



Assam Inland WaterTransport Development Society

(An Autonomous Body under the Transport Department, Government of Assam)

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Comp No. 365000/112

Date: (as per e-sign)

From : State Project Director
Assam Inland Water Transport Development Society (AIWTDS)
Ulubari, Guwahati-7

To : 1) The Director
Inland Water Transport, Assam
Ulubari, Guwahati-7

2) The State Project Coordinator
Assam State Disaster Management Authority
Dispur, Guwahati-6

Sub : **Request for public opinion**-----Uploading of the attached SOP in respective Websites for “establishment of an Emergency Response and Search and Rescue (ER&SAR) coordination mechanism for Inland Water Transport (IWT)”.

Sir/Madam,

With reference to the subject cited above, I would like to inform you that vide MOM signed on 29.04.2025 by the Secretary to the Govt. of Assam, Revenue & Disaster Management Department cum the CEO, ASDMA (i/c) the SOP for the establishment of an Emergency Response an Search and Rescue (ER&SAR) coordination mechanism for Inland Water Transport (IWT) has been approved.

In this connection, you are hereby requested to upload the said SOP on your official website to invite public opinion. Opinions received within 14 (fourteen) days from the date of publication of the SOP may be taken into consideration and communicated to the Assam IWTD Society for further necessary action.

Enclo : The SOP as mentioned.

Thanks and Regards

Digitally signed by
ADITYA VIKRAM YADAV
Date: 07-05-2025
(Aditya Vikram Yadav, IAS)
State Project Director
Assam IWTD Society
Ulubari, Guwahati-7

Memo : Comp No. 365000 -A

Date: (as per e-sign)

Copy to :

1. The CEO, Assam State Disaster Management Authority (ASDMA), Dispur, Guwahati-6 for favour of kind information.
2. The Secretary to the Govt. of Assam, Transport Department, Dispur, Guwahati-6 for favour of kind information.
3. M/s Webcom, Guwahati for publication of the attached SOP in the AIWTDS website.

e-signed

State Project Director
Assam IWTD Society

STANDARD OPERATING PROCEDURE (SOP) FOR **ASSAM INLAND WATERWAYS** **FOR RIVER DISASTER MANAGEMENT**

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1. EXECUTIVE SUMMARY

This **Standard Operating Procedure (SOP) for Assam Inland Waterways for River Disaster Management** is developed under the purview of the Assam State Disaster Management Authority (ASDMA). It provides a structured framework to ensure an effective response to river-related disasters, including floods, boat accidents, drowning incidents, transportation of relief materials, and hazardous material spills.

The SOP outlines **preparedness, response, and recovery** measures to minimize loss of life, environmental damage, and property destruction. It establishes a **checklist-based approach** for coordinated action among all emergency responders, including Assam Inland Waterways, ASDMA, and relevant government and private stakeholders.

The SOP establishes a structured **Incident Response Framework** aligned with ASDMA's state-level disaster management structure to ensure a coordinated approach to river-based disasters. It defines **standardized response protocols** for emergencies such as floods, boat accidents, and hazardous material spills. Additionally, it outlines **resource allocation and coordination mechanisms** with emergency response teams to enhance efficiency in disaster management. A well-defined **communication and escalation matrix** ensures timely decision-making and response execution. Furthermore, the SOP emphasizes **training and preparedness guidelines** to strengthen response capabilities. This document must be used in conjunction with other disaster response frameworks and is subject to **annual reviews and updates** based on operational feedback and emerging risks.

2. PURPOSE

This SOP comes under the ambit of the Assam State Disaster Management Authority (ASDMA) as mentioned in the organizational structure of “Incident Response Team – State Level” of ASDMA.

This SOP establishes the “Check off list” including guidelines for preparedness, response, and recovery **in case of river-related disasters**, including floods, boat accidents, drowning incidents, transportation of relief materials, and hazardous material spills. It ensures a coordinated and efficient approach to minimize loss of life, environmental damage, and property destruction.

This SOP is to be read in conjunction with ER&SAR coordination mechanism Document, Escalation Matrix during Disaster and other SOPs on the subject issued by the Govt. authorities. This SOP shall be reviewed annually and updated based on the operational feedback and emerging risks.

3. SCOPE

This SOP applies to all emergency responders, government agencies, non-governmental organizations (NGOs), and community volunteers involved in river disaster management. It covers:

- Flash floods
- Riverine floods
- Boat capsizing or accidents
- Drowning incidents
- Water pollution and hazardous material spills
- Supply of relief materials and transportation of injured to the predetermined locations.
- Conduct community awareness programs on disaster preparedness.

4. LEVELS OF SAR INCIDENT

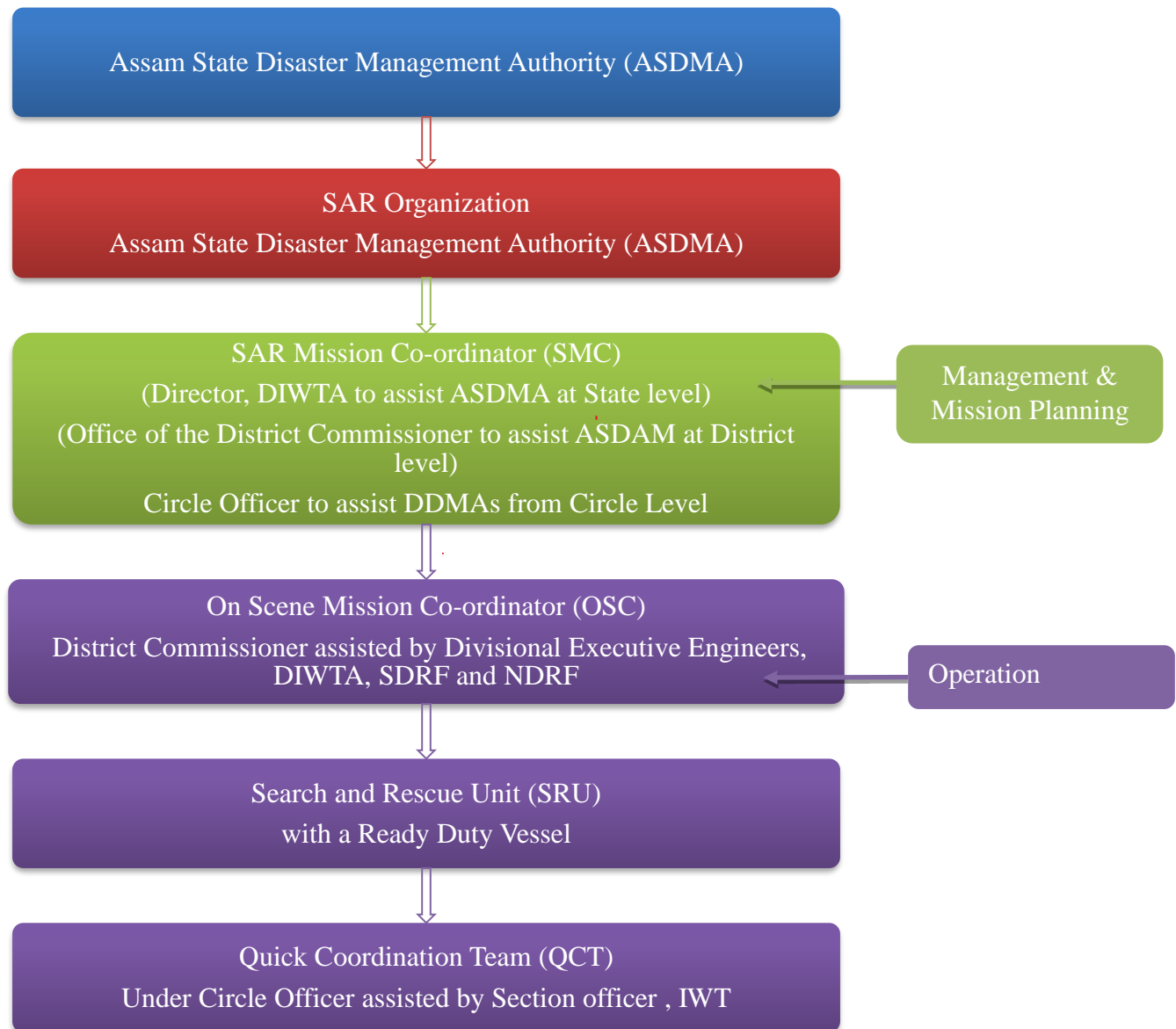
Any SAR incident is classified into three levels based on its severity as given in table below

Levels	Description of SAR Incident
L1	L1 specifies disasters that can be managed at the district level; however, the state and Centre will remain in operational readiness to provide assistance, if needed.
L2	L2 specifies disaster situations that may require assistance and active participation of the state, and the mobilization of resources at the state level. In this case also, the central government and agencies will remain in operational readiness to provide assistance, if needed.
L3	L3 specifies disaster situations arise from large scale disasters where districts and the state may not have the capacity to respond adequately and require assistance from the central government for assisting the state and district machinery.

5. ROLES AND RESPONSIBILITIES: INFRASTRUCTURE AND ORGANIZATION REQUIRED FOR ER&SAR

5.1. Command Structure

The command structure to be set up as mentioned below:



5.2. Actions to be taken in the event of a disaster under the SAR organization

A. SAR MISSION COORDINATOR (SMC):

SC is responsible to assist ASDMA in management and mission planning for Incident response in case of river disaster.

SMC to undertake following duties to ensure SAR Management:

- i) Establish **INTEGRATED COMMAND CONTROL CENTRE (ICCC)** at Gateway of Guwahati Ghat (GGG) in coordination with AIWCL to coordinate the conduct of SAR operations effectively. Followings are to be ensured:
 - a) A dedicated team of IWT personnel, including a duty officer to be positioned 24x7 for the conduct of operations.
 - b) ICCC to collate all the data from RIS and other sources of information
 - c) All units be tasked with SAR functions under direct control of DIWTA at State level and Office of the District Commissioner at District level.
 - d) DIWTA will be the first responder to any natural / man-made disasters at State level and Office of the District Commissioner at District level.
 - e) DIWTA/Office of the District Commissioner to invoke all other government stakeholders, including Assam State Disaster Management Authority, NDRF, SDRF, Health, etc.
 - f) All Ghats under DIWTA, Panchayats, IWAI, AIWCL to be mapped and feed into the data system of ICCC.
- ii) Prepare and ensure availability of an updated Terrain Map with all available facilities in the area of its jurisdiction.
- iii) Identify and earmark SRU/SAR resources to be used within the area
- iv) Keep the **Tugs** with firefighting facility fully operational for deployment at short notice.

- v) Establish secure communication link with all stakeholders and the Duty Officer to check communication once every day.
- vi) Identify type of the disaster/incident and its location
- vii) Assign SMC and SRUs units, as required for assistance
- viii) Establish a **bulk message** with all stakeholders and community volunteers and use it for transmission of weather report every day and incident report as per requirement.
- ix) Provide Situation Report (SITREPS) to all the authorities under the SAR organisation through secured communication every 30 min or earlier, if the situation warrants.
- x) Establish alternate route for communication with all stakeholders.
- xi) All stakeholder organization/Department/Agencies to provide one officially nominated Person along with a designated contact numbers, with details of the personnel responsible for emergency response.
- xii) List of all emergency contact details along with the designation of the nominated individuals should be place at the ICCC and ensure its availability in all control rooms as well as at the community level.
- xiii) Plan SAR exercises, SAR training and developing SAR policies supported by AIWTRA, ASDMA, SDRF & NDRF.
- xiv) Conduct dummy SAR exercise with Ready Duty Vessel once a Quarter and stringent inspection of its operational status, including machinery and crew efficiency.

The following categories of vessels are to be used for SAR operations.

- (a) Primary SAR Vessels:** The Ready Duty Vessel is the Primary SAR vessel which is to be prepared for conversion to a temporary hospital ship for evacuation during major disaster. QRT as defined and to be stationed on the Ready Duty Vessel 24 x 7
- (b) Secondary SAR vessels:** All other IWT/AIWCL operational vessels with crew.
- (c) Vessels of opportunity:** A vessel of opportunity is any vessel other than primary and secondary vessel, who are in the location close enough to provide immediate assistance to a vessel in distress or evacuation. These vessels must be withdrawn from the scene of action after the arrival of the Secondary SAR vessels and placed in the periphery for support mission, if any by the OSC.

The SMC to undertake following duties to ensure SAR Mission Planning:

- Obtain and evaluate all data on the developing emergency situation in the river;
- Ascertain the type of emergency equipment available onboard the distressed craft;
- Obtain and update prevailing environmental conditions to all the stakeholders;
- Ascertain movements and location of vessels and alert shipping in likely search areas for rescue, lookout (visual and electronic) and/or radio watch on appropriate frequencies to facilitate communications with SAR facilities;

- Determine the area to be searched and decide on the methods and facilities to be used;
- Develop the search and rescue action plan, i.e. Allocate search areas, designate the OSC, augment additional SAR facilities and designate on-scene communications frequencies;
- Inform CEO, ASDMA of the search action plan;
- Arrange briefing and debriefing of SAR personnel;
- Evaluate reports from all sources and modify the search action plan as necessary;
- Arrange for delivery of relief materials to the area of the incident/disaster in support of the survivors;
- Maintain in chronological order an accurate and up-to-date record with a plot, where necessary, of all proceedings;
- Issue situation reports frequently (SITREPS) every 30 minutes or earlier, depending on the situation.

On completion of the SAR operation, following actions to be taken:

- Recommend to CEO, ASDMA on completion of the assigned task of abandoning or suspending of the search;
- Release SAR facilities when assistance is no longer required;
- Evaluate property, environmental damage, and loss of life.
- Identify areas requiring urgent restoration and inform the Responsible Officer.
- Notify accident investigation authorities;

- Notify police and other government authorities where relevant and necessary;
- Conduct debriefings to analyse the response effectiveness.
- Prepare a final report with all supporting documents on the operation;
- Press and media management.

B. ON SCENE COORDINATOR (OSC)

He is responsible for:

- i) In charge of the onsite operations
- ii) Designate the first SRU/Ready Duty Ship arriving at the scene as the OSC
- iii) OSC will be responsible for the operation until the completion of the mission.
- iv) The duties of OSC are mentioned below:
 - Receive and familiarise search action plan from SMC.
 - Implement search action plan promulgated by SMC.
 - Modify search plan based on prevailing environmental conditions.
 - Ensure availability of essential men and material for the SAR mission prior to deployment and ask for additional resources if required.
 - Take charge and coordinate operation of all SAR facilities on scene;
 - Consult and advise SMC regarding any changes to the plan based on the developing situation.
 - Provide relevant information to other SRUs on scene.
 - Advise SMC for relieving any SRU on scene and request for dispatch & suitable relief to maintain OSC resources.

- Monitor performance of other units participating in the search.
- Consolidate reports obtained from other SRUs and dispatch to SMC.
- Provide Situation Reports every 30 mins or earlier, if necessary (SITREPS)
- Give chronological numbers to the SITREPS issued and maintain the record of the same.

Ghat Operators are to undertake following tasks, if the incident take place alongside:

- **Assess the situation:** Quickly evaluate the type and severity of the incident (e.g., capsizing, collision, engine failure, grounding, fire etc.).
- **Initiate emergency protocols:** Ensure that all passengers are evacuated if necessary and move them to a safe area.
- **Provide first aid:** If trained, offer immediate first aid to injured passengers until medical help arrives.
- **Contact emergency services:** Immediately notify relevant authorities
- **Report the situation** to the local authorities in charge
- **Assist the boat crew:** The Ghat Operator should work closely with the boat crew to manage the situation, including helping with rescue operations or stabilizing the boat.
- **Maintain clear communication** with all parties involved, including the boat crew, emergency responders, and any passengers or witnesses.
- **Control the crowd** till arrival of Police.

C. SEARCH AND RESCUE UNIT (SRU)

A SRU is a unit comprises of a **Ready Duty Vessel** with trained crew embarked 24x7, provided with equipment suitable for the expeditious and efficient conduct of search and rescue.

It should reach the scene of distress quickly and perform the following operations:

- Conduct search and evacuate the distressed persons or render help.
- Evacuate seriously injured to a predetermined place.
- Provide assistance to prevent or reduce the severity of accidents and the hardship of survivors.
- Deliver essential materials and survival equipment to the scene.
- Be prepared to provide First Aid, food, drinking water, medical or other initial needs of survivors.
- Have contingency plans for conversion to a hospital ship, if the situation calls for.
- Ready duty ship should also have the updated list of all the contact persons of stakeholders.

The READY DUTY SHIP is to have following onboard at all times;

- i) Full complement of trained crew.
- ii) Secure communication, VHF/UHF, including Channel 16 and walky-talkies
- iii) Latest Night Navigation Chart with operational equipment
- iv) Adequate food and water for prolonged operation

- v) Full complement of the QRT
- vi) Medical facilities, including a doctor or Paramedics
- vii) Adequate life saving equipment and drinking water
- viii) Identify the location of for transporting the critical cases
- ix) Have Oil spill containment Oil Booms readily available ashore for embarkation at short notice for controlling the oil spillage
- x) One Inflatable Rubber Boat with OBM for rescue operating from water
- xi) Rescue ropes and Harness for victim evacuation
- xii) Rescue nets and Basket for victim evacuation.
- xiii) High intensity search lights and flares for signalling at night
- xiv) Portable oxygen cylinders
- xv) Warm clothing during winter months
- xvi) Marine VHF/UHF Radios
- xvii) GPS
- xviii) Environmental protection Gear kept ashore for use like oil spill containment boom

The Ready Duty Ship will make a quick survey of the situation and send message to the IWT Control room/ Fire Service Control Room giving details of the incident:

- Ascertain the level and type of the disaster vis L1, L2, L3 and intimate to the ICCC.
- Request for additional resources if felt essential.

- In case of collision: Severity of the collision, no. of vessels involved, visual damage, any passengers fallen overboard, situation onboard the vessel, is anyone of the vessel sinking and its level of sinking, are local fishing boats or other vessels in the area and their types.
- In case of running aground and unable to retrieve: Quickly assess the situation and check from the grounded vessel on the condition of its hull & propellers, any flooding of the underwater compartments or likelihood of fire, injuries to the passengers requiring immediate evacuation, depth of water at its propellers and mid-ship.
- In case of damage to the underwater hull and flooding: Assess and report to ICCC with the condition of the vessel i.e. listing etc. Request for Tug if required.
- In case of Fire: Intensity of Fire, Materials involved in fire and their fire behaviour, spreading rate of fire, and direction to which fire is spreading, water supply provisions and inbuilt fire protection facilities of the buildings.
- Re-enforcement/ other resources required for assistance and necessity of power cutting, medical assistance (Call 108) etc.
- The leader should remain in continuous contact and provide situation report to all concerned.
- Team leader to keep an eye on the operation and ensure safety of the team.
- Cordon off the area for smooth operation.

D. QUICK RESPONSE TEAM (QRT)

Quick Response Team (QRT) comprising representatives from various relevant agencies and organizations at the important ghats and headed by Section Officer, IWT of the respective Ghat.

In addition, trained and equipped QRTs shall be placed at pre-designated ferry ghats or docking points to embark on-board the Ready Duty Ship for undertaking quick and effective rescue operations 24x7. The QRT members are to be nominated by names and contact numbers and list to be available in all control rooms.

The Ghat level QRT to comprise of the following members:

- Circle Officer ----- Team leader
- Section Officer, IWT
- One trained personnel from Civil Defence
- One trained personnel from Home Guard
- One representative from Anchalik Panchayat/ Gaon Panchayat
- One representative from local Police Station/Out Post
- One representative from Ghat Lessee
- One representative from Fire& Emergency Service/SDRF
- One representative from State Health & Medical Dept.
- One representative from PWD (Roads) Deptt.
- Nearest Ex Army/ Ex Navy personnel, locally available.

6. TRAINING

Operational readiness inspection and co-ordination exercise:

To ensure optimum efficiency and smooth conduct of SAR missions following exercises are to be scheduled. The AIWTRA is to issue supportive regulations for the exercises, to help prepare the organization to fight disaster/ incident.

- (a) **Unit level:** To prepare the Ready Duty Ship to sail out at shortest possible time to the specified exercise area with complete crew and equipment, co-ordinated by ICCC of IWT. To be conducted once a month.
- (b) **Primary and Secondary vessels coordination exercise:** The IWT to provide list of vessels which will be available as Secondary vessels for SAR mission in every port. This exercise is to be conducted once a Quarter, all vessels earmarked for this task are to sail out to the area of exercise and exercise evacuation/ rescue drills.
- (c) **District Level exercise:** This exercise is to be conducted once a year, which involves all the stakeholders as per the detailed exercise plan as prepared by AIWTRA in consultation with DDMA concerned.

7. FOLLOWING ARE THE SUPPORT ORGANISATIONS FOR SAR OPERATIONS

7.1. STAKEHOLDERS OF THE SAR ORGANIZATION

The key stakeholders involved in SAR assistance are listed below. The contact details are to be available in the ICCC of IWT.

- (1) District Commissioner of the concerned district. [DC]
- (2) Directorate of Inland Water Transport Assam, [DIWTA],

- (3) Assam Inland Waterways Company Limited [AIWCL]
- (4) Assam Inland Water Transport Regulatory Authority [AIWTRA]
- (5) Assam State Disaster Management Authority [ASDMA]
- (6) State Disaster Response Force/National Disaster Response Force (SDRF/NDRF)
- (7) Police Department., GoA
- (8) India Meteorological Department (IMD)
- (9) Assam State Space Application Centre (ASSAC)
- (10) Central Water Commission (CWC)
- (11) Water Resources Dept., GoA
- (12) Inland Waterways Authority of India (IWAI)
- (13) Fire and Emergency Services, GoA
- (14) Health and Family Welfare Department, GoA
- (15) Public Health Engineering Department (PHED) and Various Engineering Departments
- (16) Telecommunications through service provider.
- (17) Ghat Operators: Concerned BDOs, Panchayat Secretaries, Autonomous Council, Ghat Lessees
- (18) Boat Operators
- (19) Other Organisation like Armed Forces
- (20) Volunteer Force comprising of willing civilians/ NGOs/ Ex- Serviceman in the Districts.

7.2. DUTIES OF STAKEHOLDERS

The duties of different stakeholders involved in SAR system are summarized below.

A. District Commissioner:

- On the ground coordination with local authorities
- Assessing the scale of incident.
- Coordination of rescue operation
- Overseeing emergency healthcare.
- Managing communication and dealing with media
- Investigation and ensuring accountability
- Relief and Rehabilitation
- Maintaining Law and Order
- Be ready to provide alternate means of communication, in the event of complete breakdown ashore.

B. DIWTA

- **Emergency Response Coordination:** The Directorate of IWT acts as a key coordinator and as communication hub during SAR operations.
- **Enforcement of Safety Measures:** Enforcing the safety regulations, inspecting vessels and ensuring compliance with safety standards. DIWTA ensures that all vessels operating on the inland

waterways of Assam comply with the safety regulations as issued by AIWTRA.

- **Resource Allocation:** The Directorate allocates and deploys resources for SAR operations, which will include boats, rescue teams, and equipment.
- **Training and Capacity Building:** DIWTA will provide training and capacity building for SAR personnel, including vessel operators, crews, and response teams.
- **Information Sharing:** The Directorate facilitates the exchange of critical information related to SAR operations, ensuring that relevant agencies and organizations are informed of incidents and can respond effectively.
- **Safety Awareness:** DIWTA plays a role in raising awareness about safety measures and emergency procedures among the community, including vessel operators, crews, and passengers.

C. AIWCL

- **Integrated Command Control Centre (ICCC):** Facilitate with space and infrastructure at Integrated Command Control Centre (ICCC) at Gateway of Guwahati Ghat Terminal, Fancy Bazar, Guwahati and establish the connectivity with sub-control room at Division /Sub Division level.
- **Integration of technology:** Facilitate with the technological advancements like GIS (Geographic Information System), remote sensing, and satellite imagery which will help to develop a

comprehensive and real-time tracking system. This system will enable the authorities to monitor vessel movements, identify potential risks, and respond swiftly to emergencies.

- **Provide Vessels:** As requisitioned by the authority.

D. AIWTRA

- **Regulations:** The regulatory authority is responsible to formulate rules, regulations and safety standards related to inland water transport within the state of Assam. These regulations cover vessel design, equipment, crew training, and operational procedures to ensure the safety and security of IWT operations.
- **Vessel Inspections and Certification:** The regulatory authority is responsible to conduct inspections of vessels to assess their compliance with safety standards. The Authority shall issue vessels fitness certificate which will indicate that the vessel is fit to operate in accordance with established safety standards.
- **Licensing:** The regulatory authority issues licenses to boat operators after ensuring that they meet the specific qualifications and training requirements. These licenses serve as proof of competence and adherence to safety standards.
- **Safety Audits:** The regulatory authority to conduct Annually safety audits of all floating assets under DIWTA, AIWCL, IWAI, Panchayat including private and country boats registered under AIWTRA. DIWT to support AIWTRA during safety audits.
- **Safety Awareness:** Create Awareness among the crew and boat operators on the AIWTRA safety guidelines and it compliance.

E. Assam State Disaster Management Authority [ASDMA]

Revenue and Disaster Management Department, Govt. of Assam, has notified designated Incident Response Teams for State Level and District Level as annexed, where IWT is one of the stakeholders. ER&SAR Coordination mechanism of IWT is to be linked under the ambit of Govt. of Assam.

- **Emergency Response Coordination:** The ASDMA serves as the coordinating body at the State level, liaising with agencies such as NDMA, MHA, NDRF, DDMA, and other relevant departments to facilitate disaster response activities. For IWT related emergency situation DDMA may co-ordinate for placement of SDRF/NDRF with IWT team.
- **State Emergency Operation Centre (SEOC):** Operating 24/7, the SEOC gathers, compiles analyses and disseminates information from key alert-generating agencies like IMD, NESAC, and CWC to ensure a prompt and coordinated response.
- **Incident Response System (IRS):** The Authority activates the Incident Response System based on the magnitude of the disaster, as needed, to ensure effective management.
- **Data Sharing & Technology Integration:** By leveraging cutting-edge technology, the Authority integrates data from various sources into the SEOC for real-time tracking and monitoring, enabling informed decision-making during emergencies.
- **Training & capacity building:** The Authority provides training to first responders incl. Community volunteers, CQRT in districts/Revenue Circles while imparting basic lifesaving skills including first aids related to flood etc. through Civil Defence, NDRF, SDRF.

- **Awareness activities:** The authority undertakes awareness drive pertaining to various disasters including flood, storm, lightning etc. through print, media, telecom, mock drill etc. as preparedness measure annually in all districts.

F. State Disaster Response Force/National Disaster Response Force (SDRF/NDRF)

- The activation of State Disaster Response Force (SDRF) must be ensured when the response teams at Block/Circle and district level have failed to effectively respond to boat accidents or when the authorities feel the existing response mechanism will not be able to respond to the boat/vessel accidents or when the emergency requires the prompt intervention of State machinery.
- SDRF has developed and equipped as per the standard structure of National Disaster Response Force to effectively respond to such disaster. All water rescue equipment like under water cutter/under water plasma cutting machines/under water chain saw/under water search camera and torch/gas cutting torches/gas cutter/under water welding pro to tackle level-2 disaster must be available. Training must be imparted to SDRF battalions to tackle boat/vessel accidents in addition to other kinds of disasters. It is also essential that standard activation signals of alertness and mobilization should be followed by all responders, so that team may be mobilized immediately after getting signals.
- SDRF should have the capability in terms of man material and training for better response with precision and efficiency in case of riverine disaster.

- A Control Room of SDRF is recommended to be integrated with State EOCs/IWT Control room/ District EOCs/NDRF/ River Police/local Police/ other responding agencies and stakeholders which have been identified and coordinated by the state for inland water rescue emergencies.
- SDRF must take part at District/State level mock drills and exercises. To save the precious response time, some of the fully equipped SDRF teams must be prepositioned at vital locations.
- The whole response mechanism of District/State level should be integrated with SDRF so that the resource requirements at the site of operation could be rapidly filled to evacuate victims.
- **NDRF** : The activation of NDRF should be ensured when the response teams at State level failed to effectively respond to boat accidents or when the state authorities feel the existing state response mechanism will not be able to respond to the boat/vessel accidents or when the emergency requires the prompt intervention of national response machinery.

G. Police Department, GoA through River Police

- To maintain law & order and legal formalities in SAR Operations.
- Deployment of Police personnel/law and order machinery stationed along the river-bank and registered local Self Help Groups (SHGs) in the nearby Village clusters.

H. India Meteorological Department (IMD)

- To provide vital information about the meteorological observations, weather forecasting and early warning for tropical cyclones, thunderstorm, dust storms, heavy rains, snow, cold/heat waves etc.
- The primary aim of providing warnings ahead of a hazard impact is to empower individuals and communities to respond appropriately to the hazard threat in order to reduce the risk of death, injury, property loss and damage.
- **Nowcast Services for Boat operations:** Nowcast technology offers an opportunity to warn boat operators about severe weather events with short lead times up to 3 hours. The fastest mode of communication should be used for the dissemination of Nowcast warnings like Web, e-mail, Fax, telephone, mobile, SMS, TV, radio communication, flag hoisting, public announcements/ Sirens etc.

I. Central Water Commission (CWC)

To provide information about water levels in river and flood forecast at different river locations. CWC to provide specialized training for officials to improve understanding of the interaction of hydrological processes.

J. Water Resources Department, GoA

- To provide flood information system and water levels in the rivers.

K. Inland Waterways Authority of India (IWAI)

- To provide the navigation related information.
- Provided service of existing TUG/ Survey Vessels of IWAI if required, in addition to the vessels of IWT/AIWCL.

- Provided service of dredger if dredging is required for management of any crisis.

L. Fire and Emergency Services, GoA

- To provide Fire Fighting, Search, Rescue and Disaster mitigation services in SAR operation

M. Health and Family Welfare Department, GoA/ National Health Mission

To provide medical and health services in SAR operation. Must have well maintained and equipped medical room with trained staff including doctors and paramedics. The Medical Room must have all the necessary lifesaving drugs and medicines and emergency automated CPR system. There should be adequate provision for ambulances and boat ambulances for quick evacuation to pre-identified and coordinated higher medical care centers. They may be activated during traffic hours in the water channel or these can be kept ready for unforeseen situations. Adequate stock of life saving medicines must be stored on board the boat ambulances.

N. Public Health Engineering Department (PHED) and Various Engineering Departments

- To provide resource support in SAR operation.

O. Telecommunication Department

- To provide communication support in SAR operation.

- **Stop boat operations:** If the incident is serious, the Ghat Operator must ensure that no further boats are allowed to depart until the situation is under control.
- **Inspect boats for safety:** If the incident occurred due to a mechanical failure or equipment malfunction, the Ghat Operator should assist in identifying the cause and take corrective actions.
- Ensure that the waterway is safe for further boat operations once the incident has been resolved. Remove any obstacles, debris, or damaged boats.

P. Boat Operators: Private Boat Operators, Tourist Boat Operators, Assam Tourism Development Corporation (ATDC).

- Ensuring the safety of everyone involved and minimizing damage.
- The first priority is to ensure the safety of all passengers on board. This includes providing life jackets, ensuring people are not injured, and evacuating the boat if necessary.
- **Assess Injuries:** Determine if any passengers or crew members are injured and, if possible, administer first aid or call for medical assistance.
- The boat operator must immediately notify the Ghat Operator and QRT about the incident.
- **Provide Aid to Others:** If other vessels are involved in the incident, the operator must offer assistance to those involved, including helping with the rescue and ensuring they have the necessary support.

- **Basic First Aid:** The operator should be trained in basic first aid to assist injured parties before professional medical help arrives. This could involve CPR, bandaging wounds, or preventing shock.
- **Medical Evacuation:** If necessary, the operator should facilitate medical evacuation by coordinating with Ghat Operators/ QRT/ emergency services.
- **Provide Statements:** The operator must fully cooperate with authorities in their investigation, providing any requested documents or statements.
- **Ensure Availability of Safety Gear:** Prior to an incident, the operator is responsible for ensuring that the boat is equipped with the proper safety equipment, including life jackets, fire extinguishers, signaling devices, and emergency communication tools.
- **Follow Legal Requirements:** After the incident, the boat operator must comply with all legal obligations, such as notifying the appropriate authorities, completing paperwork, or attending a hearing if necessary.

Q. Other Organisation like Armed Forces:

Associated with District Administration for rescue and evacuation for large scale of disaster/ incident

R. Volunteer force comprising of willing Civilians/NGOs/Ex-Serviceman in the districts:

- Coordination in search operations to locate survivors as directed by local administration.
- Assisting trained medical professionals in providing basic first aid.

- Logistic support like setting up emergency shelters.
- Immediate emergency relief by providing water, food, medical supply.
- Securing the scene and restoring normalcy.

S. Assam State Space Application Centre (ASSAC):

- **Geospatial Support:** Provide satellite imagery, GIS maps, and spatial data for planning and real-time SAR operations.
- **Risk Mapping:** Identify flood-prone and erosion-prone zones using remote sensing to enable timely alerts to ghats in these areas as a precautionary measure.
- **Support to ICCC and RIS:** Integrate GIS layers and visuals into the Integrated Command Control Centre (ICCC) and district control rooms. Support integration and operations of River Information System (RIS) and the digital monitoring and tracking system.
- **Training & Capacity Building:** Train SAR personnel in use of GIS tools and satellite data interpretation.
- **Post-Disaster Assessment:** Supply satellite-based damage maps and analysis for recovery planning.
- **Data Sharing:** Maintain and share geospatial data with ASDMA, IWT, and other stakeholders as per requirement.
- **Vessel Communication:** Support in developing Mobile Satellite based service network for vessel communication to ensure safe navigation by IWT vessels.

ESCALATION MATRIX FOR SEARCH & RESCUE OPERATIONS BY IWT AND OTHER STAKEHOLDERS		
Sequence	Task	Officers Assigned to complete the task
Level-1(Small)	I) RECEIVING OF CALLS:	
	1) Receiving of any emergency calls from ghat/IWT Control room/Police/SEOC/DEOC/ Caller etc.	IWT Control room personnel on duty
	2) Gathering of information on the nature of emergency, materials involved in the incident, place, landmark, callers name/ phone number etc.	IWT Control room personnel on duty
	3) Control Room Operator of concerned IWT division /IWT HQs will inform SEOC/DEOC/ Jurisdictional F&ES Station.	Duty Officer in control room 24X7 to inform DEOC/SEOC
	4) After alarming, pre-notified first responders/Quick response team (as per IWT response Plan) of concerned IWT divisions will collect details of the incident from the IWT Control Room Operator.	IWT to notify QRTs and the details placed in Control room for contact with concerned QRT
	II) PROCEED TO PLACE OF OCCURENCE:	
	5) First responders/Quick response team will turn out in quickest possible time and take shortest possible route to reach the place of occurrence	QRT to be positioned in ready duty shift 24X7
	III) ON WAY TO PLACE OF OCCURENCE:	
	6) If the turn out responders /QRT is held up in traffic jam, railway crossing or meets road accident, develops mechanical defects and not able to proceed further, in such case the turn out leader is responsible to inform to the control room to send the other turn out team through best possible alternative route.	Team Leader and IWT Control room Operator/duty officer
	7) The IWT control room operator/duty officer will inform the jurisdictional police/ police control room for traffic management and incident site security	IWT Control Room Operator on duty/duty officer Sensitization of Police Control room/SDRF/F&ES control room/DEOC/SEOC/NDR F/Health control room through schedule mock drill/communication

		from concerned IWT control room
	IV) ON REACHING INCIDENT SPOT	
	8) Team Leader of the QRT will carry out the rescue work as required in the situation. Simultaneously, will make a quick survey of the situation and send message to the IWT Control room/ Fire Service Control Room giving details of the incident	Team Leader of QRT
	a) Ascertain the level and type of the disaster vis L1, L2, L3 and intimate to the ICCC.	
	b) Request for additional resources if felt essential.	
	c) <u>In case of collision:</u> Severity of the collision, no. of vessels involved, visual damage, any passengers fallen overboard, situation onboard the vessel, is anyone of the vessel sinking and its level of sinking, are local fishing boats or other vessels in the area and their types.	
	d) <u>In case of running aground and unable to retrieve:</u> Quickly assess the situation and check from the grounded vessel on the condition of its hull & propellers, any flooding of the underwater compartments or likelihood of fire, injuries to the passengers requiring immediate evacuation, depth of water at it's propellers and midship.	
	e) <u>In case of damage to the underwater hull and flooding:</u> Assess and report to ICCC with the condition of the vessel i.e. listing etc. Request for Tug if required.	
	f) <u>In case of Fire:</u> Intensity of Fire, Materials involved in fire and their fire behavior, spreading rate of fire, and direction to which fire is spreading, water supply provisions and inbuilt fire protection facilities of the buildings.	
	g) Re-enforcement/ other resources required for assistance and necessity of power cutting, medical assistance (Call 108) etc.	

	h) The leader should remain in continuous contact and provide situation report to all concerned.	
	i) Team leader to keep an eye on the operation and ensure safety of the team	
	j) Cordon off the area for smooth operation	
Level-2 (Medium)	IV) WHEN INCIDENT GOES BEYOND CONTROL OF FIRST RESPONDER/QRT:	
	9) When Team Leader recognizes that intensity of the incident is high and beyond the control of First responders he/she will inform immediately to the IWT Control room duty officer and DEOC concerned for reinforcement / F&ES control room will also be informed.	Team Leader
	10) The Fire Service Control-room operator shall accordingly inform the Office-incharge of the Fire & Emergency Services Station/DEOC/ about the severity of the incident and will send the required number of reinforcement and other resources as per demand of the situation.	Fire Service Control room Operator
	<p>11) The Officer In-charge Station Officer/SDRF Commander shall proceed to the place of occurrence along with Second level responders.</p> <p>The in-charge of the concerned Fire & Emergency Services Station reaches the place of occurrence along with additional resources and disaster response vehicle etc.</p> <p>The additional search and rescue equipment/disaster response vehicle from the concerned Fire & Emergency Services Station reaches the place of occurrence and helps in Search and rescue operation. Reports his/her arrival to the control room operator.</p> <p>The combined search and rescue operation continues.</p> <p>A rank of Sub Officer/Station Officer/Squad Commander of SDRF should take charge of the search and rescue operation (or fire fighting, in case of fire).</p>	<p>Officer In-charge/Station Officer/SDRF Squad Commander/ District Project Officer- ASDMA/ Sr. Station Officer/ Response Team Commander as the case may be</p> <p>Fully equipped with 3-5 nos. Responders with and other special appliances for search rescue etc. and alternative mode of communication.</p>

	<p>They should report about the progress of operation to their District Officers/Divisional Officers/DEOC/Fire/IWT control rooms.</p> <p><u>He/she will also inform DEOC/CEO-DDMA concern & appraise if District Level Incident Response Team (IRT) requires to be activated in full strength.</u></p>	<p><u>In case of fire incident:</u> Components of special rescue-Advance Rescue Tenders, Hydraulic Platforms etc. with sufficient rescuers</p>
	12) The Fire service control room operator/DEOC also alerts the nearest F&ES stations of the concerned district's territorial jurisdictions for alertness and readiness for mobilization.	
Level-3 (Major)	WHEN INCIDENT GOES BEYOND THE CONTROL OF JURISDICTION OF LOCAL FIRE & EMERGENCY SERVICES STATION/SDRF TEAM	
	<p>13) When Officer in-charge/Station Officer/Squad Commander of SDRF recognises that intensity of incident is very high and needs massive reinforcement for conducting operation, shall immediately inform to the DEOC/Fire Service Control Room.</p> <p><u>He/she shall formally declare that the intensity of the incident is a MAJOR one. He/She will directly communicate to CEO-DDMA/DEOC for activation of District Incident Response Team (IRT).</u></p> <p>In such case, the District Officers/ Sr. Station Officers/Divisional Officers/ Company Commander shall also rush to the place of occurrence and take control of the command.</p>	<p>Concerned officer as the case may be</p> <p>Responsible Officer of District Incident Response Team will activate the IRT and local formations /other response agencies</p>
	14) DEOC will also informs the jurisdictional police about the serious nature of the disaster and asks for proper security and traffic arrangement as well as for law and order maintenance	
	15) The additional resources from the concerned agencies will reach the place of occurrence and help in disaster management and rescue operation. Arriving teams will	

	<p>inform DEOC concerned and act as per the direction of Incident Commander/Responsible Officer</p> <p>If CEO-DDMA activates district IRT and requisition services of NDRF/Armed forces and other specialized response agencies:</p> <ol style="list-style-type: none"> 1. Incident Command Post(ICP) will be set up for prolong search and rescue operation 2. Superior officer take command and Incident action plan is prepared 3. In case of multiple agency, a structured and Unified Command is established. 	
Level-3 (Serious)	INCIDENT WHERE MASSIVE DAMAGE AND/OR LOSS OF LIFE AND PROPERTY	
	16) In any Incident of Level 1, 2 or 3 where human life or property is lost shall be treated as serious. In such case ,the concerned District Officers/ Sr. Station Officers/Divisional Officers/ SDRF Company Commander shall immediately rush to the place of occurrence	Concerned District Officer/Sr. Station Officer/Divisional Officer/Company Commander
	17) The Officers reaches the place of occurrence with the quickest possible means and reports his arrival to the Director/DEOC over phone. He supervises the Rescue Operation	
	18) The superior officer present at the place of occurrence assesses the quantum of the loss of lives and properties and take all measures to contain the damage. The same will be reported to DEOC/SEOC	
CALLING OFF OPERATIONS	Report of IWT Control room/DEOC/SEOC will reflects regarding closing of operations.	Senior Most Officer present at the incident site.
	19) Conduct debriefing of the operation and take stock of man and materials involved in the operation	Incident Commander and other concerned agencies
	20) A report of the said incident is prepared in 'fire and disaster report form' by the jurisdictional Fire & Emergency Services Station in-charge and send it to the Director, State Fire & Emergency Services, Assam	Office Incharge

	through proper channel with a copy to the local Superintendent of Police/CEO-DDMA.	
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Quick Response teams for each IWT ghats /divisions are to be notified by IWT and 24x 7 Control room to be made operational by the IWT to carry out the search & rescue operations as per the SOP .

Abbreviations:

- SDRF- State Disaster Response Force
- NDRF- National Disaster Response Force
- IWT- Inland Water Transport department
- DEOC-District Emergency Operation Centre
- SEOC-State Emergency Operation Centre

Annexure:

- Concept note on Incident Response system
- Govt. notification of State/District level Incident Response team