

**APPENDIX 11**  
**(SOUTH CAROLINA TSUNAMI PLAN)**  
**TO THE SOUTH CAROLINA EMERGENCY OPERATIONS PLAN**

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**I. INTRODUCTION**

- A. As required by state and federal law, South Carolina’s policy is to be prepared for any emergency or disaster, including tsunamis. Tsunamis are ocean waves caused by a large and sudden displacement of the ocean (e.g., from earthquakes, underwater landslides, etc.) and may occur at any time, day or night.
- B. South Carolina State Regulations 58-1 and 58-101 require contingency plans and implementing procedures for major hazards, such as tsunamis, coordinated by the State with Counties that have a potential of being impacted.
- C. The South Carolina Tsunami Plan defines the roles and responsibilities for intergovernmental and State Emergency Response Team (SERT) personnel to save lives, protect property, and assist the private sector in facilitating their ability to recover from a tsunami event.

**II. PURPOSE**

- A. Plan and coordinate the operational procedures South Carolina will use in the event of a tsunami.
- B. Identify roles and responsibilities of local, state, and federal agencies when responding to a tsunami.
- C. Provide resources to assist local governments in preventing and minimizing injury or death to people resulting from a tsunami.

**III. SCOPE**

- A. The South Carolina Tsunami Plan addresses operations to be conducted in coordination and mutual support with the South Carolina Emergency Operations Plan (SCEOP).
- B. This plan complements the SCEOP and addresses responsibilities, processes, and actions specific to tsunami events.

**IV. FACTS AND ASSUMPTIONS**

- A. Facts
  - 1. Tsunamis are often incorrectly referred to as tidal waves. A tsunami is actually a series of waves that can travel at speeds averaging 450 (and up to 600) miles per hour in the open ocean.

2. There are two sources of tsunamis for coastal waters - a distant source and a local source.
  - a. Distant Source: The source of the tsunami is more than 620 miles (1,000 km) away from the Tsunami Warning Center's Area of Responsibility (AOR).
  - b. Local/Regional Source: Source of the tsunami is within 620 miles of the AOR. A local or near-field tsunami has a very short travel time (30 minutes or less), and mid-field or regional tsunami waves have travel times on the order of 30 minutes to 2 hours.
3. Locally generated tsunamis generally cause more loss of life than distant tsunamis. Tsunamis generated from local sources are generally larger and arrive much sooner after the causative source event than tsunamis from distant sources. Though the impact is high, the probability of such an event is extremely low.
4. Tsunamis have been recorded along the U.S. Atlantic Coast as far back as 1755 and as recent as 1929. Landslides on the outer continental shelf and slope along the Mid-Atlantic ridge have the potential to trigger tsunamis that may affect populated coastal areas.
5. Withdrawal of the ocean is not always a precursor to arrival of the wave. The first wave may not be the largest. The largest wave usually occurs among the first three waves.

B. Assumptions

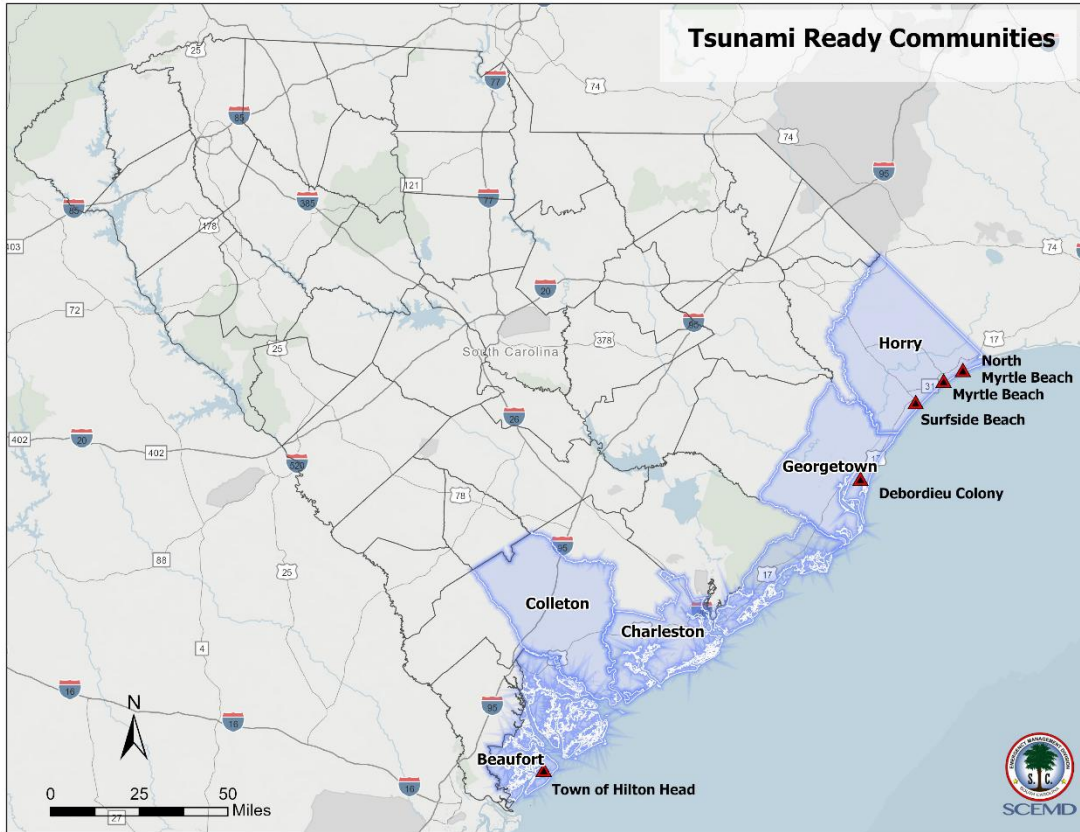
1. A damaging tsunami wave reaching South Carolina would likely force between a couple of inches and 3 feet of water onshore, with a worst-case scenario of 16 feet. Depending on the source location, the anticipated lead time is 2-18 hours.
2. Communications and critical infrastructure services will be disrupted or destroyed.
3. The maximum possible tourist and workforce populations will be present in affected areas.
4. Damage will be widespread and will vary widely (i.e., concentrations of significant damage in some areas with slight damage in others).
5. Access to damaged areas will be restricted and some low-lying areas will be inundated.
6. A tsunami response might be affected by a concurrent earthquake response.

**V. SITUATION**

- A. Though the potential impact is high, the tsunami threat for South Carolina is extremely low, and any tsunamis would likely be small and inundate mostly the beaches.
- B. The tsunami threat in South Carolina will likely result from a distant seismic source and provide at least 2-4 hours lead time.
- C. The National Weather Service has identified five main sources of concern that pose a tsunami risk for South Carolina and other portions of the East Coast of the United States. Travel times for these hypothetical sources to Charleston are described in the table below. Travel times are expected to be similar for the rest of the South Carolina coast.

<b>Hypothetical Tsunami Travel Times from SC Sources of Concern</b>					
<b>Hours: Minutes</b>					
<b>Location</b>	<b>East Coast Submarine Landslide (40N/-70W)</b>	<b>Puerto Rico Trench</b>	<b>Azores Gibraltar</b>	<b>Canary Islands</b>	<b>Scotia Plate</b>
Charleston, SC	4:44	5:13	11:15	10:19	17:49

- D. South Carolina has six coastal counties bordering the Atlantic Ocean with more than 200 miles of general coastline. The SC Coastal Counties are Beaufort, Charleston, Colleton, Georgetown, Horry, and Jasper. For tsunami hazards, Berkeley and Dorchester County are also considered in this list because of the potential for a tsunami to affect tidal zones.
- E. A Tsunami Watch, Warning, or Advisory will be transmitted by National Weather Service (NWS) offices for all tsunamis forecasted to impact South Carolina.
- F. NOAA’s NWS Offices promote the TsunamiReady Program.
  - 1. The TsunamiReady Program is designed to help states, counties, municipalities, universities, and other population centers in coastal areas reduce the potential for deadly tsunami-related consequences.
  - 2. The program helps community leaders and emergency managers strengthen their local operations. TsunamiReady communities are better prepared to save lives through improved planning, education, and awareness.



3. Communities have fewer fatalities and property damage if they effectively plan before a tsunami arrives. No community is tsunami proof, but the TsunamiReady Program can help minimize loss to vulnerable communities.
4. SC TsunamiReady Counties and Communities:

Counties	Communities
<ul style="list-style-type: none"> <li>• Beaufort</li> <li>• Charleston</li> <li>• Colleton</li> <li>• Georgetown</li> <li>• Horry</li> </ul>	<ul style="list-style-type: none"> <li>• Debordieu Colony</li> <li>• Town of Hilton Head Island</li> <li>• Myrtle Beach</li> <li>• North Myrtle Beach</li> <li>• Surfside Beach</li> </ul>

*National Weather Service (June 2026)*

G. Tsunami Alerts

1. The National Oceanic and Atmospheric Administration (NOAA)’s National Tsunami Warning Center (NTWC) in Palmer, Alaska, is responsible for the preparation and dissemination of Tsunami Warnings, Watches, Advisories, and Information Statements for the coastal regions of Canada and all States except Hawaii. These regions are defined as the NTWC’s AOR.

2. The NTWC uses earthquake information, tide gauges, and DART (Deep-ocean Assessment and Reporting of Tsunamis) buoys located in the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea to predict tsunami arrival times, predict coastal run-up when possible, and disseminate appropriate warning and informational products based on this information.
3. The following products are issued by the NTWC. Each has a distinct meaning relating to local emergency response.

Product	Potential Hazard(s)	Public Action
Information Statement	No threat or very distant event for which hazard has not yet been determined	No action suggested at this time
Watch	Not yet known	Stay alert for more information. Be prepared to act
Advisory	Strong currents and waves dangerous to those in or very near water	Stay out of water, away from beaches and waterways
Warning	Dangerous coastal flooding and powerful currents	Move to high ground or inland

a. Tsunami Information Statement

- (1) A Tsunami Information Statement is issued to inform emergency management officials and the public an earthquake has occurred, or a tsunami warning, watch, or advisory has been issued for another section of the ocean.
- (2) In most cases, Information Statements are issued to indicate there is no threat of a destructive tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas.
- (3) An Information Statement may, in appropriate situations, caution about the possibility of destructive local tsunamis.
- (4) Information Statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory, or warning may be issued for the area, if necessary, after analysis and/or when updated information becomes available.

b. Tsunami Watch

- (1) A Tsunami Watch is issued to alert emergency management officials and the public of an event which may later impact the watch area.
- (2) The watch area may be upgraded to a warning or advisory or be canceled based on updated information and analysis.
- (3) Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.
- (4) Citizens should use a NOAA Weather Radio or stay tuned to a local radio or television station for updated emergency information.

c. Tsunami Advisory

- (1) A Tsunami Advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water.
- (2) The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory.
- (3) Appropriate actions to be taken by local officials may include closing and/or evacuating beaches, evacuating harbors and marinas, and repositioning ships to deep waters when there is time to do so. Local tsunami plans should be referenced for more information.
- (4) Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

d. Tsunami Warning

- (1) A Tsunami Warning is issued when a potential tsunami with significant widespread inundation is imminent or expected.
- (2) Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave.
- (3) Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas and the repositioning

of ships to deep waters when there is time to safely do so. Reference local tsunami plans for more information.

- (4) Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.
- 4. The geographic extent of a tsunami product is based on the size of the earthquake, the tsunami travel times throughout the AOR, and expected impact zones.
- 5. Tsunami products are generally issued within 10 minutes after earthquake occurrence.
- 6. Below is the U.S. East Coast criterion for issuance of tsunami products following an earthquake:

Earthquake Magnitude	Area	Product
4.0-4.9	Within 150 km (93 miles) of coast	Tsunami Information Statement
5.0-5.9	Within 100 km (62 miles) onshore	Tsunami Information Statement
6.0-6.4	No geographic criterion	Tsunami Information Statement
6.5-7.5	Deeper than 100 km (62 miles) or far offshore	Tsunami Information Statement
	Within 250 km (155 miles) from source	Tsunami Warning
7.6-7.8	Deeper than 100 km (62 miles) or far offshore	Tsunami Information Statement
	Within 500 km (310 miles) from source	Tsunami Warning
	Within 1000 km (621 miles) from source	Tsunami Advisory
>7.8	Within 1000 km (621 miles) from source	Tsunami Warning
	Elsewhere	Tsunami Watch

H. Tsunami Inundation Modeling

- 1. In 2026, SCEMD obtained tsunami inundation modeling for the coast of South Carolina through the Northeastern State Emergency Consortium

(NESEC). The model uses four combined scenarios; these are a near source tsunami due to an underwater landslide, a tsunami following an earthquake in the Puerto Rico Trench, a tsunami resulting due to an eruption of the Cumbre Vieja Volcano located in the Canary Islands and the 1755 Lisbon earthquake/ tsunami. See Attachment B for SC Tsunami Inundation Area Map.

2. The combined inundation layer is located in PalmettoEOC. The following table summarizes types of infrastructures found inside the tsunami inundation zone.

Infrastructure type	Quantity
Airports	3
Correctional facilities	0
County Emergency Operations Center (EOCs)	0
Fire stations	14
Police stations	10
Water/wastewater treatment facilities	3
Emergency medical services (EMS)	2
Hospitals	4
Other medical facilities	7
Schools	9
Colleges	2

## VI. CONCEPT OF OPERATIONS

### A. Notification

1. In the event of a Tsunami Warning, Watch, Advisory, or Information Statement, the NTWC issues the tsunami message to the NWS Forecast Offices in the affected states. The local NWS Forecast Offices have the primary responsibility to process the information and rebroadcast the tsunami message or product through the civil emergency system which activates the Emergency Alert System (EAS).

- a. EAS

- (1) The decision to activate EAS for a tsunami product is the sole responsibility of the local NWS Forecast Offices.
  - (2) If NWS activates EAS, state and local officials can follow-up with another activation of EAS to warn the public and/or issue safety messages.
  - (3) Tsunamis with minimal impacts (rough surf and currents) may not result in EAS activation.
2. Upon receipt of a Tsunami Warning, Watch, Advisory, or Information Statement, the State Warning Point (SWP) will confirm receipt of the tsunami message with the NTWC and relay to coastal counties and appropriate SC Emergency Management Division (SCEMD) staff. For redundancy, the SWP has several communications systems to receive tsunami messages when issued by NWS:
    - a. Internet (i.e., tsunami.gov)
    - b. NOAA All Hazards Weather Radio
    - c. iNWS text/email
    - d. EMnet
    - e. Fax machine
- B. Activation
1. In the event a Tsunami Warning is issued for the South Carolina coast by the NTWC, the State Emergency Operations Center (SEOC) will activate at OPGON 1 and staff accordingly.
  2. In the event a Watch or Advisory is issued for the South Carolina coast by the NTWC, the SEOC will activate at OPGON 2 and will be staffed accordingly.
- C. Initial Priorities
1. Public Information
    - a. See Annex 15 (Public Information) of the SCEOP.
    - b. The NWS Forecast Offices have the authority and responsibility to warn of a tsunami. The NWS Forecast Offices activate EAS and other systems. State and local officials may follow with a rebroadcast of the initial EAS message.

- c. A Tsunami Warning and any accompanying evacuation will be disseminated to cover the affected areas by one or all of the following systems:
  - (1) EAS
  - (2) IPAWS
  - (3) NOAA All Hazards Weather Radio
  - (4) Local Warning System (e.g., Reverse 911, Code Red, Everbridge, etc.)
  - (5) Local TV Stations
  - (6) Local Radio Stations
  - (7) Loudspeakers (if available)
  - (8) Route Alerting
  - (9) Social Media
  - (10) County Apps (if available)
- d. See Attachment E for a Sample News Release and Attachment F for a Sample EAS Statement.
- e. See Attachment C for the Tsunami Watch/ Advisory Timeline & Attachment D for the Tsunami Warning Response Timeline.

2. Evacuation

- a. Types of Evacuation
  - (1) Clearing of beaches – For tsunamis with wave heights less than one (1) foot, evacuating beaches, low-lying areas, and waterways provides sufficient protection from the tsunami wave.
  - (2) Inland evacuation – Evacuating inland is the preferred method to evacuate low-lying coastal areas in advance of the initial tsunami wave. The inland evacuation distance varies from county to county depending on factors such as the availability of tsunami inundations plans, the geography of the coast and ease of messaging. In general, these distances range from 300ft to 1 mile inland.

(3) Vertical evacuation – Vertical evacuation is the act of moving to the highest floor in a multiple-story building in order to avoid the tsunami wave. Vertical evacuation should be used when tsunami lead time, wave height, and/or reliable transportation is limited.

b. The decision to evacuate the coast will depend on the forecasted tsunami height and the forecasted lead time ahead of the first wave. The following table can be used as a guide for decision-making:

	Lead Time < 4 hours	Lead Time > 4 hours
Wave Height < 1 ft	Clear beaches	Clear beaches
Wave Height 1-3 ft	Vertical evacuation	Vertical evacuation
Wave Height > 3 ft	Vertical evacuation	Inland evacuation

c. Upon activation of the SCEOP, the Governor may issue an evacuation order for the general public and/or medical facilities in specific coastal areas.

(1) Coastal counties that are TsunamiReady have established the following evacuation distances as indicated in their respective county/ tsunami plans:

- (a) Beaufort: Half mile to five miles inland and/or twenty (20) feet vertically, depending on location of impact in the county.
- (b) Colleton: One mile inland and/or 20 feet vertically.
- (c) Charleston: One mile inland.
- (d) Georgetown: At least 300 feet inland and/or 15 feet vertically. Further inland evacuation could be possible given a worse-case scenario (up to 18 feet waves).
- (e) Horry: At least 300 feet inland and/or 15 feet vertically.

d. SCEMD and local emergency managers will maintain communication with local NWS Forecast Offices on all notification and evacuation decisions. Telephone numbers of the NWS Forecast

Offices are maintained in SCEMD and the county emergency managers' telephone directories.

- e. If required, shelters will be identified outside the tsunami risk areas and coordinated by ESF-6 (Mass Care).
- f. If required or requested, Traffic Control Points (TCP) will be identified for the areas and implemented by local law enforcement with assistance by ESF-16 (Emergency Traffic Management). Access control after the event is essential.
- g. If the need arises to implement evacuation routes, the routes currently identified for hurricane evacuation will be implemented along with their respective traffic management operations. Local officials will be responsible for coordinating local evacuation efforts and requesting implementation of the hurricane traffic management plan.

D. Post-Event Operations

- 1. After the arrival of the first wave, additional waves may continue at varying intervals for several hours. The first wave may not be the largest.
- 2. Upon local determination that it is safe for the public to return, a recommendation will be made to the Governor to rescind the Evacuation Order.
- 3. Once rescinded, no reentry restrictions from the State will exist; however, reentry restrictions from the county or municipality may still be in place.
- 4. Reentry operations are the responsibility of local officials, therefore it will be conducted by local authorities, in coordination with the SEOC and with support from the SERT.
- 5. See the SCEOP, Section VII.I (Access Control and Reentry Operations) for further details.
- 6. Primary post-event operations include ensuring the safety of citizens, recovery efforts, and health inspections to prevent the spreading of communicable diseases and the contamination of food and water supplies.




**VI. DISASTER INTELLIGENCE AND COMMUNICATIONS**






- A. See Section VIII (Disaster Intelligence and Communications) of the SCEOP Base Plan.
- B. Conference Calls and Briefings

1. The SEOC will schedule conference calls with the counties and the SERT. Calls will be scheduled after receiving a Watch/ Advisory notification from the NTWC. Additionally, a line of communication will remain open throughout the duration of the event. Counties will be updated immediately upon receipt of time sensitive information.
  - a. Format for calls:
    - (1) Opening comments from the SCEMD Director.
    - (2) Disaster Intelligence Group (DIG) products will be briefed. Briefing includes, but are not limited to, expected lifelines impacts and the latest information provided by the National Tsunami Warning Center and National Weather Service (NWS).
    - (3) SCEMD Chiefs will brief key section actions.
    - (4) County Directors will report anticipated resource requests, potential shortfalls, suggested response actions and evacuation decisions or recommendations.
    - (5) SERT will brief key agency actions.
    - (6) The SCEMD Director will discuss decisions and recommendations that will be provided to the Governor.
2. Executive Group conference calls and decision briefings will be held as requested by the Governor.
  - a. Format for the calls:
    - (1) Opening comments from the Governor.
    - (2) SCEMD Disaster Intelligence Group (DIG) products will be briefed. Briefing includes, but are not limited to, expected lifelines impacts and the latest information provided by the National Tsunami Warning Center and the National Weather Service (NWS).
    - (3) The state agency directors will provide status of agency operations.
    - (4) The SCEMD Director will make recommendations to the Governor.

C. Lifeline Sector Analysis

The table below lists possible impacts to the state’s lifeline sectors associated with a tsunami event. While not all-inclusive, this list assists the SERT’s ability to respond effectively by proactively identifying possible areas of concern before impacts occur.

Lifeline	Scope of Possible Impacts
 <p data-bbox="310 604 414 659">Safety and Security</p>	<ul data-bbox="597 415 1421 747" style="list-style-type: none"> <li>• Localized evacuation of coastal communities may be required for community safety.</li> <li>• Response personnel may need to support evacuation and search and rescue activities.</li> <li>• Responders may see increased calls for assistance.</li> <li>• Flooded coastal areas may be difficult to access, hindering lifesaving missions.</li> <li>• Consider evacuating any state or local detention facilities within the impact areas, as time allows and applicable.</li> </ul>
 <p data-bbox="282 961 441 1016">Food, Hydration, Shelter</p>	<ul data-bbox="597 756 1421 1125" style="list-style-type: none"> <li>• Citizens displaced from inundated coastal areas may require emergency shelter, including Medical Equipment Power Shelters.</li> <li>• Food supplies may be depleted in isolated flooded coastal areas.</li> <li>• Crops, fisheries and animal stocks could be damaged from saltwater intrusion in flooded coastal areas.</li> <li>• Search and rescue activities may be necessary for livestock in impacted areas.</li> <li>• Evacuated livestock will need sheltering.</li> </ul>
 <p data-bbox="310 1455 414 1509">Health and Medical</p>	<ul data-bbox="597 1134 1421 1722" style="list-style-type: none"> <li>• Hospitals may see an increased number of patients seeking care.</li> <li>• Healthcare facilities and veterinary medical services in flooded coastal areas may see damage to infrastructure, structures and equipment. Access to services may be disrupted.</li> <li>• EMS response times may be slowed due to road closures in flooded coastal areas.</li> <li>• Access issues and transportation disruptions may result in delayed supplies, staffing shortages and difficulties moving patients.</li> <li>• Floodwater in coastal areas can cause injury and carry contaminants or waterborne disease. Standing water may increase the likelihood of vector-borne disease transmission.</li> <li>• Regulated healthcare facilities may need to activate their emergency operations plan and may need to be evacuated.</li> </ul>

 <p>Energy (Power &amp; Fuel)</p>	<ul style="list-style-type: none"> <li>• Fuel stations may be damaged, inaccessible, or without power, causing additional challenges for responders.</li> <li>• Natural gas pipelines could be damaged or need to stop service due to coastal flooding.</li> <li>• Flooding may damage electric distribution facilities, equipment, or systems; possibly creating localized power outages.</li> </ul>
 <p>Communications</p>	<ul style="list-style-type: none"> <li>• Disruption may occur due to localized power outages or by floodwater inundation in coastal areas.</li> <li>• Extended restoration times are possible due to access issues.</li> <li>• Outages could impact public sector information sharing platforms, dispatch centers, media transmissions, and the financial sector.</li> </ul>
 <p>Transportation</p>	<ul style="list-style-type: none"> <li>• Transportation routes may be altered because of road closures or damage, bridge closures or damage, and/or railway closures or damage.</li> <li>• The port may be disrupted, and infrastructure may be damaged or destroyed.</li> <li>• Disrupted transportation routes may affect supply chains. Ingress and egress routes may not be able to remain open for critical supplies to and from affected areas.</li> <li>• Blocked or damaged roadways may inhibit the restoration of power and the delivery of commodities or services.</li> <li>• Reentry capabilities will be impacted based on the level of damage to the transportation network.</li> <li>• Sand, debris, and floodwaters on roadways may prevent or impede transportation in impacted areas.</li> </ul>
 <p>Hazardous Materials</p>	<ul style="list-style-type: none"> <li>• Damage to storage containers, including pesticides and fertilizers, or transportation infrastructure could cause environmental and human health risks.</li> <li>• Sites storing hazardous materials may flood resulting in the release of hazardous materials</li> <li>• Floodwater could be contaminated.</li> <li>• Incident response times could be impacted.</li> </ul>
 <p>Water Systems</p>	<ul style="list-style-type: none"> <li>• Water and wastewater systems may be offline due to localized power outages or flooding.</li> <li>• Boil water advisories may be needed due to water infrastructure impacts.</li> <li>• Improperly cased wells that experience flooding may be contaminated, thus causing further groundwater issues.</li> <li>• Surface water intakes could be damaged by saltwater intrusion.</li> </ul>

D. Communications

1. ESF-2 (Communications) will coordinate communications support operations in accordance with Annex 2 (Communications) of the SCEOP.
2. A listing of state-level communications systems available at the SEOC can be found in Section VIII (Disaster Intelligence and Communications) of the SCEOP Base Plan.

## **VII. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES**

### **A. South Carolina Emergency Management Division**

1. Biennially update and review this appendix and coordinate plan review with applicable state agencies, local NWS Weather Forecast Offices, and county emergency management offices.
2. Provide assistance to county emergency management offices in support of tsunami planning and the TsunamiReady Program.
3. Coordinate with local emergency management offices and local NWS Weather Forecast Offices to review procedures for disseminating tsunami products to local jurisdictions.
4. Coordinate and implement procedures to relay and/or verify receipt of tsunami products notifications to affected counties.
5. Coordinate with local emergency management offices to determine tsunami inundation evacuation areas within the State.
6. In conjunction with county emergency management offices and local NWS Forecast Offices, develop public education tools for tsunami public education program.
7. Coordinate with local NWS Weather Forecast Offices to prepare EAS tsunami messages.
8. Coordinate with local NWS Weather Forecast Offices to participate in the monthly EAS test and provide information to coastal counties.

### **B. Emergency Support Functions. Coordinating agencies will conduct a biennial review of their ESF-specific tsunami responsibilities with primary and supporting agencies.**

1. ESF-1 (Transportation)
  - a. South Carolina Department of Transportation (Coordinating Agency)

- (1) Support plans to transport evacuated persons from tsunami threatened areas to designated shelters.
  - (2) In coordination with the South Carolina Department of Education's Office of Transportation, identify school buses for evacuation of coastal communities, as time allows.
  - (3) In coordination with the South Carolina National Guard, identify bus drivers for evacuation missions, as time allows.
  - (4) Activate the Air Coordination Group as needed.
  - (5) Identify transportation infrastructure requiring post-impact debris removal.
  - (6) Support the inspection of transportation infrastructure.
  - (7) In coordination with SCDNR, support requests for assistance transporting persons and resources post tsunami using boats and other watercraft.
  - (8) Support coordination between local transit agencies.
2. ESF-2 (Communications)
- a. South Carolina Department of Administration, Office of Technology and Information Services (Coordinating Agency)
    - (1) Issue pre-planned radio equipment in support of SCDPS transportation management and evacuation operations (Note: May be insufficient time to distribute equipment per plan; prioritized distribution scheme may be employed).
    - (2) As required, coordinate alternate communication systems to augment damaged or inoperative systems.
    - (3) Report Public Safety communication outages (radio, cellular, cyber, etc.).
3. ESF-3 (Public Works and Engineering)
- a. South Carolina National Guard (Coordinating Agency)
    - (1) Lead coordination for the distribution of sandbags and specialized flood fight equipment from the USACE as needed.
    - (2) Maintain awareness of water system statuses across impacted areas.

- b. South Carolina Rural Water Association/South Carolina Water/Wastewater Agency Response Network (SCWARN)
  - (1) Provide technical assistance to water and wastewater systems in returning to normal operations.
  - (2) Provide support for impacted systems to receive aid and material support through the SCWARN network.
  
- 4. ESF-6 (Mass Care)
  - a. South Carolina Department of Social Services (Coordinating Agency)
    - (1) In coordination with the American Red Cross and local emergency managers, identify shelters to support evacuations from tsunami risk areas. Shelter locations should be outside the tsunami risk areas.
    - (2) Provide SCDSS staff to support shelter operations, as required.
  
  - b. American Red Cross  
  
In coordination with local emergency managers and SCDSS, identify shelters to support evacuations from tsunami risk areas. Shelters should be located outside tsunami risk areas.
  
  - c. South Carolina Department of Public Health  
  
Open, manage, and operate Medical Equipment Power Shelters as required post-event.
  
  - d. The Salvation Army  
  
Coordinate with SCDSS and ESF-6 organizations (State and County) to identify and address immediate unmet needs of the evacuated population.
  
- 5. ESF-8 (Health and Medical Services)
  - a. South Carolina Department of Public Health (Coordinating Agency)
    - (1) Coordinate medical transport assets to support health care facilities or county EMS as needed.
    - (2) Assess status of licensed healthcare facilities in impacted areas.

- (3) Recommend measures to prevent and control disease transmission.
  - b. South Carolina Department on Aging  
  
Coordinate and implement procedures to relay Tsunami Warning and Watch notifications to Area Agencies on Aging, who are serving senior population groups in inundation areas.
  - c. South Carolina Coroners Association  
  
Provide additional fatality management resources to affected county coroner(s) as needed.
- 6. ESF-9 (Search and Rescue)
  - a. South Carolina Department of Labor, Licensing, and Regulation (Coordinating Agency)  
  
Coordinate the mobilization of Search and Rescue (SAR) resources to support local requests for SAR operations in anticipated impact areas.
  - b. South Carolina Department of Natural Resources  
  
In coordination with SCDOT, support requests for assistance post-tsunami using boats and other watercraft.
- 7. ESF-10 (Environmental and Hazardous Materials Operations)
  - a. South Carolina Department of Environmental Services (Coordinating Agency)
    - (1) Assess environmental concerns that may affect the public following a tsunami.
    - (2) Coordinate response action for spills and releases of hazardous materials as required.
- 8. ESF-11 (Food Services)
  - a. South Carolina Department of Social Services (Coordinating Agency)  
  
In coordination with The Salvation Army (TSA) and the American Red Cross, feed evacuated persons from tsunami threatened areas.
  - b. American Red Cross

In coordination with SCDSS, TSA, and local emergency managers, feed evacuated persons from tsunami threatened areas.

c. The Salvation Army

In coordination with SCDSS and the American Red Cross, provide mass feeding and/or hydration support to evacuated persons from tsunami threatened areas.

9. ESF-12 (Energy)

a. South Carolina Office of Regulatory Staff (ORS) (Coordinating Agency)

(1) Provide risk and damage assessments for at-risk electric facilities within the coastal areas that might be affected by a tsunami.

(2) Coordinate with utilities for mitigation and protection actions to reduce the impact of coastal flooding on facilities.

10. ESF-13 (Law Enforcement)

a. South Carolina Law Enforcement Division (Coordinating Agency)

(1) Coordinate law enforcement support operations in accordance with Annex 13 (Law Enforcement) of the SCEOP.

(2) Coordinate general law enforcement activities including, but not limited to, providing security for evacuated areas and shelters.

(3) Coordinate clearance and security of waterways.

11. ESF-14 (Recovery and Mitigation)

a. South Carolina Emergency Management Division (Coordinating Agency)

(1) Compile damage assessment information to support a Presidential Disaster Declaration.

(2) See Appendix 6 (South Carolina Recovery Plan) to the SCEOP.

12. ESF-16 (Emergency Traffic Management)

a. South Carolina Department of Public Safety (Coordinating Agency)

- (1) In conjunction with county law enforcement authorities, develop and coordinate traffic management plans to assist with evacuation of affected areas to include establishing local traffic control points/roadblocks and implementation of the hurricane traffic management planning if necessary.
  - (2) Support local government with tsunami evacuation planning.
13. ESF-17 (Agriculture and Animals)
  - a. Clemson University Livestock-Poultry Health (Coordinating Agency)
    - (1) Maintain situational awareness in order to provide appropriate outreach and guidance to stakeholders.
    - (2) Work with supporting agencies to support agribusiness interests, mitigate risks, and coordinate resources as needed during a response.
    - (3) Coordinate resources to support local communities with animal related response activities as requested.
    - (4) Work with supporting agencies to support and coordinate resources to maintain appropriate public health standards for the food supply chain.
14. ESF-19 (Military Support)
  - a. South Carolina National Guard (Coordinating Agency)
    - (1) In coordination with ESF-1, support coastal evacuation mission by identifying bus drivers, as time allows.
    - (2) Support ESF-1 post event with debris clearance, first push, sand clearing off roads and reentry.
15. ESF-24 (Business and Industry)
  - a. South Carolina Department of Commerce (Coordinating Agency)
    - (1) Assess business impacts in affected communities as a result of the disaster.
    - (2) Conduct business registration for post-disaster reentry.

- (3) Coordinate with the South Carolina Department of Insurance in monitoring the post-impact deployment/activities of insurance claims adjusters.
- (4) In case of a Small Business Administration (SBA) eligible disaster, assist in communicating eligibility criteria to affected businesses.
- (5) Facilitate donations from businesses through referral to the ESF-18 (Donated Goods and Volunteer Services) Donations Management Team.

16. Federal Support

a. National Oceanic and Atmospheric Administration

Assists through its subordinate agencies to include the NWS Weather Forecast Offices, the National Tsunami Warning Center (NTWC), the NOAA Center for Tsunami Research (NCTR), and the National Geophysical Data Center (NGDC).

b. Federal Emergency Management Agency

Implement the National Response Framework (NRF) to provide assistance.

c. United States Geological Survey

Provides earthquake monitoring and analysis support.

d. United States Coast Guard

Provides search and rescue resources available under normal statutory authority that can be coordinated through ESF-9 and the Air Branch without an emergency declaration

## **VIII. ADMINISTRATION, LOGISTICS, AND FINANCE**

A. Administration and Finance

1. See Annex 7 (Finance and Administration) to the SCEOP.
2. A Stafford Act declaration enables the Federal Government to provide financial assistance to public entities, individuals and families, and certain private non-profit organizations.
3. Logistics. See Attachment A (SC Logistics Plan) to the SCEOP.

## **IX. CONTINUITY OF GOVERNMENT (COG)**

See Section VII (Concept of Operations), Paragraph L (Continuity of Government) of the SCEOP Base Plan.

**X. CONTINUITY OF OPERATIONS (COOP)**

See Section VII (Concept of Operations), Paragraph M (Continuity of Operations) of the SCEOP Base Plan.

**XI. PLAN DEVELOPMENT AND MAINTENANCE**

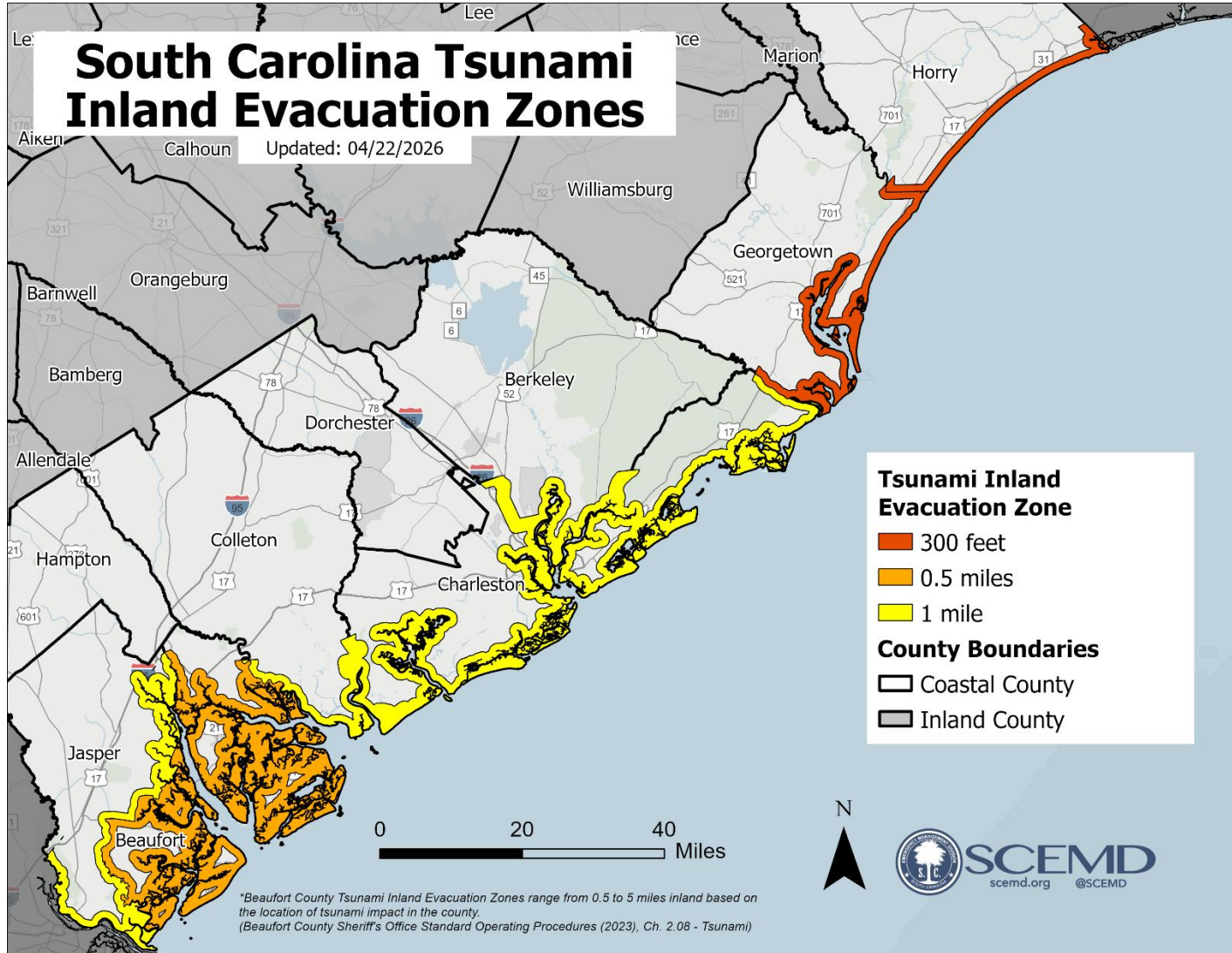
- A. SCEMD is the lead agency for the development, coordination, review, and update of this plan.
- B. Agencies with designated responsibilities will review and update this appendix on a biennial basis. The review will incorporate any updates from the National Response Framework (NRF), the National Incident Management System (NIMS), and other relevant state and federal guidance.

**XII. AUTHORITIES AND REFERENCES.** See Attachment C of the South Carolina Emergency Operations Plan (Authorities and References).

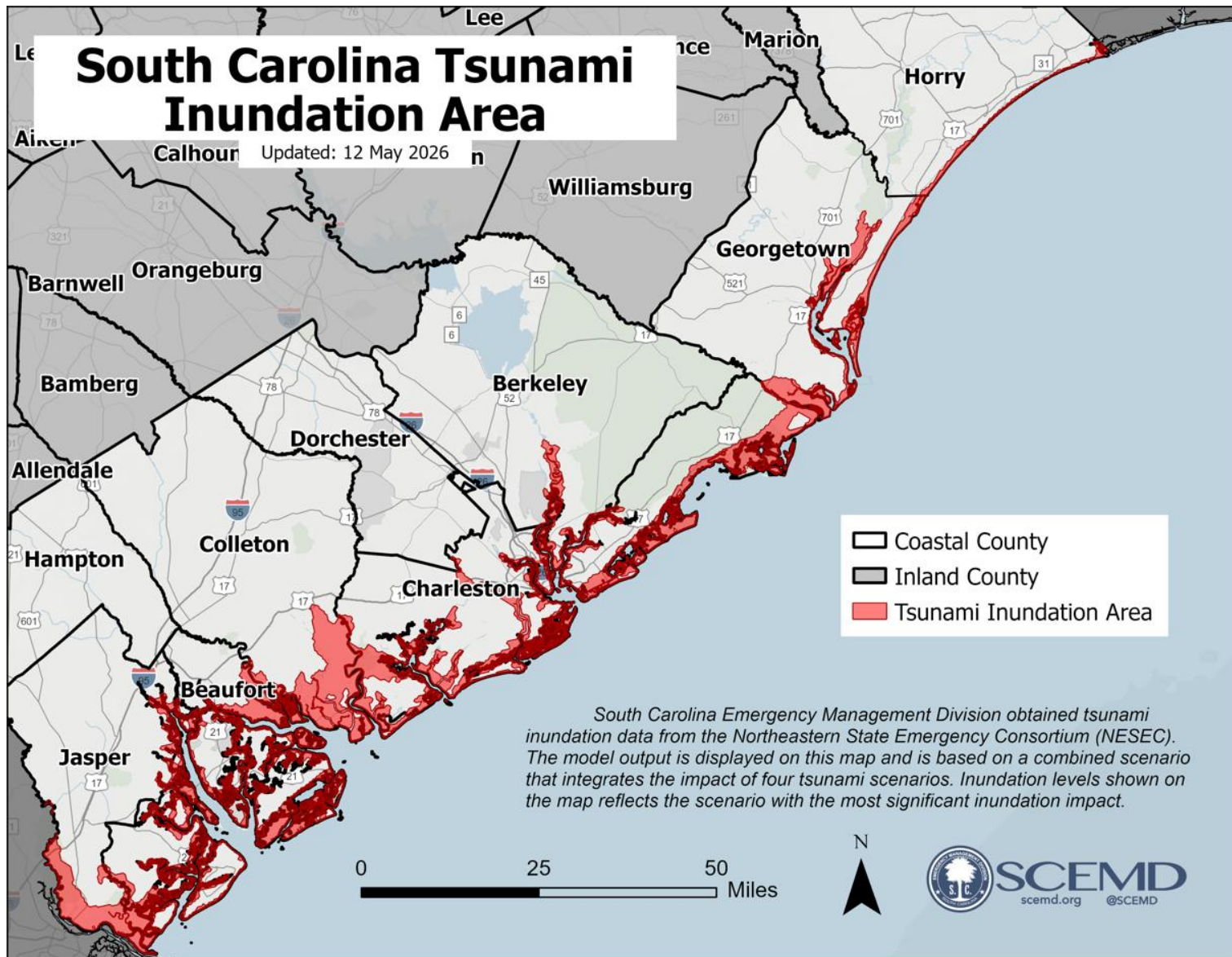
**XIII. ATTACHMENTS**

Attachment A	South Carolina Inland Tsunami Evacuation Map
Attachment B	South Carolina Tsunami Inundation Area
Attachment C	Tsunami Watch and Advisory Timeline
Attachment D	Tsunami Warning Timeline
Attachment E	Sample News Release
Attachment F	Sample Emergency Alert System (EAS) Messages for Tsunami Hazard

ATTACHMENT A. SOUTH CAROLINA INLAND TSUNAMI EVACUATION MAP



ATTACHMENT B. SOUTH CAROLINA TSUNAMI INUNDATION AREA MAP



# ATTACHMENT C. TSUNAMI WATCH/ ADVISORY TIMELINE

## Tsunami Watch / Advisory Timeline

**Tsunami Watches** are issued to alert emergency management officials and the public of an event which may later impact the watch area. The watch area may be upgraded to a warning or advisory or canceled based on updated information and analysis.

**Tsunami Advisories** are issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near water. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

<b>Tsunami Watch/Advisory Issued</b>
<p style="text-align: center;">SCEMD WILL HAVE AN OPEN LINE OF COMMUNICATIONS THROUGH OUT THE DURATION OF THE EVENT. COUNTIES WILL BE UPDATED IMMEDIATELY UPON RECEIPT OF TIME SENSITIVE INFORMATION</p>
<ul style="list-style-type: none"><li><input type="checkbox"/> State Warning Point emails Watch/Advisory message to counties.</li><li><input type="checkbox"/> SCEMD activates the SEOC at OPCON 2.</li><li><input type="checkbox"/> SCEMD Disaster Intelligence Group (DIG) assembles available information on status of the Tsunami Watch/Advisory. Sources of information:<ul style="list-style-type: none"><li>▪ NOAA/Local NWS Forecast Office</li><li>▪ National Tsunami Warning Center</li><li>▪ FEMA</li></ul></li><li><input type="checkbox"/> SCEMD facilitates a conference call with counties and SERT to discuss county response activities and resource needs.</li><li><input type="checkbox"/> If necessary, SCEMD requests Executive Order for State of Emergency and Evacuation from the Governor's Office.</li><li><input type="checkbox"/> DIG reviews maps of threatened areas to determine locations of critical facilities within the evacuation zones.</li><li><input type="checkbox"/> ESF-1 obtains and distributes information on road conditions.</li><li><input type="checkbox"/> ESF-2 reviews status of communication systems along coast.</li><li><input type="checkbox"/> ESF-6 identifies shelters outside the potential evacuation area and places them on standby notice.</li><li><input type="checkbox"/> ESF-15 issues Public Information Statements if needed.</li><li><input type="checkbox"/> ESF-24 obtains tourist count in the threatened area.</li><li><input type="checkbox"/> SCEMD determines if any further action is needed prior to a Tsunami Warning being issued.</li></ul>
<b>Tsunami Watch/ Advisory Cancelled</b>
<ul style="list-style-type: none"><li><input type="checkbox"/> SERT members and counties report impacts which are captured in PalmettoEOC (ie. Significant Events)</li><li><input type="checkbox"/> Coordinate with SERT to determine status of community lifelines.</li><li><input type="checkbox"/> ESF-15 prepares major PIO effort to disseminate information to public about event.</li></ul>

## ATTACHMENT D. TSUNAMI WARNING TIMELINE

### Tsunami Warning Response Timeline

**Tsunami Warning** are issued when a potential tsunami with significant widespread inundation is imminent or expected. Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

#### **Tsunami Warning Issued**

**SCEMD WILL HAVE AN OPEN LINE OF COMMUNICATIONS THROUGH OUT THE DURATION OF THE EVENT. COUNTIES WILL BE UPDATED IMMEDIATELY UPON RECEIPT OF TIME SENSITIVE INFORMATION**

- State Warning Point emails Tsunami Warning message to counties
- SCEMD activates the SEOC at OPGON 1
- SCEMD notifies adjacent States and FEMA of activation
- SCEMD requests ESFs to activate response procedures to include:
  - Obtaining information on road conditions and evacuation routes.
  - Reviewing status of communication systems in the evacuation area.
  - Identifying and opening shelters outside the evacuation area.
  - Obtaining tourist count in the threatened area.
  - Implementing evacuation procedures.
  - Coordinating and establishing traffic control points.
  - Staging emergency equipment outside of inundation area.
  - Repositioning ships to deeper waters, as time allows.
  - Clearing of potentially impacted waterways.
  - Moving search and rescue equipment to staging area outside risk area.
  - Securing or closing of ports and boat landings.
  - Deploying first responders to assembly sites.
- SCEMD DIG assembles available information on status of the Tsunami Warning.  
Sources of information:
  - Local NWS Forecast Office
  - National Tsunami Warning Center
  - FEMA
- SCEMD facilitates a conference call with counties and SERT.
  - Discuss county response actions, their resource needs, and their decision to evacuate.
  - Discuss county recommended evacuation areas.
  - Coordinate the need to implement evacuation routes and any necessary assembly points.
  - Inform counties of State actions.

## ATTACHMENT D. TSUNAMI WARNING TIMELINE

- SCEMD requests Executive Order for State of Emergency and Evacuation from the Governor's Office.
- SCEMD issues Public Information Statements and provides counties with Governor's Declaration.
- SCEMD monitors evacuations and provides assistance to counties as required.
- DIG continues to coordinate with partners to evaluate potential impacts.

### **Tsunami Warning Cancelled**

- Evacuation order rescinded after SCEMD, SERT members and local officials determine that it is safe to return.
- SCEMD coordinates/ SERT members supports reentry operations conducted by local authorities.
- SCEMD establishes response priorities and mutual aid requirements.
- SERT members and counties report impacts which are captured in PalmettoEOC (ie. Significant Events).
- DIG coordinates with SERT to determine status of community lifelines.
- ESF-9 supports search and rescue operations, if necessary.
- Counties initiate initial damage assessment. SCEMD Recovery compiles county data.
- SCEMD requests aerial reconnaissance of damaged areas.
- ESF-15 prepares major PIO effort to disseminate information to public about event.
- SCEMD prepares a request for a major disaster declaration and submits to the Governor for signature as required.
- ESF-14 convenes the South Carolina Recovery Task Force and State RSFs.
- Joint Field Office and/or Public Assistance Processing Center is established, in coordination with FEMA, in the event of a federally declared disaster.
- Advanced Evaluation Team (AET) assessment is initiated to determine need for Federal Disaster Recovery Coordinator (FDRC) and a follow-on Mission Scoping Assessment (MSA) with State and Federal RSF leads.

## ATTACHMENT E. SAMPLE NEWS RELEASE

### Sample News Release

#### **Tsunami Warning Issued for [States/Coastal Areas in Threatened Region]**

A tsunami warning is in effect for [coastal areas] of South Carolina. All coastal residents near the beach or in low-lying areas should move immediately inland to higher ground and stay away from harbors and inlets. Homes and small buildings are not designed to withstand the impact of tsunamis. Do not stay in these structures.

Residents in the warned area should follow instructions from local authorities. This warning is based solely on earthquake information. A tsunami has not yet been confirmed.

At [time] on [date], a preliminary magnitude [#] earthquake occurred [location]. This earthquake may have generated a tsunami. If a tsunami has been generated, the first waves could reach [locations] at [time] [EDT/EST] on [date].

Tsunamis are a series of ocean waves that can remain dangerous for several hours. They may appear as strong surges or rapid water receding and can increase quickly as they approach shallow areas. Wave heights can be amplified by irregular shorelines and are difficult to predict. Tsunamis are often not survivable. Do not return to evacuated areas until local authorities issue an all-clear. Mariners in waters deeper than 600 feet are generally not affected.

For updated tsunami arrival times, maps, and safety information, visit [tsunami.gov](https://tsunami.gov). Additional messages will be issued if conditions change. Stay tuned to NOAA All Hazards Weather Radio, local TV, or radio stations for further instructions.

## ATTACHMENT F. SAMPLE EAS RELEASES

### SAMPLE EAS RELEASE

Long WEA message:

SC Emergency Management Division: TSUNAMI WARNING. A surge of water is now approaching the South Carolina coast. MOVE inland away from beaches, marinas, harbors, shoreline areas, and other water ways. DO NOT WAIT to see rising water or other natural signs of a tsunami. Get to higher ground NOW.

Short WEA message:

SCEMD: TSUNAMI WARNING. Move inland and get to higher ground NOW.

EAS Message:

This is a message from the South Carolina Emergency Management Division. There is a tsunami warning in your area. The National Weather Service is tracking a tsunami wave off the coast of South Carolina. MOVE inland away from beaches, marinas, harbors, shorelines, and other water ways. Do not wait to see rising water or other natural signs of a tsunami. Get to 15 feet above ground or one mile inland away from the coast. For more information and updates go to [scemd.org](http://scemd.org).