		Animal Husbandry Dept.	- o Assess need for fodder if required. - o Keep ready teams for carcass disposal (if required).

	v. <i>Information to public and media</i>	Information Dept. Revenue (DM) Dept./APSDMA	- Establish Media/Press Centre for media management and information dissemination - Ensure that the information to media/general public about the response of the State Government is released in an organized manner. - Organize media briefing twice a day at pre-determined intervals.
	vi. <i>Other important work related to immediate response</i>	Revenue (DM)Dept./SDMA	- Prepare quick need assessment report for planning of relief operation. - Additional assistance may be asked for emergency response/relief from GoI-NDMA (If needed).
		Commissioner Relief/ SEOC-SDMA	- Prepare situation report and circulate it twice a day in the morning and evening to key government functionaries. - Maintain constant touch with National, District and Mandal EOCs and other control rooms.
			- Remain in constant touch with IMD for updates on weather forecast for the coming days and plan accordingly. - Conduct areal survey of affected areas for taking as talk
		Revenue (DM) Dept./SDMA Collectors	- Activate evacuation & relief centers according to needs/situation. - Maintain record of persons admitted at evacuation/relief centres
Time = 0 +24 to 48 Hours	Review of situation and reporting	Revenue(DM) Dept./SDMA	Establish contact with IMD, CWC, ISRO and the defense ministry of GoI. for aerial / satellites imageries about further weather condition and plan accordingly.

	Restoration of critical infrastructure/essential services	Revenue (DM) Dept.,/APSDMA Line Depts. Dist. Collectors Municipal Commissioner	- o Ensure that the essential services/critical infrastructure of the affected areas have been restored or alternative arrangement is made for ensuring safety of people and smooth management of emergency response. - o Ensure that key administrative and lifeline buildings are brought back to operation quickly. - o Designate and deploy senior officers (as per the need) to worst affected area/s to oversee rescue/relief operation. - o Ensure following primary necessities are restored: - Power - Water - Telecommunication - Roads & Bridges
	Disposal of Dead bodies	Revenue (DM)Dept., Home Dept., Health Dept., Local Authorities Dist. Collectors Municipal Commissioner	- o Ensure following procedure is followed before disposal/handing over of dead bodies: - Photographs of the dead bodies are taken, - Identification of the dead bodies is done, - Post Mortem where ever necessary and possible is carried out, - Handing over dead bodies of persons known/identified to their relatives, - Disposal of unclaimed and Unidentified
		Animal Husbandry Dept. Local Authorities Health dept.	- o Animal Husbandry Department to ensure medical aid to cattle that are injured. - o Disposal of animal carcasses with the help of local bodies
	Public Information and Media Management	Revenue (DM)Dept.,/APSDMA Information Dept.	- o Ensure that the information about progress of rescue and relief is provided to media/public in an organized manner at least twice a day. - o Establish help lines for facilitating

		Dist. Collector Municipal Commissioner	Communication between the victims and their relatives residing outside the affected area/s. o Establish Information Centers at strategic locations for providing information about persons evacuated to the relief centres/hospitals.
	Miscellaneous rescue and relief work	Revenue (DM)Dept.,/APSDMA Dist. Collector Municipal Commissioner	o Assess the situation and take appropriate action to accelerate the Search & Rescue Operations. o Depute additional officers and supporting staff to cyclone affected areas from non-affected areas (if required) to accelerate the rescue and relief operations.
		Revenue (DM)Dept., Civil Supply Dept.	Ensure that the relief assistance received from outside should be stored and sent for distribution to cyclone affected areas according to their need and proper accounts are maintained about both receipt and distribution.
		Revenue (DM) Dept. Civil Supply Dept.,	District Collector may oversee the functioning of relief centres and ensure adequate supply of relief materials.
Time = 0 +48 to 96 Hours	Continuous rescue and relief work	Revenue (DM)Dept.,/ APSDMA Dist. Collectors Municipal Commissioner Finance Dept. Civil Supply Dept.	o Remain in constant touch with IMD for updates on weather forecast for the coming days and plan accordingly. o Arrange for procurement of additional relief material required for relief operations (on the basis of need assessment). o Mobilize additional relief material required for relief operations o Maintain constant touch with State & Districts EOCs.
		Revenue Dept. Health Dept. Transport Dept.	o Arrangement for transportation of injured from field hospital to base hospital. o Arrangement for transport of dead bodies to their native places.
		Relief Commissioner Dist. Collectors Municipal Commissioner Line Depts.	Ensure maintenance of record, timely reporting and information management.

Time = 0 +96 to 168 Hours	Continuous rescue and relief work	Revenue (DM)Dept./SDMA)	- o Remain in constant touch with IMD for updates on weather forecast for the coming days and plan accordingly. - o Review the restoration of all the public and essential in cyclone affected areas. - o Review and follow-up all necessary arrangements for emergency response & relief in the affected area/s. - o Ensure relief disbursement, allotment of funds and grants to line department and district collectors for organizing emergency response, relief and evacuation arrangements. - o on receiving the message from IMD about degradation of cyclone, inform the concern dist. Collector.
		Relief Commissioner Dist. Collectors R & B Dept.	Organize a quick rapid visual survey of the affected areas (through a technical team of engineers) to ascertain the safety of the structures decide on giving the go-ahead to people to move back to their respective house.
		Relief Commissioner Dist. Collectors Home Dept.	After receiving the message of de- warning, ensure that people are moved back safely to their houses.

Plan continuation

6.1 Introduction

Plan continuation is a dynamic process of updating the plan on a periodic basis. The back-bone of maintaining/continuing the plan is carrying out mock drills and updating the plan based on the lessons learnt as an outcome of the mock exercise which consists of identifying the gaps and preparing a system to fill the gap.

6.2 Plan Testing

The Commissioner, Revenue (DM)Dept.,/Managing Director, APSDMA shall prepare, review and update State level Cyclone Preparedness and Response plan as per the objectives of the APSDMA. He shall also ensure that disaster management drills and rehearsals are carried out periodically.

While updating the plan, the following aspects need to be considered by the Commissioner, Revenue (DM) Dept.,/Managing Director, APSDMA every year:

- Critical analysis of the outcome of exercises & mock drills as part of plan testing.
- Incorporation of lessons learnt in the updated plan as an outcome of mock exercises through identification of gaps and measures to fill them.

The plan must be thoroughly tested and evaluated on a regular basis, at least twice a year. The plan testing should preferably be organized on the first Monday in the months of April and October every year.

After plan testing and incorporation of lesson learnt, the Commissioner, Revenue (DM) Department, Managing Director, APSDMA should send a copy of the revised and updated plan to the following officials:

- Chief Secretary, Government of Andhra Pradesh
- Managing Director, A P State Disaster Management Authority
- Principal Secretary, Revenue (DM)Department
- Head of all line Departments.
- State Emergency Operation Centre
- District Emergency Operation Centres
- IMD
- Cyclone Warning Center

The main objectives of plan testing are to:

- Determine the feasibility and compatibility of back up facilities and procedures
- Identify areas in the plan that need modification.
- Identify training needs of key stakeholders.
- Assess the ability of the organization/department to respond to cyclone threats.

All the departments, which have specific roles and responsibilities in Cyclone Preparedness and Response Plan, must have a system to ensure that all Officers of their departments who have a specific role to play are fully conversant with their responsibilities/tasks.

6.3 Evaluation of Mock Drills

- After conducting the activity on mock exercise, evaluation is very important. It is of critical importance that these insights are collected from participants (who participated in the exercise) and used to modify the plan.
- Debriefing is very effective as it is carried out immediately after the exercise. It also includes documentation in terms of recommendations and improvements of the plan.
- The lessons learned from the mock exercise are likely to be similar to those from real events. The only major difference is that exercises are controlled events, specifically designed to test procedures and they can be repeated again and again until sound/workable arrangements are in place.

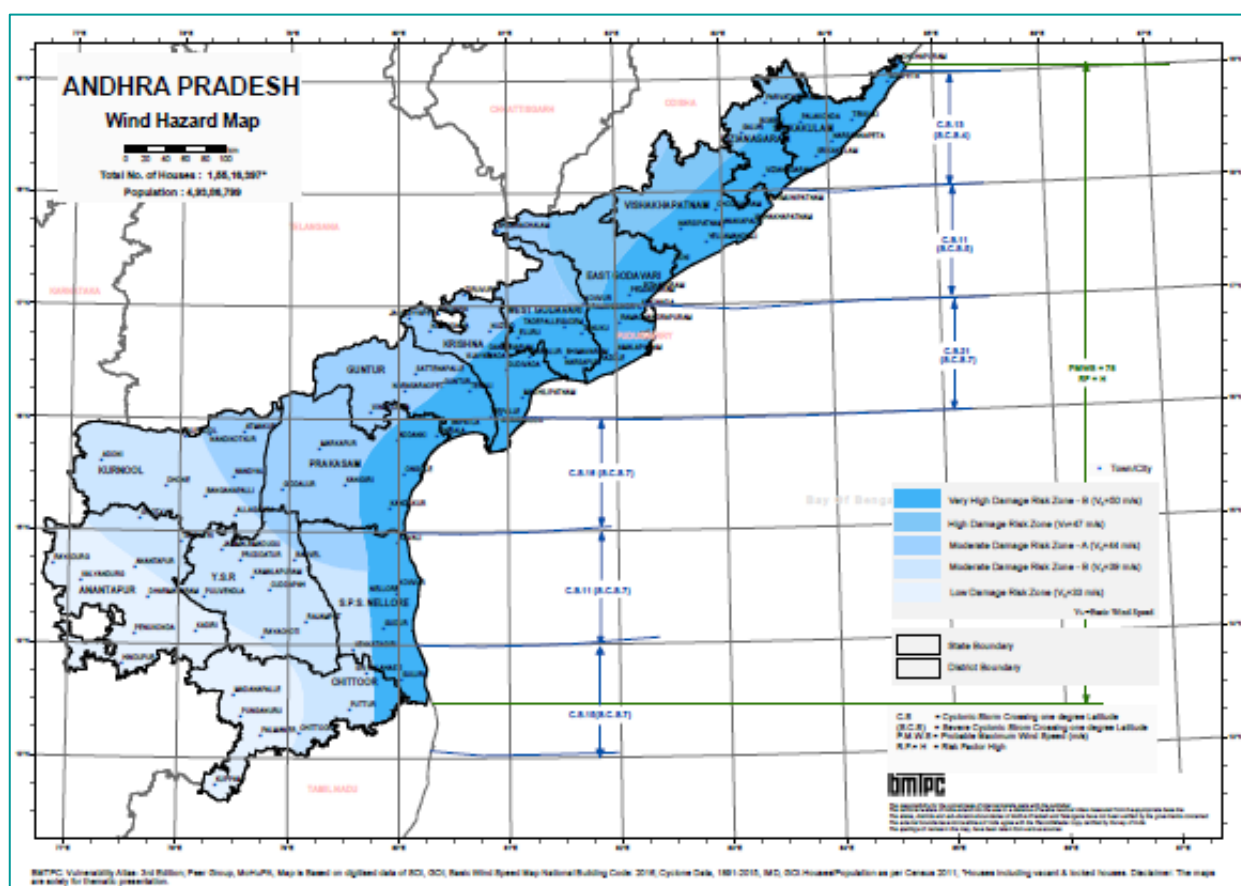
6.4 Review / Updation of Plan

- The Cyclone Preparedness and Response Plan should be reviewed and updated regularly every year before the monsoon season, based on inputs as under:
 - Drills and Rehearsals
 - Recommendations from all Departments in their Annual DM Report
 - Lessons learnt from Cyclone in other states and countries
 - Directions from Ministry of Home Affairs, National Disaster Management Authority, Government of India etc.

APDMA and all other concerned Departments should encourage formal and informal interaction with various stakeholders at different levels to learn and document their experiences, so that such experiences can contribute constructively towards updation of Cyclone Preparedness and Response Plan for further improving the capability to deal with future Cyclone disaster.

Annexure

1. Cyclone frequency and wind hazard map of Andhra Pradesh
2. Vulnerable villages due to cyclone winds
3. India Disaster Resource Net Work (IDRN)
4. Early Warning Dissemination System (EWDS) Station Locations
5. List of satellite phone, V-SAT & SBMDVT'S
6. General terminology used in weather bulletins
7. DO'S and DON'TS at pre, during and post cyclone
8. Emergency contact directory
9. Communication formats of U.O notes/letters



VULNERABLE VILLAGES DUE TO CYCLONE WINDS

(Peak gust Velocity during 1891-2015)

The categorization has been done as per the wind speed (during 1891-2015 period) explained as under:

Defined Category	Category	Effectuated Villages
Very high damage risk zone -B (basic wind speed = 50 m/s)	Very high -B	7395
High damage risk zone (basic wind speed = 47 m/s)	High	3699
Moderate damage risk zone – A (basic wind speed = 44 m/s)	Moderate – A	2392
Moderate damage risk zone – B (basic wind speed = 39 m/s)	Moderate – B	2875
Low damage risk zone (basic wind speed = 33 m/s)	Low	1382

**Category as per BMTPC, Defined category is given for convenience.*

Coastal villages are grouped based on the distance from the coastline. In this criterion with in the 2 km from the coastline is one category and between 2 – 5 km from the coastline is another category. The basic wind speed is calculated from cyclone data during 1891-2015 from IMD. Source of basic winds is BMTPC vulnerability atlas 3rd edition.

VILLAGES WITHIN THE 2 KM FROM COASTLINE

S.no	District	Mandal	Village	Basic winds (m/s)	Category
1	East Godavari	Thondangi	Thondangi	50	Very high - B
2	East Godavari	Thondangi	Vemavaram	50	Very high - B
3	East Godavari	Thondangi	Krishnapuram	50	Very high - B
4	East Godavari	Thondangi	Kona forest	50	Very high - B
5	East Godavari	Thondangi	A.v.nagaram	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
6	East Godavari	Kothapalle	Ramanakkapeta	50	Very high - B
7	East Godavari	Kothapalle	Ponnada	50	Very high - B
8	East Godavari	Kothapalle	Yendapalle	50	Very high - B
9	East Godavari	Kothapalle	Mulapeta	50	Very high - B
10	East Godavari	Kothapalle	Amaravalli	50	Very high - B
11	East Godavari	Kothapalle	Aminabada	50	Very high - B
12	East Godavari	Kothapalle	Komaragiri	50	Very high - B
13	East Godavari	Kothapalle	Kutukudumilli	50	Very high - B
14	East Godavari	Kothapalle	Kothapalle	50	Very high - B
15	East Godavari	Kothapalle	Uppada	50	Very high - B
16	East Godavari	Kothapalle	Subbampeta	50	Very high - B
17	East Godavari	Kakinada (rural)	Nemam	50	Very high - B
18	East Godavari	Kakinada (rural)	Thammavaram	50	Very high - B
19	East Godavari	Kakinada (rural)	Vakalapudi	50	Very high - B
20	East Godavari	Thallarevu	Reserved forest	50	Very high - B
21	East Godavari	Kakinada (urban)	Kakinada (m)	50	Very high - B
22	East Godavari	Kakinada (urban)	Jagannadhapuram	50	Very high - B
23	East Godavari	Kakinada (rural)	Turangi	50	Very high - B
24	East Godavari	Karapa	Gurajanapalle	50	Very high - B
25	East Godavari	Katrenikona	Brahmasamedyam	50	Very high - B
26	East Godavari	Thallarevu	Reserved forest	50	Very high - B
27	East Godavari	Katrenikona	Pallamkurru	50	Very high - B
28	East Godavari	Katrenikona	Katrenikona	50	Very high - B
29	East Godavari	Katrenikona	Pallamkurru	50	Very high - B
30	East Godavari	Uppalaguptam	Nimmakayala kothapalle	50	Very high - B
31	East Godavari	Katrenikona	Chirrayanam	50	Very high - B
32	East Godavari	Uppalaguptam	T. Challapalle	50	Very high - B
33	East Godavari	Uppalaguptam	Surasaniyanam	50	Very high - B
34	East Godavari	Allavaram	River	50	Very high - B
35	East Godavari	Allavaram	Samanthakuru	50	Very high - B
36	East Godavari	Allavaram	Komaragiripatnam	50	Very high - B
37	East Godavari	Allavaram	Bendamurulanka	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
38	East Godavari	Mamidikuduru	Gogannamattam	50	Very high - B
39	East Godavari	Sakhinetipalle	River	50	Very high - B
40	East Godavari	Malikipuram	Kesanapalle	50	Very high - B
41	East Godavari	Malikipuram	Sankaraguptham	50	Very high - B
42	East Godavari	Sakhinetipalle	Kesavadasupalem	50	Very high - B
43	East Godavari	Sakhinetipalle	Antarvedi	50	Very high - B
44	Guntur	Karlapalem	Perali	50	Very high - B
45	Guntur	Bapatla	Adivi	50	Very high - B
46	Guntur	Nizampatnam	Dindi	50	Very high - B
47	Guntur	Nizampatnam	Dindi	50	Very high - B
48	Guntur	Nizampatnam	Nizampatnam	50	Very high - B
49	Guntur	Nizampatnam	Dindi	50	Very high - B
50	Guntur	Nizampatnam	Dindi	50	Very high - B
51	Krishna	Nagayalanka	Forest	50	Very high - B
52	Krishna	Kruthivennu	Chinagollapalem	50	Very high - B
53	Krishna	Kruthivennu	Kruthivennu	50	Very high - B
54	Krishna	Kruthivennu	Nidamaru	50	Very high - B
55	Krishna	Kruthivennu	Tadivennu	50	Very high - B
56	Krishna	Kruthivennu	Interu	50	Very high - B
57	Krishna	Machilipatnam	Pedayadara	50	Very high - B
58	Krishna	Machilipatnam	Kanuru	50	Very high - B
59	Krishna	Machilipatnam	Tallapalem	50	Very high - B
60	Krishna	Machilipatnam	Gokavaram	50	Very high - B
61	Krishna	Machilipatnam	Manginapudi	50	Very high - B
62	Krishna	Machilipatnam	Tavisipudi	50	Very high - B
63	Krishna	Machilipatnam	Gopuwanipalem	50	Very high - B
64	Krishna	Machilipatnam	Kara agharam	50	Very high - B
65	Krishna	Machilipatnam	Polatitippa	50	Very high - B
66	Krishna	Machilipatnam	Palletummalapalem	50	Very high - B
67	Krishna	Koduru	Ullipalem	50	Very high - B
68	Krishna	Koduru	Ramakrishnapuram	50	Very high - B
69	Krishna	Nagayalanka	Kammanamolu	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
70	Nellore	Kavali	Chennayapalem	50	Very high - B
71	Nellore	Kavali	Thummalapenta	50	Very high - B
72	Nellore	Bogole	Juvvaladinne	50	Very high - B
73	Nellore	Bogole	Mallayapalem	50	Very high - B
74	Nellore	Allur	Isakapalle	50	Very high - B
75	Nellore	Allur	Gogulapalle	50	Very high - B
76	Nellore	Vidavalur	Varini	50	Very high - B
77	Nellore	Vidavalur	Utukuru	50	Very high - B
78	Nellore	Indukurpet	Kudithipalem	50	Very high - B
79	Nellore	Indukurpet	Gangapatnam	50	Very high - B
80	Nellore	Indukurpet	Mypadu	50	Very high - B
81	Nellore	Indukurpet	Somarajupalle	50	Very high - B
82	Nellore	Indukurpet	Koruturu	50	Very high - B
83	Nellore	Thotapalligudur	Kothapalem	50	Very high - B
84	Nellore	Thotapalligudur	Venkanapalem	50	Very high - B
85	Nellore	Thotapalligudur	Koduru - i	50	Very high - B
86	Nellore	Thotapalligudur	Koduru - ii	50	Very high - B
87	Nellore	Thotapalligudur	Eduru – ii	50	Very high - B
88	Nellore	Thotapalligudur	Ananthapuram	50	Very high - B
89	Nellore	Thotapalligudur	Sivarampuram	50	Very high - B
90	Nellore	Muthukur	Pynampuram	50	Very high - B
91	Nellore	Muthukur	Nelaturu	50	Very high - B
92	Nellore	Muthukur	Krishnapatnam	50	Very high - B
93	Nellore	Chillakur	Thamminapatnam	50	Very high - B
94	Nellore	Kota	Kothapatnam	50	Very high - B
95	Nellore	Vakadu	Pamanji	50	Very high - B
96	Nellore	Vakadu	Vagarra @ tupilipalem	50	Very high - B
97	Nellore	Vakadu	Jaminkothapalem	50	Very high - B
98	Nellore	Vakadu	Valamedu	50	Very high - B
99	Nellore	Vakadu	Andalamala	50	Very high - B
100	Nellore	Vakadu	Budidalawagu	50	Very high - B
101	Nellore	Vakadu	Konduru	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
102	Nellore	Vakadu	Pambali	50	Very high - B
103	Nellore	Vakadu	Duggaraja patnam	50	Very high - B
104	Nellore	Vakadu	Reddipalem bit - i	50	Very high - B
105	Nellore	Vakadu	Pudirayadoruvu	50	Very high - B
106	Nellore	Vakadu	Reddipalem bit - ii	50	Very high - B
107	Nellore	Sullurpeta	Pulicat lake	50	Very high - B
108	Nellore	Sullurpeta	Shar project	50	Very high - B
109	Nellore	Tada	Pulicat lake	50	Very high - B
110	Prakasam	Chirala	Gavinivari palem	50	Very high - B
111	Prakasam	Chirala	Ipuru palem (rural)	50	Very high - B
112	Prakasam	Vetapalem	Kotha peta (rural)	50	Very high - B
113	Prakasam	Vetapalem	Nayani palli (rural)	50	Very high - B
114	Prakasam	Vetapalem	Pullari palem	50	Very high - B
115	Prakasam	Chinaganjam	Motu palle	50	Very high - B
116	Prakasam	Chinaganjam	Chinaganjam	50	Very high - B
117	Prakasam	Chinaganjam	Pedaganjam	50	Very high - B
118	Prakasam	Naguluppalapadu	Kanuparthi	50	Very high - B
119	Prakasam	Ongole	Devaram padu	50	Very high - B
120	Prakasam	Kotha patnam	Padarthi	50	Very high - B
121	Prakasam	Kotha patnam	Alluru kotha patnam	50	Very high - B
122	Prakasam	Kotha patnam	Raju palem	50	Very high - B
123	Prakasam	Kotha patnam	Ethamukkala	50	Very high - B
124	Prakasam	Kotha patnam	Madanur	50	Very high - B
125	Prakasam	Tangutur	Ananthavaram	50	Very high - B
126	Prakasam	Singarayakonda	Pakala	50	Very high - B
127	Prakasam	Singarayakonda	Bingini palle	50	Very high - B
128	Prakasam	Ulavapadu	Karedu	50	Very high - B
129	Prakasam	Ulavapadu	Chaki cherla	50	Very high - B
130	Prakasam	Gudluru	Mocherla	50	Very high - B
131	Prakasam	Ulavapadu	Ramayapatnam	50	Very high - B
132	Prakasam	Gudluru	Ravur	50	Very high - B
133	Prakasam	Gudluru	Chevuru	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
134	Srikakulam	Ichchapuram	Ichchapuram (m)	50	Very high - B
135	Srikakulam	Ichchapuram	Kesapuram	50	Very high - B
136	Srikakulam	Ichchapuram	Burjapadu	50	Very high - B
137	Srikakulam	Kaviti	Nelavanka	50	Very high - B
138	Srikakulam	Kaviti	Kapasakuddi	50	Very high - B
139	Srikakulam	Kaviti	Kaviti	50	Very high - B
140	Srikakulam	Kaviti	Jagathi	50	Very high - B
141	Srikakulam	Kaviti	Bejjiputtuga	50	Very high - B
142	Srikakulam	Kaviti	Borivanka	50	Very high - B
143	Srikakulam	Kaviti	Varakha	50	Very high - B
144	Srikakulam	Kaviti	Kusumpuram	50	Very high - B
145	Srikakulam	Kaviti	Balliputtuga	50	Very high - B
146	Srikakulam	Kaviti	Manikyapuram	50	Very high - B
147	Srikakulam	Sompeta	Rushikudda	50	Very high - B
148	Srikakulam	Kanchili	Kuttuma	50	Very high - B
149	Srikakulam	Sompeta	Baruvapeta	50	Very high - B
150	Srikakulam	Sompeta	Gollagandi	50	Very high - B
151	Srikakulam	Sompeta	Baruva	50	Very high - B
152	Srikakulam	Sompeta	Turakasasanam	50	Very high - B
153	Srikakulam	Sompeta	Mulapalam	50	Very high - B
154	Srikakulam	Sompeta	Damodarapuram	50	Very high - B
155	Srikakulam	Sompeta	Mogalikotturu	50	Very high - B
156	Srikakulam	Sompeta	Uppalam	50	Very high - B
157	Srikakulam	Sompeta	Gollavooru	50	Very high - B
158	Srikakulam	Sompeta	Rajam	50	Very high - B
159	Srikakulam	Sompeta	Sirimamidi	50	Very high - B
160	Srikakulam	Mandasa	Loharibanda	50	Very high - B
161	Srikakulam	Mandasa	Pithali	50	Very high - B
162	Srikakulam	Mandasa	Gollapalem	50	Very high - B
163	Srikakulam	Mandasa	Dunnavuru	50	Very high - B
164	Srikakulam	Mandasa	Marripadu	50	Very high - B
165	Srikakulam	Mandasa	Ratti	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
166	Srikakulam	Palasa	Payakarampuram	50	Very high - B
167	Srikakulam	Mandasa	Bethalapuram	50	Very high - B
168	Srikakulam	Mandasa	Bidimi	50	Very high - B
169	Srikakulam	Mandasa	Laxmipuram	50	Very high - B
170	Srikakulam	Vajrapukothuru	Metturu	50	Very high - B
171	Srikakulam	Vajrapukothuru	Gadivuru	50	Very high - B
172	Srikakulam	Vajrapukothuru	Garudabhadra	50	Very high - B
173	Srikakulam	Vajrapukothuru	Amalapadu	50	Very high - B
174	Srikakulam	Vajrapukothuru	Cheepurupalle	50	Very high - B
175	Srikakulam	Vajrapukothuru	Pedavanka	50	Very high - B
176	Srikakulam	Vajrapukothuru	Gollasaradhi	50	Very high - B
177	Srikakulam	Vajrapukothuru	Battupadu	50	Very high - B
178	Srikakulam	Vajrapukothuru	Pallisaradhi	50	Very high - B
179	Srikakulam	Vajrapukothuru	Dokulapadu	50	Very high - B
180	Srikakulam	Vajrapukothuru	Gollalapadu	50	Very high - B
181	Srikakulam	Vajrapukothuru	Cheepurupalle	50	Very high - B
182	Srikakulam	Vajrapukothuru	Saradapuram	50	Very high - B
183	Srikakulam	Vajrapukothuru	Nagarampalle	50	Very high - B
184	Srikakulam	Vajrapukothuru	Kidisingi	50	Very high - B
185	Srikakulam	Vajrapukothuru	Thadivada	50	Very high - B
186	Srikakulam	Vajrapukothuru	Laxmidevipeta	50	Very high - B
187	Srikakulam	Vajrapukothuru	Pundi backwater	50	Very high - B
188	Srikakulam	Vajrapukothuru	Vajrapukothuru	50	Very high - B
189	Srikakulam	Vajrapukothuru	Peddaboddapadu	50	Very high - B
190	Srikakulam	Vajrapukothuru	Pallivuru @ sangaruvanipeta	50	Very high - B
191	Srikakulam	Vajrapukothuru	Peddamuraharipuram	50	Very high - B
192	Srikakulam	Vajrapukothuru	Terapalle	50	Very high - B
193	Srikakulam	Vajrapukothuru	Pedijagannadhapuram	50	Very high - B
194	Srikakulam	Vajrapukothuru	Uddanam gopinadhapuram	50	Very high - B
195	Srikakulam	Vajrapukothuru	Reyyipadu	50	Very high - B
196	Srikakulam	Vajrapukothuru	Uddanamraipadu	50	Very high - B
197	Srikakulam	Vajrapukothuru	Ananthagiri	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
198	Srikakulam	Vajrapukothuru	Pathatekkali	50	Very high - B
199	Srikakulam	Vajrapukothuru	Uddanamkurmanadhapuram	50	Very high - B
200	Srikakulam	Vajrapukothuru	Synooru	50	Very high - B
201	Srikakulam	Vajrapukothuru	Pollada	50	Very high - B
202	Srikakulam	Vajrapukothuru	Chinavanka	50	Very high - B
203	Srikakulam	Vajrapukothuru	Suryamanipuram	50	Very high - B
204	Srikakulam	Vajrapukothuru	Komarlatada	50	Very high - B
205	Srikakulam	Santhabommali	Marripadu	50	Very high - B
206	Srikakulam	Vajrapukothuru	Akkupalle	50	Very high - B
207	Srikakulam	Vajrapukothuru	Devunaltada	50	Very high - B
208	Srikakulam	Santhabommali	Tekkali creek	50	Very high - B
209	Srikakulam	Santhabommali	Bhavanapadu @ madyapeta	50	Very high - B
210	Srikakulam	Santhabommali	Rajapuram	50	Very high - B
211	Srikakulam	Santhabommali	Sandhipeta	50	Very high - B
212	Srikakulam	Santhabommali	Meghavaram	50	Very high - B
213	Srikakulam	Santhabommali	Maruvada	50	Very high - B
214	Srikakulam	Santhabommali	Kollipadu	50	Very high - B
215	Srikakulam	Santhabommali	Borubhadra	50	Very high - B
216	Srikakulam	Santhabommali	Lakkivalasa	50	Very high - B
217	Srikakulam	Santhabommali	Seepuram	50	Very high - B
218	Srikakulam	Santhabommali	Malagam	50	Very high - B
219	Srikakulam	Santhabommali	Runku hanumanthapuram	50	Very high - B
220	Srikakulam	Santhabommali	Umilada	50	Very high - B
221	Srikakulam	Santhabommali	Siddibeharakothuru	50	Very high - B
222	Srikakulam	Polaki	Koduru	50	Very high - B
223	Srikakulam	Polaki	Belamara polavalasa	50	Very high - B
224	Srikakulam	Polaki	Dandulakshmipuram	50	Very high - B
225	Srikakulam	Polaki	Rajapuram	50	Very high - B
226	Srikakulam	Polaki	Nandigam	50	Very high - B
227	Srikakulam	Polaki	Polaki	50	Very high - B
228	Srikakulam	Polaki	Ampalam	50	Very high - B
229	Srikakulam	Gara	Jalluvalasa	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
230	Srikakulam	Gara	Vomaravalli	50	Very high - B
231	Srikakulam	Gara	Thonangi	50	Very high - B
232	Srikakulam	Gara	Gonti	50	Very high - B
233	Srikakulam	Gara	Korlam	50	Very high - B
234	Srikakulam	Gara	Vatsavalasa	50	Very high - B
235	Srikakulam	Gara	Srikurmam	50	Very high - B
236	Srikakulam	Srikakulam	Ippili	50	Very high - B
237	Srikakulam	Srikakulam	Kallepalle	50	Very high - B
238	Srikakulam	Etcherla	Bontalakoduru	50	Very high - B
239	Srikakulam	Srikakulam	Mofusbandar	50	Very high - B
240	Srikakulam	Etcherla	Dharmavaram	50	Very high - B
241	Srikakulam	Etcherla	Koyyam	50	Very high - B
242	Srikakulam	Etcherla	Voleti atchanna agraharam	50	Very high - B
243	Srikakulam	Etcherla	Bhagiradhipuram	50	Very high - B
244	Srikakulam	Etcherla	Kuppili	50	Very high - B
245	Srikakulam	Ranastalam	Varahanarsihmapuram	50	Very high - B
246	Srikakulam	Ranastalam	Kotcherla	50	Very high - B
247	Srikakulam	Ranastalam	Pathasundra palem	50	Very high - B
248	Srikakulam	Ranastalam	Kollihimavaram	50	Very high - B
249	Srikakulam	Ranastalam	Jeerupalem	50	Very high - B
250	Srikakulam	Ranastalam	Kotapalem	50	Very high - B
251	Srikakulam	Ranastalam	Gudem	50	Very high - B
252	Srikakulam	Ranastalam	Ramachandrapuram	50	Very high - B
253	Srikakulam	Ranastalam	Naruva	50	Very high - B
254	Srikakulam	Ranastalam	Jeerukovvada	50	Very high - B
255	Srikakulam	Ranastalam	Tekkali	50	Very high - B
256	Srikakulam	Ranastalam	Narayanagajapathirapuram	50	Very high - B
257	Srikakulam	Ranastalam	Mentada	50	Very high - B
258	Srikakulam	Ranastalam	Akkayapalem	50	Very high - B
259	Visakhapatnam	Nakkapalli	Chukalavarilakshmipuram	50	Very high - B
260	Visakhapatnam	S rayavaram	Gudivada	50	Very high - B
261	Visakhapatnam	Nakkapalli	Vempadu	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
262	Visakhapatnam	Nakkapalli	Pedateenarla	50	Very high - B
263	Visakhapatnam	Nakkapalli	Pedateenarla	50	Very high - B
264	Visakhapatnam	Nakkapalli	Nellipudi	50	Very high - B
265	Visakhapatnam	Nakkapalli	Rajauyyapeta	50	Very high - B
266	Visakhapatnam	Nakkapalli	Chandanada	50	Very high - B
267	Visakhapatnam	Nakkapalli	Buchirajupeta	50	Very high - B
268	Visakhapatnam	Nakkapalli	Donivanilakshmipuram	50	Very high - B
269	Visakhapatnam	Nakkapalli	Gunupudi	50	Very high - B
270	Visakhapatnam	Nakkapalli	N. Narasapuram	50	Very high - B
271	Visakhapatnam	Payakaraopeta	Pentakota	50	Very high - B
272	Visakhapatnam	Payakaraopeta	Srirampuram	50	Very high - B
273	Visakhapatnam	Payakaraopeta	Masahebpeta	50	Very high - B
274	Visakhapatnam	Payakaraopeta	Kesavaram	50	Very high - B
275	Visakhapatnam	Payakaraopeta	Rajavaram	50	Very high - B
276	Visakhapatnam	Payakaraopeta	Kumarapuram	50	Very high - B
277	Visakhapatnam	Payakaraopeta	Edatam	50	Very high - B
278	Visakhapatnam	Pedagantyada	Devada	50	Very high - B
279	Visakhapatnam	Pedagantyada	Appikonda (part)	50	Very high - B
280	Visakhapatnam	Paravada	Cheepurupalle (west)	50	Very high - B
281	Visakhapatnam	Paravada	Cheepurupalle (east)	50	Very high - B
282	Visakhapatnam	Atchutapuram	Dosuru	50	Very high - B
283	Visakhapatnam	Atchutapuram	Tantadi	50	Very high - B
284	Visakhapatnam	Atchutapuram	Chippada	50	Very high - B
285	Visakhapatnam	Atchutapuram	Thallapalem	50	Very high - B
286	Visakhapatnam	Rambilli	Pudi	50	Very high - B
287	Visakhapatnam	Atchutapuram	Pudimadaka	50	Very high - B
288	Visakhapatnam	Rambilli	Lalam koduru	50	Very high - B
289	Visakhapatnam	Rambilli	Nakkapalem	50	Very high - B
290	Visakhapatnam	Rambilli	Chebrolu veerappakondra	50	Very high - B
291	Visakhapatnam	Rambilli	Vijayarampuramagraharam	50	Very high - B
292	Visakhapatnam	Rambilli	Chatametta	50	Very high - B
293	Visakhapatnam	Rambilli	Kalavalapalli	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
294	Visakhapatnam	Rambilli	Sitapalem	50	Very high - B
295	Visakhapatnam	Rambilli	Rajala agraharam	50	Very high - B
296	Visakhapatnam	Rambilli	Gorapudi	50	Very high - B
297	Visakhapatnam	Rambilli	Zirayati chintuva	50	Very high - B
298	Visakhapatnam	Rambilli	Rambilli	50	Very high - B
299	Visakhapatnam	Rambilli	Manyapu chintuva	50	Very high - B
300	Visakhapatnam	S rayavaram	Vakapadu	50	Very high - B
301	Visakhapatnam	Bheemunipatnam	Chippada	50	Very high - B
302	Visakhapatnam	Bheemunipatnam	Annaram	50	Very high - B
303	Visakhapatnam	Bheemunipatnam	Bhimunipatnam (m)	50	Very high - B
304	Visakhapatnam	Bheemunipatnam	Mulakuddu	50	Very high - B
305	Visakhapatnam	Bheemunipatnam	Kummaripalem	50	Very high - B
306	Visakhapatnam	Bheemunipatnam	Bhimunipatnam (mu)	50	Very high - B
307	Visakhapatnam	Bheemunipatnam	Kothavalasa	50	Very high - B
308	Visakhapatnam	Bheemunipatnam	Nerallavalasa	50	Very high - B
309	Visakhapatnam	Bheemunipatnam	Nidigattu	50	Very high - B
310	Visakhapatnam	Visakhapatnam	Forest	50	Very high - B
311	Visakhapatnam	Bheemunipatnam	Ramayogi agraharam	50	Very high - B
312	Visakhapatnam	Bheemunipatnam	Kapuluppada	50	Very high - B
313	Visakhapatnam	Bheemunipatnam	Chepaluppada	50	Very high - B
314	Visakhapatnam	Visakhapatnam	Rushikonda	50	Very high - B
315	Visakhapatnam	Visakhapatnam	Endada	50	Very high - B
316	Visakhapatnam	Visakhapatnam	Adiviram	50	Very high - B
317	Visakhapatnam	Visakhapatnam(u)	Visakhapatnam (m)	50	Very high - B
318	Visakhapatnam	Gajuwaka	Gajuwaka (m)	50	Very high - B
319	Visakhapatnam	S rayavaram	Upparapalli	50	Very high - B
320	Visakhapatnam	S rayavaram	Pedda uppalam	50	Very high - B
321	Visakhapatnam	S rayavaram	China uppalam	50	Very high - B
322	Visakhapatnam	Pedagantyada	Nadupuru (part)	50	Very high - B
323	Vizianagaram	Pusapatirega	Chintapalle	50	Very high - B
324	Vizianagaram	Pusapatirega	Krishnapuram	50	Very high - B
325	Vizianagaram	Pusapatirega	Pathivada	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
326	Vizianagaram	Pusapatirega	Kollayavalasa	50	Very high - B
327	Vizianagaram	Pusapatirega	Konada	50	Very high - B
328	Vizianagaram	Bhogapuram	Subbannapeta	50	Very high - B
329	Vizianagaram	Bhogapuram	Kongavanipalem	50	Very high - B
330	Vizianagaram	Bhogapuram	Kancheru	50	Very high - B
331	Vizianagaram	Bhogapuram	Kavulavada	50	Very high - B
332	Vizianagaram	Bhogapuram	Basavapalem	50	Very high - B
333	Vizianagaram	Bhogapuram	Kancherupalem	50	Very high - B
334	West Godavari	Mogalthur	Perupalem	50	Very high - B
335	West Godavari	Mogalthur	Kummarapurugupalem	50	Very high - B
336	West Godavari	Narasapuram	Vemuladeevi	50	Very high - B
337	West Godavari	Narasapuram	Thurputallu	50	Very high - B

VILLAGES BETWEEN 2 - 5 KM FROM COAST LINE

S.no	District	Mandal	Village	Basic winds (m/s)	Category
338	East godavari	Tuni	Hamsavaram	50	Very high - B
339	East godavari	Thondangi	Anuru	50	Very high - B
340	East godavari	Thondangi	Pydikonda	50	Very high - B
341	East godavari	Thondangi	Srungavruksham	50	Very high - B
342	East godavari	Gollaprolu	Mallavaram	50	Very high - B
343	East godavari	Kothapalle	Nagulapalle	50	Very high - B
344	East godavari	Kothapalle	Kondevaram	50	Very high - B
345	East godavari	Kothapalle	Vakatippa	50	Very high - B
346	East godavari	Kothapalle	Gorsa	50	Very high - B
347	East godavari	Kakinada (rural)	Panduru	50	Very high - B
348	East godavari	Kakinada (rural)	Thimmapuram	50	Very high - B
349	East godavari	Samalkota	Panasapadu	50	Very high - B
350	East godavari	Kakinada (rural)	Penumarthi	50	Very high - B
351	East godavari	Kakinada (rural)	Ramanayyapeta	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
352	East godavari	Kakinada (rural)	Sarpavaram	50	Very high - B
353	East godavari	Kakinada (urban)	Suryaraopeta	50	Very high - B
354	East godavari	Kakinada (rural)	Suryaraopeta(part)	50	Very high - B
355	East godavari	Kakinada (rural)	Chidiga	50	Very high - B
356	East godavari	Kakinada (urban)	Medaline	50	Very high - B
357	East godavari	Kakinada (rural)	Repuru	50	Very high - B
358	East godavari	Kakinada (rural)	Kovvuru	50	Very high - B
359	East godavari	Karapa	Nadakuduru	50	Very high - B
360	East godavari	Karapa	Penuguduru	50	Very high - B
361	East godavari	Thallarevu	Chollangi	50	Very high - B
362	East godavari	Thallarevu	Chollangi peta	50	Very high - B
363	East godavari	Thallarevu	Polekurru	50	Very high - B
364	East godavari	Thallarevu	P. Mallavaram	50	Very high - B
365	East godavari	Katrenikona	Kandikuppa	50	Very high - B
366	East godavari	Uppalaguptam	Uppalaguptam	50	Very high - B
367	East godavari	Uppalaguptam	Gopavaram	50	Very high - B
368	East godavari	Allavaram	Devaguptam	50	Very high - B
369	East godavari	Allavaram	Mogallamuru	50	Very high - B
370	East godavari	Razole	Ponnamanda	50	Very high - B
371	East godavari	Malikipuram	Lakkavaram	50	Very high - B
372	East godavari	Razole	Katrevupadu	50	Very high - B
373	East godavari	Malikipuram	Gudapalle	50	Very high - B
374	East godavari	Malikipuram	Irusumanda	50	Very high - B
375	East godavari	Malikipuram	Visweswarayapuram	50	Very high - B
376	East godavari	Malikipuram	Kattiwanda	50	Very high - B
377	East godavari	Sakhinetipalle	Antarvedipalem	50	Very high - B
378	East godavari	Sakhinetipalle	Mori	50	Very high - B
379	East godavari	Sakhinetipalle	Gudimula kandrika	50	Very high - B
380	Guntur	Bapatla	Maruproluvaripalem (rural)	50	Very high - B
381	Guntur	Nizampatnam	Dindi	50	Very high - B
382	Guntur	Repalle	Gangadipalem	50	Very high - B
383	Guntur	Nizampatnam	Amudalapalli	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
384	Guntur	Karlapalem	Ganapavaram	50	Very high - B
385	Guntur	Nizampatnam	Adavuladeevi	50	Very high - B
386	Guntur	Nizampatnam	Pregnam	50	Very high - B
387	Krishna	Nagayalanka	Ganapeswaram	50	Very high - B
388	Krishna	Nagayalanka	Edurumondi	50	Very high - B
389	Krishna	Kruthivennu	Laxmipuram	50	Very high - B
390	Krishna	Kruthivennu	Garisepudi	50	Very high - B
391	Krishna	Kruthivennu	Chandala	50	Very high - B
392	Krishna	Kruthivennu	Endapalle	50	Very high - B
393	Krishna	Kruthivennu	Cherkumilli	50	Very high - B
394	Krishna	Kruthivennu	China pandraka	50	Very high - B
395	Krishna	Bantumilli	Peda pandraka	50	Very high - B
396	Krishna	Bantumilli	Narayanapuram	50	Very high - B
397	Krishna	Bantumilli	Manimeswaram	50	Very high - B
398	Krishna	Bantumilli	Munjuluru	50	Very high - B
399	Krishna	Pedana	Jinjeru	50	Very high - B
400	Krishna	Pedana	Madaka	50	Very high - B
401	Krishna	Pedana	Nandamuru	50	Very high - B
402	Krishna	Pedana	Kakarlamudi	50	Very high - B
403	Krishna	Machilipatnam	Buddalapalem	50	Very high - B
404	Krishna	Machilipatnam	Kothapudi	50	Very high - B
405	Krishna	Machilipatnam	Potlapalem	50	Very high - B
406	Krishna	Machilipatnam	Pothepalle	50	Very high - B
407	Krishna	Machilipatnam	Machilipatnam (rural)	50	Very high - B
408	Krishna	Machilipatnam	Chilakalapudi (rural)	50	Very high - B
409	Nellore	Kavali	Rudrakota	50	Very high - B
410	Nellore	Kavali	Anemadugu	50	Very high - B
411	Nellore	Kavali	Kavali bit - ii (rural)	50	Very high - B
412	Nellore	Kavali	Mannangidinne	50	Very high - B
413	Nellore	Kavali	Thallapalem	50	Very high - B
414	Nellore	Bogole	Siddavarapu venkatesupalem	50	Very high - B
415	Nellore	Allur	Allurupeta	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
416	Nellore	Allur	Allur	50	Very high - B
417	Nellore	Allur	Purini	50	Very high - B
418	Nellore	Vidavalur	Dandigunta	50	Very high - B
419	Nellore	Indukurpet	Komarika	50	Very high - B
420	Nellore	Indukurpet	Indukurpet bit-i	50	Very high - B
421	Nellore	Indukurpet	Pogada doruvu khandrika	50	Very high - B
422	Nellore	Indukurpet	Jangamvani doruvu	50	Very high - B
423	Nellore	Thotapalligudur	Potlapudi	50	Very high - B
424	Nellore	Thotapalligudur	Vilukanipalle	50	Very high - B
425	Nellore	Thotapalligudur	Eduru - I	50	Very high - B
426	Nellore	Thotapalligudur	Koduru khandrika	50	Very high - B
427	Nellore	Muthukur	Mamidipudi	50	Very high - B
428	Nellore	Muthukur	Muthukur	50	Very high - B
429	Nellore	Muthukur	Epuru bit-i-a	50	Very high - B
430	Nellore	Chillakur	Momidi	50	Very high - B
431	Nellore	Chillakur	Turpu kanupur	50	Very high - B
432	Nellore	Chillakur	Addepalle	50	Very high - B
433	Nellore	Kota	Karlapudi	50	Very high - B
434	Nellore	Kota	Siddavaram	50	Very high - B
435	Nellore	Kota	Illukurupadu	50	Very high - B
436	Nellore	Kota	Putchalapalle	50	Very high - B
437	Nellore	Kota	Allampadu	50	Very high - B
438	Nellore	Vakadu	Molaganur	50	Very high - B
439	Nellore	Vakadu	Pathetipalem	50	Very high - B
440	Nellore	Vakadu	Ganganapalem	50	Very high - B
441	Nellore	Vakadu	Iskamattu	50	Very high - B
442	Nellore	Vakadu	Pedda cheruvu	50	Very high - B
443	Nellore	Vakadu	Namkadu bit - i	50	Very high - B
444	Nellore	Vakadu	Manyalanattu	50	Very high - B
445	Nellore	Vakadu	Namkadu bit - ii	50	Very high - B
446	Nellore	Vakadu	Juvvinattu	50	Very high - B
447	Nellore	Vakadu	Kapparampadu	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
448	Nellore	Vakadu	Kodiwaka	50	Very high - B
449	Nellore	Vakadu	Cheemalapadu	50	Very high - B
450	Nellore	Vakadu	Tirumur	50	Very high - B
451	Nellore	Chittamur	Rayareddipalem	50	Very high - B
452	Nellore	Chittamur	Pothunayanipalle	50	Very high - B
453	Nellore	Chittamur	Mangalavaripalle	50	Very high - B
454	Nellore	Chittamur	Putragunta	50	Very high - B
455	Nellore	Chittamur	Mukkidipalem	50	Very high - B
456	Nellore	Chittamur	Gangupalem	50	Very high - B
457	Nellore	Chittamur	Gollapalem	50	Very high - B
458	Nellore	Chittamur	Kothapalem	50	Very high - B
459	Prakasam	Chirala	Chirala (rural)	50	Very high - B
460	Prakasam	Vetapalem	Vetapalem	50	Very high - B
461	Prakasam	Vetapalem	Pandilla palle	50	Very high - B
462	Prakasam	Chinaganjam	Kadavakuduru	50	Very high - B
463	Prakasam	Ongole	Ulich	50	Very high - B
464	Prakasam	Tangutur	Somavarappadu	50	Very high - B
465	Prakasam	Tangutur	Tangutur	50	Very high - B
466	Prakasam	Tangutur	Velagapudi	50	Very high - B
467	Prakasam	Zarugumilli	K.bitragunta	50	Very high - B
468	Prakasam	Singarayakonda	Somarajupalle	50	Very high - B
469	Prakasam	Singarayakonda	Singarayakonda	50	Very high - B
470	Prakasam	Ulavapadu	K.rajupalem	50	Very high - B
471	Prakasam	Ulavapadu	Chagallu	50	Very high - B
472	Prakasam	Ulavapadu	Veerepalle	50	Very high - B
473	Srikakulam	Ichchapuram	Edupuram	50	Very high - B
474	Srikakulam	Ichchapuram	Kotari	50	Very high - B
475	Srikakulam	Kaviti	Bhyripuram	50	Very high - B
476	Srikakulam	Kaviti	Deppili gonapaputtuga	50	Very high - B
477	Srikakulam	Kaviti	Silagam	50	Very high - B
478	Srikakulam	Kaviti	Chandiputtuga	50	Very high - B
479	Srikakulam	Kanchili	Makarampuram	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
480	Srikakulam	Kanchili	Talatampara	50	Very high - B
481	Srikakulam	Kanchili	Mandapalle	50	Very high - B
482	Srikakulam	Sompeta	Sompeta (CT)	50	Very high - B
483	Srikakulam	Kanchili	Kokkiliputtuga	50	Very high - B
484	Srikakulam	Kanchili	Ammavariputtuga	50	Very high - B
485	Srikakulam	Sompeta	Zinkibhadra	50	Very high - B
486	Srikakulam	Sompeta	Benkili	50	Very high - B
487	Srikakulam	Sompeta	Palasapuram	50	Very high - B
488	Srikakulam	Sompeta	Lakkavaram	50	Very high - B
489	Srikakulam	Sompeta	Korlam	50	Very high - B
490	Srikakulam	Sompeta	Palavalasa	50	Very high - B
491	Srikakulam	Sompeta	Ananthapuram	50	Very high - B
492	Srikakulam	Sompeta	Tallabhadra	50	Very high - B
493	Srikakulam	Sompeta	Ranigam	50	Very high - B
494	Srikakulam	Mandasa	Ambugam	50	Very high - B
495	Srikakulam	Sompeta	Pathinivalasa	50	Very high - B
496	Srikakulam	Mandasa	Ambugambit	50	Very high - B
497	Srikakulam	Mandasa	Haripuram	50	Very high - B
498	Srikakulam	Mandasa	Limbugam	50	Very high - B
499	Srikakulam	Mandasa	Narayanapuram	50	Very high - B
500	Srikakulam	Mandasa	Banjarukesupuram	50	Very high - B
501	Srikakulam	Mandasa	Bahadapalle	50	Very high - B
502	Srikakulam	Mandasa	Sariapalle	50	Very high - B
503	Srikakulam	Palasa	Neelavathi	50	Very high - B
504	Srikakulam	Palasa	Boddapadu	50	Very high - B
505	Srikakulam	Palasa	Meelagarampadu	50	Very high - B
506	Srikakulam	Palasa	Tarlakota	50	Very high - B
507	Srikakulam	Palasa	Chinabadam	50	Very high - B
508	Srikakulam	Palasa	Pesarapadu	50	Very high - B
509	Srikakulam	Vajrapukothuru	Rajam	50	Very high - B
510	Srikakulam	Vajrapukothuru	Rittapadu	50	Very high - B
511	Srikakulam	Palasa	Gopalapuram	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
512	Srikakulam	Vajrapukothuru	Peddabadam	50	Very high - B
513	Srikakulam	Palasa	Antharakudda	50	Very high - B
514	Srikakulam	Vajrapukothuru	Mahadevipuram	50	Very high - B
515	Srikakulam	Vajrapukothuru	Bendi	50	Very high - B
516	Srikakulam	Vajrapukothuru	Bypalle	50	Very high - B
517	Srikakulam	Vajrapukothuru	Seethapuram	50	Very high - B
518	Srikakulam	Vajrapukothuru	Thotapalle	50	Very high - B
519	Srikakulam	Vajrapukothuru	Kollipadu	50	Very high - B
520	Srikakulam	Vajrapukothuru	Kondavooru	50	Very high - B
521	Srikakulam	Nandigam	Marlapadu	50	Very high - B
522	Srikakulam	Vajrapukothuru	Gunalapadu	50	Very high - B
523	Srikakulam	Vajrapukothuru	Uddanam narsingapalle	50	Very high - B
524	Srikakulam	Vajrapukothuru	Miliaputti	50	Very high - B
525	Srikakulam	Nandigam	Mojjuvada	50	Very high - B
526	Srikakulam	Vajrapukothuru	Lingalapadu	50	Very high - B
527	Srikakulam	Nandigam	Bharanigam	50	Very high - B
528	Srikakulam	Nandigam	Vallabharayapadu	50	Very high - B
529	Srikakulam	Nandigam	Devada	50	Very high - B
530	Srikakulam	Nandigam	Dodlarama chandrapuram	50	Very high - B
531	Srikakulam	Tekkali	Boppaipuram	50	Very high - B
532	Srikakulam	Nandigam	Routhupuram	50	Very high - B
533	Srikakulam	Nandigam	Banjeerupeta	50	Very high - B
534	Srikakulam	Vajrapukothuru	Sunkara jaganadhapuram	50	Very high - B
535	Srikakulam	Vajrapukothuru	Dabbalapadu	50	Very high - B
536	Srikakulam	Nandigam	Uyyalapeta	50	Very high - B
537	Srikakulam	Santhabommali	Khaspanaupada	50	Very high - B
538	Srikakulam	Santhabommali	Yemalapeta	50	Very high - B
539	Srikakulam	Santhabommali	Kurmanadhapuram	50	Very high - B
540	Srikakulam	Santhabommali	Pothunaidupeta	50	Very high - B
541	Srikakulam	Santhabommali	Akasalakkavaram	50	Very high - B
542	Srikakulam	Santhabommali	Antlavaram	50	Very high - B
543	Srikakulam	Santhabommali	Govindapuram	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
544	Srikakulam	Santhabommali	Jonnalapadu	50	Very high - B
545	Srikakulam	Santhabommali	Kakarapalle	50	Very high - B
546	Srikakulam	Santhabommali	Godalam	50	Very high - B
547	Srikakulam	Kotabommali	Gangaram	50	Very high - B
548	Srikakulam	Santhabommali	Palathalagam	50	Very high - B
549	Srikakulam	Kotabommali	Harichandrapuram	50	Very high - B
550	Srikakulam	Santhabommali	Uddandapalem	50	Very high - B
551	Srikakulam	Polaki	Rahimanpuram	50	Very high - B
552	Srikakulam	Polaki	Urjam	50	Very high - B
553	Srikakulam	Polaki	Boddam	50	Very high - B
554	Srikakulam	Polaki	Priyagraharam	50	Very high - B
555	Srikakulam	Polaki	Gathalavalasa	50	Very high - B
556	Srikakulam	Polaki	Susaram	50	Very high - B
557	Srikakulam	Polaki	Challayyavalasa	50	Very high - B
558	Srikakulam	Polaki	Ambeerupeta	50	Very high - B
559	Srikakulam	Polaki	Gangivalasa	50	Very high - B
560	Srikakulam	Polaki	Vodhipadu	50	Very high - B
561	Srikakulam	Polaki	Yetlabasivalasa	50	Very high - B
562	Srikakulam	Polaki	Santhalakshmi puram	50	Very high - B
563	Srikakulam	Polaki	Talasamudram	50	Very high - B
564	Srikakulam	Polaki	Dola	50	Very high - B
565	Srikakulam	Gara	Ampolu	50	Very high - B
566	Srikakulam	Gara	Fakeertakya	50	Very high - B
567	Srikakulam	Srikakulam	Pathasrikakulam (rural)	50	Very high - B
568	Srikakulam	Gara	Sativada	50	Very high - B
569	Srikakulam	Gara	Thulugu	50	Very high - B
570	Srikakulam	Gara	Nizamabad	50	Very high - B
571	Srikakulam	Gara	Korni	50	Very high - B
572	Srikakulam	Gara	Calingapatnam	50	Very high - B
573	Srikakulam	Gara	Gara	50	Very high - B
574	Srikakulam	Gara	Vadada	50	Very high - B
575	Srikakulam	Etcherla	Muddada	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
576	Srikakulam	Etcherla	Ponnada	50	Very high - B
577	Srikakulam	Srikakulam	Balivada	50	Very high - B
578	Srikakulam	Etcherla	Kongaram	50	Very high - B
579	Srikakulam	Etcherla	Kaluri acharyula agraharam	50	Very high - B
580	Srikakulam	Etcherla	Ajjaram	50	Very high - B
581	Srikakulam	Laveru	Thamvada	50	Very high - B
582	Srikakulam	Laveru	Hanumanthapuram	50	Very high - B
583	Srikakulam	Laveru	Sahapuram	50	Very high - B
584	Srikakulam	Laveru	Lopenta	50	Very high - B
585	Srikakulam	Laveru	Netheru	50	Very high - B
586	Srikakulam	Ranastalam	Krishnapuram	50	Very high - B
587	Srikakulam	Ranastalam	Gosam	50	Very high - B
588	Srikakulam	Laveru	Lakshmipuram	50	Very high - B
589	Srikakulam	Ranastalam	Surapuram	50	Very high - B
590	Srikakulam	Ranastalam	Yerravaram	50	Very high - B
591	Srikakulam	Laveru	Regapalem	50	Very high - B
592	Srikakulam	Ranastalam	Teppalavalasa	50	Very high - B
593	Srikakulam	Ranastalam	Seetharampuram	50	Very high - B
594	Srikakulam	Ranastalam	Patharlapalle	50	Very high - B
595	Srikakulam	Ranastalam	Derasam	50	Very high - B
596	Srikakulam	Ranastalam	Paparaopeta	50	Very high - B
597	Srikakulam	Ranastalam	Surampeta	50	Very high - B
598	Srikakulam	Ranastalam	Chillapetarajam	50	Very high - B
599	Srikakulam	Ranastalam	Maruvada	50	Very high - B
600	Srikakulam	Ranastalam	Chittivalasa	50	Very high - B
601	Srikakulam	Ranastalam	Boyapalem	50	Very high - B
602	Visakhapatnam	S rayavaram	Thimmapuram	50	Very high - B
603	Visakhapatnam	S rayavaram	Koruprolu	50	Very high - B
604	Visakhapatnam	Nakkapalli	Upmaka agraharam	50	Very high - B
605	Visakhapatnam	Nakkapalli	Kagita	50	Very high - B
606	Visakhapatnam	Nakkapalli	Nallamallipalem	50	Very high - B
607	Visakhapatnam	Nakkapalli	Forest	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
608	Visakhapatnam	Nakkapalli	Forest	50	Very high - B
609	Visakhapatnam	Payakaraopeta	Forest	50	Very high - B
610	Visakhapatnam	Payakaraopeta	Gopalapatnam	50	Very high - B
611	Visakhapatnam	Payakaraopeta	Mangavaram	50	Very high - B
612	Visakhapatnam	Payakaraopeta	Pedarama bhadra puram	50	Very high - B
613	Visakhapatnam	Payakaraopeta	Satyavaram	50	Very high - B
614	Visakhapatnam	Payakaraopeta	Palteru	50	Very high - B
615	Visakhapatnam	Payakaraopeta	S. Narasapuram	50	Very high - B
616	Visakhapatnam	Payakaraopeta	Kandipudi	50	Very high - B
617	Visakhapatnam	Paravada	Kalapaka	50	Very high - B
618	Visakhapatnam	Paravada	Ravada	50	Very high - B
619	Visakhapatnam	Paravada	Swayambuvaram	50	Very high - B
620	Visakhapatnam	Atchutapuram	Dopperla	50	Very high - B
621	Visakhapatnam	Atchutapuram	Gangamambapuraagraharam	50	Very high - B
622	Visakhapatnam	Atchutapuram	Nadimpalli	50	Very high - B
623	Visakhapatnam	Atchutapuram	Nunaparathi	50	Very high - B
624	Visakhapatnam	Atchutapuram	Maduthuru	50	Very high - B
625	Visakhapatnam	Atchutapuram	Ravipalem	50	Very high - B
626	Visakhapatnam	Atchutapuram	Duppituru	50	Very high - B
627	Visakhapatnam	Atchutapuram	Janguluru	50	Very high - B
628	Visakhapatnam	Atchutapuram	Uddapalem	50	Very high - B
629	Visakhapatnam	Rambilli	Moturupalem	50	Very high - B
630	Visakhapatnam	Rambilli	Raja koduru	50	Very high - B
631	Visakhapatnam	Atchutapuram	Jogannapalem	50	Very high - B
632	Visakhapatnam	Rambilli	Anandapuram	50	Very high - B
633	Visakhapatnam	Rambilli	Gurjapalem	50	Very high - B
634	Visakhapatnam	Rambilli	Krishnampalem	50	Very high - B
635	Visakhapatnam	Rambilli	Velchuru	50	Very high - B
636	Visakhapatnam	Rambilli	Rajala	50	Very high - B
637	Visakhapatnam	Rambilli	Marripalem	50	Very high - B
638	Visakhapatnam	Bheemunipatnam	Amanam	50	Very high - B
639	Visakhapatnam	Bheemunipatnam	Bheemunipatnam	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
640	Visakhapatnam	Bheemunipatnam	K.v.bhumulu	50	Very high - B
641	Visakhapatnam	Bheemunipatnam	Tagarapuvalasa	50	Very high - B
642	Visakhapatnam	Bheemunipatnam	Chittivalasa	50	Very high - B
643	Visakhapatnam	Anandapuram	Peddipalem	50	Very high - B
644	Visakhapatnam	Bheemunipatnam	Sangivalasa	50	Very high - B
645	Visakhapatnam	Anandapuram	Vemulavalasa	50	Very high - B
646	Visakhapatnam	Bheemunipatnam	Tallavalasa	50	Very high - B
647	Visakhapatnam	Anandapuram	Vellanki	50	Very high - B
648	Visakhapatnam	Anandapuram	Gambheeram	50	Very high - B
649	Visakhapatnam	Bheemunipatnam	J.v. agharam	50	Very high - B
650	Visakhapatnam	Bheemunipatnam	Boddapalem	50	Very high - B
651	Visakhapatnam	Anandapuram	Vellanki	50	Very high - B
652	Visakhapatnam	Visakhapatnam	Paradesipalem	50	Very high - B
653	Visakhapatnam	Visakhapatnam	Bakkannapalem	50	Very high - B
654	Visakhapatnam	Bheemunipatnam	Maduravada	50	Very high - B
655	Visakhapatnam	Visakhapatnam	Potulamangayyapalam	50	Very high - B
656	Visakhapatnam	Visakhapatnam	Chinagadili	50	Very high - B
657	Visakhapatnam	Gajuwaka	Kanithi	50	Very high - B
658	Visakhapatnam	Pedagantyada	Pedagantyada	50	Very high - B
659	Visakhapatnam	S rayavaram	Sarvasiddi	50	Very high - B
660	Visakhapatnam	S rayavaram	Karrivanipalem	50	Very high - B
661	Visakhapatnam	S rayavaram	Lingarajupalem	50	Very high - B
662	Vizianagaram	Pusapatirega	Govindapuram	50	Very high - B
663	Vizianagaram	Pusapatirega	Lankalapallipalem	50	Very high - B
664	Vizianagaram	Pusapatirega	Chowduvada	50	Very high - B
665	Vizianagaram	Pusapatirega	Bharanikam	50	Very high - B
666	Vizianagaram	Pusapatirega	Konayypalem	50	Very high - B
667	Vizianagaram	Pusapatirega	Gumpam	50	Very high - B
668	Vizianagaram	Pusapatirega	Vempadam	50	Very high - B
669	Vizianagaram	Pusapatirega	Thottadam	50	Very high - B
670	Vizianagaram	Pusapatirega	Roluchappidi	50	Very high - B
671	Vizianagaram	Pusapatirega	Palanki	50	Very high - B

S.no	District	Mandal	Village	Basic winds (m/s)	Category
672	Vizianagaram	Pusapatirega	Pasupam	50	Very high - B
673	Vizianagaram	Bhogapuram	Kotabhogapuram	50	Very high - B
674	Vizianagaram	Pusapatirega	Yerukonda	50	Very high - B
675	Vizianagaram	Pusapatirega	Nadipalle	50	Very high - B
676	Vizianagaram	Bhogapuram	Bhogapuram	50	Very high - B
677	Vizianagaram	Bhogapuram	Lakshmipuram	50	Very high - B
678	Vizianagaram	Bhogapuram	Nandigam	50	Very high - B
679	Vizianagaram	Bhogapuram	Jaggayyapeta	50	Very high - B
680	Vizianagaram	Bhogapuram	Munjeru	50	Very high - B
681	Vizianagaram	Bhogapuram	Gudepuvalasa	50	Very high - B
682	Vizianagaram	Bhogapuram	Amatam ravivalasa	50	Very high - B
683	Vizianagaram	Bhogapuram	Polipalle	50	Very high - B
684	Vizianagaram	Bhogapuram	Ravada	50	Very high - B
685	Vizianagaram	Bhogapuram	Cherakupalle	50	Very high - B
686	Vizianagaram	Bhogapuram	Gudivada	50	Very high - B
687	West godavari	Bhimavaram	Forest	50	Very high - B
688	West godavari	Mogalthur	Kalipatnam	50	Very high - B
689	West godavari	Mogalthur	Mutyalapalle	50	Very high - B
690	West godavari	Narasapuram	Lakshmaneswaram	50	Very high - B
691	West godavari	Bhimavaram	Losarigutlapadu	50	Very high - B
692	West godavari	Narasapuram	Lingana boinacherla	50	Very high - B

INDIA DISASTER RESOURCE NET WORK (IDRN)

(District Wise Resource Inventory)

3a. Equipments with A P State Disaster Response Force

Sl.	Name of the Equipment	2 nd Bn	3 rd Bn	5 th Bn	6 th Bn	9 th Bn	16 th Bn	H.O	Total
1	I-Sat Phones	-	1	1	-	1	-	1	4
2	Hdpe Life Boats For Rescue (14 Seater) Mac600)	-	-	-	3	-	1	-	4
3	Inflatable Rescue Boats with OBM 25 HP	-	2	1	1	-	-	-	4
4	Hammers 10 Lb (4.5 Kg)	2	2	2	2	2	2	-	12
5	Portable Oxygen Kits	-	2	-	2	2	-	-	6
6	Anchor With Rope (20m)	-	2	-	2	1	-	-	5
7	Water Rescue Helmets	-	3	-	3	3	-	-	9
8	Swimming Glasses	-	15	-	14	15	-	-	44
9	Safety Knife	-	3	-	3	3	-	-	9
10	Throw Bags	-	2	-	2	2	-	-	6
11	Survivor Pfd	-	4	-	3	4	-	-	11
12	Mooring Rope	-	2	-	2	2	-	-	6
13	Water Proof Head Torch	-	4	-	3	4	-	-	11
14	Spine Board With Head Immobilizer	-	-	-	2	-	-	-	2
15	Torch Light Under Water	-	2	-	2	2	-	-	6
16	Emergency Foldable Stretcher	20	20	20	20	20	20	-	120

Sl.	Name of the Equipment	2 nd Bn	3 rd Bn	5 th Bn	6 th Bn	9 th Bn	16 th Bn	H.O	Total
17	Spine Boards	10	10	10	10	10	10	-	60
18	Heavy Duty Hand Gloves	-	92	-	-	92	92	-	276
19	Nose Masks	-	92	-	-	92	92	-	276
20	Black Belt With Buckle (Nylon)	-	92	-	-	92	92	-	276
21	Safety Goggles	-	92	-	-	92	92	-	276
22	Helmet (Colour Yellow)	-	92	-	-	92	92	-	276
23	Knee Pad (Brand Killer)	-	92	-	-	92	92	-	276
24	Elbow Pad (Brand Killer)	-	92	-	-	92	92	-	276
25	Wood Cutter Chain Saw Model Ms 230	2	2	1	2	2	1	-	10
26	Wood Cutter Chain Saw – Sunmax	2	-	-	-	-	-	-	2
27	Wood Cutter Chain Saw Zm 7500 (74cc)	5	6	1	7	6	-	-	25
28	Wood Cutter Chain Saw Ms382 (72.2cc)	28	47	93	58	28	95	-	349
29	Wood Cutter Chain Saw Ms-460 (76.5cc)	15	21	18	24	20	26	-	124
30	Wood Cutter Chain Saw Model Ms 660	-	16		4	-		-	20
31	Wood Cutter Chain Saw Model Ms 880 – 121.6cc	-	5	-		-	-	-	5

Sl.NO	Battalion Locations.
1	2nd Bn APSP, Kurnool.
2	3rd Bn APSP, Kakinada, East Godavari.
3	5th Bn APSP, Vizianagaram.
4	6th Bn APSP, Mangalagiri, Guntur.
5	9th Bn APSP, Venkatagiri, Nellore.
6	16th Bn APSP, Visakhapatnam.

3a. 1. EQUIPMENTS WITH AP STATE DISASTER RESPONSE & FIRE SERVICES DEPARTMENT

Sl.No	District	Bolt cutters (Shears)	Chain Saw-Diamond	Cutters-Hydraulic	Spreaders-Hydraulic	Sledge hammer	Heavy Axe	Crescent/adjustable wrenches	Rescue Rams	Inflatable Light Tower	Light Mast
1	Srikakulam	5	50	1	1	12	8	9	1	7	0
2	Vizianagaram	4	28	2	2	5	3	4	0	5	1
3	Visakhapatnam	1	50	2	2	5	26	0	2	11	1
4	East Godavari	1	100	1	1	10	0	0	0	10	3
5	West Godavari	1	0	1	1	1	2	0	1	10	0
6	Krishna	7	106	3	3	23	11	4	1	12	0
7	Guntur	3	0	0	0	10	0	0	0	9	0
8	Prakasam	1	0	3	3	0	0	0	1	7	0
9	SPSR Nellore	1	31	2	1	10	4	2	1	4	1
10	Chittoor	7	19	5	1	5	3	4	1	5	0
11	YSR Kadapa	3	10	1	1	7	4	10	0	5	0
12	Kurnool	2	0	2	0	13	0	0	0	3	0
13	Ananthapurmu	2	0	1	0	3	2	0	0	3	0
	Total	38	394	24	16	104	63	33	8	91	6
Sl.No	District	Fire Fighting Foam(Ltrs.)	Jack with 5ton lift	Gloves-Rubber, Tested up to 25,000 volt	Stretcher harness (set)	Blankets	Search light	Lifebuoy	Life Jackets	Breathing apparatus - self contained	Pump - high pressure, portable
1	Srikakulam	4000	6	0	0	1	10	58	71	13	14
2	Vizianagaram	1780	0	1	1	0	0	53	47	6	13
3	Visakhapatnam	3120	0	1	0	2	7	69	47	16	16
4	East Godavari	4000	5	0	2	0	5	177	194	15	1
5	West Godavari	2940	0	0	1	0	4	90	145	6	22
6	Krishna	4195	11	30	0	1	5	165	263	34	38
7	Guntur	1620	0	4	0	10	0	96	174	19	28
8	Prakasam	2700	1	0	0	0	0	44	56	7	21
9	SPSR Nellore	1990	1	0	0	0	1	76	82	13	14
10	Chittoor	4310	6	1	1	5	7	41	77	17	25
11	YSR Kadapa	2510	8	20	0	0	6	47	50	16	9
12	Kurnool	1850	2	0	0	0	0	85	153	19	16
13	Ananthapurmu	1790	9	0	0	3	4	52	80	11	5
	Total	36805	49	57	5	22	49	1053	1439	192	222

3A. 2. EQUIPMENTS WITH AP STATE DISASTER RESPONSE & FIRE SERVICES DEPARTMENT

Sl.No	District	Suit - fire proximity	Boats (IRB)	Pump - floating	Extension Ladder	ABC Type	CO2 Type	Foam Type	DCP Type	Fire Tender	Form Tender
1	Srikakulam	3	2	4	13	4	73	18	65	13	0
2	Vizianagaram	3	3	3	14	0	73	6	45	12	0
3	Visakhapatnam	2	2	4	11	0	28	10	80	10	3
4	East Godavari	2	2	4	20	0	42	25	28	17	1
5	West Godavari	0	4	4	14	19	78	21	42	14	0
6	Krishna	5	9	5	25	28	194	50	96	22	2
7	Guntur	0	4	4	0	0	50	0	41	13	2
8	Prakasam	4	4	3	16	0	82	6	63	16	0
9	SPSR Nellore	5	7	4	13	0	121	10	83	11	1
10	Chittoor	6	3	3	19	6	149	26	46	20	0
11	YSR Kadapa	2	2	2	17	3	90	16	60	13	1
12	Kurnool	5	2	3	15	0	115	8	47	19	0
13	Ananthapuramu	6	1	3	13	3	102	14	58	14	1
	Total	43	45	46	190	63	1197	210	754	194	11

Sl.No	District	Stretcher normal	Diving suit	Defibrillator	Tarpaulin	Rope ladder	Aluminium ladder	Shovel	Spade	Crow bar	Helmet
1	Srikakulam	2	0	1	0	2	0	46	40	45	56
2	Vizianagaram	0	2	0	0	2	7	34	30	33	69
3	Visakhapatnam	2	1	0	0	6	0	57	36	28	65
4	East Godavari	2	0	0	0	0	0	24	26	18	65
5	West Godavari	1	0	0	0	0	0	47	39	30	52
6	Krishna	9	0	0	0	1	7	67	36	75	263
7	Guntur	1	1	1	0	0	13	44	42	41	62
8	Prakasam	0	0	0	0	0	0	29	32	42	62
9	SPSR Nellore	4	3	1	0	4	9	34	32	40	51
10	Chittoor	0	0	0	2	1	0	46	48	29	119
11	YSR Kadapa	1	0	0	1	0	0	41	37	47	121
12	Kurnool	2	0	0	0	0	2	46	49	49	86
13	Ananthapuramu	0	0	0	2	4	6	39	43	23	77
	Total	24	7	3	5	20	44	554	490	500	1148

3A. 3. EQUIPMENTS WITH AP STATE DISASTER RESPONSE & FIRE SERVICES DEPARTMENT

Sl.No	District	Pick Axe	Axe	Ceiling Hook	Ropes	Motor Cycle	Any other Items
1	Srikakulam	0	0	0	0	0	0
2	Vizianagaram	0	0	0	0	0	Mini Mist Jeep-2 Mist Bulet -2
3	Visakhapatnam	0	0	0	0	0	0
4	East Godavari	0				0	
5	West Godavari	0	0	0	0	0	0
6	Krishna	0	0	0	0	0	Water Lorry -3 Browsers-1 Mini Mist-3 Rescue Tender-1
1	Guntur	0	0	0	0	0	0
2	Prakasam	28	16	12	39	3	0
3	SPSR Nellore	0	0	0	0	0	0
4	Chittoor	0	0	0	0	0	0
5	YSR Kadapa	0	0	0	0	0	1 Hydraulic Manual Cutter
6	Kurnool	0	0	0	0	0	0
7	Ananthapuramu	18	7	17	52	4	0
	Total	46	23	29	91	7	

EARLY WARNING DISSEMINATION SYSTEM (EWDS) STATION LOCATIONS

Early Warning Dissemination System (EWDS) Station locations in Andhra Pradesh		
Sl.No	Station	District/Mandal/Location
1	State Emergency Operation Centre (SEOC)	O/oAPSDMA, Tadepalli, GunturDistrict, Amaravati.
2	District Emergency Operation Center(DEOCs)	Collectorate, Srikakulam
3		Collectorate, Vizianagram
4		Collectorate, Visakhapatnam
5		Collectorate, East Godavari
6		Collectorate, West Godavari
7		Collectorate,Machilipatnam, Krishna
8		Collectorate, ,Guntur
9		Collectorate, Ongole, Praksam
10		Collectorate, Nellore
Mandal Emergency Operation Centre(MEOCs)		
Sl.No	District	Location/Mandal
1	Guntur	Nizampatnam
2		Repelle
3		Karlapalem
4		Bapatla
5	Krishna	Kruthivennu
6		Bandar
7		Nagayalanka
8		Koduru
9		Bantumilli
10	West Godavari	Narasapur
11		Mogalturu
12	East Godavari	Thondangi
13		Upplalaguptam
14		I Polavaram
15		Katrenikona
16		Allavaram
17		Sakinetipally
18		Malkipuram
19		U.Kothapalli
20		Mamidikuduru
21		Tuni
22		Kakinada(Urban)
23		Karapa
24		Thallarevu
25		Razole
26		Ulavapadu
27	Prakasam	S. Konda
28		N.G. Padu
29		Chirala
30		Kothapatnam

31		Gudlur
32		Chinnaganjam
33		Vetapalem
34		Ongole
35		Tangutur
36		Bogole
37		Muthukur
38		Kavali
39		Vidvaluru
40		Indukurupeta
41		Alluru
42	Nellore	Vakada
43		Kota
44		Thotapalligudur (T.P.Gudur)
45		Chillakur
46		Chittamur
47		Sullurpeta
48		Tada
49		Ichapuram
50		Kaviti
51		Sompeta
52		Vajrapukothuru
53		Santabommali
54		Gara
55		Laveru
56	Srikakulam	Ranastalam
57		Polaki
58		Etcherla
59		Mandasa
60		Palasa
61		Nandigam
62		Srikakulam
63		Kanchili
64	Viziaynagaram	Pusapatirega
65		Bhogapuram
66		Paravada
67		Nakkapalli
68		Payakaraopeta
69		Rambilli
70		Atchutapuram
71	Visakhapatnam	Bheemili
72		S. Rayavaram
73		Visakhapatnam (Rural)
74		Visakhapatnam (Urban)
75		Gajuwaka
76		Pedagantyada
Fish landing Centers		
Sl.No	District	Location
1	Nellore	Utukurupeddapalem
2		Juvvaladinne

3	Visakhapatnam	Visakhapatnam Outer harbor (Revopolavaram)
4		Pudimadaka(Kadapalem)
5	Vizianagarm	Chintapalli (Mukham)
6	East Godavari	Kakinada Fishing Harbour
7		Bhairavapalem
8	West Godavari	Veemuladeevi old MPCs BUILDING
9	Krishna	Gilakaladindi
10		Sorlagondi
11	Guntur	Nizampatnam Fishing Harbour
12		Suryalanka
13	Prakasam	Vodarevu
14		Kothapatnampallipalem
15	Srikakulam	Manchineellapeta
16		Budagatlapalem (Jeerupalem)
Tourist Locatons		
Sl.No	District	Location
1	Nellore	Mypadu Beach
2	Visakhapatna m	Ramkrishna Beach
3		Rushikonda Beach
4		Yarada Beach
5		Bheemunipatnam Beach
6		Manginapudi Beach
7	West Godavari	Perupalem Beach
8	East Godavari	NTR Beach, Kakinada

List of Multi-Purpose Cyclone Shelters (MPCS) connected with Early Warning Dissemination System (EWDS)			
S.No	District	Mandal	Village
1	Srikalulam	1. Ichapuram	1.Donkuru
2		2. Kaviti	1.Idduvanipalem,
3			2.Ch. Karrivaripalem
4		3. Sompeta	1.Gollavuru
5			2.Ramayyapatnam
6		4. Vajrapukothuru	1. Amalapadu
7			2.Metturu
8			3.MN Peta
9			7. Bypalli
10			8. Chinavanka
11			9. Chinakothuru
12		5. Santabommali	1. Kollipadu
13			2. Reddica Sunnapalli
14			3. Runku
15		6. Gara	1. Komaravanipeta
16			2.Calingapatnam
17			3. Korlam
18			4. Bandravanipeta
19			5. Perlavanipeta
20		7. Laveru	Ragupalem
21			1.Komaravanipeta

22		8. Ranastalam	2. Jagannadapuram
23			3. Ch. Kovvada
24			4. Kotha Mukkam
25			5. Donipeta
26			6.Potayyapeta
27		9.Polaki	1. Akkuvaram
28		10. Etcherla	1.Moosavanipeta
29			2.Badavanipeta
30			3. D.Matsyalesam
31		Srikakulam	
32	5. Kotha Dibbalapalem		
33	6. Patha Dibbaplaem		
34	7.Rallapeta		
35	Vizianagaram	11. Pusapatirega	1. Barripeta H\O Pathiwada
36			2. Boddugurayayapeta
37			3. B.V.Peta
38			4. Konaipalem
39			5. Konada-2
40		12. Bhogapuram	1. Thotapalli
41			2. Kondarajupalem
42	Visakhapatnam	13. Paravada	1. Jalaripeta
43		14.Nakkapalli	2. Muthyalam palem
44			1.Bangarampeta
45		15. Payakaraopeta	2. Mullaparra
46			1.Gajapatinagaram
47			2. Palmanpeta
48			3. Ratnayampeta
49			4. Kumarapuram
50			5. Pentakota
51			6.Rajayyapeta
52		16. Rambilli	1. Venkayyapalem
53		17. Atchutapuram	1.Kadapalem-I
54			2. Vadapalem
55		19. S. Rayavaram	1. Revopolavaram
56	East Godavari	20. Thondangi	1. Avulamanda
57			2. Laxmanudipeta
58		21.Uppalaguptam	1. Pedaraghavulupeta
59		22. I Polavaram	1. Byravapalem
60		23. Katrenikona	2. Balusutippa
61		24. Allavaram	3. Chirrayanam
62			4. Kothapalem
63			5. Molleti Mogga
64			6. Neelarevvu- I
65			7. Pandi
66			8. Pallam Kurru

67		25. Sakinetipally	1. Rameshwaram
68			2. Vodalarevu
69			3. Samantha Kurru
70			1. Kesavadasupalem
71			2. Pallipalem
72			1. Padamatipalem
73			2. Kesanapalli
74			1. Uppada
75		28. Mamidikuduru	1. Karavaka
76	West Godavari	29. Narasapur	1. Sardupallipalem of Vemulaveedhi
77			2. Chinmyavani Lanka
78			3. Pedamaghavani Lanka
79			4. Veemuladeevi (East)
80			1. Yetimondi of Perupalem
81			2. Bellamkondavari meraka
82	Krishna	31. Kruthivenu	1. Intheru
83			2. Pedathadika
84		32. Bandar	1. Pedapatnam-I
85			2. Tallapalem
86		33. Nagayalanka	3. V. Kanuru
87			4. Gilakaladindi
88			5. Poletitippa
89			6. Kammavari Cheruvu
90			7. Pallitammalapalem
91			1. Elichetladibba
92	Guntur	34. Nizampatnam	1. Harbour of Nizampatnam Village
93			2. Sanjeevanagar of Kothapatnam
94		35. Repelle	3. Nakshatra Nagar of Kothapalem
95			4. Fishermen colony of Nizampatnam village
96			5. Near MRO office of Nizampatnam
97			6. Padamativeedhi of Nizampatnam
98			1. Mollagunta of Katta
99		36. Bapatla	2. Lankavanidibba
100			1. Suryalanka
101	Prakasam	37. Ulavapadu	1. Chakicherla
102			2. Alagayypalem of Karedu
103			3. Pallipalem of Ramayapatnam (Proposed for site change)
104			4. Kothapallipalem of Karedu

105		38. S. Konda	5. Pedapallipale of Karedu
106			1. Pakala Main
107			2. Pothaiahgari Pattapupalem of Pakala
108		39. N.G. Padu	1.Thopulapalem of Kanuparthi
109		40. Chirala	1. Odarevu
110		41. Kothapatnam	1. K.Pallipalem
111			2. Motumala
112			3. Padarthi
113			4. Rangaiah Palem
114			5. Gamalla Palem
115			6. Madanur
116		42. Gudlur	1.Mondivaripalem
117	Nellore	44. Bogole	2. Salipeta
118			1. Pallipalem of Pedaganjam
119			1.Kothakadapalem
120		45. Muthukur	2. Pathapalem ofChennapalem
121			3. Tenkyalachetla palem
122			1. Epurupattapupalem
123		46. Kavali	2. krishnapatnam
124			1. Chinaramudupalem
125			2. Chinapattapupalem H\O Chennayyapalem
126			3. Indranagar colony of Thummalapenta
127			4. Karetivaripalem
128			5. Pallipalem of Thummalapenta
129			6.Pedanattu
130			7. Ramudipallipalem
131			8.Sri Ramapuram-II
132			9.Pedda Ramudipalem
133		47. Vidvaluru	1. Sri Gowripuram of Ramatheertham
134			2. Pallipalem of Utukuru
135			3. Venkatareddy Palem
136			4. Pedapalem of Ponnapudi
137			5.Pedapalem of Utukuru
138			6. Anajaneyapuram
139		48. Indukurupeta	1. West Pattepupalem of Mypadu
140			2. Korutu Pattapupalem
141			3. Monapalem
142		49. Alluru	1. Audinarayanapuram
143		50. Vakada	1. Pamaji
144		51. Kota	1. Kothapatnam
145			2. Srinivasa satram

LIST OF SATELLITE PHONE, V-SAT & SBMDVT'S IN THE STATE/DISTRICT/DEPARTMENTS

S.No	District	Location	Type of equipment				Name of the Department	In Costody of DRO/ D-section/ R.I/ SDRF	Name of the Person Operating	Mobile Number of the Operating Person
			Satellite phone	Satellite Phone Number	SBMD VT	V-SAT				
1	Srikakulam	Collector office	2	8991115274 8991119337	2	81392/3	Revenue	D-Section	A.SuryaRajasekhar (Jr.Assistant)	Jagadesh-9553187387
2	Vizianagaram	Collector office			2		Revenue	D-Section	P.venkata Lakshmi (Sr.Assistant)	7093210756
		5th Batallion	1	8991115152			SDRF	RI :T.Prabhakar (RI)	CC : Nani	CC-9502121076
3	Visakhapatnam	Collector office	2	8991115273 8991119345	2	81502/3	Revenue	D-Section	R.Sarath (Ham Radio Operator)	8374579403
4	East Godavari	Chituru ITDA PO Office	1	8991115271	2		Revenue	D-Section	Nagesh Kumar	9263125678
		Rampachodavaram	1	8991115275			Revenue	ITDA (PO)	Anand (CC)	9440801445
		3rd Batallion	1	8991115151			SDRF	RI	Chand Kumar (HC)	9492160766
5	West Godavari	Collector office			2		Revenue	Collector	Collector CC	9491041487
								Joint Collector	Joint Collector CC	9491041421
		Jangareddygudem RDO Office	1	8991115272				RDO	Pramod	9505129577
6	Krishna	Collector office			2		Revenue	D-Section	P.Purshotham (Ham Radio Operator)	9032298242

S.No	District	Location	Type of equipment				Name of the Department	In Costody of DRO/ D-section/ R.I/ SDRF	Name of the Person Operating	Mobile Number of the Operating Person
			Satellite phone	Satellite Phone Number	SBMD VT	V-SAT				
		AP Fire Service	1	8991115154			AP Fire Service	Superintendent	Vinayak (Superintendent)	9701765436
7	Guntur	Collector office			2		Revenue	D-Section	V.S.R.Prasad (Ham Radio Operator)	9959625564
		AP SDMA	2	8991115150 8991119338	2	81442/3	APSDMA	Duty Officers	Duty Officers (SEOC)	8333905022
		IGP BN & SDRF	1	8991115277			IGP BN & SDRF	RI	SDRF Control	9440906404
8	Nellore	Collector office	1	8991119336	2	81504/5	Revenue	DPM	Vijayasradhi (Ham Radio Operator)	9866195456
		9th Batallion	1	8991115153			9th BN SDRF	RI	Balu 6281047743	9440906540 7287039127
9	Prakasham	Collector office	1	8991115276	2		Revenue	DRO	DRO CC	8886616005 , 7396550397
Total Districts - 9, Satellite Phones - 16, SBMDVT's - 20 and V-SAT- 4										
V-Sat NDMA contact No:81350										

GENERAL TERMINOLOGY USED IN WEATHER BULLETINS

(A)	Intensity of Rainfall	Terminology Used.
1.	0.1 mm to 2.4 mm (24 hrs)	Very light rain
2.	2.5 mm to 7.5 mm	"
3.	7.6 mm to 34.9 mm	"
4.	35.0 mm to 64.9 mm	"
5.	65.0 mm to 124.9 mm	"
6.	Exceeding 125 mm.	"

(B) Special distribution of weather phenomenon.		
S.No.	Percentage Area Covered	Terminology Used
1.	1 to 25	Isolated
2.	26 to 50	Few Places
3.	51 to 75	Many Places
4.	76 to 100	At most Places

(C) Emergency Situation

1. When water level is rising above the danger of H.F.L
2. When intensity of rainfall is above 65 mm/hr
3. When breaches are anticipated and may lead to disaster.
4. When water levels are rising alarmingly.

(D) Evacuation

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

DO'S AND DON'TS AT PRE, DURING AND POST CYCLONE

(i) Before the Cyclone season:

- Check the house; secure loose tiles, carry out repair works for doors and windows
- Remove dead wood or dying trees close to the house; anchor removable objects like lumber piles, loose tin-sheds, loose bricks, garbage cans, sign-boards etc. which can fly in strong winds
- Keep some wooden boards ready so that glass windows can be boarded if needed
- Keep a lantern filled with kerosene, battery operated torches and enough dry cells on hand.
- Demolish condemned buildings
- Keep some extra batteries for transistors
- Keep some dry non-perishable food always ready for emergency use
- Ensure availability of Personal Protective Equipements (PPE) and essential hygiene products.

(ii) When the cyclone starts

- Listen to the radio (All India Radio stations give weather warnings).
- Keep monitoring the warnings to prepare for cyclone emergency.
- Pass on the information to neighbors/others.
- Ignore rumors and do not spread them; this will help to avoid panic situations.
- Believe official information
- When a cyclone alert is on for your area, continue normal working but stay alert to the radio warnings.
- Remember that a cyclone alert means that the danger is within 24 hours. Stay alert.
- When your area is under cyclone warning get away from low-lying beaches or other low-lying areas close to the coast
- Leave early before your way to high ground or shelter gets flooded
- Do not delay and run the risk of being marooned
- If your house is securely built on high ground take shelter in the safer part of the house. However, if asked to evacuate do not hesitate to leave the place.
- Board up glass windows or put storm shutters in place.
- Provide strong suitable support for outside doors.
- If you do not have wooden boards handy, paste paper strips on glasses to prevent splinters. However, this may not avoid breaking windows.
- Get extra food which can be eaten without cooking. Store extra drinking water in suitably covered vessels.
- If you are to evacuate the house move your valuable articles to upper floors to minimize flood damage.

- Have lantern, torches or other emergency lights in working conditions and keep them handy.
- Small and loose things which can fly in strong winds should be stored safely in a room.
- Be sure that a window and door can be opened only on the side opposite to the one facing the wind.
- Make provision for children and adults requiring special diets.
- If the centre of the cyclone is passing directly over your house there will be a lull in the wind and rain lasting for half an hour or so. During this time do not go out, because immediately after that very strong winds could blow from the opposite direction.
- Switch off electrical mains in the house.
- Remain calm.

(iii) When Evacuation is instructed

- Pack essentials for yourself and your family to last you a few days, including medicines, special foods for babies and children or elders.
- Head for the proper shelter or evacuation points indicated for your area.
- Do not worry about your property
- At the shelter follow instructions of the person in charge.
- Remain in the shelter until you have been informed to leave
- Wear personal protective measures while evacuation, ensure personal hygiene and minimal physical distancing.

(iv) Post-cyclone measures

- Remain secure in shelter until given instructions to return to your home.
- Get inoculated immediately.
- Keep away from loose or dangling wires from the lamp posts.
- Drive carefully.
- Clear debris immediately from your premises.
- Report correct loss to appropriate authorities.
- Avoid mass gatherings and ensure personal hygiene.
- Wear mask while going out and ensure physical distancing.

EMERGENCY CONTACT DIRECTORY (Disaster Management Directory)

Sl. No	Name of the Department	Name of the Officer	Designation	Contact Number/Fax	Email
1	India Meteorological Department(IMD) , Amaravati	Ms. S. Stella	Director	8331086974	s.stella@imd.gov.in
2	Cyclone warning Center, Vizag	Shri Vijaybhaskar	Director	0891-2543033/31, Fax: 0891-2543036	cwcvs@imd.gov.in
3	Indian National Centre for Ocean Information Services(INCOIS)	Dr. SATHEESH C. SHENOI	Director	040-23895000, Fax: 040-23895001	director@incois.gov.in
4	National Remote Sensing Centre (NRSC)	Sri. Santanu Chowdhury	Director	040-23884001	director@nrsc.gov.in
5	Central Water Commission (CWC)	D.Ranga Reddy,	CE, KGBO, HYD	040-23201605	cekgbo-cwc.nic.in
6	MHA Control Room		011-23093563/564/566/571 Toll free no.1070,1930,1944		jscpg-mha.nic.in
7	NDMA Control Room			011-26701728	ndmacontrolroom@gmail.com
8	A P Space Application Center(APSAC)	G.Nageswar rao	Vice -Chairman	0866-2973510, Faax-0866-2972745	apsac.itec@gmail.com
9	Department of Telecom(DoT)	Abhai kumar singh	DDG(E&T)	011-23731558, Fax -23372259	abhaykr.singh69@nic.in
10	A P State Development and Planning Society(APS DPS)	K.Shiv Shankar	Director	0866-2484810	apsdps.plq@ap.gov.in
11	Medical & Health Department	Smt. Aruna kumari	Director	9989925746	dir_health@yahoo.co.in
12	Animal Husbandry Department	Dr.G.Somasekharam	Director	0866-2492542	tappal-ani@ap.gov.in
13	Agriculture Department	H.Arun kumar,I.A.S	Commissioner	0863-2216461	comagr.ap@gmail.com
14	PR&RD Department	M.Girija Shankar,I.A.S	Commissioner		cpr.ap@nic.in, commr_pr@ap.gov.in
		Prasad	PA to Commissioner	9490148358	

15	Roads and Building Department	Y.Rajeev Reddy	Engineer-in-chief(Admn,NH&CRF)	0866-2469901	cenhcrfap@gmail.com
16	Water Resource Department(Irrigation)	Sri.VEERA PRATAP NERUSU	Deputy Director (Admin)	8008500240	encirrigationap@gmail.com
			Dy.CE	0866-2576726	
17	Fisheries Department	Ram Shankar Naik, I.A.S	Commissioner	0866-2584554	commfishap@gmail.com
18	Rural Water Supply	R.V.Krishna Reddy	Engineer-in-chief(i/c)	9100120500	eicrwss@ap.gov.in
		M.Rajeswara Rao	CE-II	9100120502	ce2rwss@gmail.com
19	APSPDCL	P.Kaladhar Rao	Director projeccts	9440811888	dir_pro@southernpower.co.in
		K.Harinadha Rao	CMD	9440812222	
20	APEPDCL	Ch.Ramabhadra sastry	AEE-Technical Director to Director(Opn.)	9491049820	adetdiro@apeasternpower.com
21	Civil Supplies Department	Kona Sasidhar, I.A.S	Commr. Civil supplies &EO secy to Govt.	0866-2554138, 2554134	commr_cs@ap.gov.in , apccspeshi@gmail.com
		Smt. A.Surya kumari,I.A.S	VC&MD	0866-2551915, Fax- 0866-2551913	md@apscsc.gov.in
22	AP State Disaster response and Fire Services	Anuradha	D.G. fire	9440627878	dg_apfire@yahoo.com
23	Information & Public Relations Department(I&PR)	T.Vijay umar Reddy,I.I.S	Commissioner	0866-2974160/162, 9121215222	ipr-ap@nic.in
24	Horticulture Department	Chiranjiv Choudhary, I.F.S	Commissioner	7330741111,0863-2216470	horticulturedept@yahoo.co.in
25	Municipal and Urban development Department	Sri vijaykumar G Srkr,I.A.S	Commissioner&Director	0863-2250477, Fax 0863-2260477	cdma_ap@cdma.gov.in
26	School Education Dept.,	V.Chinaveerabhadru du,I.A.S	Commissioner	0866-2883946/47/50	csepeshi@gmail.com
27	AP SDRF	B.Srinivas	IG	8332990027	apsphedoffice@gmail.com , muniswami.sunkara@gmail.com
28	NDRF	Zahidkhan	Commandant	7382299621	ap10-ndrf@nic.in
29	NDRF-New Delhi	S.N. Pradhan,I.P.S	DG	9771400600, CC No-Inspector Negi-9891717404	hq.ndrf@nic.in
30		New Delhi		011-23438091	

	NDRF- Control room	Mangalgiri		8333068559	commandant10thndrf@gmail.com
31	Eastern Naval Command, Visakhapatnam	Cap.M.Subramanyam	CSOD	956016448,0891-2812249,2812543	Provizag.dprmod@nic.in
32	Indian Coast guard, Visakhapatnam	B ranjan	IG	0891-2547266	dhg6@indiancoastguard.nic.in
		A V C R acharayulu	Disaster commandant	7726015699	
33	A P Coastal Security Police (marine police)-control room	AS Khan, IPS	IG	0891-2797272,9959550742,cc-igp:9492545924	cspvsphans@gmail.com
34	Airforce Station, Begumpet			040-27813064,040-27753905	coobegumpet@gmail.com
35	Indian Army(HQ Telangana and Andhra), Hyd	Shri Ravi Mane	Colonel	9485100004	goldenpalmasa@gmail.com
36	Department of PORTS	NP Ram krishna Reddy,I.A.S	CEO	9959145777	dir_ports_kkd@ap.gov.in, dp_kkd@yahoo.com

DISTRICT COLLECTOR AND OTHER COLLECTORATE OFFICERS:

Sl.No	District	Name of the Officer	Designation	Contact Number	Fax	Email
1	Srikakulam	Sri J Nivas, I.A.S	Collector	9849903786	08942-222510	collector_skln@ap.gov.in
		Dr.K Srinivasulu	JC-1	9490612828		jcsklm2012@gmail.com, ajcsklm@gmail.com
		Sri B.Dayanedhi	DRO	9490612829		droskln2012@gmail.com
		M Satya Padma	D-Supdt	8333988754		cosklmsupdt@gmail.com
		Sri Nagesh	DPM	8500233124		
2	Vizianagaram	Dr.M.Hari Jawahar Lal, I.A.S.	Collector	7702762347	08922-275802	collector_vznm@ap.gov.in
		Dr.G.C.Kishore Kumar, I.A.S.	JC	9491012011		jc_vznm@ap.gov.in
		Sri J. Venkata Rao	DRO	9491012012		dro_vznm@ap.gov.in
		Sri K.Srikanth	D-Supdt	9441416480		dsuperintendent123@gmail.com
		Smt B.Padmavathi	DPM	9100124602		deocvznm@gmail.com
3	Visakhapatnam	Sri V.Vinay Chand, I.A.S.,	Collector	PS to Collector No: 9849903818 Collector peshi No: 08912526999, 08912509865		collectorpeshivizag@gmail.com ,cctocollectorvizag@gmail.com

Sl.No	District	Name of the Officer	Designation	Contact Number	Fax	Email
		Sri M. Venu Gopal Reddy, I.A.S.,	JC-1	9959026611, CC to JC No: 9032623859		jcvizag.vgr@gmail.com
		Smt. M.Sreedevi	DRO	9849903820, CC to DRO No: 9703888838	0891-2564426	drovsk@gmail.com
		Sri M.V.S. Lokeshwara Rao	D-Supdt	9849913705		drovskds@gmail.com
		Sri B.V.Ramana	DPM (I/c)	9100064972		dpmdmvizag@gmail.com
4	East Godavari	Sri D Muralidhar Reddy IAS.,	Collector	9849903899 9849903879		collector_egd@ap.gov.in
		Sri G. Lakshmi Sha IAS.,	JC-1	9849903889		jc_egd@ap.gov.in
		Sri Ch. Sathibabu	DRO	9849903862 9849903104		egodro@nic.in
		M. Suribabu	D-Supdt	9849903920		egosupdt@nic.in
			DPM		0884-2353480	
5	West Godavari	Sri Muthyala Raju Revu	Collector	9160997009	-	Collectorwg@gmail.com Collector_wgd@ap.gov.in
		Sri K Venkata Ramana Reddy	JC-1	9491041415	-	Joint collectorwg@gmail.com jc_wgd@ap.gov.in
		Sri N Srinivasa Murthy	DRO	9491041422	-	drowestgodavari@gmail.com
		Sri V Mallikarjuna Reddy	D-Supdt	9491041429	-	dsupdtwg1@gmail.com dsupdtwg@gmail.com
		Sri K Satyanarayana	DPM	9848589801	-	Kapusatya@gmail.com
6	Krishna	A.MD.IMTIAZ, I.A.S.	Collector	9849860001	0866-2478070	collector_krsn@ap.gov.in
		DR.K.MADHA VI LATHA, I.A.S.	JC-1	9849903960	-	jc_krsn@ap.gov.in
		A. PRASAD	DRO	9849903961	08672-252401	dro_krsn@ap.gov.in
		D.V.S.YELLA RAO	D-Supdt	9908664635	-	revenue.krsn@gmail.com
		N. VENKATESWARA RAO	DPM	9441818457	-	nvrfire93@gmail.com
7	Guntur	I.Samuel Anand Kumar	Collector	9849904002	8.6E+09	collector_gantr@ap.gov.in
		A.S.Dinesh Kumar	JC-1	9849904003		jc_gntr@ap.gov.in
		NVV Satyanarayana	DRO	9849904004	8.6E+09	droguntur1@gmail.com
		D.Venkateswara Rao	D-Supdt	9849904019		dsectionguntur@gmail.com
		D.Manorama	DPM	8897009072		manoramadara@gmail.com
8	Prakasam	P. Bhaskar	Collector	8886616001	08592-231444	collector_pkm@ap.gov.in
		S.Shanmohan	JC-1	8886616002		jc_pkm@ap.gov.in

Sl.No	District	Name of the Officer	Designation	Contact Number	Fax	Email
		V.Venkata subbaiah	DRO	8886616004		prkdro1@gmail.com
		Subbarao	D-Supdt	8886616008		prkdss@gmail.com
		K.Addaiah	DPM	9908031277		addaiah.tahsildar@gmail.com
9	Nellore	M.V.Seshagiri Babu	Collector	9849904051	0861-2325025	collector_nlr@ap.nic.in
		V.Vinod Kumar	JC-1	9849904052		neljc@nic.in
		C.Chandra Shekar reddy	DRO	9849904053		neldro@nic.in
		Azeez	D-Supdt	7995576695		nelsupdt@nic.in
		Chiranjeevi	DPM	9000704322		nelsupdt@nic.in
10	Chittoor	Narayana Bharath Gupta	Collector	9491077001	NOT WORKING	collectorchittoor@gamil.com
		D.Markandeyulu	JC-1	9491077002		jcchittoor@gmail.com
		G.Gangadhar Goud	DRO	9491077033		dro.cttr@gmail.com
		Alfred	D-Supdt	9491077015		dsupdt1@gmail.com
		K.A.Narayana reddy	DPM	9100804313		narayanareddy43567@gmail.com
11	Kadapa	C.Hari Kiran	Collector	9849904109	8.6E+09	collector_kdp@ap.gov.in
		M.Gowthami	JC-1	9849904110		jc_kdp@ap.gov.in
		S.Raghunath	DRO	9849904112	8.6E+09	dro_kdp@yahoo.com
		T.Venkata Ramana	D-Supdt	9849904124		dsectionkadapa@gmail.com
			DPM	Vacant		
12	Kurnool	Sri G.Veerapandian, I.A.S.,	Collector	9440290999 08518-220006	08518-221914	collector_krnl@ap.gov.in
		Sri Ravi Pattanshetti, I.A.S.,	JC-1	8978840011 08518-220328	-	jc_krnl@ap.gov.in jckurnool@gmail.com
		Sri B Pullaiah	DRO	9491017555	-	dro_krnl@ap.gov.in drokurnool@gmail.com
		Smt A.B. Elizabeth	D-Supdt	8333989003	-	dsectionkrnl@ap.gov.in
		Sri G.Bala Raju	DPM	9440504526	-	balaraju94405@gmail.com
13	Anantapuram	Gandham Chandrudu	Collector	9493188801		ccoatp@gmail.com ccantp@gmail.com
		S.Dillil Rao	JC-1	9493188806		jc_antp@ap.gov.in jcantp123@gmail.com
		B.Gayatri Devi	DRO	9493188804		aprdro@nic.in
		M.Nagaraju	D-Supdt	9493188813		aprsupdt@nic.in
		H.Anand	DPM	9177971859		hanandsdcatp@gmail.com



Annexure 9

COMMUNICATION FORMATS OF U.O NOTES/LETTERS



**GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT**



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

Lr. No.xx /SEOC/APSDMA/20xx Dt.0xx.xx.xx

From,

Secretary to Government,
Revenue (DM) Department,
A P Secretariat,
Amaravati

To

The Director General of Police, AP Police
The Spl. Commissioner, Dept., of Agriculture and
Cooperation,
The Commissioner, Dept., of Horticulture
The Commissioner, I &PR
The Commissioner, Dept., of Fisheries
The Commissioner, School Education
The Director, Municipal and Urban Development
Department,
The Director, A P Civil Supplies Dept.,
The Director, Animal Husbandry Dept.,
The Director, PR&RD Dept.,
The Engineer-in-Chief, Water Resources Dept.,
The Engineer-in-Chief, Rural Water Supply
The Engineer-in-Chief, Roads & Buildings
The CMD AP Transco Dept.,
The Director, Medical & Health Dept.,
The Director General, A P Fire Services Dept.,

Sub:- Natural calamities Revenue (DM) Department – extremely Severe Cyclone “xxx”_ likely to hit/ cross xxx coast by the AN of date - expecting of heavy rains combining gale winds in the Districts of xx,xxx, and xx, - Strict following of the Standard Operating Procedures(SOP) for ensuring of better preparedness and tackling of the situation- Reg.

Ref: Bulletin No.xx received from IMD at xx:00 Hrs IST Dt.

As you are aware that the extremely Severe Cyclone xx” is lay centered at xxxx. It is likely to cross the Coast at xx by the AN of date . Heavy rains combining of gale winds are expected in the Districts of xx, xx and xx in the next xxx hours. There is every likelihood of paralyzing the normal life in the areas of xx_xx prone to cyclone. As such it is requested that all the depts. should follow the Standard Operating Procedures (SOP) prescribed for cyclone management, vide Go.Ms.No.6,Revenue (DM)Dept.,dt.28.08.2015 to monitor the situation round the clock and to take all possible activities to minimize the effects of massive cyclone.

Yours faithfully,

Secretary to Government
Revenue (DM) Department



GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

MOST URGENT

From
The Special Commissioner for Disaster Management &
E.O. Addl. Secretary to Government,
Revenue (DM) Department,
A.P., Secretariat, Velagapudi, Amaravathi.

To
The Director General,
AP Police,
Mangalagiri.

=====

Wireless / Fax Msg. No./APSDMA/2020

Dated: ..2020

=====

It is inform that in view of the very severe Cyclonic Storm '____' likely to cross AP coast on _____ the director general of police, is requested to provide --- SDRF teams / additional SDRF teams to ----- District apart from existing SDRF battalion.

As requested by the District Collectors, (based on their immediate assessment) these SDRF teams may be positioned at the districts / places indicated below by evening of _____:

=====

Special Commissioner for Disaster Management &
E.O. Addl. Secretary to Government

Copy to:

The Inspector General of Police APSDRF.
The District Collectors of



GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

MOST URGENT

From
The Special Commissioner for Disaster Management &
E.O.Addl. Secretary to Government,
Revenue (DM) Department,
A.P., Secretariat, Velagapudi, Amaravathi.

To
The Commandant,
10th NDRF Battalion,
Mangalagiri, GUNTUR.

=====

Wireless / Fax Msg. No./APSDMA/2020

=====

Dated: ..2020

It is inform that in view of the very severe Cyclonic Storm '____' likely to cross AP coast on _____ the Commandant, 10th Bn. NDRF is requested to provide --- NDRF teams / additional NDRF teams to ----- District apart from existing NDRF battalion at Guntur.

As requested by the District Collectors, (based on their immediate assessment) these NDRF teams may be positioned at the districts / places indicated below by evening of _____:

=====

Special Commissioner for Disaster Management &
E.O. Addl. Secretary to Government

Copy to:
The Director General, NDRF HQ, New Delhi.
The District Collectors of



**GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT**



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

From,
The Special Commissioner for Disaster Management &
E.O. Addl. Secretary to Government,
Revenue (DM) Department,
A.P., Secretariat, Velagapudi, Amaravathi.

To,
The Commandant,
Eastern Naval Command,
Naval Base, Visakhapatnam

Sir,

Sub: APSDMA-Disaster Management – _____ Cyclone - Rescue Relief Operations –
Request to make available the services of Navy to take up rescue operations – Reg.

Ref: IMD Bulletin No. , dated: _____ at _____ hours IST

I am to inform you that in view of the _____Cyclone Warning for the AP coast issued by the IMD in the reference cited, _____ Cyclone would continue to move_____ and cross Andhra Pradesh between _____ around _____ by noon of ___th _____, 2020, as a very severe cyclonic storm with a maximum sustained wind speed of _____ kmph. This Cyclone will be affecting _____ Coastal Districts of Andhra Pradesh especially in the _____ directly and with heavy rainfall all over the State.

In view of the expected severity of the cyclone and the likely damages, I, therefore, request that Coast Guard may be positioned at strategic places along the coast adjoining the Districts so that immediate rescue and relief operations can be undertaken by Coast Guard whenever and wherever necessary. It is requested to treat this as an urgent request and take action accordingly

Yours faithfully,

Special Commissioner & EO Addl. Secretary
Revenue (DM) department

Copy to:
The Principal Secretary, Revenue (DM)Department.



**GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT**



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

MOST URGENT

From,
The Special Commissioner for Disaster Management &
E.O. Addl. Secretary to Government,
Revenue (DM) Department,
A.P., Secretariat, Velagapudi, Amaravathi.

To
AOC-In-C
Indian Air Force,
Training Command,
Bengaluru.
(Ph-080-2341108 / 23411060)

Sir,

Sub: GoAP –APSDMA- Revenue (DM) Dept. – Cyclonic Strom “_____” ____th, 2020 – Stand
by Helicopters for rescue and relief operations - Deployment of Helicopters request – Reg.

It is to inform that, Cyclone storm _____ is expected to cross on _____th of _____ 2020
at _____ District of Andhra Pradesh state, Also heavy rains are forecasted during the
period ____

2. Hence it is requested to provide two helicopters for standby purpose, in case to use for
rescue and relief operations. The requested location of standby is at District. Shri , RDO,
District (Mobile Number +91 -Office : _____) may be contacted for further Coordination /
information / Clarification in this regard.

Special Commissioner& E.O. Addl. Secretary to Govt.
Revenue (DM)Department

Copy to:

Principal Secretary to Govt., Revenue(DM)Department
Principal Secretary to CM, Vijayawada.
AOC, Air Force Station, Begumpet, Hyderabad
(Email-coobegumpet@gmail.com Fax 040-27755351/27753905).
The District Collector, for information and necessary action.
The Superintendent of Police, for information and necessary action.
The RDO, for information and necessary action.



**GOVERNMENT OF ANDHRAPRADESH
A P DISASTER MANAGEMENT AUTHORITY
REVENUE(DM) DEPARTMENT**



Land Line: 08645246600, Mobile: 8333905022, Fax:08645-246600

Lr. No.xx /SEOC/APSDMA/20xx Dt.0xx.xx.xx

From,
Secretary to Government,
Revenue (DM) Department,
A P Secretariat,
Amaravati

To
The Director General of Police, AP Police
The Spl. Commissioner, Dept., of Agriculture and
Cooperation,
The Commissioner, Dept., of Horticulture
The Commissioner, I &PR
The Commissioner, Dept., of Fisheries
The Commissioner, School Education
The Director, Municipal and Urban Development
Department,
The Director, A P Civil Supplies Dept.,
The Director, Animal Husbandry Dept.,
The Director, PR&RD Dept.,
The Engineer-in-Chief, Water Resources Dept.,
The Engineer-in-Chief, Rural Water Supply
The Engineer-in-Chief, Roads & Buildings
The CMD AP Transco Dept.,
The Director, Medical & Health Dept.,
The Director General, A P Fire Services Dept.,

Sub:-Revenue (DM) Department – Extremely Severe Cyclone “xxx” likely to cross xxx coast by the AN of dae - Expecting heavy rains combining of gale winds in the Districts of xx,xxx, and xx, - Deputation of Senior officers of various Departments to the SEOC, APSDMA office, Tadepalli, Guntur Dt. for ensuring of better preparedness and tackling of cyclone related things- Reg.

Ref: Bulletin No.xx received from IMD at xx:00 Hrs IST Dt.

I am to inform that the Extremely Severe Cyclone xx” likely to cross xx Coast by the AN of date xxxx. Heavy rains combining of gale winds are expected in the Districts of xx, xx and xx in the next few days. There is every possibility of paralyzing the normal life in the areas prone to cyclone. As such to monitor the situation round the clock and extend better service, it is felt necessary to depute senior officers of all line depts., to the SEOC

I therefore request to depute officers of senior cadre from your department to report to the SEOC immediately by TIME/ PM today under reference to this office.

Yours faithfully,

Secretary to Government
Revenue (DM) Department



Toll Free - 18004250101

Phone/Fax - +91 8645246600

E mail - seoc-apsdma@ap.gov.in

Andhra Pradesh

CYCLONE PREPAREDNESS AND

RESPONSE PLAN

Andhra Pradesh State Disaster Management Authority
Revenue (Disaster Management) Department,
Govt. of Andhra Pradesh