GOVERNMENT OF ODISHA

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WORKS DEPARTMENT

OBSERVATIONS REGARDING PREPARATION OF DISASTER MANAGEMENT PLAN

OF

WORKS DEPARTMENT

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STATE DISASTER MANAGEMENT PLAN

12. Data collection Format (2 pages)

STATE DISASTER MANAGEMENT PLAN

INTRODUCTION

Odisha is one of the major and flourishing state of India with a geographical area of 155707 sq.k.m. The population of the state was about 41.9 million (as per census 2011). The State Capital Bhubaneswar well known as Temple City now in an advanced way of Electronic city well connected by Air, Railways and Highway lines. There are 30 administrative districts and of the thirty districts six districts are in costal belt and well flourished with paddy cultivation.

Odisha is highly prone to natural disaster mainly like floods and cyclones. Flood is a recurrent phenomenon in odisha and stand as a barrier in progress of the mentioned area. The recent 1999 super cyclone in odisha in the coastal belt very clearly illustrates the need for multi-hazard prevention, response and recovery plans for natural hazards so that threat to human life and property in minimized. Disaster management is a developmental problem for preparedness and mitigation planning will have to be taken up in before hand to tackle the situation.

OBJECTIVE

This department i.e. Works Department under Government of Odisha is responsible for constructional work and its maintenance for Roads, Bridges, C.D. works and Building works for public utility.

As a very advisable adage prevention is better than cure, the Disaster Management Plan (DMP) by this Works Department is prepared for responsible with prime objective -

To save public life along with safe guard of public utility structures like bridges, roads and many public buildings alongwith some existing old prestigious buildings.

This DMP is prepared to combat the hazard situations with an emphasis on close coordination with the National Disaster Management Plan (NDMP).

1. Assimilating the lessons learnt from post disasters especially flood and cyclones.
2. Bringing together information and knowledge available for mitigation.

There are varying levels of vulnerability to different disasters, while cyclones and floods are perennial occurrences, the severity of these incidences determine the level of disasters, similarly heat waves and monsoon storms are regular incidents in the states, but these incidents are seasonal and region specific. Based on severity of the disasters, enlist of materials and physical losses and assistance requirement at different levels of disasters are being identified and activation of management plan will be dependant on the declared level of disaster, finally

following objectives may be identified in implementing Disaster Management Plan(DMP) for better organization and promoting a paradigm shift in approach to facilitate planning preparedness, operational coordination and community participation -

Mitigation measures i.e.

1. Prevention and preparedness to be promoted as highest priority at all levels.
2. Efficient response and rehabilitation operations with caring approach at identified vulnerable stretches/ spots are taken up.
3. Reconstruction as an opportunity has been implemented to build disaster resistant structures for proper habitation.
4. Appropriate steps have been taken to bring back the structures to a better and safer level than the previous condition.
5. Proper steps have been implemented for an early safe forecasting system backed by meteorological authority with information technology (IT) support.
6. And at the long run a productive partnership with the media to create awareness and contributing towards capacity development between public and administration.

1. STATISTICS OF ROAD

There is 19472.656 Km of length under Works Department, Government of Odisha. The detailed are given below.

NH	-	3594.162 km
SH	-	3841.988 Km
MDR	-	4076.746 Km
ODR	-	7959.760 Km
Total	-	19472.656 Km

These roads have been distributed in the 30 districts of the State among the field Divisions for its proper management.

VULNERABLE POINTS/ AREAS TO BE AFFECTED DURING DISASTER

During preparation of Disaster Management Plan to face the mitigation, the main points is to find out/ identified the vulnerable points/ areas to be affected due to disaster.

As this Department is dealing with, and responsible for construction work and its day to day maintenance for road, bridge, C.D. Works along with all public building works under its control, all the field officials starting for Executive Engineers, Assistant Engineer and Junior Engineers are warned for such identification of structures accordingly.

As the State Odisha is concerned it is highly prone to natural disaster like floods and cyclones. Though disaster like earth quake is concerned and as Odisha is not so very prone to earth quake as it is remaining under earth quake zone like zone I,II & III which are less predominant compare to zone – IV & V, the field officials have spot out such vulnerable public buildings and they have kept its proper watch and actions are initiated for its up-to-date keep up.

Similarly as in the case of vulnerability for buildings, as stated above the road works and bridges have been identified which may get affected during hazards like cyclones and floods. Though cyclone is not a predominant factor of hazard for road and bridge work unless it is a super cyclone which ultimately converts to a flood, but flood is a very dominating factor for hazard towards proper safeguard at road and bridge structures. Because the flood is caused due to inadequate capacity within the banks of rivers to contain high flow brought down from upper catchments due to heavy rain fall. Besides there are also other causes of flood due to deposition and filling up of river bed by heavy siltation of river bed caused due to abnormal deforestation which caused to land slide during rain fall and brought down of that land silt through flood water helping rising of river bed resulting in spreading over the banks and adjacent to road approach and bridges as its course causing submergence of road work and bridges.

As stated causes above the vulnerable points, in anticipation of getting damage during floods and cyclones for bridge and building works have been shown as Annexure separately as given below ---

i. Bridges and road approach under submersible condition – As Annexure “Ax”.

ii. Bridges under poor condition – As Annexure “Ay”.

iii. Public buildings like prestigious building. Heritage buildings and public buildings – As Annexure – “AB”.

RISK ANALYSIS /STANDARD OPERATING PROCEDURE

During study and analysis of Disaster Management Plan, the Risk Analysis comes with reference to vulnerable points for disaster which in turn comes with the factors to be observed such as _____

I. Prevention
II. Mitigation and
III. Preparedness.

Which ultimately requires a Standard Operation Procedure (SOP).

Accordingly prevention and mitigation are to identify vulnerable points and its assessment of threat to life and property of both individual and public and its measure to reduce loss threat and its action how to deal with disaster situation with planning and taking decision to stop further propagation. As the factor states the vulnerable stretches have been identified with reference to facts mentioned in vulnerable points as enclosed in annexure line

iv. Bridges and road approach under submersible condition – As Annexure "Ax".
v. Bridges under poor condition – As Annexure "Ay".
vi. Public buildings like prestigious building. Heritage buildings and public buildings – As Annexure – AB.

To take up such work a team of personnel (technical) is formed.-------

As it is in the work procedure duties of the personnel's are --------

1. **Executive Engineer** – As per the work load in all the districts throughout the state, post of Executive Engineers (Division) have been distributed. They are always vigilant to their

work and remain alert mostly during flood session. Under them Assistant Engineers used to work who are answerable to the Executive Engineer.

2. **Assistant Engineer –** Like Executive Engineer, the work loads of a division the works are used to distributed among Assistant Engineers, who is engaged in construction works under his sub division along with its maintenance and during such maintenance they used to find out such vulnerable factors to be solved to present hazard due to disaster period. He is supported by Junior Engineer as per work load.
3. **Junior Engineers** – As stated above, the Junior Engineer plays the vital role in all the works. He is the person to find out such stretch and intimate to its next higher officer i.e the Assistant Engineers and so as to Executive Engineers as above.

In fact this team consisting Executive Engineer, Assistant Engineer and Junior Engineers combinedly takes the decision and intimate the facts to the Superintending Engineer for verification for onward transmission to the administrative control i. e with the Chief Engineer for finalization of the fact.

During hazards, all the works taken up as per the rules and codal provision. Accordingly they have been already instructed to work immediately the temporary restoration work with intimation to the higher authority for its regularization. And they are also taking up the works immediately as and when required. Besides all the field officials are well equipped with allsorts of communication facilities and they are always kept in contact with head quarter controlling authority at Bhubaneswar.

ACTION PLAN

After identification of roads, bridges, building works under the jurisdiction of the Works Department as vulnerable to disaster due to affecting factor like flood as cyclones, action plan along with preparedness have been carried out.

Personnel's to Carried out the Action Plan

Besides higher authorities i.e Engineer-in-Chief cum Secretary, Works and Chief Engineer, Roads / Buildings and Chief Engineer National Highway, who are administrative heads, the field officers comprising respective Superintending Engineers, Executive Engineers, Assistant Engineers and Junior Engineers have been instructed to be remain prepared to tackle the field situations along with temporary restoration materials at the time of flood so that the transportation of relief commodities should not be obstructed. And accordingly the responses from the field officials have been received toward their preparedness for mitigation to tackle the hazard situations. At the same time all the field officials are made readily available with machineries and materials like earthmovers, dozers, trucks, wooden bullahg, empty cement bags also with river sand for protection works. Besides they have also been advised to remain vigilant for vulnerable stretches.

Action Plan for Vulnerable Structures

1. **Bridge Works** :- A list of bridges have been identified for vulnerable to get affected due to disaster (Annexure-). As they are poor and susceptible to further deformation due to disaster factors, extra cares have been carried out with proper renovation work. Out of

such list some of the bridges have been improved by replacing new bridges and improvement works for rest are under progress in regular process observing all procedural aspects.

2. **For Submersible Bridge & Road Work Portion** :- Like as stated above, in case of submersible road and bridge portion, the submersible bridges are being replaced with High Level Bridges along with raising up of road embankment work with its approach. However, in case of suitability of site condition the road alignments are being diverted /changed to get rid of said situations.
3. **For Building Work** :- As per the list for buildings attached in Annexure "AB" which are vulnerable for disturbance during, if disaster factors affects them, it is observed that as they were pretty old and prestigious/ heritage buildings, some of the technical aspects could not have considered like earth quake factors. Besides some of them are in poor condition with reference to technical point of aspects. In order to protect all such structures adequate cares have been initiated and the works are in progress under the technical supervision of respective Executive Engineers along with proper vigilant by the higher officials. Besides proper fire protection work are also taken up in large public utility Government buildings. One such example is "Toshali Plaza" at Bhubaneswar.
4. Besides all above statements described, necessary steps have also been taken i.e list of some of the contractors along with their detailed addresses, contact numbers have been kept as ready references. Who can supply machineries, materials to mitigate the hazard situations immediately for the vulnerable areas. List of such contractors – Annexure – "AC".

At the same time all field officials have also been intimated to keep touch with the contractors who are equipped with machineries and materials to face the hazard situation and can supply the materials immediately. The proforma for such is enclosed for reference.

CHAPTER-I

Statistical Profile of Department

ROAD LENGTH BY TYPE IN ODISHA .

At present the Works Department and the Government of Odisha is engaged for both improvement for maintenance of road work for a total road length of 19472.656km. The road networks of the state consists of national high ways, state highways, major/district roads and they are as given below ---------

National High Ways 3594.162 km

Express Highways 38.400km

State Highways 3803.588km

Major District Roads 4076.746km

Other District roads 7959.760km

Besides, this Department has also an important role for improvement of buildings infrastructure in the State. Construction of new building infrastructures / maintenance of existing one and above all planning for the upcoming building projects by tapping funds from various sources i.e. the State Budget / Central schemes / Deposits etc. is always taken care either through a long term program or short term strategies.

Works Department is headed by the Engineer-in-Chief-cum-Secretary to Government. Besides there are 2 Additional Secretary, 1 F.A.-cum-Additional Secretary, 2 Under

Secretary and 1 A.F.A.-cum-Under Secretary. The field formation of Works Department has 1 Engineer-in-Chief (Civil), 7 Chief Engineers[C.E., DPI & Roads, CE, Buildings, C.E.NH, CE, World Bank Project & CE. RD & QP, C.E Directorate of Designs, Chief Engineer-cum-Chief Manager, Technical State Procurement Cell] and 1 Chief Architect at Heads of Department level. There are 12 (R&B) Circles, 3 N.H. Circles, 1 Mechanical Circle and 1 Electrical Circle and 1 P.H. Circle in charge of Superintending Engineers, who are responsible to the concerned Chief Engineers for the administration and general professional controls of the public works in charge of officers of the Department within their Circles. The Executive Engineers at the Divisional level are the executives are the executive heads of the Administrative units of the Department. There are 49 (R&B) Divisions, 15 N.H. Divisions, 4 GED Divisions, 4 Mechanical Divisions and 2 GPH Divisions in the State. Below to them there are 224 Sub-Divisions in charge of Sub-Divisional Officers in the rank of Assistant Engineer and Assistant Executive Engineer.

Development and maintenance of an extensive road network is a major pre-requisite on which the pace and pattern of development rests. As assigned by the State Government, Public Works like construction of roads, bridges, Cross Drainage work on nullahs, buildings including public health and electrical works etc. are being executed by the Works Department. Road communication is the key element for the economic development of the State. Above all, good roads improve the accessibility of the rural areas to markets and facilitate better delivery of services. Therefore, the Government strategy in this sector is to provide all weather road linkages to rural settlements.

Simultaneously, the Department through its other wings also performs varied kinds of functions for the economic and infrastructural development of the State

Administrative Set up

Office of the Engineer-in-Chief (Civil)

This is the Head of Department office and functioning under Government of Odisha, Works Department. There are ten Circle Officer (Seven Civil, one P.H., one Electrical and one Mechanical) functioning under this Organization. There are 36 Civil Divisions,

2 G.P.H. Division, 4 General Electrical Divisions and 4 Mechanical Divisions are functioning under the above Circle Offices, Sub-Divisional Officers and Section Offices are also functioning under the above Divisional Offices.

The Engineer-in-Chief (Civil) is the head of the Organization. Three Chief Engineers designated as Chief Engineer, (DPI & Roads), Chief Engineer, Buildings, and Chief Engineer, World Bank are functioning under the Office.

Design Planning and Investigation & Roads

The Design and Planning activity in the organization is provided through a separate Design, Planning and Investigation Wing in the Odisha Works Department. Its head the Chief Engineer, Design Planning and Investigation and Road (CE (DPI & R)) has a reporting responsibility to the EIC-cum-Secretary.

Buildings

In addition to responsibilities for roads, Odisha Works Department has the task of supervising the construction and maintenance of public buildings on behalf of a wide range of State Government Organizations. For this purpose, the organization structure of Odisha Works Department includes a specific wing devoted to this activity. It is headed by a Chief Engineer Buildings (CE (B)) reporting to the EIC-cum-Secretary.

World Bank Project

Odisha State Road Project (O.S.R.P) is a World Bank Funded Project implemented by Works Department (OWD) of GOO. The Project Development Objective (PDO) is to remove transport bottlenecks in targeted transport corridors for greater investment and economic and social development activities in the State of Odisha.The Project Management Unit (PMU), headed by Chief Engineer(WBP) is located at Nirman Soudh , Unit - 5, Bhubaneswar.

National Highways

Responsibility for new construction and maintenance works on the National Highways

is under the control of the Chief Engineer National Highways (CE (NH)). The CE (NH) reports to MOST for works carried out on the National Highway network.

Research Development and Quality Promotion

Inspection and Quality Control activity is under the control of the Chief Engineer Research Development and Quality Promotion (CE (RD & QP)). It was established as a Research Laboratory in 1965 to cater to the need for testing of materials involved in road and building construction. This wing's functions expanded in 1982 to include a research development and quality promotion cell.

Odisha Bridge Construction Corporation

Odisha Bridge & Construction Corporation Limited (OB&CC) was incorporated on 01.01.1983 under Companies Act, 1956 as a Govt. Company. It is a Government Company sponsored by Odisha State Government within the meaning of section 617 of the Companies Act. Since its inception, it is working as a Govt. of Odisha undertaking Organisation.The Corporation is governed by Managing Director on behalf of Board of Director nominated by the Govt. under guidelines set by Memorandum of Association and Articles of Association along with work rules mentioned therein.

Office of the Chief Architect

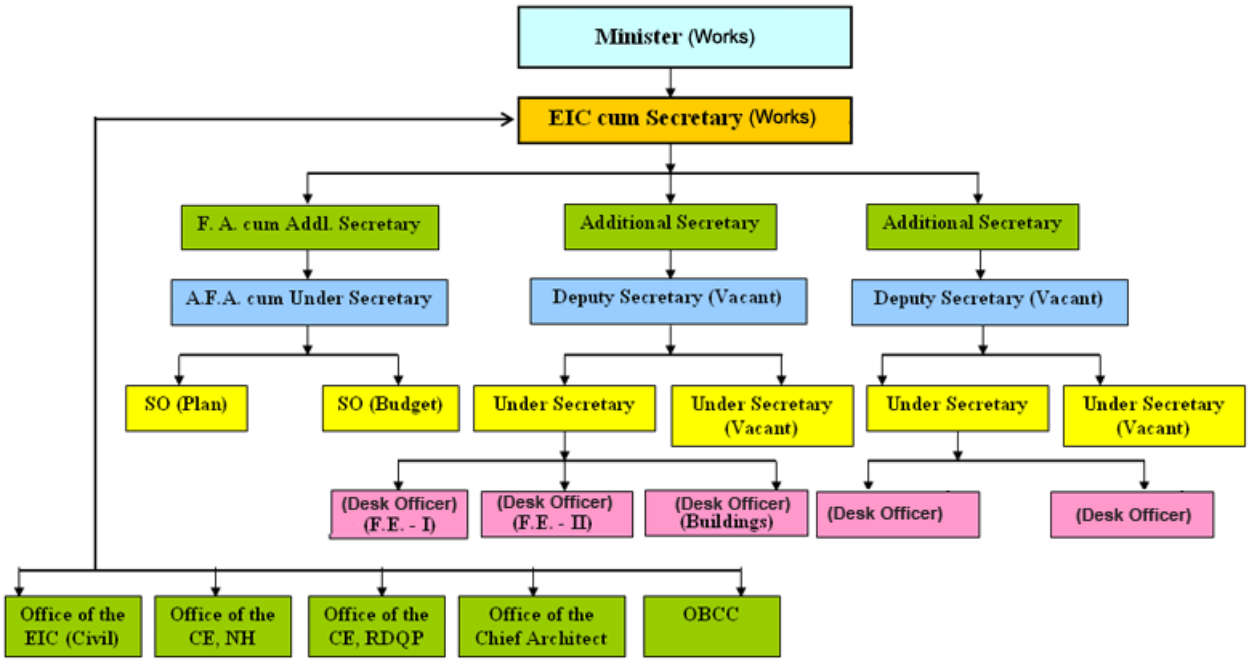
The office of the Chief Architect is working as an independent Heads of Department under the administrative control of Works Department and looks after the architectural matters of the State of Odisha. Besides the above, the said office also prepares architectural project drawings for Works Department and also for other Departments. This wing is headed by CE (Architect).

State Procurement Cell

With the objective of supervision of full roll out of e-procurement in the four

Engineering Departments of the State, Government have constituted the "State Procurement Cell" under the administrative control of Works Department with EIC (Civil), Odisha as the Chief Procurement Officer vide Works Department O.M No.8904 dt 06.05.2008. This wing is headed by Chief Engineer cum Chief Manager (Tech) of the State Procurement Cell, Govt. of Odisha.

The schematic diagram showing function of Works details.



STATEMENT OF DISTRICT WISE LENGTH OF ROADS ON Express Highway, SH, MDR, ODR						
		As on 15.07.2013				
Sl. No	**Name of District**	**Express Highway**	**SH**	**MDR**	**ODR**	**Total length in km.**
1	Cuttack		118.000	195.810	351.208	**665.018**
2	Jagatsinghpur		133.00	41.00	225.90	**399.900**
3	Kendrapara		70.2	46.275	330.255	**446.730**
4	Jajpur	20.400	1.6	134.4	438.532	**594.932**
5	Dhenkanal		12.000	105.400	290.610	**408.010**
6	Angul		64.000	134.300	386.295	**584.595**
7	Nayagarh		13.000	163.200	246.326	**422.526**
8	Khurda		17.330	310.734	544.291	**872.355**
9	Puri		9.00	147.10	310.33	**466.428**
10	Balasore		31.200	189.200	330.960	**551.360**
11	Bhadrak		113.750	124.530	143.820	**382.100**
12	Mayurbhanj		295.36	199.70	460.95	**956.010**
13	Sambalpur		164.970	113.600	238.248	**516.818**
14	Jharsugada		43.440	0.000	101.205	**144.645**
15	Deogarh		110.070	39.200	4.700	**153.970**
16	Baragarh		100.200	154.392	139.050	**393.642**
17	Bolangir		133.095	127.000	509.725	**769.820**
18	Sonepur		40.000	68.110	115.743	**223.853**
19	Keonjhar	18.000	65.040	89.860	411.750	**584.650**
20	Sundargarh		207.780	306.740	370.660	**885.180**
21	Ganjam		519.350	196.020	743.414	**1458.784**

22	Boudh		63.580	53.460	47.450	**164.490**
23	Kandhamal		290.973	110.200	213.310	**614.483**
24	Gajapati		249.300	67.700	57.390	**374.390**
25	Nowrangpur		123.000	0.000	208.310	**331.310**
26	Koraput		92.630	330.000	327.210	**749.840**
27	Rayagada		393.400	129.800	81.620	**604.820**
28	Malkangiri		241.920	77.700	32.600	**352.220**
29	Kalahandi		55.500	353.975	78.500	**487.975**
30	Nuapara		30.900	67.340	219.400	**317.640**
	Total	**38.400**	**3803.588**	**4076.746**	**7959.760**	**15878.494**

CHAPTER-2

Hzard, Vulnerability, Capacity & Risk Profile-

I. **Nature, frequency and intensity of disaster to which the department is prone to or is likely to be impacted in future** -

On geographical analysis of odisha state it is observed that odisha is highly prone to natural disaster mainly due to flood and cyclone. Flood is a recurrent phenomenon in odisha and stands as a barrier in progress of the state, where as cyclone though it is not recurrent compare to flood still it is occurring frequently damaging to public life and property especially in the coastal districts namely Ganjam, Puri, Cuttack, Kendrapada, Jagatsinghpur, Bhadrak & Balasore. In this connection the recent Super Cyclone of Odisha in 1999 may be taken as a bright example which caused in a large scale damage to life and property of the country. The cyclonic landfall usually lead to heavy rains accompanied with high speed winds and which eventually converts into flood, as was the case with above super cyclone flood in the Mahanadi delta area in October 1999. Though the several parts of Odisha is not in harmful cyclonic hazard but as mentioned above these seven districts are more vulnerable to cyclonic hazard. In order to withstand such cyclonic hazard and as mainly building works are prone to such hazard necessary codal provisions are followed and utilized in practice and care being taken during constructional work of public buildings.

Similarly, though the flood is a predominant factor in creating hazard in the state, the coastal belt districts are highly hazard prone compare to other flood parts of inside Odisha. Generally the flood is caused by the in adequate capacity within the banks of rivers to contain high flow brought down from upper catchments due to heavy rain fall. Besides these are also other causes of flood due to deposition and filling up of river bed by heavy siltation of river bed caused due to abnormal deforestation which caused to land slide during rain fall and brought down of that land silt through flood water helping rising of river bed resulting in reduction of

caring capacity of river channel. To protect such hazard to get rid of flood, care should have taken for deforestation and protection of vegetative growth by the side of river course.

As the department is concerned on constructional work of roads and bridges and building work, cares are being taken as per codal provisions. The building works as they are more hazards special cares are also being adopted for its safe to withstand such disaster.

As the department is concerned for surface transportation and building management, it is emphasized to prepare a plan on close coordination with the National Disaster Management Plan(NDMP) to combat hazards situations with the vital points i.e

1. Assimilating the lessons learnt from past disaster especially floods and cyclones.
2. Bringing together information and knowledge available.

II. Historical/ Past Disasters / Losses In The Department-

On observation of the past records of odisha, flood is a perennial disaster in coastal belt and in the districts of Kendrapada, Jagatsinghpur, Jajpur and Balasore. Besides above districts of Puri, Khurda, Ganjam are also prone to flood and cyclonic hazards.

III. Causes of Losses / Damages

The losses and damages are due to heavy flood and cyclone.

IV. Hazard Wise Vulnerability of the Department to Various Hazards to Which the Department / State is Prone to

As the department is responsible for safeguard of the road transportation along with its bridges and C.D. works and buildings the respective field officials have been warned accordingly to act during disaster cases.

V. Capacity of the Department to Deal With the Identified Disasteers- Institutional Organisational And Infrastructural-

The matter relates to the State Disaster Management Authority. Now here it is OSDMA.

VI. Gaps in the Existing Capacity-

Does not arise.

VII. Risk Analysis-

Calculating risk which various hazards/ disaster can came to department keeping in view its vulnerability and capacity –

In this regard the respective field officials have been directed to intimate the all situations of risk zones with proper observations of the site conditions.

CHAPTER-3

I. Measures Necessary for Prevention of Disaster, Mitigation, Preparedness And Capacity Building in Accordance With the Guidance Laid Down by the Prevention, Mitigation And Preparedness-

Prevention and mitigation measures in disaster means identification of hazards and its assessment of threat to life and property of both individual and public and its measure to reduce the loss thereof and its action how to deal with disaster situation with planning and taking decision to stop further propagation. In this case particularly in road sector our mitigation plan should be evolved for vulnerable stretches to reduce the impact of disaster which will vary depending on the hazard and its degree.

It is observed, that at many road stretches the hazardous situations like breaches, cuts etc of embankment are occurring due to over toping of water for which permanent solutions are to be taken up such as raising of embankments with judicious vents. In this case respective Divisions are being intimated to spot out such stretches so that necessary permanent solution can be taken up.

Besides following preventive measures are to be considered to check the disaster

1. Identify stretches/ areas vulnerable to specific disaster.
2. Sufficient protect ional construction along the flood zones/ hazard zone to be taken up.
3. Habitation in such areas to be prevented.
4. Construction of structures resistant to onslaughts of hazards.

5. Construction of barriers/ retaining walls/ break waters at hazard porn areas adjacent to coastal erosion should be taken care of.

Besides many of the public buildings and transport infrastructure are vulnerable to damage from earthquake, cyclones, flood and winds hazards. So special cares have been taken towards construction and maintenance of sophisticated infrastructure, public buildings in the state. As a part of mitigation strategy our department have already introduced special consideration both on structural design for earthquake, cyclone hazards to buildings and on material standards to ensure strengthening and protection of these structures and installations. Also while modification to conceptual design of critical infrastructure and building arrange, proper advice/ consultations are being invited from reputed authorized farms and institutions with detailed observations.

However following guide lines are to be followed in building performance-------

i. The damage caused by the disaster is repairable and it does not pose threat to life.
ii. Users, beneficiaries and visitors are protected during disaster.
iii. The occupants and rescue emergency personnel are able to move safely inside the installations.

Special Care to Buildings (for Flood Hazard)

i. Proper drainage system around the building, slope adjustment etc.
ii. Raising of plinth level to high flood level (HFL).
iii. Grounded edge near the building to protect against scouring by pitching along with vegetative growth.
iv. Flood wall/ Levee.

Special Care to Building for Cyclone Hazard

i. Improving connection of wall to roof.
ii. Wind bracing through diagonal strap with metal/ RCC on walls and roof to prevent pushing against wind.
iii. Installing load wall/ parapet wall on roof top to hold the roof firmly.

Above all for preparedness this department have taken steps much ahead with detailed instructions to all the concerned field officials to face the disaster condition in the disaster prone area to mitigate the situation in order to save public property and lives.

II. Integration in to Its Development Plans And Projects, the Measures For Prevention of Disaster And Mitigation.

In this regard all field officials have been instructed / directed to keep contact with the organizations who can supply the materials and along with their machineries for mitigation of the disaster conditions. Accordingly we have also issued one such Performa for their use. (Performa enclosed).

III. Provision of Funds For Prevention of Disaster, Mitigation, Capacity- Building And Preparedness-

During the disaster, the main and vital situation is the need of funds to meet the unpredictable situations due to disaster and to bring back the habitable condition. So the concerned state Government Departments as part of their regular annual budget preparation exercises includes budget items that transcend between mandated functions and activities that are now identified as disaster management activities. It is mandatory and incumbent as the part of department to identify specific budget heads to cover such activities identified as disaster management.

Since this department is mainly responsible for roads (including C.D. Works) and building works affected mainly due to cyclonic/ flood disaster aim at creating physical infrastructure for mitigation based on the priority basis to be taken up for which investment proposal for the Dept. supported by the judicious project report must be submitted to the mitigating authority of the state for issue of funds for the investments as for the following--------

1. Construction of cyclonic centre.
2. Construction of missing road links and bridges.
3. Re construction / raising of road embankments with proper vents where over toping of water / road breaches are porn.
4. Renovation/ Reconstruction of buildings damaged due to disaster.

Besides there is a CRF fund setup by the Central Government to meet the expenditure for providing immediate relief to the victim and of cyclone, drought, earthquake, flood etc. under the head "8235- General and other Reserve Fund-III Calamity Relief Fund" in the accounts of State Government So the Department should take care of the same with Revenue Departments.

Budget requirements for each line department for cyclone, draught, floods and other disasters district wise need to be worked out by the respective departments under the guidance of OSDMA. The State Government will inspect concerned departments to prepare the budget requirement for managing disasters such as prepared maps / prevention / mitigation and response, rescue, relief.

IV. Drawing up Mitigation, Preparedness, Response Plans, Capacity Building, Data Collection, Identification And Training of Personnel in Relation to Disaster Management-

In a disaster plan the prevention includes the identification of hazards the assessment of threat to life and property and initiating measures to reduce potential loss of life and property damage. While mitigation measures range from community awareness campaigns to increase knowledge of how to deal with disaster situations.

Before taking up mitigation effort following points are to considered--------

1. Identify areas vulnerable to specific disaster.
2. Prevent development/ construction work along flood zones/ hazard locations.
3. Avoid habitation in hazardous areas.
4. Develop structures resistant to the onslaughts of hazards.
5. Promote and construction flood resistant buildings.
6. Reduce or eliminate natural hazards through technological intervention (e.g. construction of retaining wall, planting, vegetation growing etç).

While capacity building is to help undertake risk and damage assessment studies and asset institutional capacities of the various stakeholders involved and following components are to be considered.

1. Risk assessment
2. Technical assistance to state (Department) for preparing high priority risk mitigation investments.
3. Preparation of long term training and capacity building strategy.
4. Implementation of high priority training and capacity building programs.
5. Strengthening capacity for damage and loss assessments.

Regarding training of personnel in relation to disaster management, the OSDMA authority is competent enough.

V. Review the Enactments Administrated by It, Its Plaices, Rules And Regulations With a View to Incorporate Therein the Provisions Necessary for Prevention of Disasters, Mitigation or Preparedness-

In this regard the detailed rules and regulations and instructions as issued from time to time by the disaster authority will be followed and taken care of.

VI And VII. Provision of Emergency Communication in Affected Areas And Such Other Actions As May Be Necessary for Disaster Management-

As this department is concerned and who is dealing only with road communication and building construction all concerned field officials at disaster prone areas have been made aware to intimate disaster situations time to time to the controlling authority at head office. Besides they have also been directed to keep materials ready along with field personnel to tackle the hazard condition due to disasters.

CHAPTER-4 : RESPONSE PLAN

I. Mechanism for Early Warning And Dissemination Thereof-

This section of action may be dealt at Revenue (OSDMA) level.

II. Trigger Mechanism for Response-

For the section of action, the respective field staff in the disaster prone area have been instructed to carryout the worst disaster situation as practicable to some public property and human lives and immediate information to the higher authority for further course of action.

III. Response Plan for Responding Effectively And Promptly to Any Threatening Disaster Situation or Disaster in Accordance With the State Plan And in Accordance With the Guidelines or Directions of the National Executive Committee And the Executive Committee And the State Government And the SDA-

As the steps have been initiated for prevention work, mitigation and preparedness for an ensuring unpredicted disaster, the respective officials of disaster prone area and the

controlling office personnel have been kept ready to take care of for alone situations. However the guidelines as provided will be strictly follow up.

IV. Appointment of Nodal Officers to Perform Emergency Support Functions (ESFs)/ Roles in Emergency in the Formal Already Circulated by the State Government-

This office has already appointed one such Nodal Officer to perform such assignment.

V. Construction of the Incident Response Terms (IRTs) at All Levels With Provision of Delegation of Authority-

All the field officials have been directed to act accordingly during disaster.

VI. Reporting Procedure And Formats-

Reporting procedure and formats as issued by the OSDMA authority will be followed.

VII. Role of NGOs And Voluntary Sector And Coordination Thereof-

This may be taken care of at the Government in Revenue Department.

VIII. System of Assessing the Damage from Any Disaster-

The damage will be assessed due to disaster with proper field verification and on preparation of estimates to this effect with intimation to the disaster authority.

IX. Roles And Responsibilities And Coordination Mechanism for the Department-

All officials and staff of the department are being instructed to keep proper coordination and proper harmony in the interest of public.

X. Disaster Specific Response Plan – Response Plan for Major Disaster such as Earthquake, Flash Flood/ Cloud burst, Snow avalanche/ Land slide etc. in Which State Level Response Would be Needed-

This prime object of Disaster Response Plan (DRP) is to provide safety, minimizing damages to property and protecting public life. The DM Act. 2005 requires that DMP incorporate the result of vulnerability and risk assessment of the area. Hence, the response plan including plans, procedures and identifications of prone areas to be affected to disaster and support functionaries so that they will be responsible for such support function.

Earthquake – According to Seismic zoning of India, the country is divided into five seismic zones based on severity. e.g.- Zone- I, II, III, IV & V.

Odisha lies in zone – I,II & III which are relatively low risk zones. On observing the past history of odisha since nearly 50 years no such occurrences of severe earthquake have been marked, still

then extra precautionary measures towards earthquake resistance factor implemented during construction of all public buildings to safe guard from earthquake.

Cloud burst, Snow avalanche – Although these are coming under disaster situations, odisha is not prone for such disaster.

Flash flood – Most of the city area of odisha are prone to flash flood. At present the city of Bhubaneswar is verge prone to flash flood situation leading to massive property damages and some human lives.

As the city is growing along with growth of population, people are constructing building works without any proper guideline and obstructing the natural drainage line unauthorized encroachment resulting submergence of habitant areas resulting to flash flood situation.

To get rid of such situation a proper strict guideline from the Government should be carried out.

Land slide – The land slide hazard in odisha is generally confirmed to southern ghats due to encroachment of hilly slopes and denudation of vegetative cover from the slopes are main region of land slide. Besides the operation of granite stone quarries by the private industries is also another cause.

To get rid of such land slide during road construction work, proper slope in hills are maintained with proper drain arrangements. Besides forest departments are also taking care of sliding of land by vegetative growth.

XI. Identification of Suppliers for Departmental Supplies And Pre-Contracting for Supplies in Case of Emergencies –

Although the section mostly coming for rehabilitation to be monitored by the Government in Revenue Department, this department has also taken care of in case of breaching of roads damage of C.D. works (if so), for which they have been advised to keep. E.g. empty sand gunny bags, bull hag, moorums if required for temporary restoration work.

CHAPTER-5 : RELIEF, REHABILITATION AND RECONSTRUCTION

I. Norms of Relief, if Applicable

II. Minimum Standards of Relief

III. Rehabilitation Plan-

All above three observations are coming under the jurisdiction of Government in Revenue Department.

IV. Financial Mechanism-

Since the post condition due to disaster is unpredictable, it is obvious that need of funds during such devastation situation is highly needed and without which it may not possible to take up the rehabilitation/ restoration work. So an additional funds for a specified time period should have informed to the Government in disaster authority for its clearance. So it is proposed an emergency financial support.

V. Action Plan for Reconstruction- Building Back Better-

This is, action to be taken in post disaster condition. In this case after cessation of disaster condition, proper observation to be made for the structures e.g. breaching of road stretch, damaged to the bridges, C.D. worked and damages to the buildings etc. and bagging upon judicious action to be taken up, whether to rehabilitee or to reconstruction. If the structures are severally damaged due to disaster and if their rehabilitation implies nothing but shear wastage of Government fund it is better to proceed reconstruction and the action plan should be chalked out accordingly.

CHAPTER-6 : KNOWLEDGE MANAGEMENT-

I. Need of Creating Network of Knowledge Institutions-

Although the department is engaged in construction/ rehabilitation work, but as the disaster in question it needs a bridge between Department with the institutions to updatization of up to date knowledge and it becomes an objective of State Disaster Management Plan (SDMP).

So in view of the recurrent nature of natural hazards impacting the state and considering the efforts needed in mitigating and preparing the state departments, a permanent administrative structure at state, district and village level should be created. This structure will monitor developmental activities across department, providing suggestions for incorporating necessary mitigation measures. As such professionals like architect, engineering, risk managers

in financial organizations will review and incorporate mitigation aspects for projects and when these cells become functional both at state and district levels, periodic visit to Government/ Public structures will be undertaken to assess the risk and suggest appropriate mitigation measures. In this regard institution like confederation of industry may be taken care of.

II. Identification of Knowledge Institutions And Mechanism of Knowledge Shering-

A bridge between Government Departments, State Disaster Departments and reputed institutions dealing with disaster studies should be encouraged, so that knowledge in preparedness, mitigation and prevention of disaster will remain up-to-date

III & IV. Documentation Lesson Learnt And Documentation of Best Practices And Uploading of the Same in the Departmental Website-

Due to vast improvement of networking system all up-to-date information are available in networking system. So the information relating to disaster conditioned should be uploaded in departmental website for future needful.

CHAPTER-7 : REVIEW AND UPDATING AND DISSEMINATION PLAN

I. DM Plan is a "Living Document"-

It would require regular improvement and updating at least once a year.

II. System of Updating-

Who, when and how?

III. Dissemination of Plan to Stakeholders – how? Printing of Document, Uploading in Departmental Website, Meetings And Seminar etc.-

All above instructions and suggestions, action to be taken up at the Government level in State Disaster Authority for proper upditazation. However, field personnel will be instructed to remain vigilant to face such disaster if happens in future. Besides as flood is a perennial hazard in coastal belt of odisha, the field officials are always used to work by head office to remain always vigilant and alert to tackle the disaster situations.

Annexure – "AB"

STATEMENT

(DISASTER MANAGEMENT PLAN)

Sl. No.	**Name of the Building**
(1)	**(2)**
1	Old Judicial Academy at Cuttack now functioning Board of Revenue.
2	Administrative Block of S.B Women's College, Cuttack.
3	Old igh Court Building, Cuttack.

4	Indoor Unit, MKCG, Berhampur.
5	CJM Court Building, Paralakhemundi.
6	S.K.C.G College, Paralakhemundi
7	Govt. Boys High School, Paralakhemundi
8	OPD Block, SCB Medical College, Cuttack.
9	Govt. Women's College, Baripada.
10	Revenshaw Collegiate School, Cuttack.
11	Khalikote College, Berhampur.
12	Collectorate Building, Balasore.
13	Collectorate Building, Mayurbhanj.
14	Collectorate Building, Keonjhar.
15	Government College, Phulbani.
16	Government College, Kalahandi.
17	Women's College, Kalahandi.
18	Bolangir College, Bolangir.
19	S.C.S. College, Puri
20	D.D. College, Keonjhar.
21	F.M. College, Balasore.
22	M.K.C. High School, Baripada.
23	Government College, Bhadrak.
24	ADJ Court Building, :Paralakhemundi.
25	SDJM Court Building, Paralakhemundi.
26	Red Court Building, Sambalpur.
27	District Court Building at Baripada.