

TEAM NORFOLK



Emergency Operations & Resiliency Framework

Hazard-Specific Annex

Tsunami

August 2025

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Team Norfolk

Hazard-Specific Annex

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PURPOSE AND SCOPE

The purpose of this Hazard-Specific Annex is to establish an organizational framework and coordinated response capability for the City of Norfolk and its partners in the event of a tsunami incident. This annex guides preparedness, response, and initial recovery efforts to protect life, property, and critical infrastructure.

It is designed to fulfill legal mandates outlined in applicable state and local codes governing emergency services and emergency management. In addition, this annex promotes a unified and collaborative approach, ensuring that all participating agencies operate with coordination, consistency, and unity of effort during a tsunami emergency.

Notably, the City of Norfolk is the only community in Virginia recognized as a National Weather Service *TsunamiReady* community, reflecting our proactive commitment to tsunami preparedness, planning, and community awareness.

BACKGROUND

Per the 2022 Hampton Roads Hazard Mitigation Plan (HRHMP), the term tsunami originates from Japanese—meaning “harbor wave”—and refers to one or a series of large ocean waves formed by disturbances such as earthquakes, landslides, volcanic activity, or underwater explosions. These waves radiate outward, potentially originating thousands of miles from coastlines.

Wave characteristics: Wave periods range from 5 to 90 minutes, and in the open ocean, tsunami waves may travel as fast as 450 mph. Upon reaching shallow waters, wave speed decreases while energy remains unchanged, allowing waves to increase dramatically in height—potentially reaching 100 feet at the shoreline. Low-lying areas (under 50 feet elevation and within one mile of shore) face the greatest exposure. Rapid water level changes are a key warning sign. The first wave may not always be the largest. Waves can increase or decrease in height and intensity for hours after the first wave.

Impacts: The primary cause of fatalities is drowning, with associated hazards including flooding, contamination of water supplies, and damaged utilities (e.g., gas lines).

Since 1600, approximately 40 tsunami or tsunami-like events have been documented along the U.S. East Coast—caused not by tectonic subduction zones (like the Pacific’s Cascadia) but by East Coast–specific triggers:

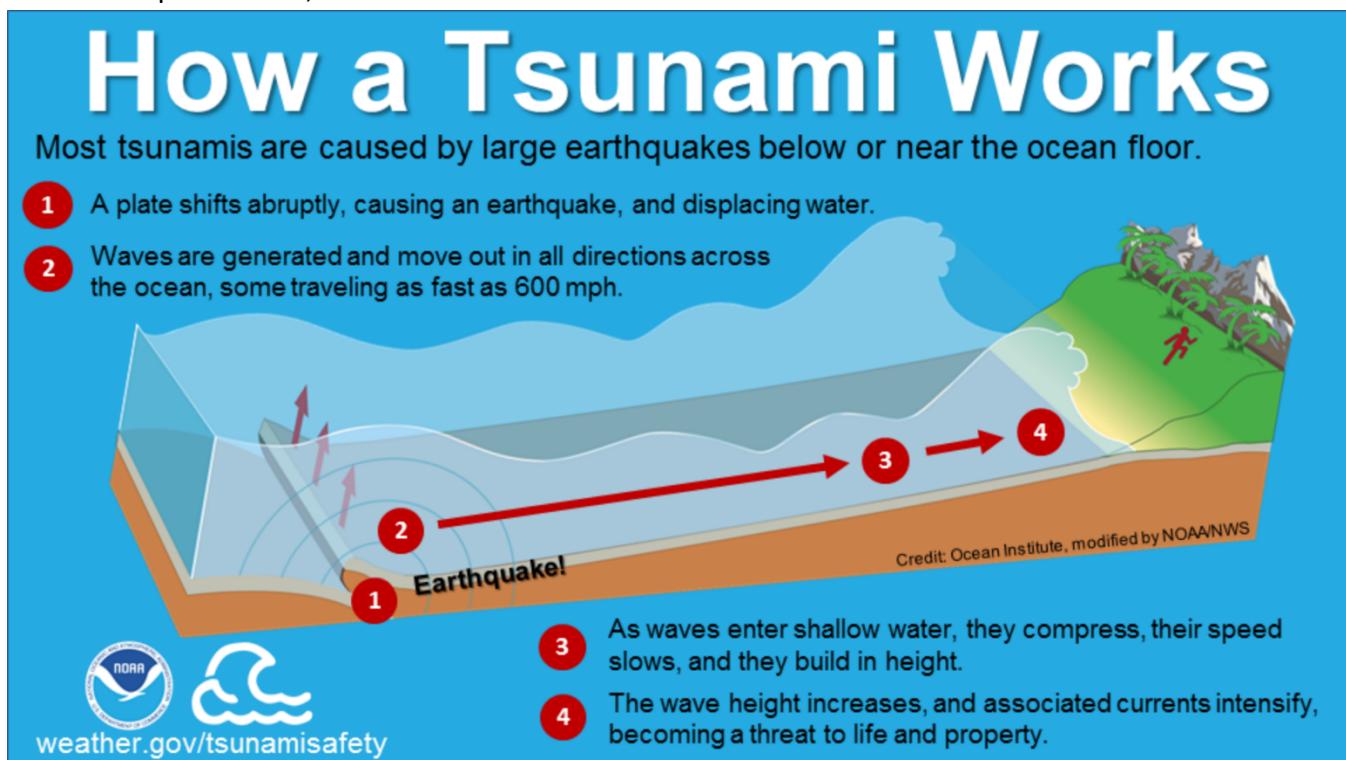
- Local offshore landslides or slumping

- Undersea methane release or extraterrestrial impacts

Debris, both natural and man-made, exacerbates damage during such events.

Although no tsunami has directly impacted Southside Hampton Roads, these East Coast incidents suggest a low probability but plausible hazard. An example includes the recent 2020/2021 Maine event.

Projected impacts would likely mirror those of severe coastal flooding or storm surge events in terms of property damage and infrastructure loss. However, due to limited historical incidence, the HRHMP notes that quantitative, annualized loss estimates remain unattainable at this time.



SITUATION

The City of Norfolk is a coastal community with extensive shoreline along the Chesapeake Bay and its tributaries, characterized by low-lying topography and a dense population in waterfront areas. While the West coast is more frequently associated with tsunami hazards, historical records show that tsunami events, though rare, have occurred along the U.S. East Coast.

Although there is no historical record of a tsunami directly impacting Norfolk or Southside Hampton Roads, tsunami events remain a credible hazard due to various potential triggers including offshore landslides, seismic activity along the Mid-Atlantic Ridge, underwater methane release, and atmospheric or celestial events such as meteorite impacts.

The City of Norfolk's designation as Virginia's only National Weather Service *TsunamiReady* community reflects a proactive approach to preparing for this hazard. Through enhanced public education, warning dissemination capability, and evacuation planning, Norfolk is positioned to respond rapidly should a tsunami threat emerge.

Key considerations for Norfolk's tsunami situation include:

- Norfolk's waterfront neighborhoods, parks, and transportation corridors lie within areas susceptible to inundation during a significant tsunami event.
- The geographic characteristics of the region result in limited time for warning and evacuation if an event is generated locally, although distant-source events would generally provide several hours of lead time.
- Southside Virginia's low sea level elevation – with no higher terrain like western parts of the United States provides additional complications when it comes to evacuations.
- Vulnerable populations, including residents in low-lying neighborhoods, tourists visiting coastal attractions, and those without access to personal transportation—would require special consideration in the warning and evacuation process.
- Tsunami waves, should they occur, would likely cause impacts similar to or more severe than coastal flooding or storm surge, including rapid inundation, debris movement, and damage to infrastructure.
- Norfolk's Downtown Flood Wall system may need to be closed for a tsunami threat.

In alignment with the 2022 Hampton Roads Hazard Mitigation Plan, the probability of a tsunami affecting Norfolk is assessed as low, but the potential consequences are significant enough to warrant planning and preparedness.

RISK AND ASSUMPTIONS

This section identifies the key risks associated with a tsunami impacting Norfolk and outlines the planning assumptions upon which this annex is based. Understanding these risks and assumptions ensures that preparedness, response, and recovery actions remain realistic, achievable, and informed by the best available information.

RISK

While the probability of a tsunami directly impacting Norfolk is considered low, the potential consequences of such an event are significant and justify preparedness measures.

The primary risks associated with a tsunami incident in Norfolk include:

- Rapid inundation of low-lying coastal neighborhoods and transportation corridors.

- Threats to life safety from strong, fast-moving waters, debris impacts, and collapse of weakened structures.
- Damage or destruction of critical infrastructure, including utilities, ports, roadways, and public facilities.
- Secondary hazards such as contaminated floodwaters, fires from damaged utilities, hazardous material releases, and disruption of essential services.
- Economic disruption due to damage to the Port of Virginia, tourism, and other coastal-dependent industries.

ASSUMPTIONS

This annex is based on the following planning assumptions:

- **Warning and lead time:** Tsunami events generated by distant sources (e.g., seismic activity in the Atlantic Ocean) will generally allow for hours of warning and coordinated response. However, locally generated tsunamis (e.g., from submarine landslides) could provide little to no warning time, limiting evacuation and preparedness actions.
- **Hazard zones:** The areas most at risk from tsunami inundation include locations less than 50 feet above sea level and within approximately one mile of the coastline.
- **Vulnerability overlap:** Many populations and facilities vulnerable to tsunami hazards are also vulnerable to other coastal hazards such as hurricanes and storm surge. Planning, evacuation routes, and sheltering considerations will therefore mirror many aspects of coastal storm planning.
- **Debris hazard:** Tsunami events can generate significant debris, both from displaced infrastructure and from natural objects, posing additional hazards during and after the event.
- **Dependence on external resources:** A tsunami incident could overwhelm local resources, requiring support from regional, state, and federal agencies. A significant East Coast Tsunami would likely impact many major cities on the East Coast, severely stressing the availability of resources to support.
- **Continuity of government and essential services:** Maintaining continuity of government operations, emergency management coordination, and communication systems will be critical during response and recovery phases.
- **Public Education** on tsunami threats, and how to respond will be lower than other hazards due to the rare nature of them. More clear, concise, and direct messaging may be needed.
- **Initial Information** may change, as earthquake magnitudes are often adjusted up or down by the USGS after they occur. This could result in a change in the forecast of any potential tsunami threat.

CONCEPT OF OPERATIONS

This section outlines how the City of Norfolk will manage and coordinate preparedness, response, and initial recovery operations in the event of a tsunami. It describes the operational framework, roles and responsibilities, direction and control, alert and notification procedures, and situational awareness processes necessary to protect life, property, and the environment.

DIRECTION AND CONTROL

Initial Incident Command will be assumed by the Norfolk Emergency Operations Center (EOC), which will most likely be the recipient of an initial tsunami alert product from the National Weather Service (NWS). Upon receipt of such an alert, the EOC will activate appropriate response protocols and disseminate necessary notifications through Norfolk Alert to both impacted areas and all relevant Team Norfolk response agencies.

ALERT AND INITIAL BRIEFING

The USGS and NOAA/NWS's Tsunami Warning Center constantly monitor for tsunami threats using a collection of sensors, including seismographs and the DART system. **DART** real-time tsunami monitoring systems, developed by PMEL, are positioned at strategic locations throughout the ocean and play a critical role in tsunami by providing detection of waves and information on their heights.

Tsunami Detection & Forecasting Explained



Seismic stations detect and measure earthquakes, which cause most tsunamis.



Seismic waves travel 100x faster than tsunamis, so this is the first available data for quake-generated events.



Water-level networks detect and measure the actual tsunamis:



Deep-ocean Assessment & Reporting of Tsunami

DART systems measure water changes at the bottom of the sea.



Tidal stations near the coast measure ocean height.



If a tsunami is detected, **Tsunami Warning Center scientists** run forecast models using:

- ◆ Real-time water & seismic data
- ◆ Preset scenarios
- ◆ Bathymetry and topography



National Tsunami Warning Center (Alaska)

Pacific Tsunami Warning Center (Hawaii)

Forecasts show the path of tsunami waves across the ocean and estimate impacts at specific coastal locations:



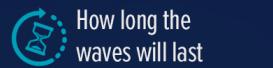
Wave heights



Arrival times



Locations & extent of flooding



How long the waves will last

Warning centers use early seismic data to decide if a tsunami could have been generated, and if a tsunami alert should be issued.

If a tsunami is possible, water-level data is monitored to determine the tsunami's existence and size, and to verify, adjust, or cancel alerts.

Forecast model runs, along with historical tsunami data, help warning centers make further decisions about adjusting and/or cancelling alerts.

This info helps local officials make decisions about evacuation, beach and route closures, and more.



For the US East Coast, DART sensors are positioned off the coast and across the Caribbean and Gulf, to provide information to the scientists at the Tsunami Warning Center.

Tsunami messages are issued by the Tsunami Warning Centers to notify emergency officials, the public, and partners about potential tsunami threats following a possible tsunami-generating event. For U.S. coastlines, these messages include specific alerts defined by the National Weather Service:

Tsunami WARNING: TAKE ACTION – Danger! A tsunami that may cause widespread flooding is expected or occurring. Dangerous coastal flooding and powerful currents may continue for several hours or days after initial arrival. Evacuation is recommended. Move to high ground or inland away from water and follow instructions from local officials.



Tsunami Warnings are broadcast through:

- Local radio and television
- Marine radio
- Wireless Emergency Alerts (WEA)
- NOAA Weather Radio
- NOAA websites (e.g., Tsunami.gov)

To augment these national warning systems, Team Norfolk EOC will issue geographically targeted Norfolk Alert messages, ensuring additional local reach, including notifications to landline telephones.

Norfolk does not utilize outdoor warning sirens, however, many nearby military bases and colleges campuses do have warning siren systems. These locations may choose to utilize their sirens for a tsunami threat, similar to how they use them for other emergencies.

It is important to note that there may not always be sufficient time for an official warning. Therefore, public awareness of “natural warnings” is critical. If at the coast, people should immediately take action and move to a safe place if they:

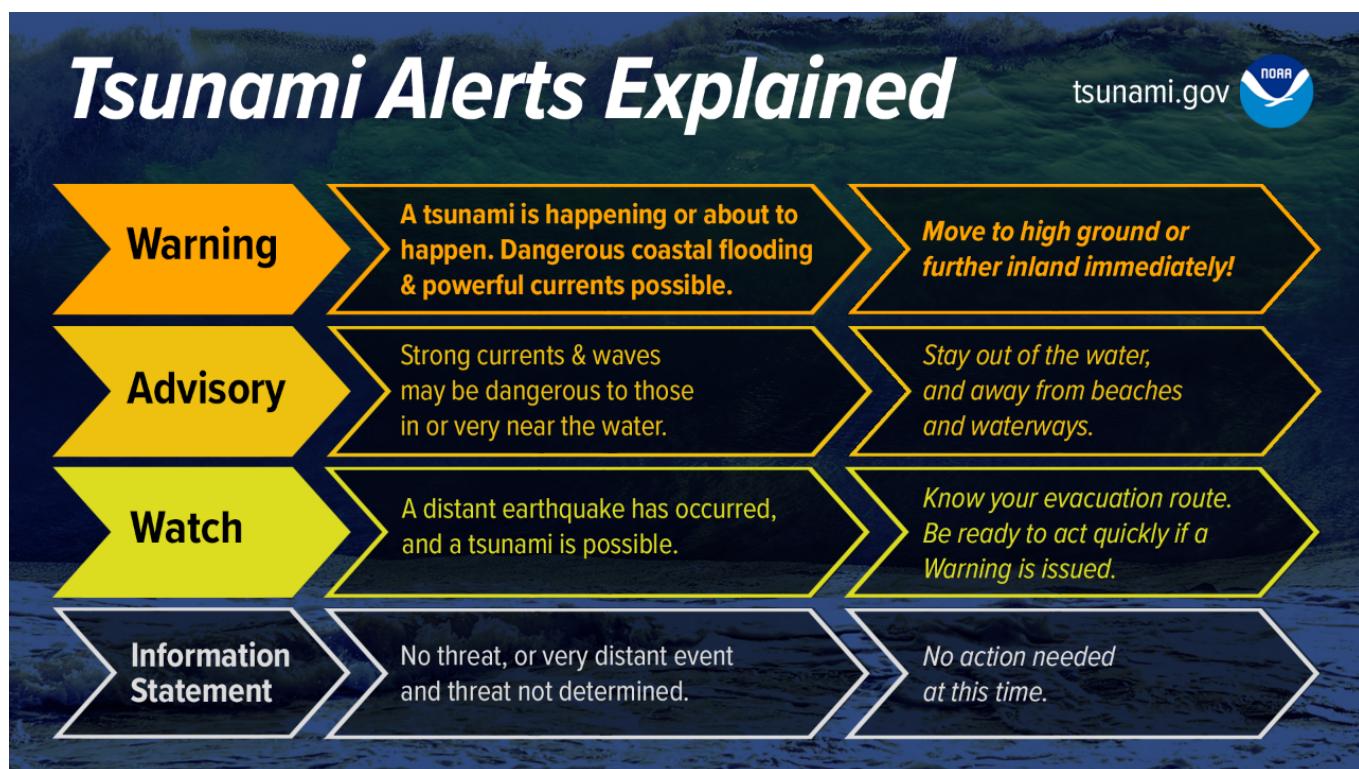
- Feel a strong or prolonged earthquake;
- See a sudden rise or fall in ocean water levels;
- Hear a loud roar from the ocean.

Tsunami ADVISORY: TAKE ACTION – Stay away from the water. A tsunami with potential for strong currents or dangerous waves is expected or occurring. There may be localized flooding of beaches, immediate shoreline and harbor areas. Stay out of the water and off beaches and waterfronts and follow instructions from local officials.

Tsunami WATCH: BE PREPARED – Stay informed. A distant earthquake has occurred, and a tsunami is possible. Monitor official sources for updates and be prepared to act if conditions warrant.

Tsunami Information Statement: Relax – No threat or low risk. An earthquake has occurred but poses no tsunami threat or the threat is still being evaluated.

Note: Tsunami alerts may be updated or cancelled as new information becomes available. Watches, advisories, and information statements may also be upgraded if the threat increases.



OPERATIONAL PERIODS AND SITUATIONAL REPORTS

Operational periods will be established at the onset of the incident by the Norfolk Emergency Operations Center (EOC) in coordination with Emergency Preparedness and Response leadership. The length of operational periods will be based on the evolving situation, incident complexity, and resource needs. Each operational period will include clearly defined objectives, resource assignments, and situational updates.

- Situational reports (SitReps) will be developed and distributed at regular intervals to provide updates on:
- Current conditions and forecasted impacts;
- Protective actions taken or recommended;
- Resource status and unmet needs;
- Significant accomplishments and issues for resolution.

SITUATIONAL AWARENESS AND COORDINATION

The Emergency Preparedness and Response team will coordinate EOC briefings, ensuring that leadership, response agencies, and key stakeholders are aligned on operational goals and objectives for each period. Regular coordination will support unified decision-making, efficient resource deployment, and timely public information dissemination.

Useful external resources, in addition to those listed in the Basic Plan, include:

- National Weather Service (NWS) Tsunami Program
 - <https://www.tsunami.gov/>— For real-time tsunami alerts, advisories, warnings, and educational resources.
- USGS Earthquake Map
 - <https://earthquake.usgs.gov/earthquakes/map/?extent=24.32708,-138.20801&extent=50.20503,-51.81152>
- Tsunami Safety Messaging: <https://www.weather.gov/safety/tsunami-hazards>
- Tsunami Infographics: <https://www.weather.gov/wrn/tsunami-sm>

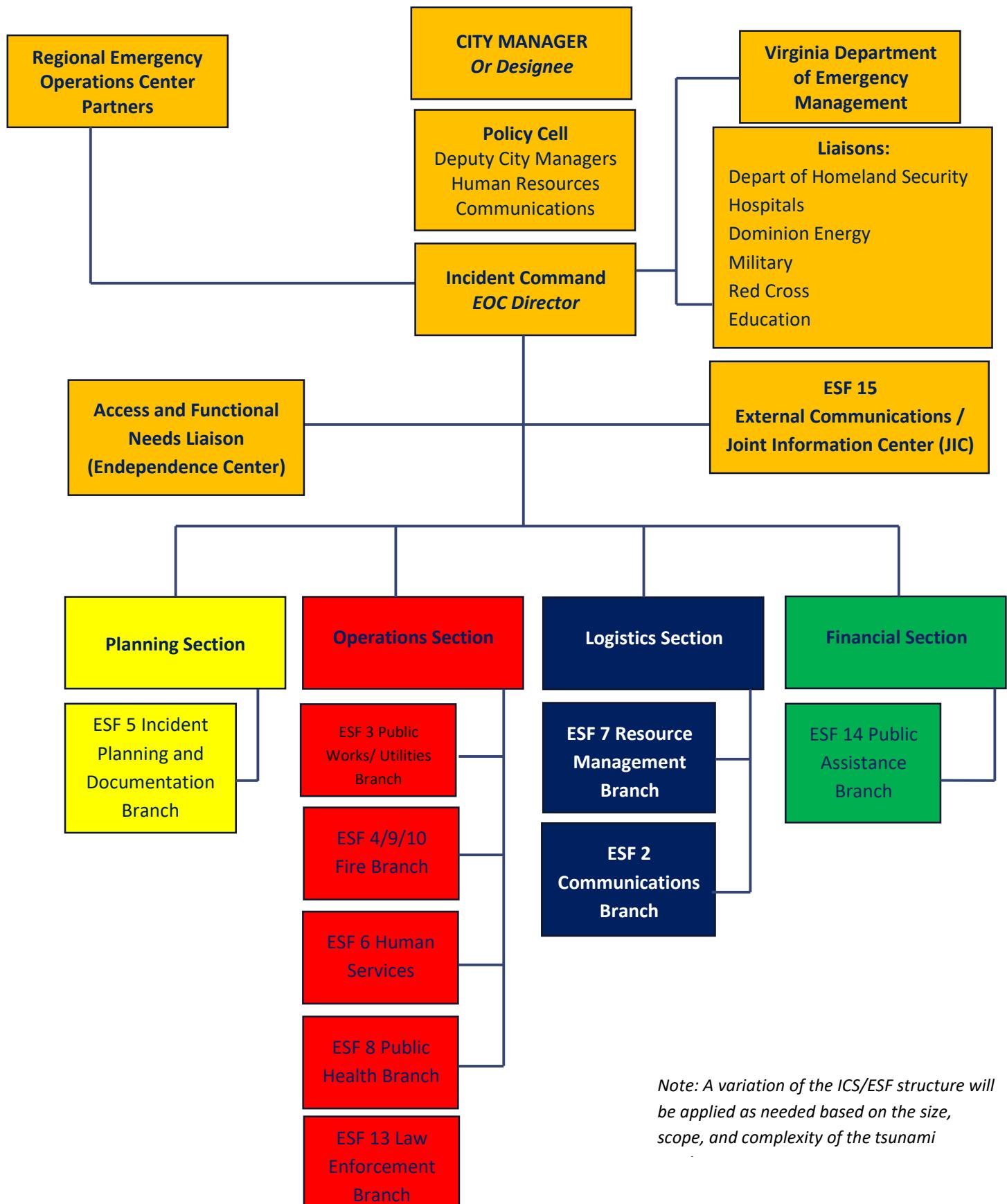
ORGANIZATION

With the formal adoption of the National Incident Management System (NIMS), the Incident Command System (ICS), and the Emergency Support Function (ESF) framework, the Norfolk Emergency Operations Center (EOC) utilizes a consistent ICS/ESF hybrid structure for all incidents, including tsunami response operations.

The organizational structure ensures:

- Clear lines of authority and communication,
- Span of control appropriate to incident complexity,
- Integration of city departments and external partners into unified command and support roles.

SEE ORGANIZATION CHART ON NEXT PAGE



ALL EMERGENCY SUPPORT FUNCTIONS

Be sure to review your respective ESF Annex for partner agencies, contact information, and roles and responsibilities appropriate for all incidents, available resources, and other critical information!

For more information on Emergency Support Functions, [visit the FEMA site.](#)

EMERGENCY SUPPORT FUNCTION 1: TRANSPORTATION

Primary Agencies: Norfolk Department of Transit

Support Agencies: Norfolk Police Department, Norfolk Emergency Management, Norfolk Fire-Rescue, Norfolk Fleet Management, Norfolk Parks and Recreation

KEY RESPONSIBILITIES

Norfolk Public Works

- Provide transportation infrastructure support, including deployment of traffic control devices, detour signage, and debris clearance as needed to support evacuation, emergency access, and reentry operations.
- Assist in identifying and securing staging and parking areas for buses and other transport assets.

Hampton Roads Transit (HRT)

- Provide buses and drivers to assist in the evacuation of residents from tsunami-threatened areas to designated safe locations or shelters.
- Coordinate routing, schedules, and availability of vehicles during the operational period.

Norfolk Airport Authority

- Coordinate transportation and logistics at Norfolk International Airport as needed for evacuation, relocation, or reentry operations.
- Ensure staging areas are identified for buses and ground transportation providers supporting airport operations during the incident.

Norfolk Police Department

- Provide traffic management and escort services for transportation convoys as necessary during evacuation and reentry phases.
- Ensure safe passage for vehicles moving between at-risk areas, evacuation assembly points, and shelter locations.

Norfolk Emergency Management

- Coordinate transportation planning as part of overall EOC operations and maintain situational awareness of transportation capabilities and limitations.
- Support requests for mutual aid or additional transportation resources if local capacity is exceeded.

Norfolk Fire-Rescue

- Provide medical transport support for individuals requiring ambulance services during evacuation and reentry.
- Assist with triage and coordination of medical needs during transport operations.

Norfolk Fleet Management

- Maintain and provide city-owned vehicles as needed to support transportation operations.
- Ensure fueling, maintenance, and readiness of transportation resources used during tsunami response.

Norfolk Parks and Recreation

- Support transportation operations involving evacuation to city shelters and reception centers, including coordination with shelter management teams.

Additional Considerations

- Ensure transportation plans account for individuals with access and functional needs (AFN), including appropriate vehicles and assistance during evacuation and reentry.
- Maintain close coordination between transportation providers, law enforcement, and emergency management for safe, timely, and efficient movement of evacuees.
- Include provisions for the transport of pets accompanying evacuees, consistent with sheltering policies and family reunification efforts.

EMERGENCY SUPPORT FUNCTION 2: COMMUNICATIONS

Primary Agencies: Norfolk Department of Information Technology, Norfolk Emergency Management

Support Agencies: Norfolk Police Department, Norfolk Fire-Rescue, Norfolk Public Works, Norfolk Public Libraries

KEY RESPONSIBILITIES

Norfolk Department of Information Technology

- Ensure operability and resilience of the City's communications infrastructure supporting EOC operations and emergency response activities.
- Provide technical support for restoration of critical communications networks and systems affected by tsunami-related damage.
- Maintain backup systems to ensure continuity of voice, data, and radio communications during and after the incident.

Norfolk Emergency Management

- Coordinate public alert and warning systems, including Norfolk Alert and the Integrated Public Alert and Warning System (IPAWS), to ensure timely dissemination of tsunami watches, warnings, and evacuation instructions.
- Serve as liaison with the National Weather Service (NWS) and other external agencies for official tsunami notifications.
- Support situational awareness and information sharing with all Team Norfolk response partners through the EOC.

Norfolk Police Department

- Support secure communication channels for law enforcement personnel during tsunami response operations.
- Ensure interoperability with partner agencies assisting with evacuation and reentry operations.

Norfolk Fire-Rescue

- Maintain interoperable communications among fire-rescue units, EMS, and partner agencies operating in affected areas.

Norfolk Public Works

- Provide support for deployment of temporary communication infrastructure (e.g., mobile communications units) if required to restore operational capability in damaged areas.

Norfolk Public Libraries

- Support public access to information and communications systems, including Wi-Fi access and information kiosks, during recovery phases when libraries are used as community resource centers.

Additional Considerations

- Ensure communication strategies account for individuals with limited English proficiency and those with access and functional needs, including provision of accessible formats.
- Maintain redundancy in communications systems to mitigate potential damage from tsunami-related impacts (e.g., flooding of infrastructure).
- Support coordination of public messaging between City departments, regional partners, and the Commonwealth of Virginia Joint Information Center (JIC) to ensure consistent, accurate, and timely information is provided to the public.

EMERGENCY SUPPORT FUNCTION 3: PUBLIC WORKS, UTILITIES & ENGINEERING

Primary Agencies: Norfolk Public Works

Support Agencies: Norfolk Utilities, Norfolk Fleet Management, Norfolk Emergency Management, Norfolk Parks and Recreation, Norfolk Police Department, Norfolk Fire-Rescue

KEY RESPONSIBILITIES

Norfolk Public Works

- Conduct damage assessments of public infrastructure following tsunami impact, including roads, bridges, drainage systems, and public facilities.
- Prioritize and perform emergency debris removal to clear critical transportation routes for emergency response and recovery operations.
- Provide barricades, signage, and other traffic management devices to support safe operations in damaged or hazardous areas.
- Coordinate repair of damaged infrastructure to restore essential city services and enable reentry and recovery operations.
- Support flood mitigation activities as needed during response and recovery.

Norfolk Utilities

- Assess and repair damage to water, wastewater, and stormwater systems impacted by tsunami flooding or debris.
- Coordinate restoration of essential utility services to support critical facilities and the general public.

Norfolk Fleet Management

- Maintain readiness and provide city-owned heavy equipment and vehicles required to support public works and debris removal operations.
- Ensure fueling, maintenance, and repair services for vehicles and equipment used during the response and recovery.

Norfolk Emergency Management

- Coordinate resource requests for additional engineering or debris management support through mutual aid or state assistance as needed.
- Maintain situational awareness on critical infrastructure status and coordinate with EOC operations.

Norfolk Parks and Recreation

- Support debris management and damage assessment activities in city parks, waterfront areas, and recreational facilities.

Norfolk Police Department

- Assist with securing damaged areas and providing traffic control to ensure the safety of public works crews operating in hazardous zones.

Norfolk Fire-Rescue

- Provide safety support and assist with hazard identification in structurally compromised areas or during debris removal operations.

Additional Considerations

- Ensure debris removal operations account for hazardous materials that may be present due to tsunami inundation.
- Coordinate temporary emergency repairs to protect critical infrastructure and enable continuity of essential services.
- Maintain close coordination with ESF 1 – Transportation to ensure road clearance priorities align with evacuation, reentry, and supply routes.

EMERGENCY SUPPORT FUNCTION 4: FIREFIGHTING

Primary Agency: Norfolk Fire-Rescue

Support Agencies: Norfolk Police Department, Norfolk Emergency Management, Norfolk Public Works, Norfolk Department of Public Health, Virginia Department of Forestry

KEY RESPONSIBILITIES

Norfolk Fire-Rescue

- Provide fire suppression services in tsunami-affected areas, including areas with compromised access or structural instability.
- Conduct search and rescue operations in flooded or debris-laden zones in coordination with Urban Search and Rescue (USAR) capabilities if activated.
- Assist with triage, treatment, and transportation of injured individuals in coordination with EMS and medical support units.
- Evaluate and suppress fires caused by ruptured gas lines, electrical system failures, or other tsunami-related hazards.
- Support damage assessments for facilities critical to fire response operations.
- Coordinate staffing and deployment of personnel and apparatus to ensure citywide coverage during prolonged incident operations.
- Participate in EOC briefings to maintain situational awareness and coordinate operational priorities.

Norfolk Police Department

- Provide scene security and traffic control to support fire-rescue operations.
- Assist with search and rescue coordination as needed.

Norfolk Emergency Management

- Coordinate mutual aid requests for additional firefighting or technical rescue resources through regional, state, or federal support systems.
- Support overall incident coordination and communication through the EOC.

Norfolk Public Works

- Assist with debris clearance to allow access for firefighting vehicles and personnel.
- Provide support in identifying and marking hazardous structures or compromised roadways.

Norfolk Department of Public Health

- Assist with identifying and mitigating health hazards in fire-affected areas, including air quality issues from smoke or chemical releases.

Virginia Department of Forestry

- Provide additional fire suppression support or equipment as needed, particularly for brush or interface fires triggered by tsunami-related impacts.

Additional Considerations

- Ensure firefighter safety in areas with potential structural collapse, hazardous materials, or unstable flood-damaged infrastructure.
- Maintain continuity of operations for fire stations and support facilities that may be impacted by tsunami flooding.
- Coordinate with ESF 8 – Public Health and Medical Services for patient care and decontamination where appropriate.

EMERGENCY SUPPORT FUNCTION 5: INFORMATION AND PLANNING

Primary Agency: Norfolk Emergency Management

Support Agencies: All City Departments, Norfolk Fire-Rescue, Norfolk Police Department, Norfolk Information Technology, Norfolk Public Health, American Red Cross, Virginia Department of Emergency Management (VDEM)

KEY RESPONSIBILITIES

Norfolk Emergency Management

- Activate and manage the Emergency Operations Center (EOC) in support of tsunami response and recovery operations.
- Provide overall coordination of emergency support functions and ensure integration of city departments, partner agencies, and external support.
- Monitor tsunami alerts issued by the National Weather Service (NWS) and coordinate timely dissemination through Norfolk Alert, IPAWS, and other notification systems.
- Facilitate planning, situation reporting, and development of Incident Action Plans (IAPs) for each operational period.
- Coordinate resource requests through local, regional, and state emergency management systems, including WebEOC.
- Maintain ongoing situational awareness and support decision-making through briefings, common operating picture updates, and interagency coordination.
- Support damage assessments and transition into recovery operations in alignment with state and federal disaster assistance processes.
- Coordinate training, public education, and outreach efforts related to tsunami preparedness and evacuation awareness in advance of an incident.

All City Departments

- Participate in EOC operations as needed to support continuity of services and to provide personnel, equipment, and subject-matter expertise.
- Maintain internal departmental emergency plans aligned with citywide tsunami response objectives.

Norfolk Fire-Rescue & Police Department

- Provide operational intelligence and incident updates to the EOC.
- Support planning, communications, and public safety response coordination.

Norfolk Information Technology

- Ensure continuity and reliability of EOC technology systems, including communications, data sharing, and public warning platforms.

Norfolk Public Health & American Red Cross

- Provide coordination and information related to public health concerns, shelters, and mass care needs.

Virginia Department of Emergency Management (VDEM)

- Serve as liaison to the Virginia Emergency Operations Center (VEOC), support mutual aid requests, and assist with access to state and federal resources as needed.

Additional Considerations

- Ensure that emergency operations planning includes provisions for individuals with access and functional needs (AFN), pets, and non-English speakers.
- Plan for sustained operations, including continuity of government, for prolonged or widespread tsunami impacts.
- Maintain alignment with the City's Basic Emergency Operations Plan, NIMS/ICS principles, and current state and federal emergency management guidance.

EMERGENCY SUPPORT FUNCTION 6: MASS CARE, EMERGENCY ASSISTANCE, TEMPORARY HOUSING, AND HUMAN SERVICES

Primary Agency: Norfolk Department of Human Services, American Red Cross

Support Agencies: Norfolk Emergency Management, Norfolk Public Schools, Norfolk Parks and Recreation, Norfolk Department of Public Health, Norfolk Police Department, Norfolk Fire-Rescue, Norfolk Community Services Board, Norfolk Animal Care & Adoption Center

KEY RESPONSIBILITIES

Norfolk Department of Human Services

- Coordinate the provision of mass care services including sheltering, feeding, and distribution of emergency supplies to those displaced by tsunami-related evacuations or damage.
- Support family reunification and the provision of crisis counseling, benefits enrollment, and human services case management.
- Ensure that individuals with access and functional needs (AFN) receive appropriate services, including transportation, communication, and durable medical equipment.

American Red Cross

- Operate and manage emergency shelters in coordination with the City, providing staffing, logistics, feeding, and registration.
- Support reunification efforts through tools such as the Safe and Well system.
- Coordinate shelter supply management, including bedding, comfort kits, and cleaning supplies.

Norfolk Emergency Management

- Activate shelter plans and coordinate site selection, resource support, and inter-agency communication through the EOC.
- Ensure mass care operations are integrated into the overall response framework.

Norfolk Public Schools

- Provide access to designated school facilities for use as emergency shelters.
- Coordinate custodial, maintenance, and food services support as needed during shelter activation.

Norfolk Parks and Recreation

- Provide staffing support at shelters and assist with recreational and childcare activities to support displaced families.
- Assist with alternate shelter locations and short-term reception centers if needed.

Norfolk Department of Public Health

- Support shelter health surveillance, sanitation inspections, and public health guidance related to congregate care settings.

- Coordinate access to nursing support or medical screening as needed at shelter sites.

Norfolk Police Department & Fire-Rescue

- Provide security, safety inspections, and EMS support at shelter sites.
- Assist with transportation and coordination for displaced individuals requiring medical attention.

Norfolk Community Services Board (CSB)

- Provide behavioral health support, crisis counseling, and support for individuals with mental health or substance use conditions.
- Coordinate specialized services for individuals with developmental or cognitive disabilities.

Norfolk Animal Care & Adoption Center

- Coordinate pet sheltering operations in conjunction with general population sheltering efforts.
- Support reunification of pets and owners post-disaster.

Additional Considerations

- Ensure mass care and sheltering operations are accessible to people with disabilities, non-English speakers, and others with AFN.
- Maintain coordination with ESF 8 (Public Health and Medical Services) and ESF 17 (Animal Services) for comprehensive care and support.
- Prepare for long-term housing and recovery assistance in the event of prolonged displacement or major structural damage caused by tsunami impact.

EMERGENCY SUPPORT FUNCTION 7: LOGISTICS

Primary Agency: Norfolk Department of General Services, Norfolk Emergency Management

Support Agencies: Norfolk Finance Department, Norfolk Fleet Management, Norfolk Public Works, Norfolk Department of Information Technology, American Red Cross

KEY RESPONSIBILITIES

Norfolk Department of General Services

- Coordinate logistics support for tsunami response operations, including procurement, staging, and distribution of critical supplies, equipment, and services.
- Manage city warehouses, staging areas, and points of distribution (PODs) to support sheltering operations and field support needs.
- Ensure availability of facility space for logistical operations, including fueling stations, storage, and equipment hubs.

Norfolk Emergency Management

- Identify and prioritize logistics needs in coordination with the EOC Planning and Operations Sections.
- Submit mutual aid and resource requests through WebEOC and coordinate with VDEM for state and federal logistics support.
- Track and manage incoming resources, donations, and mission assignments.

Norfolk Finance Department

- Facilitate emergency procurement, contracting, and purchasing in accordance with city emergency declarations and applicable laws.
- Maintain documentation to support cost tracking, reimbursement, and financial reporting associated with logistics activities.

Norfolk Fleet Management

- Provide city-owned vehicles, generators, and equipment as needed to support response and recovery operations.
- Ensure fueling, maintenance, and repair capabilities are available for vehicles and heavy equipment deployed during the incident.

Norfolk Public Works

- Support logistics operations with access to personnel, heavy equipment, and debris removal resources.
- Assist with setup and management of staging sites and access control.

Norfolk Department of Information Technology

- Ensure logistical support for communications equipment and IT systems deployed at shelters, field operations centers, or temporary facilities.

American Red Cross

- Support shelter logistics including supply delivery, inventory control, and resupply of feeding and hygiene items.

Additional Considerations

- Ensure resource management practices are aligned with FEMA resource typing and ICS logistics standards.
- Coordinate closely with ESF 6 (Mass Care) and ESF 8 (Health and Medical) to support life-sustaining needs.
- Maintain accountability and documentation of resource use for reimbursement and after-action analysis.
- Plan for sustained logistics operations in the event of prolonged tsunami recovery periods or widespread infrastructure disruption.

EMERGENCY SUPPORT FUNCTION 8: PUBLIC HEALTH AND MEDICAL SERVICES

Primary Agency: Norfolk Department of Public Health, Norfolk Fire-Rescue (Emergency Medical Services)

Support Agencies: Norfolk Emergency Management, Norfolk Department of Human Services, Norfolk Community Services Board, Norfolk Police Department, Sentara Healthcare, American Red Cross, Norfolk Public Schools

KEY RESPONSIBILITIES

Norfolk Department of Public Health

- Monitor and assess public health threats resulting from tsunami-related flooding, including water contamination, mold, and hazardous material exposure.
- Provide sanitation inspections and public health guidance for shelters, food services, and Points of Distribution (PODs).
- Coordinate disease surveillance and infection control in congregate settings such as shelters or mass care sites.
- Support environmental health assessments for damaged or flooded residential and commercial properties.
- Provide immunization or prophylaxis campaigns if necessary due to health risks post-incident.

Norfolk Fire-Rescue (EMS Division)

- Provide triage, treatment, and medical transportation for injured individuals during tsunami response and recovery.
- Coordinate medical surge response in the field and at healthcare facilities.
- Support search and rescue medical operations in tsunami-affected areas.
- Maintain medical readiness of EMS personnel and equipment throughout the operational period.

Norfolk Emergency Management

- Coordinate resource requests for public health and medical assets through WebEOC and liaise with VDH and VDEM.
- Ensure alignment of public messaging with public health recommendations during the response phase.

Norfolk Department of Human Services

- Assist with coordination of long-term health services for displaced individuals, especially those with pre-existing conditions or AFN.
- Provide case management for individuals needing follow-up medical or behavioral health services.

Norfolk Community Services Board (CSB)

- Provide crisis intervention, behavioral health support, and mental health services in shelters and community settings.
- Coordinate services for individuals with psychiatric or substance use needs impacted by the tsunami incident.

Norfolk Police Department

- Assist with securing healthcare and shelter facilities, and escorting medical transport units as necessary.

Sentara Healthcare

- Coordinate hospital surge capacity, patient tracking, and emergency care services.
- Provide regular status updates on facility capability, resource needs, and patient transfers to the EOC.

American Red Cross

- Support shelter health operations with first aid stations and health volunteers.
- Assist in identifying individuals requiring additional medical or mental health services.

Norfolk Public Schools

- Coordinate nursing support to shelters hosted in school facilities if available.

Additional Considerations

- Ensure that health and medical services account for individuals with disabilities, limited English proficiency, or chronic medical conditions.
- Maintain close coordination with ESF 6 (Mass Care), ESF 15 (Public Information), and healthcare coalitions.
- Support fatality management in coordination with the Office of the Chief Medical Examiner and regional partners if necessary.

EMERGENCY SUPPORT FUNCTION 9: SEARCH AND RESCUE

Primary Agency: Norfolk Fire-Rescue

Support Agencies: Norfolk Police Department, Norfolk Emergency Management, Virginia Department of Emergency Management (VDEM), U.S. Coast Guard, Norfolk Public Works, Norfolk Community Services Board

KEY RESPONSIBILITIES

Norfolk Fire-Rescue

- Conduct land-based and structural search and rescue (SAR) operations in tsunami-affected areas, including collapsed structures, flooded zones, and debris fields.
- Coordinate rescue efforts involving individuals trapped, injured, or missing due to tsunami-related impacts.
- Deploy specialized rescue teams, including Urban Search and Rescue (USAR) assets, if activated.
- Perform triage and immediate medical care in the field and facilitate transfer to EMS or hospitals.
- Maintain situational awareness on access issues, hazards, and responder safety in coordination with Public Works and other ESFs.

Norfolk Police Department

- Provide perimeter control, security, and support during SAR operations.
- Assist with locating missing persons and coordinating family reunification in partnership with Human Services and the Red Cross.
- Support swift evacuation and protective actions during rapidly developing incidents.

Norfolk Emergency Management

- Coordinate mutual aid and specialized rescue resource requests through the EOC and WebEOC.
- Facilitate communication between local, state, and federal SAR assets.
- Integrate SAR operations into the overall Incident Action Plan and operational briefings.

Virginia Department of Emergency Management (VDEM)

- Provide access to regional and state SAR teams, including Virginia Task Force resources if required.
- Serve as the liaison for requests to FEMA and federal SAR agencies.

U.S. Coast Guard

- Conduct maritime and coastal SAR operations, especially in areas affected by strong currents, vessel impacts, or near-shore flooding.
- Provide aerial or boat-based reconnaissance to identify individuals in need of rescue.

Norfolk Public Works

- Clear access routes and remove debris to allow safe entry for SAR teams into affected areas.
- Support marking of hazardous structures or impassable zones.

Norfolk Community Services Board (CSB)

- Provide behavioral health support for individuals rescued from traumatic or high-stress situations.
- Coordinate care and crisis counseling for families of missing or deceased individuals.

Additional Considerations

- Ensure that SAR operations account for individuals with disabilities, limited mobility, or AFN.
- Integrate SAR tracking and victim identification efforts with ESF 6 (Mass Care) and ESF 8 (Public Health and Medical).
- Prepare for high-risk rescue environments, including floodwaters with debris, chemical hazards, and unstable infrastructure.

EMERGENCY SUPPORT FUNCTION 10: OIL AND HAZARDOUS MATERIAL RESPONSE

Primary Agency: Norfolk Fire-Rescue (Hazardous Materials Team)

Support Agencies: Norfolk Emergency Management, Norfolk Public Works, Norfolk Department of Public Health, Virginia Department of Environmental Quality (DEQ), U.S. Coast Guard, Norfolk Police Department, Dominion Energy, Virginia Natural Gas

KEY RESPONSIBILITIES

Norfolk Fire-Rescue (HazMat Team)

- Identify, assess, and respond to hazardous materials (HazMat) releases caused by tsunami-related infrastructure damage, flooding, or debris movement.
- Deploy detection, monitoring, and containment resources to manage chemical, biological, radiological, or fuel-related hazards.
- Ensure responder and public safety through establishment of exclusion zones and decontamination protocols.
- Coordinate with state and federal HazMat response teams as needed for large-scale or complex incidents.

Norfolk Emergency Management

- Coordinate resource requests through WebEOC for additional HazMat capabilities or technical expertise.
- Facilitate interagency coordination and ensure integration of HazMat response into the Incident Action Plan and operational briefings.

Norfolk Public Works

- Assist with containment of hazardous spills affecting roads, storm drains, or wastewater systems.
- Support cleanup operations and identification of critical infrastructure impacted by hazardous releases.

Norfolk Department of Public Health

- Provide public health guidance on environmental health threats posed by contaminated floodwaters, sewage overflows, or chemical releases.
- Coordinate with HazMat teams to assess risks to shelters, food services, and drinking water supplies.

Virginia Department of Environmental Quality (DEQ)

- Lead assessment and regulatory oversight of environmental contamination incidents.
- Coordinate hazardous materials documentation and reporting to state and federal agencies.
- Provide technical support on remediation, permitting, and regulatory compliance.

U.S. Coast Guard

- Respond to marine-based hazardous materials incidents in the harbor, coastal waters, or navigable waterways affected by tsunami surge.
- Support oil spill response and coordinate with the National Response Center for larger incidents.

Norfolk Police Department

- Support site security and perimeter control in areas affected by hazardous material releases.
- Assist with evacuation of residents and isolation of impacted zones.

Dominion Energy & Virginia Natural Gas

- Respond to downed power lines, ruptured gas mains, or damaged substations that pose secondary hazardous threats.
- Coordinate utility shutoffs and restoration in collaboration with fire-rescue and public works personnel.

Additional Considerations

- Ensure that public notifications regarding hazardous material risks are timely, accessible, and include AFN and non-English-speaking populations.
- Coordinate with ESF 8 (Public Health) for decontamination of affected individuals and response personnel.
- Document all HazMat incidents and coordinate environmental recovery with DEQ and federal agencies if a Stafford Act declaration is issued.

EMERGENCY SUPPORT FUNCTION 11: AGRICULTURE AND NATURAL RESOURCES ANNEX

Primary Agency: Norfolk Department of Public Health (Environmental Health Division)

Support Agencies: Norfolk Animal Care & Adoption Center, Norfolk Parks and Recreation, Norfolk Emergency Management, Virginia Department of Agriculture and Consumer Services (VDACS), Virginia Cooperative Extension, U.S. Department of Agriculture (USDA)

KEY RESPONSIBILITIES

Norfolk Department of Public Health (Environmental Health Division)

- Assess and monitor public health risks related to contaminated food supplies, water sources, and natural resources following a tsunami.
- Conduct inspections of retail food establishments, community feeding operations, and water systems to ensure safety.
- Provide guidance on disposal of spoiled food, animal waste, and agricultural runoff that may pose environmental or health hazards.

Norfolk Animal Care & Adoption Center

- Coordinate care, sheltering, and reunification efforts for pets and service animals affected by the tsunami.
- Support search and rescue operations involving animals in flooded or damaged areas.
- Work with VDACS and animal welfare partners for mass care of displaced or stray animals.

Norfolk Parks and Recreation

- Assess damage to natural parks, recreational areas, and urban green spaces impacted by tsunami surge or flooding.
- Support cleanup and environmental restoration efforts for damaged natural resources.
- Coordinate temporary use of open space for pet sheltering, public feeding sites, or debris staging if needed.

Norfolk Emergency Management

- Coordinate with state and federal agencies for environmental and agricultural response and recovery resources.
- Include protection of natural and cultural resources in the overall recovery strategy and disaster declarations.

Virginia Department of Agriculture and Consumer Services (VDACS)

- Provide technical assistance related to animal health, agricultural safety, and pet sheltering coordination.
- Support response efforts involving livestock, feed contamination, and agricultural water supplies.

Virginia Cooperative Extension

- Provide public education and support related to plant, animal, and food safety issues in the aftermath of a tsunami.
- Offer recovery guidance for community gardens, urban agriculture, and small-scale farming operations.

U.S. Department of Agriculture (USDA)

- Provide support for recovery programs related to agricultural damage, food supply disruptions, and animal health.

Additional Considerations

- Ensure that animal sheltering and agricultural response operations are coordinated with ESF 6 (Mass Care) and ESF 8 (Health and Medical).
- Address public concerns regarding food and water safety with coordinated messaging across ESF 15 (External Affairs).
- Maintain documentation and conduct post-incident assessments to support recovery funding and natural resource restoration planning.

EMERGENCY SUPPORT FUNCTION 12: ENERGY

Primary Agency: Dominion Energy

Support Agencies: Virginia Natural Gas, Norfolk Emergency Management, Norfolk Department of Public Works, Norfolk Fire-Rescue, Norfolk Information Technology

KEY RESPONSIBILITIES

Dominion Energy

- Assess and restore electrical infrastructure and service following tsunami-related damage, including downed power lines, damaged substations, and equipment failure.
- Coordinate power restoration prioritization in collaboration with the EOC to support critical facilities (e.g., hospitals, shelters, water/sewer systems).
- Provide regular updates on outages, restoration timelines, and hazards associated with live wires or compromised equipment.
- Assist with preemptive power shutdowns in high-risk flood zones to prevent electrocution or fires.

Virginia Natural Gas

- Respond to gas leaks or ruptured lines caused by infrastructure collapse or inundation.
- Coordinate utility shutoffs and system pressure stabilization in tsunami-impacted areas.
- Support reactivation and safety inspections of natural gas service during recovery and reentry phases.

Norfolk Emergency Management

- Coordinate utility status updates and resource needs through the EOC.
- Ensure situational awareness of energy availability at critical facilities and prioritize support accordingly.
- Facilitate mutual aid and state support requests in the event of widespread outages or fuel shortages.

Norfolk Department of Public Works

- Support coordination of utility access, trenching, and debris removal for utility crews performing restoration work.
- Assist with identification of damaged underground utility infrastructure.

Norfolk Fire-Rescue

- Respond to electrical fires, gas leaks, and secondary hazards associated with compromised utility infrastructure.
- Support evacuations and safety enforcement in areas with downed or live electrical lines.

Norfolk Information Technology

- Coordinate with Dominion and other partners to prioritize restoration of power to IT and communication infrastructure essential for EOC and emergency response continuity.

Additional Considerations

- Ensure public messaging includes energy safety guidance and outage expectations, particularly for individuals dependent on electricity for life-sustaining equipment.
- Coordinate with fuel providers to ensure uninterrupted supply to emergency generators, city fleet vehicles, and priority facilities.
- Track and report energy restoration progress during each operational period and adjust priorities based on changing conditions and public needs.

EMERGENCY SUPPORT FUNCTION 13: PUBLIC SAFETY AND LAW ENFORCEMENT

Primary Agency: Norfolk Police Department

Support Agencies: Norfolk Sheriff's Office, Norfolk Fire-Rescue, Norfolk Emergency Management, Virginia State Police, U.S. Coast Guard, Norfolk Community Services Board, Norfolk Public Works

KEY RESPONSIBILITIES

Norfolk Police Department

- Maintain public safety and order during all phases of tsunami response and recovery.
- Implement and manage evacuation operations in coordination with Emergency Management and Transportation (ESF 1).
- Establish and enforce traffic control points, access control zones, and secure perimeters around hazardous or evacuated areas.
- Support search and rescue, mass care, and sheltering operations with scene security and law enforcement presence.
- Investigate incidents related to criminal activity, looting, or threats to life safety in the aftermath of a tsunami.
- Provide escort services for emergency convoys and critical personnel.

Norfolk Sheriff's Office

- Assist with security support at shelters, transportation hubs, and damaged facilities.
- Support detainee or judicial system continuity of operations, including alternate facility access if affected by tsunami impacts.
- Coordinate with Norfolk Police and Fire-Rescue for mutual support during high-demand periods.

Norfolk Fire-Rescue

- Collaborate with police to secure emergency scenes and provide EMS or HAZMAT support where needed.
- Conduct joint safety assessments in structurally compromised areas.

Norfolk Emergency Management

- Coordinate multi-agency security efforts through the EOC, ensuring consistent public messaging and resource alignment.
- Request additional law enforcement or National Guard support as needed through the state emergency management system.

Virginia State Police

- Provide regional law enforcement mutual aid, including highway patrol, evacuation support, and traffic diversion in coordination with local authorities.

U.S. Coast Guard

- Enforce maritime safety zones, conduct waterway patrols, and support coastal security missions before, during, and after tsunami events.

Norfolk Community Services Board (CSB)

- Provide behavioral health crisis support to responders and affected individuals in shelter settings or during field operations.
- Assist public safety personnel in responding to individuals in crisis or those with behavioral health needs.

Norfolk Public Works

- Support public safety operations by clearing debris, installing barriers, and maintaining emergency access routes.

Additional Considerations

- Prioritize equitable enforcement and ensure access to support services for displaced, vulnerable, or AFN populations.
- Ensure security operations align with NIMS/ICS principles and are coordinated across local, state, and federal law enforcement partners.
- Provide wellness and resilience support to first responders experiencing trauma or extended deployments.

EMERGENCY SUPPORT FUNCTION 14: CROSS-SECTOR BUSINESS AND INFRASTRUCTURE

Primary Agency: Norfolk Economic Development

Support Agencies: Norfolk Emergency Management, Norfolk Information Technology, Norfolk Department of Public Works, Norfolk Department of Utilities, Norfolk Department of City Planning, Virginia Department of Emergency Management (VDEM), Virginia Department of Transportation (VDOT), Private Sector Partners, Utility Providers, Port of Virginia

KEY RESPONSIBILITIES

Norfolk Economic Development

- Serve as the primary liaison between the city and the private sector to assess and support business continuity and economic recovery following tsunami impacts.
- Facilitate communication with major employers, critical infrastructure operators, and small businesses to determine operational status and unmet needs.
- Coordinate access to recovery resources, grant programs, and technical assistance for impacted businesses.
- Support reentry and restoration of commercial corridors and economic hubs.

Norfolk Emergency Management

- Maintain situational awareness of infrastructure and private sector conditions through coordination with business partners and critical lifeline sectors.
- Integrate business and infrastructure needs into the overall response and recovery planning process.
- Coordinate requests for support and resources through the EOC-Plans@norfolk.gov or HSIN systems.

Norfolk Information Technology

- Coordinate restoration and continuity of public IT infrastructure that supports business services and city operations.
- Engage with telecommunications providers to assess impacts to broadband and connectivity in commercial districts.

Norfolk Department of Public Works

- Support assessment and restoration of transportation infrastructure serving business and industrial areas.
- Assist with debris clearance and utility access to facilitate the reopening of business operations.

Norfolk Department of Utilities

- Coordinate restoration of water, sewer, and stormwater services essential to industrial, retail, and service-sector facilities.

- Provide priority assessments for high-impact or hazardous disruptions within commercial zones.

Norfolk Department of City Planning

- Review zoning, permitting, and land use regulations as needed to expedite repairs and restoration of damaged business facilities.
- Support integration of resilience strategies in long-term redevelopment of commercial infrastructure.

Virginia Department of Emergency Management (VDEM)

- Provide technical assistance and facilitate access to state programs supporting business and infrastructure continuity.
- Liaise with critical infrastructure partners and coordinate sector-specific recovery resources.

Virginia Department of Transportation (VDOT)

- Support recovery of state-maintained roads and transportation networks that serve industrial areas, ports, and freight hubs.

Private Sector Partners / Utility Providers / Port of Virginia

- Assess infrastructure conditions, report disruptions, and coordinate restoration timelines.
- Collaborate with city agencies to align recovery actions with operational needs across sectors including energy, water, communications, and transportation.
- Share status updates on supply chain or distribution impacts that affect regional recovery.

Additional Considerations

- Ensure outreach and support to small, minority-owned, and underserved businesses during both response and recovery.
- Establish communication pathways for rapid updates between the city and cross-sector stakeholders.
- Promote continuity planning, mutual aid agreements, and public-private coordination to enhance resilience to future tsunami threats.

EMERGENCY SUPPORT FUNCTION 15: EXTERNAL AFFAIRS

Primary Agency: Norfolk Department of Communications

Support Agencies: Norfolk Emergency Management, Norfolk Information Technology, Norfolk Police Department, Norfolk Fire-Rescue, Norfolk Department of Public Health, American Red Cross, Virginia Department of Emergency Management (VDEM), National Weather Service (NWS)

KEY RESPONSIBILITIES

Norfolk Department of Communications

- Lead coordination of public messaging, media relations, and information dissemination before, during, and after a tsunami incident.
- Serve as the primary point of contact for all media inquiries and public statements on behalf of the City of Norfolk.
- Develop and distribute clear, accurate, and timely messages to residents, businesses, and visitors via all available platforms (social media, press releases, TV/radio, website updates, and Norfolk Alert).
- Collaborate with the Emergency Operations Center (EOC) to ensure messaging reflects real-time operational objectives and public safety guidance.
- Coordinate Joint Information Center (JIC) activities if activated.

Norfolk Emergency Management

- Provide technical content and incident-specific guidance to support public warnings, alerts, and protective action recommendations.
- Activate Norfolk Alert and IPAWS for emergency notifications, including tsunami warnings, evacuation orders, and all-clear messaging.
- Support rumor control and verification of unofficial or conflicting information.

Norfolk Information Technology

- Ensure the city's digital communication infrastructure (website, mobile platforms, internal messaging tools) remains functional and secure during high-demand operations.

Norfolk Police Department & Fire-Rescue

- Share operational updates with the Public Information Officer (PIO) to ensure public messaging reflects field conditions.
- Assist in community outreach and door-to-door notifications in areas with limited access to technology or high-risk populations.

Norfolk Department of Public Health

- Provide messaging on public health concerns including floodwater safety, shelter conditions, boil water advisories, and disease prevention post-tsunami.

- Coordinate with ESF 8 for health-related risk communication.

American Red Cross

- Share information about available shelters, reunification services, and mass care resources.
- Collaborate on consistent messaging with Norfolk communications teams and statewide JIC.

Virginia Department of Emergency Management (VDEM)

- Coordinate messaging and media briefings across local, state, and federal partners.
- Support the JIC with spokespersons, templates, and strategic communications resources.

National Weather Service (NWS)

- Provide authoritative warning language, graphics, and forecast information for tsunami alerts.
- Collaborate with Norfolk PIOs to enhance message accuracy and credibility.

Additional Considerations

- Ensure communications are accessible to all residents, including individuals with limited English proficiency, sensory impairments, or access and functional needs.
- Maintain consistent and coordinated messaging across agencies to avoid conflicting information.
- Conduct public education campaigns in advance of tsunami season to promote awareness, preparedness, and understanding of natural and official warning signs.

TRAINING AND EXERCISES

The City of Norfolk is committed to maintaining operational readiness for tsunami incidents through regular training, drills, and exercises. As the only *TsunamiReady* community in Virginia, Norfolk upholds the standards set by the National Weather Service (NWS) through continuous improvement and preparedness activities.

Key Objectives:

- Ensure all emergency support function (ESF) partners understand their tsunami-related responsibilities.
- Familiarize staff with tsunami warning systems, notification protocols, evacuation procedures, and shelter operations.
- Validate coordination and communication across departments, agencies, and regional partners.

Training Activities Include:

- Annual tsunami-specific tabletop exercises involving ESF leads, the EOC, and public safety agencies.
- Tsunami awareness and evacuation training for city departments, especially those serving vulnerable populations or operating in at-risk zones.
- Public education sessions and community drills promoting natural warning recognition and evacuation awareness.
- Cross-training between Emergency Management and Norfolk Communications to maintain readiness for IPAWS/Norfolk Alert activations.
- Integration of tsunami scenarios into broader all-hazards drills, including hurricane and coastal flooding exercises.

Exercise Evaluation:

- After each exercise or real-world incident, Norfolk Emergency Management will lead an After-Action Review (AAR) to identify strengths, gaps, and improvement opportunities.
- Lessons learned will be incorporated into plan updates, training programs, and future exercises to promote continuous improvement.

Coordination:

- Norfolk Emergency Management will coordinate with the Virginia Department of Emergency Management (VDEM), National Weather Service (NWS), and neighboring jurisdictions to align tsunami preparedness and response efforts regionally.

SUPPORTING PLANS AND POLICIES

This annex is supported by and aligned with a variety of local, state, and federal plans, policies, and guidance documents. These references ensure a coordinated and compliant approach to tsunami preparedness, response, and recovery.

City of Norfolk Plans and Policies:

- Norfolk Emergency Operations Plan (EOP) – Basic Plan and Emergency Support Function Annexes
- Norfolk Coastal Storm and Hurricane Response Plan
- Norfolk Evacuation and Shelter Plan
- Norfolk Damage Assessment Plan
- Norfolk Reentry Authorization Plan
- Norfolk Family Reception Center / Victim Assistance Center Plan
- Norfolk Continuity of Operations Plans (COOPs)
- Norfolk Floodplain Management and Resilience Strategy
- Norfolk Alert and IPAWS Message Activation Protocols
- Team Norfolk EOC Operations Handbook

Regional Plans:

- Hampton Roads Hazard Mitigation Plan (June 2022)
- Hampton Roads All-Hazards Mitigation and Evacuation Plans
- Urban Area Security Initiative (UASI) Regional Plans and Threat Hazard Identification and Risk Assessment (THIRA)

State and Federal References:

- Virginia Emergency Operations Plan (VEOP)
- Commonwealth of Virginia Evacuation and Shelter Guidance
- National Weather Service TsunamiReady Guidelines
- FEMA Comprehensive Preparedness Guide (CPG) 101: Developing and Maintaining Emergency Operations Plans
- FEMA CPG 201: Threat and Hazard Identification and Risk Assessment
- National Response Framework (NRF) and Emergency Support Function Annexes
- Stafford Act (Public Law 93-288, as amended)
- Robert T. Stafford Disaster Relief and Emergency Assistance Act
- National Incident Management System (NIMS) and Incident Command System (ICS) guidance

These plans and policies collectively support the strategies outlined in this annex and provide the framework for a unified, multi-jurisdictional approach to tsunami incident management.

AUTHORITIES

This annex is developed under the authority of and in alignment with the following federal, state, and local laws, regulations, and policies that govern emergency management and tsunami preparedness:

Federal Authorities:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended)
- Homeland Security Act of 2002

- Post-Katrina Emergency Management Reform Act of 2006
- Disaster Mitigation Act of 2000
- National Response Framework (NRF)
- National Incident Management System (NIMS)
- National Tsunami Hazard Mitigation Program (NTHMP)
- FEMA Comprehensive Preparedness Guide (CPG) 101
- National Weather Service (NWS) TsunamiReady Program

State Authorities:

- Code of Virginia, Title 44: Military and Emergency Laws
- Virginia Emergency Services and Disaster Law (§ 44-146.13 et seq.)
- Virginia Emergency Operations Plan (VEOP)
- Virginia Tsunami Response Guidance (if applicable)
- Commonwealth of Virginia Evacuation and Sheltering Guidelines

Local Authorities:

- City of Norfolk Code of Ordinances – Chapter 2.5: Emergency Management
- Norfolk Emergency Operations Plan (EOP)
- City of Norfolk Continuity of Government and Continuity of Operations Plans
- Norfolk Alert Program Authority and Activation Protocols
- Ordinances and executive authorities granted to the City Manager or Director of Emergency Management during declared emergencies

These authorities provide the legal foundation for the development, implementation, and enforcement of the policies and procedures outlined in this annex.

ACRONYMS

- ADA – Americans with Disabilities Act
- AFN – Access and Functional Needs
- AAR – After-Action Report
- ARC – American Red Cross
- COG – Continuity of Government
- COOP – Continuity of Operations Plan
- CPG – Comprehensive Preparedness Guide
- DEQ – Department of Environmental Quality (Virginia)
- DHS – Department of Homeland Security
- DOT – Department of Transportation
- EAS – Emergency Alert System
- EM – Emergency Management
- EMS – Emergency Medical Services
- EOC – Emergency Operations Center
- ESF – Emergency Support Function
- FEMA – Federal Emergency Management Agency
- GIS – Geographic Information System
- HazMat – Hazardous Materials
- HRT – Hampton Roads Transit
- ICS – Incident Command System
- IPAWS – Integrated Public Alert and Warning System
- IT – Information Technology
- JIC – Joint Information Center
- NIMS – National Incident Management System
- NOAA – National Oceanic and Atmospheric Administration
- NRHA – Norfolk Redevelopment and Housing Authority
- NRF – National Response Framework
- NTHMP – National Tsunami Hazard Mitigation Program
- NWS – National Weather Service
- OEM – Office of Emergency Management
- PA – Public Assistance
- PIO – Public Information Officer
- POD – Point of Distribution
- PRI – Priority Risk Index
- SAR – Search and Rescue
- SitRep – Situation Report

- THIRA – Threat and Hazard Identification and Risk Assessment
- USAR – Urban Search and Rescue
- USDA – U.S. Department of Agriculture
- USCG – United States Coast Guard
- VDH – Virginia Department of Health
- VDEM – Virginia Department of Emergency Management
- VDOT – Virginia Department of Transportation
- WEA – Wireless Emergency Alerts

APPENDICES

- Appendix A – Tsunami Battle Rhythm

APPENDIX A - TSUNAMI BATTLE RHYTHM

STATUS	ESF	ACTIONS
Normal Operations	ESF 5	Maintain situational awareness; update contact rosters
Normal Operations	ESF 15	Conduct public education campaigns on tsunami awareness
Normal Operations	ESF 6	Identify and update shelter readiness and accessibility plans
Normal Operations	ESF 1	Verify evacuation routes and transportation resource availability
Normal Operations	ESF 2	Test communications and alerting systems
Pre-Incident Phase	ESF 5	Activate EOC based on warning or watch; brief all ESFs
Pre-Incident Phase	ESF 6	Pre-stage shelter supplies and alert shelter teams
Pre-Incident Phase	ESF 8	Alert medical and EMS personnel; review surge protocols
Pre-Incident Phase	ESF 13	Deploy law enforcement for traffic control and readiness checks
Pre-Incident Phase	ESF 14	Notify critical infrastructure and business continuity partners
Response Phase	ESF 5	Implement evacuation orders and protective measures

Response Phase	ESF 1	Coordinate evacuation transportation and road closures
Response Phase	ESF 2	Issue public alerts and warnings; maintain communication flow
Response Phase	ESF 6	Open and staff shelters; register and support evacuees
Response Phase	ESF 8	Deploy EMS teams for triage and transport
Response Phase	ESF 9	Conduct search and rescue operations in affected zones
Recovery Phase	ESF 14	Coordinate reentry planning with businesses and utilities
Recovery Phase	ESF 3	Begin debris clearance and infrastructure assessments
Recovery Phase	ESF 6	Support displaced populations and initiate long-term housing plans
Recovery Phase	ESF 8	Monitor health risks; support sanitation and disease prevention
Recovery Phase	ESF 15	Provide recovery messaging and assistance information