

Draft Standard Operating Procedures (SOPs) Cuttack City

Cyclone, Flood and Fire

USAID-GoI-UNDP Partnership Project on 'Developing Resilient Cities through Risk Reduction in the context of Disaster and Climate Change' in Cuttack, Odisha



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EXECUTIVE SUMMARY

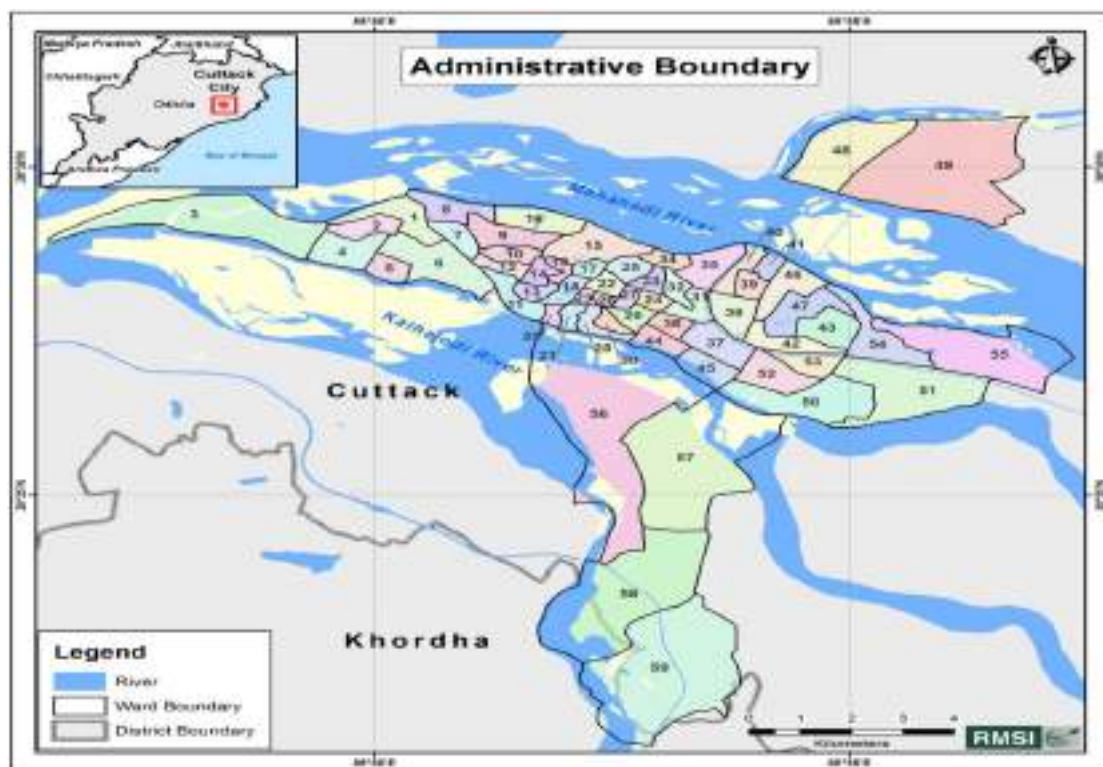


1. ABOUT CUTTACK CITY

Cuttack is the commercial capital of Odisha and one of the oldest cities located at the confluence of two big rivers- the Mahanadi and Kathajodi. The city is vulnerable to cyclone, flood, fire, and heat wave. It has braved various recent disasters including cyclone Fani which has caused major setback to the state with total losses to the tune of Rs 24,176 crores.

1.1 City Profile and Administrative Setup (*to be further updated*)

As per census 2011, Cuttack is the second biggest city in the state of Odisha. It is one of the most urbanised city with population of around 6,00,000 and an annual growth rate of around 1.22%. Population is distributed among 59 wards in a spatial spread of 82.43 sq km. It has a population density of about 7,823 people per sq km with trade and commerce as the key economic activities. Though basically and traditionally agrarian, Cuttack is also the business hub for the numerous places around it. There are many renowned industries in and around Cuttack. Apparels, shoes, handicrafts, silver ornaments and animals are also significant contributors to Cuttack economy. Being an important commercial hub for the entire Orissa and neighbouring states, Cuttack city attracts a lot of migrants mostly from rural areas resulting in high increase in population. Over 50 per cent of the city's workforce is engaged in manufacturing, trade, commerce and transportation- related activities.



Map 1: Administrative Boundary of Cuttack; Source: City Disaster Management Plan, Cuttack City- 2019-20

1.2 HRVC of Cuttack City (*to be further updated*)

The city is vulnerable to cyclone, flood, earthquake, and heat wave that affect the socio economics of the city. The city was impacted severely by the 1999 super cyclone and the floods



of 1982, 2008 and 2011. The historical cyclone event data shows that 142 cyclonic disturbances passed within 100 km of the city of which the maximum wind speed experienced was 258 km/h. The recent cyclone that affected the city was the Phailin cyclone of 2013 when the city experienced a wind speed of 215 km/h. The impact was mostly in terms of damage to assets, particularly infrastructure and houses.

Considering the location of the city in the delta area, the city is vulnerable to flooding. Flooding is due to heavy localized rainfall as well as discharge of water from the Hirakund dam located 330 km upstream. The topography of the city is saucer shaped with unplanned urban development and choking of the narrow drains with solid waste causing frequent water logging problems in many parts of the city. The flood analysis shows that Ward Nos. 2, 3, 9, 14, 17, 20, 26, 33, 40, 43 are especially vulnerable to water logging. The city operates pumps to pump out water during rainy season to avoid water logging. The city, under various development projects, is also developing drains to reduce the impact of flood and water logging. Climate change can intensify rainfall, which can influence the runoff thus increasing flood vulnerability.

Extremely high-rise in annual average maximum temperature, continuous increase in the number of hot days and rising temperature difference between Cuttack and the nearby cities provides an impression of the gradual emergence of the city as an urban heat island.

Cuttack city is located in seismic zone-III, which is moderately vulnerable to earthquakes.

Considering the high-density of population, traditional houses, and high temperatures in the summer months, the city is vulnerable to fire accidents. Historical fire accident data shows that the occurrence of fire hazards is higher in residential buildings compared to commercial and industrial buildings.

The current document focuses on three keys hazards faced by Cuttack city; namely, cyclone, floods and fire. As per the CDMP, Cuttack City, the seasonal hazard analysis for cyclone, floods and fire is as below:

Hazards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flood/water logging						←	←	←	→			
Cyclone				←	←	←	←	←	←	←	←	←
Fire	←	←	←	←	←	←	←	←	←	←	←	←

Further, while all wards are vulnerable to fire hazards, wards number 1, 4, 5, 6, 7, 9, 12, 13, 15, 16, 17, 18, 21, 23, 24, 25, 27, 30, 38, 40, 44, 46, 47, 58 and 59 are identified as vulnerable to floods. Cuttack normally receives an average annual rainfall of about 144.39 cm. About 75% to 80% of rainfall is received from June to September. Heavy rainfall is experienced by the city in the months of July and August (peak monsoon season). The heavy rains and floods over vast areas of the delta region of Mahanadi river system are common during the monsoon season. In Cuttack (situated on the delta formed by Mahanadi and its subsidiaries), more than 50% of the city is exposed to extreme flood risk basically due to urban flooding, which is due to poor drainage facilities including narrow channel exits, encroachment of flood plain areas, and choking of drains due to dumping of solid waste. Due to climate change, occurrence of flash floods during the post monsoon season cannot be ruled out.



2. STANDARD OPERATING PROCEDURES (SOPs)

The time-based and actionable SOPs for the key hazards of cyclone, flood and fire are discussed below. It lays down the specific actions along with the department and agencies responsible to undertake these actions. The SOPs are holistic in the nature and includes all key activities right from the receipt of early warning and alert to immediate relief phase.

2.1 SOP for Cyclone

Though not a coastal city and at a safe distance from storm surge during cyclones, Cuttack is prone to cyclone, mainly due to its saucer-shaped geographical settings which speeds up the water logging in the low lying wards due to heavy cyclonic rainfall. Further, due to existence of *kuchcha* houses, old and vulnerable construction, congested roads, particularly in slum pockets of the wards, strong cyclonic winds cause damage to these structures, including uprooting of trees, communication and power towers, etc. and making the evacuation & response time consuming process and a big challenge for response agencies. Right from the receipt of warning, multiple line departments and response agencies have a critical role to play for prompt evacuation, rescue, aid and restoration of affected persons, infrastructure and services. A large number of these activities are to be executed simultaneously in a collaborative manner with support from all stakeholders. Thus to streamline the efforts by multiple stakeholders for efficient and timely response, it is essential to identify, understand and practice the keys activities to be performed by the identified responsible persons and departments at different time frame of the disaster period. The laid down SOP for cyclone divides the key activities in five major themes for better clarity amongst the stakeholders. These themes are depicted in figure 1. The detailed SOP for management of cyclone is as per table 1 below.

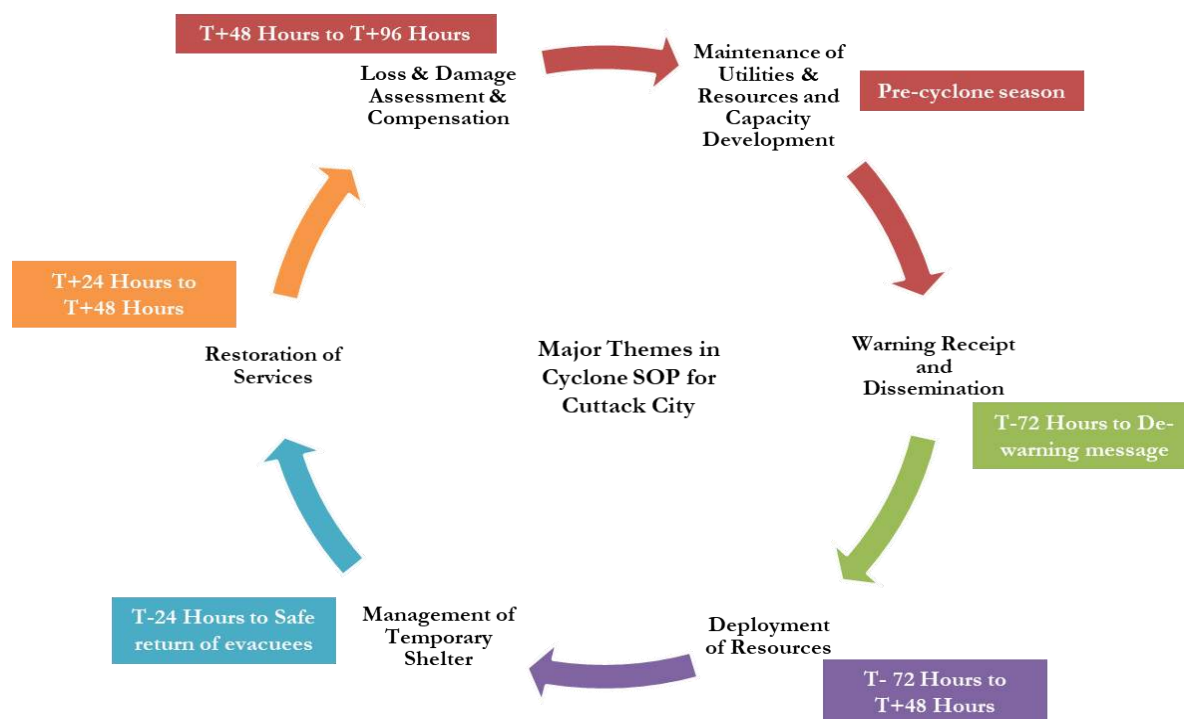


Figure 1: Major Themes in Cyclone SOP for Cuttack City



Table 1: Standard Operating Procedures for Cyclone for Cuttack City

Major Theme	Key Activities	Time Frame	Responsible Person
Maintenance of Utilities & Resources and Capacity Development	Ensure regular monitoring and maintenance of drainage system, river embankments, sluices, gauge stations, flood protection works, etc.	Pre-cyclone season (from March to April & August to September)	- Executive Engineer, Water Resource Department, Cuttack - Executive Engineer, Water Supply and Sewerage Board, Cuttack - Respective Executive Engineer, Engineering Department, CMC
	Ensure regular service and repair of all vehicles, devices and equipment including dewatering pumps, boats, inflatable emergency lights, generator sets, life-saving kits, etc. available with all line departments and agencies	Pre-cyclone season (from March to April & August to September)	- City Engineer, CMC - Head, All line departments - Head, All response agencies
	Assess the need and procure or hire resources, spare parts based on need assessment/ gap analysis		
	Identify safe buildings, having provision of basic facilities of drinking water, sanitation and security, for temporary shelters for evacuated persons	Pre-cyclone season (from March to April & August to September)	Emergency Officer, CMC
	Make database of owner/ caretaker of temporary shelters along with details of their capacities		
	Undertake mock drills or exercise with response agencies ¹ and trained teams of line departments ²		
	Undertake capacity development activities of trained resources and volunteers including operators of critical equipment		
	Undertake awareness generation activities for communities at ward level		
	Undertake inspection of pre-identified temporary shelters and take necessary actions for repair and maintenance of basic facilities	Pre-cyclone season (from March to April & August to September)	- Respective AE/JE, Automobile Section, Civil Section, Electrical Section, Project Section, Engineering Department, CMC - Respective Sanitary Inspectors, CMC
	Certify the inspection undertaken by AE/ JE and submit the certified copy to City Engineer	Pre-monsoon (from April to May end)	Respective AEE, Engineering Department, CMC

¹ Response agencies include Odisha Fire Services, ODRAF, NDRF, Health & Ambulance Services, etc.

² Line departments include all other departments of CMC or Cuttack District providing infrastructure and services to common public like Engineering, Police, Slum Improvement Public Relations, Civil Supply, RTO, etc.



Major Theme	Key Activities	Time Frame	Responsible Person
Warning Receipt and Dissemination	During cyclone season, regularly monitor information from IMD (www.imd.gov.in) and update Municipal Commissioner about the warning generated by IMD	Cyclonic season	Incharge, IT Cell, CMC
	On receipt of any warning, closely monitor the situation on ground with help of Control Room , CMC and also through local news channels	On receipt of the warning	
	Communicate the warning through telephone, e-mail, SMS, letter and social media to: a. Incharge, Control Room, CMC b. Heads of line departments c. Heads of response agencies (for keeping them on standby) d. Ward level representatives and Corporators	As per the instructions of Municipal Commissioner	
	Remain in constant touch with DEOC, Cuttack and SEOC, Odisha and regularly update IT Cell, CMC	Ongoing	Incharge, Control Room, CMC
	Update IT Cell, CMC regarding ground level incidents due to cyclone or help/ resources sought for on the basis of call received at Control Room, CMC		
	Hold an emergency meeting with heads of line departments and response agencies to take stock of situation in the City and plan further course of actions	On receipt of the warning and subsequently, every 6 hours	Municipal Commissioner, CMC
	Fully activate the Control Room, CMC by deploying representative of key line departments and response agencies	Pre-cyclone watch phase (T-72 hours)	
	Assess the condition of roads for quick mobilisation of emergency teams and resources to areas likely to be affected/ affected		
	Ensure the school, colleges in the areas likely to be affected are timely closed for the duration of cyclone warning		
	Ensure critical activities and industries in the wards likely to be affected/ affected are timely shut down to prevent natech (natural hazards triggering technological disasters) incidents		
	Fully activate departmental control rooms	Pre-cyclone watch phase (T-72 hours)	Respective Heads of Line Department
	Keep at disposal, detailed list of ward-wise jurisdiction of different personnel including technical personnel- Executive Engineers, Assistant Executive Engineers, Assistant Engineers and Junior Engineers	Pre-cyclone watch phase (T-72 hours)	Incharge, Department Control Rooms
	Ensure all personnel receive prompt and clear instructions from respective control room for specific role in their respective ward-wise		



Major Theme	Key Activities	Time Frame	Responsible Person
	jurisdictions		
	Ensure that no officer and staff leaves the headquarters without prior permission from appropriate authority; cancel leaves if required		
	Ensure prompt redressal of complaints received in control rooms		
	In case of non-redressal of any complaints/ requests sought, promptly raise the matter to the head of the department for additional support required		
	Maintain constant touch with departmental control room and regularly update IT Cell, CMC	Pre-cyclone watch phase (T-72 hours)	Incharge, Control Room, CMC
	Disseminate the warning to public at large (clear and specific messages with relevant action to be taken by public) through radio, television, newspapers, social media, etc.	Pre-cyclone watch phase (T-72 hours)	DIPRO, Cuttack
	Deploy ward level staff including Sanitary Inspectors, Tax Collectors and Community Organisers for ensuring last mile dissemination of warnings	Pre-cyclone watch phase (T-72 hours)	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Ensure the warning is disseminated to each and every individual through sirens, using door-to-door mobilisation, community level meetings, public address system, etc.	Pre-cyclone watch phase (T-72 hours)	Respective Deputy Commissioner with the help of ward level squad
	Maintain contact with ward level officers and staff and constantly monitor the situation on ground; regularly update IT Cell, CMC regarding the same	Ongoing	Incharge, Control Room, CMC
	In case of weakening of cyclone or change in its route, inform IT Cell about the de-warning message by IMD received from DEOC/ SEOC	On receipt of the de-warning message	
	Instruct for demobilisation of resources no more required and instruct ward level squad to ensure safe return of evacuees to their houses	On receipt of the de-warning message	Municipal Commissioner, CMC
	Communicate the de-warning message to activated response teams for demobilisation	As per the instructions of Municipal Commissioner	Incharge, IT Cell, CMC
Deployment of Resources	Keep response teams and operation & maintenance teams of all line departments and agencies at standby for prompt deployment when required	Pre-cyclone watch phase (T-72 Hours)	Municipal Commissioner, CMC
	Deploy communication equipment for establishing alternate communication among control room, response agencies and the	Pre-cyclone watch phase (T-72 Hours)	- SP (Signal), Cuttack - Telecommunication Operators providing



Major Theme	Key Activities	Time Frame	Responsible Person
	affected areas		services in CMC
	Deploy dewatering pumps and excavators for prompt cleaning of choked drains and areas prone to/ affected by water logging	Pre-cyclone watch phase (T-72 Hours)	Respective AE/ JE, Automobile Section, Engineering Department, CMC
	Provide Petroleum Oil Lubricant (POL) on daily basis for functioning of pumps, generator sets and other equipment, etc. based on requests from authorised persons. Maintain a record of the same in log book.	Pre-cyclone watch phase (T-72 Hours)	Civil Supply Officer, Cuttack
	Deploy additional manpower through pre-identified service providers for prompt operation/restoration work	Cyclone Alert Phase (T-48 hours)	Respective Executive Engineers
	Develop traffic plan to ensure that roads and bridges in the area likely to be affected/ affected are not used	Cyclone Alert Phase (T-48 hours)	ACP (Traffic), CMC
	Make transport arrangement for mobilisation of response teams to areas likely to be affected/ affected	Cyclone Alert Phase (T-48 hours)	RTO, Cuttack
	Pre-position search and rescue teams in areas likely to be affected/ affected to rescue the stranded persons	Cyclone Alert Phase (T-48 hours)	- Commandant, Home Guards, Cuttack - Commandant ODRAF - Commandant NDRF, 3rd Battalion
	Ensure that deployed response teams are adequately equipped with the required equipment, safety gears, tools, spares, etc.		
	Deploy ward level squads to ensure evacuation of persons from areas likely to be affected to pre-identified safe shelters	Cyclone Warning Phase (T-24 hours)	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Make transport arrangement for evacuation of persons to temporary shelters located far off	Cyclone Warning Phase (T-24 hours)	RTO, Cuttack
	Provide ambulance services for safe transport sick or injured persons to pre-identified nearby hospitals	Cyclone Warning Phase (T-24 hours)	- City Health Officer, CMC 108 Emergency Services, Cuttack - Red Cross Society, Cuttack
	Inform the communities to evacuate/ let loose their domesticated animals, livestock, birds, poultry, etc. before they themselves evacuate to safe shelters	Cyclone Warning Phase (T-24 hours)	- DIPRO, Cuttack - Respective ward level squad, CMC
	Depute security personnel along with ward squad for enforcing evacuation of the community likely to be affected	Cyclone Warning Phase (T-24 hours)	• DCP, Cuttack
	Cordon off the areas likely to be affected/	Cyclone Warning	• Incharge, Respective



Major Theme	Key Activities	Time Frame	Responsible Person
	affected	Phase (T-24 hours)	Police Station
	Deploy personnel at suitable locations to ensure that evacuated people do not return to their affected localities unless asked to do so		- Commandant, Home Guards, Cuttack - Commandant, Civil Defense, Cuttack
	Ensure safety and dignity of evacuating persons with special focus on pregnant & lactating women, adolescent girls, children, differently-abled persons (<i>divyaang</i>), old age and sick persons	Cyclone Warning Phase (T-24 hours)	- Respective ward level squad, CMC - Incharge, respective Police Station
	Provide transport services to safely transport livestock/ stray animals to the animal shelter or safe locations	Cyclone Warning Phase (T-24 hours)	Chief District Veterinary Officer, Cuttack
	Provide vehicles for transportation of sick or injured animals to veterinary hospitals		Head, Animal welfare organisations, SPCA, etc.
	Seek assistance from District and State for aerial rescue of stranded persons, if required	Post Landfall Outlook Phase (T-12 hours)	Municipal Commissioner, CMC
	Request for additional resources from neighbouring districts and the state, if required		
	Establish medical posts/ deploy medical teams near temporary shelters and also make provision of mobile medical teams	T+24 hours	- City Health Officer, Cuttack 108 Emergency Services, Cuttack - Red Cross Society, Cuttack
	Ensure adequate stock of necessary medicines, medical equipment and tools which may be required in the aftermath of cyclone		
	Ensure prompt transportation of critically ill or injured persons to pre-identified hospitals.		
	Make a record of referred patients along with the details of respective hospitals		
	Make necessary arrangements (using drones or helicopters) for aerial survey of affected areas, if required	T+ 48 hours	Emergency Officer, CMC
Management of Temporary Shelter	Provide temporary shelter to evacuated persons in pre-identified safe shelters	Cyclone Warning Phase (T-24 hours)	Respective ward level squad, CMC in support of head of the building used as shelter
	In absence of or insufficiency/ damage to an existing temporary shelter for an affected area, promptly assess and identify suitable building/ area for establishing temporary shelter		
	Identify the population which need not be evacuated and can be provided with relief and other support in their own place		
	Maintain record of the inmates of the temporary shelter, segregated into name, age, gender, relations with other inmates, disability/ special needs (if any), address, in case of emergency (ICE) number, etc.		



Major Theme	Key Activities	Time Frame	Responsible Person
	Ensure that the overall management of shelter is sensitive to the dignity, special needs and privacy of the inmates with special focus of pregnant & lactating women, adolescent girls, children, differently-abled persons (<i>dinnyaang</i>), old age and sick persons		
	Ensure provision of proper lighting of the temporary shelter, bathing and washing area, etc. to provide a sense of security to the inmates, particularly women	Cyclone Warning Phase (T-24 hours)	Respective AE/JE, Electrical Section, Engineering Department, CMC
	Deploy suitable number of security personnel to avoid any untoward incidents or law & order issues at the temporary shelter	Cyclone Warning Phase (T-24 hours)	• DCP, Cuttack • Commandant, Home Guards, Cuttack
	Deploy ward level squads for distribution of relief material in temporary shelters and to the affected areas	Cyclone Warning Phase (T-24 hours)	• Deputy Commissioner (Sanitation), CMC • Deputy Commissioner (Tax), CMC • Slum Improvement Officer, CMC
	Provide food and safe drinking water facilities in the temporary shelter and people in the affected areas	Ongoing	• Civil Supply Officer, Cuttack • Support can be sought from local NGOs and volunteers of Civil Defense, NSS, etc.
	In case of community kitchen is being organised, ensure hygiene is practiced while storing, cooking and distributing food to prevent any cases of food poisoning or other ailments	Ongoing	City Health Officer, CMC
	Ensure provision of hygienic sanitation facilities		
	Ensure provision of basic first aid in the temporary shelter		
	Have in place a list of medical services in close vicinity of the temporary shelter to take care of any medical emergency		
	Request District Health Department for necessary additional support, if required		
	Provide psychosocial first aid and support to the affected persons to reduce stress and anxiety due to the trauma experienced		
	Ensure proper management of waste in the temporary shelter to prevent spread of any diseases	Ongoing	Respective Sanitary Inspectors, CMC
	Ensure provision of hygienic bedding for the inmates	Ongoing	Emergency Officer, CMC



Major Theme	Key Activities	Time Frame	Responsible Person
	Ensure provision of safe water and fodder for animals in the animal shelter	Ongoing	- Chief District Veterinary Officer, Cuttack - Head, Animal welfare organisations, SPCA, etc.
	Chlorinate the water, if required prior to making it available to livestock/stray animals and poultry		
	Ensure adequate provision to disinfect the temporary shelter with help of bleaching powder, phenol, carbolic acid, etc.		
	Ensure all persons evacuated are duly informed of the de-warning message and are facilitated to safely return to their houses after safety of the area has been ascertained	On receipt of the de-warning message and after assessing situation in affected areas	Respective ward level squad, CMC
Restoration of Services	Clear obstacles/ flood debris on roads for unhindered passage to emergency services and vehicles	T+24 hours	Respective AE/JE, Civil Section, Engineering Department, CMC
	Promptly restore lifeline services like urban health centres, hospitals, police stations, control rooms, drinking water supply, power lines, communication lines, sewage systems, etc.	T+24 hours	- City Health Officer, CMC - City Engineer, CMC - DCP, Cuttack - Respective Head, telecommunication operators
	Ensure removal of flood debris from infrastructure like schools, <i>aanganwadi</i> centres, market places, houses in affected areas, etc.	T+48 hours	Respective Sanitary Inspectors, CMC
	Seek additional support from District or State, if required for prompt restoration of infrastructure and services	T+48 hours	Municipal Commissioner, CMC
Loss & Damage Assessment & Compensation	Receive dead bodies from the affected areas and ensure due process of dignified management of the dead. Maintain record of the same to assist in prompt clearance of claim and compensation to the grieved family.	T+48 hours	DCP, Cuttack
	Issue death certificate to the grieved family after due verification of identity and relation to the deceased	T+48 hours	City Health Officer, CMC
	Recover carcasses of dead animals and ensure safe disposal of the same. Maintain record of the same to assist in prompt clearance of claim and compensation to the rightful owner.	T+48 hours	Respective Sanitary Inspectors, CMC
	Ensure prompt clearance & disbursement of claims and compensation to the affected persons and families. Maintain record of the same	T+72 hours	- Emergency Officer, CMC - Revenue Officer, Cuttack



Major Theme	Key Activities	Time Frame	Responsible Person
	Undertake rapid damage and need assessment of the affected areas and services in order to better understand and prioritise the needs of the affected communities	T+96 hours	• City Engineer, CMC • City Health Officer, CMC • Slum Improvement Officer, CMC
	Initiate the process of retrofitting and reconstruction of the damaged infrastructure based on the report of damage assessment	At the earliest	• Municipal Commissioner, CMC



2.2 SOP for Floods

The key causes of floods and water logging in Cuttack City include:

- Heavy rainfall locally during monsoons
- Heavy rainfall in the upstream catchment areas and release of high discharge from Hirakund dam located 330 km upstream
- Cloud burst leading to urban flooding
- Cyclonic rainfall

Due to its saucer shape, the city is highly prone to water logging due to above mentioned reasons. Further, various problems including narrow channel exits, encroachment of flood plain areas and choking of drains due to dumping of solid waste, further aggravate the problem. The two immediate responses include evacuation of people from low lying areas and slums located in river beds to safe shelters and prompt dewatering of low-lying pockets. Cuttack city is prone to flood and water logging during monsoon season (June to September) and is also subject to cyclonic rainfall during cyclone season (April to June and October to December), thus it requires the line departments and response agencies to be better prepared and equipped almost throughout the year for prompt and efficient execution of their respective roles during this period. To bring further coherence in efforts of all key stakeholders, the SOP for flood for Cuttack city has been divided in five key themes as depicted in figure 2. The detailed SOP for management of cyclone is as per table 2 below.

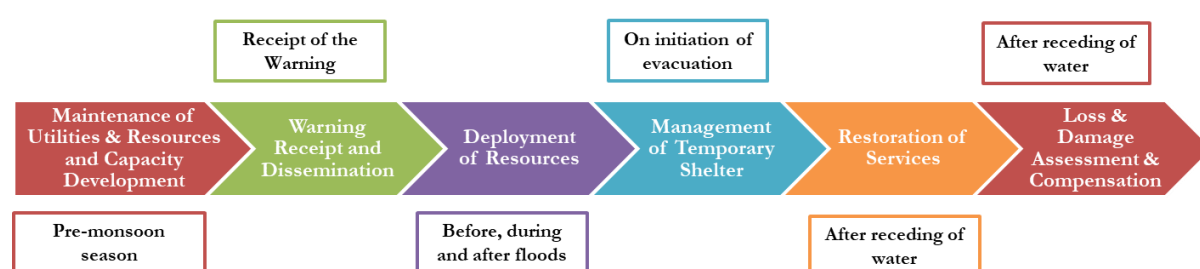


Figure 2: Major Themes in Flood SOP for Cuttack City

Table 2: Standard Operating Procedures for Flood for Cuttack City

Major Theme	Key Activities	Time Frame	Responsible Person
Maintenance of Utilities & Resources and Capacity Development	Ensure regular monitoring and maintenance of drainage system, cleaning of choked drains, embankments, sluices, canals, gauge stations, flood protection works, etc.	Pre-monsoon (from April to May end)	- Executive Engineer, Water Resource Department, Cuttack - Executive Engineer, Water Supply and Sewerage Board, Cuttack - Respective Executive Engineer, Engineering Department, CMC
	Display notice boards at strategic locations like previous breach points, piping points, scouring points, etc. for public awareness		
	Maintain a log book and certify the maintenance and repair work done by respective AE and JE		



Major Theme	Key Activities	Time Frame	Responsible Person
	Ensure regular service and repair of all vehicles, devices and equipment including dewatering pumps, emergency lights, generator sets, boats, life jackets, life buoy, ropes, life-saving kits, etc.	Pre-monsoon (from April to May end)	- City Engineer, CMC - Head, All line departments - Head, All response agencies
	Assess the need and procure/ hire resources/ spare parts based on need assessment/ gap analysis		
	Identify safe buildings, having provision of basic facilities of drinking water, sanitation and security, for temporary shelters for evacuated persons	Pre-monsoon (from April to May end)	Emergency Officer, CMC
	Make database of owner/ caretaker of temporary shelters along with details of their capacities		
	Undertake mock drills or exercise with response agencies ³ and trained teams of line departments ⁴		
	Undertake capacity development activities of trained resources and volunteers including operators of critical equipment		
	Undertake awareness generation activities for communities at ward level		
	Undertake inspection of pre-identified temporary shelters and take necessary actions for repair and maintenance of basic facilities	Pre-monsoon (from April to May end)	- Respective AE/JE, Automobile Section, Civil Section, Electrical Section, Project Section, Engineering Department, CMC - Respective Sanitary Inspectors, CMC
	Certify the inspection undertaken by AE/ JE and submit the certified copy to City Engineer	Pre-monsoon (from April to May end)	Respective AEE, Engineering Department, CMC
Warning Receipt and Dissemination	Constantly monitor information from: a. IMD (www.imd.gov.in) for heavy rainfall b. State and District level Flood Control Cell, Water Resources Department for discharge of flood water at Mundali/Naraj for floods in Mahanadi river system.	During monsoon season	Incharge, IT Cell, CMC
	Closely monitor the situation on ground with the help of Control Room, CMC and also through local news channels	On receipt of the warning	
	Communicate the warning through telephone, e-mail, SMS, letter and social media to: a. Incharge, Control Room , CMC b. Heads of line departments	As per the instructions of Municipal Commissioner	

³ Response agencies include Odisha Fire Services, ODRAF, NDRF, Health & Ambulance Services, etc.

⁴ Line departments include all other departments of CMC or Cuttack District providing infrastructure and services to common public like Engineering, Police, Slum Improvement Public Relations, Civil Supply, RTO, etc.



Major Theme	Key Activities	Time Frame	Responsible Person
	c. Heads of response agencies (for keeping them on standby) d. Ward level representatives and Corporators		
	Hold an emergency meeting with heads of line departments and response agencies to take stock of situation in the city and plan further course of actions	On receipt of the warning and subsequently, every 6 hours	Municipal Commissioner, CMC
	Fully activate the Control Room, CMC by deploying representative of key line departments and response agencies		
	Assess the condition of roads for quick mobilisation of emergency teams and resources to areas likely to be flooded or water logged		
	Ensure the school, colleges in the areas likely to be flooded or water logged are timely closed for the duration of the warning		
	Ensure critical activities and industries in the wards likely to be flooded or water logged are timely shut down to prevent natech (natural hazards triggering technological disasters) incidents		
	Remain in constant touch with SEOC, Odisha, DEOC, Cuttack and departmental control room and regularly update the IT Cell, CMC	Ongoing	Incharge, Control Room, CMC
	Update IT Cell, CMC regarding ground level incidents due to heavy rainfall and water logging or help/ resources sought for on the basis of call received at Control Room, CMC		
	Maintain contact with ward level officers and staff and constantly monitor the situation on ground; regularly update IT Cell, CMC regarding the same		
	In case of receipt of warning during non-working hours, inform the Residence Office of Municipal Commissioner		
	Fully activate departmental control rooms	On receipt of the warning	Respective Heads of Line Department
	Keep at disposal, detailed list of ward-wise jurisdiction of different personnel including technical personnel- Executive Engineers, Assistant Executive Engineers, Assistant Engineers and Junior Engineers	Ongoing	Incharge, Department Control Rooms
	Ensure all personnel receive prompt and clear instructions from respective control room for specific role in their respective ward-wise jurisdictions		
	Ensure that no officer and staff leaves the headquarters without prior permission from appropriate authority; cancel leaves if required		
	Ensure prompt redressal of complaints received in control rooms		



Major Theme	Key Activities	Time Frame	Responsible Person
	In case of non-redressal of any complaints/ requests sought, promptly raise the matter to the head of the department for additional support required		
	Disseminate the warning to public at large (clear and specific messages with relevant action to be taken by public) through radio, television, newspapers, social media, public address system, pre-identified local mechanism, if any	On receipt of the warning	DIPRO, Cuttack
	Deploy ward level staff including Sanitary Inspectors, Tax Collectors and Community Organisers for ensuring last mile dissemination of warnings	On receipt of the warning	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Ensure the warning is disseminated to each and every individual through sirens, using door-to-door mobilisation, community level meetings, public address system, etc.	On receipt of the warning	Respective Deputy Commissioner with the help of ward level squad
Deployment of Resources	Keep response teams and operation & maintenance teams of all line departments and response agencies at standby for prompt deployment when required	On receipt of the warning	Municipal Commissioner, CMC
	Activate the duty chart for round the clock vigil on each embankment under respective jurisdiction	Ongoing	Respective Assistant Engineer (AE)/ Junior Engineer (JE), Water Resources Department, Cuttack
	Observe the gauge readings, velocity of river flow at critical points along the embankment and note the direction of flow during flood		
	Remain in constant touch with Assistant Executive Engineer (AEE) during flood watching and regularly apprise him		
	In case of emergent situation like piping, overtopping, scour of embankment or any other threat, take immediate appropriate steps with intimation to AEE		
	Seek additional support, if required through from City Engineer, CMC with the help of AEE		
	Record the breach points, piping points for permanent repair after floods and also mark the high flood level for reference		
	Deploy dewatering pumps and excavators for cleaning of choked drains and dewatering of water logged areas	As required	Respective JE, Automobile Section, Engineering Department, CMC
	Provide Petroleum Oil Lubricant (POL) on daily basis for functioning of pumps, generator sets and other equipment, etc. based on requests from authorised persons. Maintain a record of the same in log book.	As required	Civil Supply Officer, Cuttack



Major Theme	Key Activities	Time Frame	Responsible Person
	In case of failure of communication, deploy communication equipment for establishing alternate communication with the affected wards	As required	- SP (Signal), Cuttack - Telecommunication Operators providing services in CMC
	Develop traffic plan to ensure that roads and bridges in the area likely to be flooded or water logged are not used	On receipt of the warning	ACP (Traffic), CMC
	Make transport arrangement for mobilisation of response teams to areas likely to be flooded or water logged	On receipt of the warning	RTO, Cuttack
	Deploy ward level squads to ensure evacuation of persons from areas likely to be flooded or water logged to pre-identified safe shelters	As per ground situation	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Inform the communities to evacuate/ let loose their domesticated animals, livestock, birds, poultry, etc. before they themselves evacuate to safe shelters	Ongoing	- DIPRO, Cuttack - Respective ward level squad, CMC
	Ensure safety and dignity of evacuating persons with special focus on pregnant & lactating women, adolescent girls, children, differently-abled persons (<i>divyaang</i>), old age and sick persons	Ongoing	- Respective ward level squad, CMC - Incharge, respective Police Station
	Make transport arrangement for evacuation of persons to temporary shelters located far off	As required	RTO, Cuttack
	Provide ambulance services for safe transport sick or injured persons to pre-identified nearby hospitals	As required	- City Health Officer, CMC 108 Emergency Services, Cuttack - Red Cross Society, Cuttack
	Provide transport services to safely transport livestock/ stray animals to the animal shelter or safe locations	As required	- Chief District Veterinary Officer, Cuttack - Head, Animal welfare organisations, SPCA, etc.
	Provide vehicles for transportation of sick or injured animals to veterinary hospitals		
	Cordon off the areas likely to be flooded or water logged	Ongoing	- Incharge, Respective Police Station - Commandant, Home Guards, Cuttack - Commandant, Civil Defense, Cuttack
	Deploy personnel at suitable locations to ensure that evacuated people do not return to their affected localities unless asked to do so		
	Establish medical posts/ deploy medical teams near temporary shelters and also make provision of mobile medical teams	Ongoing	City Health Officer, Cuttack



Major Theme	Key Activities	Time Frame	Responsible Person
	Ensure adequate stock of necessary medicines, medical equipment and tools which may be required in the aftermath of flood		108 Emergency Services, Cuttack - Red Cross Society, Cuttack
	Ensure prompt transportation of critically ill or injured persons to pre-identified hospitals		
	Make a record of referred patients along with the details of respective hospitals		
	Deploy search and rescue teams in areas likely to be flooded or water logged to rescue the stranded persons	As per ground situation	- Commandant, Home Guards, Cuttack - Commandant ODRAF - Commandant NDRF, 3rd Battalion
	Ensure that deployed response teams are adequately equipped with the required equipment, safety gears, tools, spares, etc.		
	Make necessary arrangements (using drones or helicopters) for aerial survey of affected areas, if required	As required	Emergency Officer, CMC
	Seek assistance from District and State for aerial rescue of stranded persons, if required	As per ground situation	Municipal Commissioner, CMC
	Request for additional resources from neighbouring districts and the state, if required		
Management of Temporary Shelter	Provide temporary shelter to evacuated persons in pre-identified shelters	On initiation of evacuation	Respective ward level squad, CMC in support of head of the building used as shelter
	In absence of or insufficiency/ damage to an existing temporary shelter for an affected area, promptly assess and identify suitable building/ area for establishing temporary shelter		
	Identify the population which need not be evacuated and can be provided with relief and other support in their own place		
	Maintain record of the inmates of the temporary shelter, segregated into name, age, gender, relations with other inmates, disability/ special needs (if any), address, in case of emergency (ICE) number, etc.		
	Ensure that the overall management of shelter is sensitive to the dignity, special needs and privacy of the inmates with special focus of pregnant & lactating women, adolescent girls, children, differently-abled persons (<i>dinvaang</i>), old age and sick persons		
	Ensure provision of proper lighting of the temporary shelter, batching and washing area, etc. to provide a sense of security to the inmates, particularly women	Ongoing	Respective AE/JE, Electrical Section, Engineering Department, CMC
	Deploy suitable number of security personnel to avoid any untoward incidents or law & order issues at the temporary shelter	On activation of temporary shelter	- DCP, Cuttack - Commandant, Home Guards, Cuttack



Major Theme	Key Activities	Time Frame	Responsible Person
	Deploy ward level squads for distribution of relief material in temporary shelters and to the affected areas	On activation of temporary shelter	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Provide food and safe drinking water facilities in the temporary shelter and people in the affected areas	Ongoing	- Civil Supply Officer, Cuttack - Support can be sought from local NGOs and volunteers of Civil Defense, NSS, etc.
	In case of community kitchen is being organised, ensure hygiene is practiced while storing, cooking and distributing food to prevent any cases of food poisoning or other ailments	Ongoing	City Health Officer, CMC
	Ensure provision of hygienic sanitation facilities		
	Ensure provision of basic first aid in the temporary shelter		
	Have in place a list of medical services in close vicinity of the temporary shelter to take care of any medical emergency		
	Request District Health Department for necessary additional support, if required		
	Provide psychosocial first aid and support to the affected persons to reduce stress and anxiety due to the trauma experienced		
	Ensure proper management of waste in the temporary shelter to prevent spread of any diseases	Ongoing	Respective Sanitary Inspectors, CMC
	Ensure provision of hygienic bedding for the inmates	Ongoing	Emergency Officer, CMC
	Ensure provision of safe water and fodder for animals in the animal shelter	Ongoing	- Chief District Veterinary Officer, Cuttack - Head, Animal welfare organisations, SPCA, etc.
	Chlorinate the water, if required prior to making it available to livestock/stray animals and poultry		
	Ensure adequate provision to disinfect the temporary shelter with help of bleaching powder, phenol, carbolic acid, etc.		
Restoration of Services	Clear obstacles/ flood debris on roads for unhindered passage to emergency services and vehicles	After water recedes	- Respective Sanitary Inspectors, CMC - JE, Civil Section, Engineering Department, CMC - City Health Officer, CMC
	Deploy teams with tractor unit, adequate bleaching power and halogen tablets to prevent any water-borne diseases		



Major Theme	Key Activities	Time Frame	Responsible Person
	Ensure removal of flood debris from infrastructure like schools, <i>aanganwadi</i> centres, market places, houses in affected areas, etc.	After water recedes	Respective Sanitary Inspectors, CMC
	Ensure prompt repair of roads with help pre-casted beams and slabs and other resources	After water recedes	Executive Engineer, Civil Section, Engineering Department, CMC
	Deploy additional manpower through pre-identified service providers for prompt operation/restoration work	After water recedes	- Respective Executive Engineers, Engineering Department, Cuttack - Respective Executive Engineer, Water Resources Department, Cuttack
	Promptly restore lifeline services like health centres, hospitals, police stations, control rooms, drinking water supply, power lines, communication lines, sewage systems, etc.	After water recedes	Respective Heads
	Seek additional support from District or State, if required for prompt restoration of infrastructure and services	As per ground situation	Municipal Commissioner, CMC
Loss & Damage Assessment & Compensation	Receive dead bodies from the affected areas and ensure due process of dignified management of the dead. Maintain record of the same to assist in prompt clearance of claim and compensation to the grieved family.	Within 48 hours of water receding	DCP, Cuttack
	Issue death certificate to the grieved family after due verification of identity and relation to the deceased	Ongoing	City Health Officer, CMC
	Recover carcasses of dead animals and ensure safe disposal of the same. Maintain record of the same to assist in prompt clearance of claim and compensation to the rightful owner.	Within 48 hours of water receding	Respective Sanitary Inspectors, CMC
	Ensure prompt clearance & disbursement of claims and compensation to the affected persons and families. Maintain record of the same	Initiate the process within 72 hours of water receding	- Emergency Officer, CMC - Revenue Officer, Cuttack
	Undertake rapid damage and need assessment of the affected areas and services in order to better understand and prioritise the needs of the affected communities	Within 96 hours of water receding	- City Engineer, CMC - City Health Officer, CMC - Slum Improvement Officer, CMC
	Initiate the process of retrofitting and reconstruction of the damaged infrastructure based on the report of damage assessment	At the earliest	Municipal Commissioner, CMC



2.3 SOP for Fire

The key responsibility of fire-fighting and search and rescue rests with the Odisha Fire Services and various other line departments & response agencies provide critical ground support for prompt and efficient response. For streamlining these collaborative responsibilities, the SOP for Fire for Cuttack city is divided under six major themes as depicted in figure 3. The detailed SOP for fire as per table 3 below.

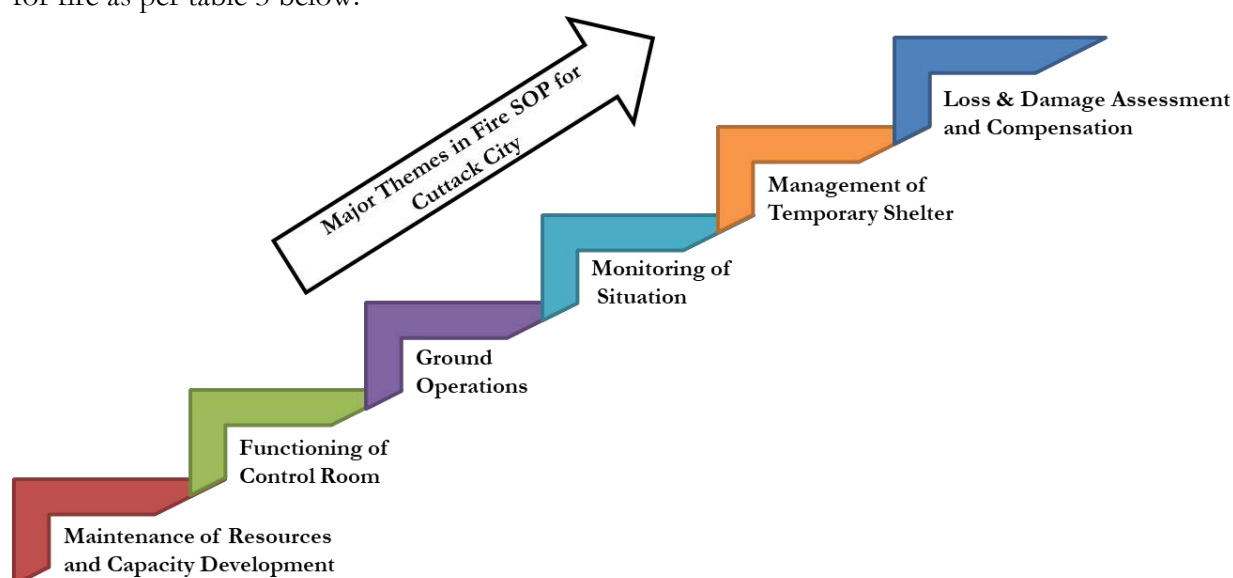


Figure 3: Major Themes in Fire SOP for Cuttack City

Table 3: Standard Operating Procedures for Fire for Cuttack City

Major Theme	Key Activities	Time Frame	Responsible Person
Maintenance of Resources and Capacity Development	Ensure regular monitoring and maintenance of fire-fighting equipment and vehicles	Regularly	Fire Officer, Cuttack
	Undertake capacity development of fire staff by regular training and procurement of required resources including personal protective equipment for fire response teams		
	Ensure regular audit of fire safety systems in public places, critical infrastructure, industries and hazardous locations		
	Assess the need, recommend installation of necessary fire-detection and fire-fighting systems		
	Identify vulnerable spots in different wards prone to fire and take remedial measures		
	Ensure that staff is duly aware of anti-dotes and material safety data sheets of chemicals like chlorine, petroleum products and others which are being handled, stored, manufactured or processed at industrial installations in the city		
Functioning of Control Room	Take note of details like location of incident, possible cause of fire, approximate number of persons caught in the incident	On receipt of information of fire incident	Incharge, Fire Control Room
	Deploy appropriate number of well-equipped fire-fighting teams based on the information		



Major Theme	Key Activities	Time Frame	Responsible Person
	received		
	Ensure the fire-fighting and search & rescue teams deployed for the operations are equipped with adequate personal protective equipment		
	Keep teams on stand-by to support the on-going operation, if need arises		
	Inform the Control Room, CMC regarding the incident and request for adequate support from medical services, ambulance services, etc.		
	In case of event of fire in an industry or hazardous installations, promptly inform the Local Crisis Group/ District Crisis Group, State Safety Cell for technical assistance in response and management	On request from Fire Control Room	Incharge, Control Room, CMC
	Deploy ambulance and medical teams for prompt triage, first aid and transfer of serious patients to hospitals	On receipt of information of fire incident	
	Inform Traffic Police and request for clearance of traffic to the affected area for quick movement of emergency vehicles		
Ground Operations	Cordon off the affected area and initiate the fire-fighting operations	On reaching the affected area	Fire Officer, Cuttack
	Request for additional support from nearby Fire Stations, if required		
	Safely evacuate occupants from the affected areas while striving to let loose domesticated animals or birds, if any		
	Deploy security personnel to affected area for maintain law & order	On receipt of information about incident	DCP, Cuttack
	Divert traffic so as to provide clear routes to emergency vehicles		ACP (Traffic), Cuttack
	Cordon off the affected and maintain law & order situation	On reaching the affected area	Incharge, Respective Police Station
	Ensure that evacuated persons do not return back to the affected area unless it is declared safe for their return		
	Deploy medical teams and ambulances for undertaking triage for prioritisation and segregation of injured and dead persons. Handover dead bodies to Police for necessary actions.	On reaching the affected area	- City Health Officer, CMC 108 Emergency Services, Cuttack - Red Cross Society, Cuttack
	On the basis of triage, provide first aid to injured persons or transfer the critically injured persons to nearby hospitals and maintain a record of the same		
	Request District Health Department for necessary additional support, if required		
	Provide psychosocial first aid and support to the affected persons to reduce stress and anxiety due to the trauma experienced		



Major Theme	Key Activities	Time Frame	Responsible Person
	Provide medical services to injured animals	On receipt of information about incident	- Chief District Veterinary Officer, Cuttack - Head, Animal welfare organisations, SPCA, etc.
	Provide transportation support for transferring injured animals to veterinary hospitals/ clinics		
	Ensure availability of water to the nearest hydrant point or through tankers (if feasible) to support fire-fighting operations	On request from fire-fighting team/ control room	Respective AE/JE, Water Supply, Engineering Department, CMC
	Provide fuel on priority basis to emergency vehicles	On request from driver of emergency vehicles	Incharge, Petrol Pumps
	Receive dead bodies and ensure due process of dignified management of the dead. Maintain a record of the same to assist in prompt clearance of claim and compensation to the grieved family.	As handed over by fire-fighting teams	DCP, Cuttack
	Recover carcasses of dead animals and ensure safe disposal of the same. Maintain a record of the same to assist in prompt clearance of claim and compensation to the rightful owner.	As handed over by fire-fighting teams	Respective Sanitary Inspector, CMC
Monitoring of Situation	In case of a large scale fire incident requiring various response agencies or longer duration of fire-fighting operations, activate the Control Room, CMC with representatives deputed from related line departments in Control Room	On assessing the nature and quantum of fire incident	Municipal Commissioner, CMC
	Hold an emergency meeting with heads of critical line departments and response agencies to take stock of situation and planning future course of actions		
	Request for additional resources from neighbouring districts and state, if required		
	In case of fire incident at industries dealing with hazardous material, take suitable measures including evacuating nearby areas, if required to mitigate any cascading impact like leakage of hazmat to surrounding areas		
	In such a case, consider cordoning off the surrounding area and shutting down of schools, colleges, offices, market areas, public places, etc. in the areas likely to be affected until it is safe for the public to enter the affected area		
	In case of major fire where affected people are not able to return to their houses, establish temporary shelter for affected persons at suitable location	At the earliest	Emergency Officer, Cuttack
	Depending on the number of affected animals, consider establishing animal shelter, if required	At the earliest, if	Chief District Veterinary Officer,



Major Theme	Key Activities	Time Frame	Responsible Person
		required	Cuttack Head, Animal welfare organisations, SPCA, etc.
	Provide transportation services to safely move evacuated person to the safe temporary shelter	At the earliest	RTO, Cuttack
Management of Temporary Shelter	Provide temporary shelter to evacuated/ rescued persons whose houses got damaged during the fire incident or who are in an area likely to be affected by any hazardous releases	At the earliest	Respective ward level squad, CMC in support of head of the building used as shelter
	In absence of or insufficiency/ damage to an existing temporary shelter for an affected area, promptly assess and identify suitable building/ area for establishing temporary shelter		
	Maintain record of the inmates of the temporary shelter, segregated into name, age, gender, relations with other inmates, disability/ special needs (if any), address, in case of emergency (ICE) number, etc.		
	Ensure that the overall management of shelter is sensitive to the dignity, special needs and privacy of the inmates with special focus of pregnant & lactating women, adolescent girls, children, differently-abled persons (<i>dhiyaang</i>), old age and sick persons		
	Ensure provision of proper lighting of the temporary shelter, batching and washing area, etc. to provide a sense of security to the inmates, particularly women	Ongoing	Respective AE/JE, Electrical Section, Engineering Department, CMC
	Deploy suitable number of security personnel to avoid any untoward incidents or law & order issues at the temporary shelter		- DCP, Cuttack - Commandant, Home Guards, Cuttack - Commandant, Civil Defense, Cuttack
	Deploy ward level squads for distribution of relief material in temporary shelters and to the affected areas	Ongoing	- Deputy Commissioner (Sanitation), CMC - Deputy Commissioner (Tax), CMC - Slum Improvement Officer, CMC
	Provide food and safe drinking water facilities in the temporary shelter	Ongoing	- Civil Supply Officer, Cuttack - Support can be sought from local NGOs and volunteers of Civil Defense, NSS, etc.



Major Theme	Key Activities	Time Frame	Responsible Person
	In case of community kitchen is being organised, ensure hygiene is practiced while storing, cooking and distributing food to prevent any cases of food poisoning or other ailments	Ongoing	City Health Officer, CMC
	Ensure provision of hygienic sanitation facilities		
	Ensure provision of basic first aid in the temporary shelter		
	Have in place a list of medical services in close vicinity of the temporary shelter to take care of any medical emergency		
	Provide psychosocial first aid and support to the affected persons to reduce stress and anxiety due to the trauma experienced		
	Ensure proper management of waste in the temporary shelter to prevent the spread of any diseases	Ongoing	Respective Sanitary Inspectors, CMC
	Ensure provision of hygienic bedding for the inmates	Ongoing	Emergency Officer, CMC
	Ensure provision of safe water and fodder for animals in the animal shelter	Ongoing	- Chief District Veterinary Officer, Cuttack - Head, Animal welfare organisations, SPCA, etc.
	Chlorinate the water, if required prior to making it available to livestock/stray animals and poultry		
	Ensure adequate provision to disinfect the temporary shelter with the help of bleaching powder, phenol, carbolic acid, etc.		
Loss & Damage Assessment and Compensation	Ensure all persons evacuated/ rescued are duly informed and facilitated to safely return to their houses after the safety of the area has been ascertained	After assessing situation in affected areas	Respective ward level squad, CMC
	Receive dead bodies from the affected areas and ensure due process of dignified management of the dead. Maintain record of the same to assist in prompt clearance of claim and compensation to the grieved family.	At the earliest	DCP, Cuttack
	Issue death certificate to the grieved family after due verification of identity and relation to the deceased	T+24 hours	City Health Officer, CMC
	Handover record of dead carcasses to Revenue Officer for prompt clearance of claims and compensation	T+24 hours	Respective Sanitary Inspectors, CMC
	Ensure prompt clearance & disbursement of claims and compensation to the affected persons and families. Maintain record of the same	T+48 hours	- Emergency Officer, CMC - Revenue Officer, Cuttack
	Deploy trained team for undertaking rapid damage and need assessment of different infrastructure and services under jurisdiction of CMC	When it is declared safe to visit the site	Municipal Commissioner, CMC



Major Theme	Key Activities	Time Frame	Responsible Person
	Accordingly, prioritise restoration of infrastructure and services in the affected area so that affected persons can safely return to their houses at the earliest		
	Deploy team for undertaking investigation of cause for fire		
	Deploy staff for assisting the team undertaking rapid damage and need assessment of the affected areas and services in order to better understand and prioritise the needs of the affected communities	T+48 hours	Fire Officer, CMC

