
# Emergency Operations & Resiliency Framework

## Hazard-Specific Annex

### Earthquake

### July 2025

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# Team Norfolk
# Hazard-Specific Annex — Earthquake

***July 2025***

## 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 an earthquake. This annex supports preparedness, response, and short-term recovery operations specific to seismic hazards and aligns with the City's Emergency Operations Plan (EOP).

This annex is designed to:

- Clarify roles and responsibilities among City departments, agencies, and partner organizations;
- Outline coordination mechanisms for resource deployment, situational awareness, and public communication;
- Support legal mandates and requirements as set forth in Commonwealth of Virginia Code, local ordinances, and emergency management standards;
- Promote unity of effort across all phases of the incident, from initial impact to stabilization and recovery.

This annex applies to all City departments and partners that have responsibilities during an earthquake incident, regardless of the event's size, scope, or duration. It is intended to supplement the EOP and does not replace standard operating procedures (SOPs) or departmental continuity plans.

## BACKGROUND

Per the 2022 Hampton Roads Hazard Mitigation Plan, an earthquake is the shaking or vibration of the ground caused by a sudden release of energy due to the shifting of rocks along fault lines beneath the Earth's surface. Earthquakes may occur due to natural tectonic processes, such as crustal strain or volcanic activity, but can also result from human activities including mine collapses or underground explosions.

Though Hampton Roads is not located near a major active fault line, the region is not immune to seismic events. Historically, the region has experienced low to moderate seismic activity, including several small-magnitude earthquakes that were felt but caused little to no damage. According to the Plan, the highest recorded magnitude within the Hampton Roads region in recent history was a 4.5 event in 1995. While damaging earthquakes are rare in this area, the potential for structural damage, especially to older unreinforced buildings and critical infrastructure, remains a concern.

Earthquakes can impact large geographic areas, disrupting social and economic systems, damaging infrastructure, and endangering lives. The most common causes of injury or death in an earthquake are

structural collapse and falling debris. The severity of damage depends on a variety of factors, including the earthquake's magnitude, depth, distance from the epicenter, ground composition, and construction practices.

Secondary hazards associated with earthquakes may include:

- Structural fires due to ruptured gas lines or electrical failures,
- Hazardous materials spills,
- Landslides or soil liquefaction,
- Flash flooding due to infrastructure damage,
- Dam or levee failure.

Earthquakes are measured in terms of both magnitude and intensity.

- Magnitude describes the amount of energy released and is most commonly reported using the Moment Magnitude Scale (Mw), which has largely replaced the original Richter scale.
- Intensity, on the other hand, describes the observed effects of an earthquake at specific locations and is measured using the Modified Mercalli Intensity (MMI) Scale, ranging from I (not felt) to XII (total destruction).

While most earthquakes in Hampton Roads are of low magnitude and not felt by residents, even minor seismic activity can disrupt operations and expose vulnerabilities in infrastructure. Additionally, larger regional or intraplate events (such as those along the Central Virginia Seismic Zone) could generate shaking that reaches Hampton Roads, underscoring the need for preparedness.

The Department of Emergency Management uses this annex to ensure planning assumptions, risk understanding, and response capabilities reflect the most current hazard analysis as outlined in the 2022 Hampton Roads Hazard Mitigation Plan.

## EARTHQUAKE INTENSITY AND THE MODIFIED MERCALLI SCALE

While the Richter Scale (and more recently, the Moment Magnitude Scale) measures the amount of energy released at the source of an earthquake, the intensity of an earthquake refers to its effects on people, structures, and the Earth's surface at a specific location.

In the United States, earthquake intensity is measured using the Modified Mercalli Intensity (MMI) Scale, developed in 1931 by seismologists Harry Wood and Frank Neumann. This scale consists of 12 increasing levels of intensity, designated by Roman numerals from I (not felt) to XII (total destruction).

Unlike magnitude, which is based on seismic data, intensity is determined through observed effects, such as:

- People being awakened or alarmed,

- Furniture or objects moving,
- Cracks appearing in walls or chimneys,
- Collapse of poorly constructed structures,
- Widespread infrastructure failure.

The lower levels of the MMI scale are subjective, based on how people feel the shaking. Higher levels involve direct assessments by structural engineers and emergency officials, especially when significant damage occurs.

This intensity-based approach allows emergency management officials to better understand and map the localized impact of an earthquake, which may vary widely across a region, even during a single event.

## EARTHQUAKE MAGNITUDE AND EFFECTS

The Richter Scale is a logarithmic scale used to measure the magnitude, or energy released, during an earthquake. The following table summarizes typical impacts at various magnitude ranges. While Norfolk is not located near a major fault line, earthquakes of magnitude 3.5 and higher have occurred in the region and can be felt locally.

*Figure: Richter Magnitudes and Earthquake Effects*

| RICHTER MAGNITUDES | EARTHQUAKE EFFECTS |
|---|---|
| Less than 3.5 | Generally not felt, but recorded. |
| 3.5-5.4 | Often felt, but rarely causes damage. |
| Under 6.0 | At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions. |
| 6.1-6.9 | Can be destructive in areas up to about 100 kilometers across where people live. |
| 7.0-7.9 | Major earthquake. Can cause serious damage over larger areas. |
| 8 or greater | Great earthquake. Can cause serious damage in areas several hundred kilometers across. |

*Source: United States Geological Survey*

## EARTHQUAKE INTENSITY AND THE MODIFIED MERCALLI SCALE

While magnitude measures the energy released by an earthquake, intensity measures the observed effects at specific locations. The Modified Mercalli Intensity (MMI) Scale is commonly used in the United States and categorizes shaking impacts from I (instrumental) to XII (catastrophic). The scale is based on observations by people and structural damage assessments.

*Figure: Modified Mercalli Intensity Scale*

| SCALE | INTENSITY | DESCRIPTION OF EFFECTS | CORRESPONDING RICHTER SCALE MAGNITUDE |
|---|---|---|---|
| I | Instrumental | Detected only on seismographs | |
| II | Feeble | Some people feel it | <4.2 |
| III | Slight | Felt by people resting; like a truck rumbling by | |
| IV | Moderate | Felt by people walking | |
| V | Slightly Strong | Sleepers awake; church bells ring | <4.8 |
| VI | Strong | Trees sway; suspended objects swing, objects fall off shelves | <5.4 |
| VII | Very Strong | Mild Alarm; walls crack; plaster falls | <6.1 |
| VIII | Destructive | Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged | |
| IX | Ruinous | Some houses collapse; ground cracks; pipes break open | <6.9 |
| X | Disastrous | Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread | <7.3 |
| XI | Very Disastrous | Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards | <8.1 |
| XII | Catastrophic | Total destruction; trees fall; ground rises and falls in waves | >8.1 |

*Source: United States Geological Survey*

## SITUATION

Although the City of Norfolk is not located near a major fault line, it is situated within a region that has experienced occasional low- to moderate-magnitude earthquakes. The Hampton Roads region is part of the larger Central and Eastern United States Seismic Zone, which includes areas capable of generating seismic activity that can impact Norfolk.

Historically, earthquakes affecting Norfolk have been infrequent and non-destructive; however, geological studies confirm that intraplate earthquakes — such as those originating in the Central Virginia Seismic Zone or further afield — can be felt across wide areas and may impact critical systems even if the epicenter lies outside city limits. Due to the region's coastal geography and soil composition, seismic waves may amplify as they pass through loose or saturated soils, potentially increasing ground shaking intensity in some areas.

Norfolk's built environment includes a significant number of older structures, including critical infrastructure, government buildings, and private residences that may not have been designed with seismic resilience in mind. Additionally, essential lifelines such as power, water, gas, transportation, and communication systems may be disrupted by even a moderate seismic event.

In an earthquake incident:

- Communications and emergency services may be overwhelmed or impaired.
- Roads, bridges, tunnels, and public transportation systems may be damaged or impassable.
- Utilities, including electricity, natural gas, and water distribution, may be interrupted.
- Health and medical services may be strained by mass casualty incidents or evacuations.
- Public concern and misinformation may require coordinated risk communication and community outreach.

While the probability of a catastrophic earthquake remains low, the consequences could be significant. The City of Norfolk must maintain a state of readiness through coordinated planning, public education, infrastructure assessment, and interagency cooperation. The Department of Emergency Management, in coordination with regional and state partners, monitors seismic activity and maintains procedures to assess damage, restore essential functions, and support the impacted population should an earthquake occur.

## LOCATION AND SPATIAL EXTENT

Norfolk is located in a region that could experience ground shaking from intraplate seismic activity, most notably from the Central Virginia Seismic Zone (CVSZ), which lies southwest of Charlottesville. While earthquakes in this zone are typically of low to moderate magnitude, they are capable of producing noticeable shaking across a wide area, including Hampton Roads.

In addition to the CVSZ, Norfolk could also feel distant seismic waves from larger, historically significant fault systems such as the New Madrid Seismic Zone in Missouri and the Charleston Fault Zone in South Carolina , both of which have produced major earthquakes (magnitude 7.0 or greater) in the last 200 years.

A key concern in the eastern U.S. is that earthquakes are typically felt over much larger areas than those of comparable magnitude in the western U.S. For example:

A magnitude 4.0 earthquake in the eastern U.S. can be felt up to 60 miles from the epicenter.

A magnitude 5.5 earthquake may be felt up to 300 miles away and can cause localized damage within 25 miles of the epicenter.

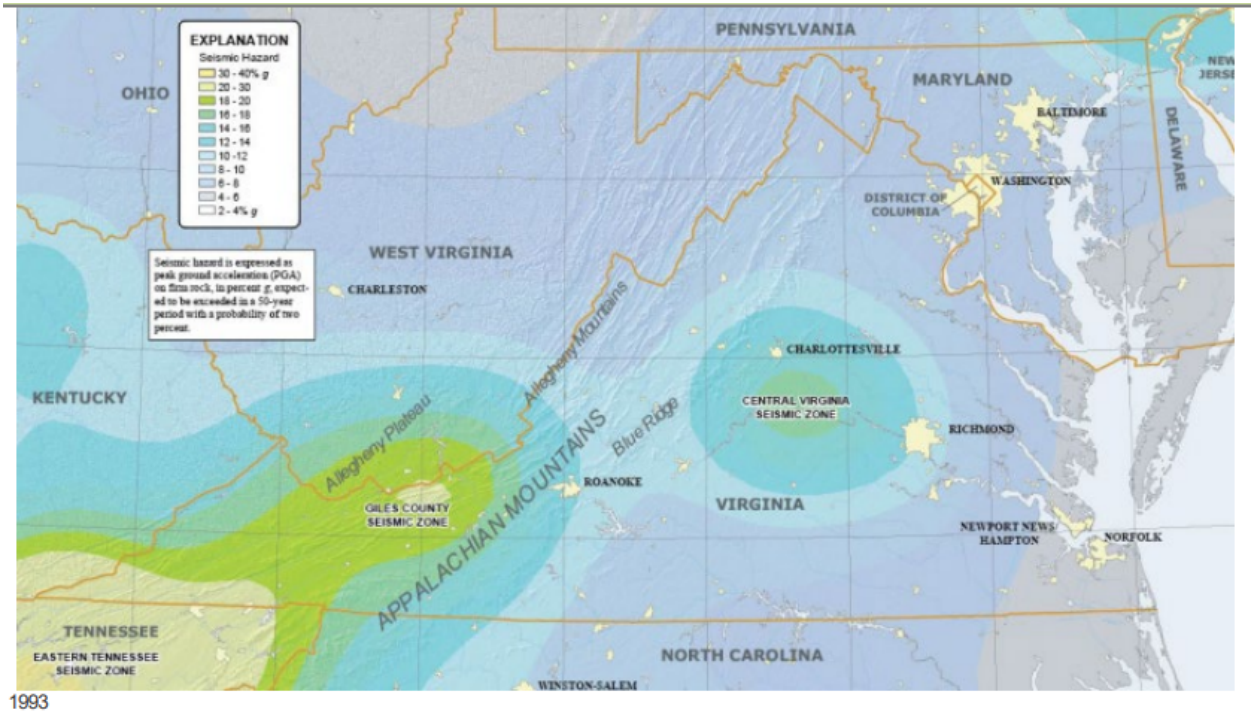
Most earthquakes occur on faults buried within bedrock, several miles below the surface. The bedrock under central Virginia was formed during ancient tectonic events, including the creation of the Appalachian Mountains over 300 million years ago and the later breakup of the supercontinent Pangaea. While faults in the eastern U.S. are often less well mapped or understood than those near active plate boundaries, their existence poses a credible risk.

The Central Virginia Seismic Zone contains both known and likely unknown faults. Because these faults are often deeply buried or obscured by layers of soil and sediment, earthquakes in this region cannot

always be directly attributed to named faults. As such, the best predictor of future hazard remains the record of past earthquakes.

The map below illustrates regional seismic hazard zones based on Peak Ground Acceleration (PGA) values. Norfolk falls within a zone of low to moderate seismic hazard but remains vulnerable to shaking from regional seismic events.

*Figure: Seismic Hazard Zones Affecting Virginia*



Source: USGS

## SIGNIFICANT HISTORICAL EVENTS

Earthquake activity in Virginia has historically been low in magnitude but persistent over time. The first documented earthquake in Virginia occurred in 1774 near Petersburg. Since then, seismic events have periodically affected the Commonwealth, though most have been minor and caused limited damage. According to regional hazard assessments, only three confirmed earthquake epicenters have occurred within approximately 65 miles of Hampton Roads, one on the Delmarva Peninsula and two in the immediate Hampton Roads area. These events resulted in only minor structural damage, reinforcing the region's classification as a low-seismic risk area. However, the relative lack of historical impacts does not eliminate the possibility of a damaging event in the future.

Because much of the region's infrastructure was not built to modern seismic standards, even a moderate earthquake could lead to significant disruptions, particularly to underground utilities, critical facilities, and transportation networks such as tunnels and bridges.

**August 23, 2011 – Louisa County Earthquake (Magnitude 5.8)**

At 1:51 p.m. on Tuesday, August 23, 2011, a magnitude 5.8 earthquake struck near Mineral, Virginia, in Louisa County, approximately 135 miles northwest of Norfolk. This was the most powerful earthquake in the eastern U.S. since 1944 and was felt across more than a dozen states and parts of Canada. In Virginia, damage was concentrated in Louisa County but extended throughout central and eastern regions, including Norfolk and the Hampton Roads area.

Key impacts included:

- Structural damage to public buildings, schools, and private homes.
- Automatic shutdown of two nuclear reactors at the North Anna Power Station.
- Damage to national landmarks such as the Washington Monument and the Washington National Cathedral.
- Minor structural damage reported at Fort Monroe in Hampton.
- Multiple aftershocks, including magnitude 4.2 and 4.5 events within two days.

While Norfolk experienced no major damage, the event demonstrated the potential for long-range seismic wave propagation in the eastern U.S. and revealed vulnerabilities in both physical infrastructure and emergency coordination systems.

**August 3, 1995 – York River Peninsula Earthquake (Magnitude 2.6)**

A rare local earthquake occurred near York River State Park with a magnitude of 2.6, recorded by the Virginia Tech Seismological Observatory. Though minor, the quake was felt by residents in York County and Camp Peary, and serves as a reminder of the potential for localized seismic events even in relatively stable zones.

**August 17, 1984 – Central Virginia Earthquake (Magnitude 4.0)**

A magnitude 4.0 earthquake struck southeast of Charlottesville, felt from Washington, D.C., to Norfolk and from Staunton to the North Carolina border. Although no significant damage was reported in Hampton Roads, the widespread perception of the quake across eastern Virginia emphasized the region's susceptibility to shaking from distant epicenters.

**September 22, 2001 – Shadwell Earthquake (Magnitude 3.2)**

A magnitude 3.2 earthquake near Shadwell, east of Charlottesville, was shallow and produced an audible boom that was initially misattributed to aircraft activity. This event highlights how shallow eastern earthquakes can produce acoustic effects, adding complexity to public communication and perception during seismic events.

## PROBABILITY OF FUTURE OCCURRENCE

Earthquake activity in the Hampton Roads region is considered to be of low probability, but not negligible. According to the U.S. Geological Survey (USGS) Earthquake Mapping Tool (https://earthquake.usgs.gov/earthquakes), there have been no documented earthquakes with epicenters located directly within the Hampton Roads area since 1774.

That said, Hampton Roads' proximity to regional fault systems such as the Charleston Fault in South Carolina and the Central Virginia Seismic Zone makes it vulnerable to shaking from seismic events originating outside the area. The geology of the eastern U.S. allows seismic energy to travel farther than in the western U.S., meaning even distant earthquakes could be felt and potentially cause damage in Norfolk and surrounding communities.

Based on regional historical data:

- The annual probability of an earthquake with an epicenter within 65 miles of Hampton Roads is estimated at less than 1%.
- While the likelihood is low, impacts could be moderate to severe due to the age and construction of local infrastructure.

**Hazus-Estimated Impacts**

The Hazus model, developed by FEMA, provides probabilistic earthquake damage estimates based on a 1,000-year return period scenario. This scenario represents a low-probability but high-impact event and is used for long-term planning. According to the 2022 Hampton Roads Hazard Mitigation Plan:

- Norfolk is projected to experience over $43 million in total damage, including $9.1 million in building damage and $21.5 million in non-structural damage and content losses.
- Virginia Beach has the highest projected total loss at nearly $74 million.
- Regional average annual losses from earthquakes are estimated at $1.1 million, with Norfolk and Virginia Beach having the highest projected recurring losses.

*Figure: Estimated Building Damage by Jurisdiction – 1,000-Year Return Period*

| SUBREGION | COMMUNITY | BUILDING DAMAGE | NON-STRUCTURAL, CONTENTS & INVENTORY DAMAGE | TOTAL* |
|---|---|---|---|---|
| Peninsula | Hampton | $5,837,000 | $14,560,000 | $27,791,000 |
| | Newport News | $7,525,000 | $19,330,000 | $37,344,000 |
| | Poquoson | $643,000 | $1,496,000 | $2,695,000 |
| | Williamsburg | $732,000 | $2,019,000 | $4,036,000 |
| | James City County | $4,401,000 | $11,077,000 | $19,876,000 |
| | York County | $3,446,000 | $8,297,000 | $15,185,000 |
| Southside | Norfolk | $9,116,000 | $21,526,000 | $43,354,000 |
| | Portsmouth | $2,851,000 | $6,197,000 | $13,391,000 |
| | Suffolk | $3,451,000 | $7,805,000 | $14,954,000 |
| | Virginia Beach | $16,885,000 | $36,962,000 | $73,951,000 |
| | Chesapeake | $9,320,000 | $20,815,000 | $40,140,000 |
| Western Tidewater | Isle of Wight County | $1,689,000 | $3,932,000 | $7,364,000 |
| | Franklin | $325,000 | $827,000 | $1,701,000 |
| | Southampton County | $825,000 | $1,943,000 | $3,676,000 |
| | Surry County | $342,000 | $843,000 | $1,577,000 |
| **Totals** | | **$67,387,000** | **$15,7928,000** | **$307,034,000** |

' Also includes income losses from relocation, lost wages, and lost rental income.
*Source: Hazus*

*Source: Hazus, as reported in the 2022 Hampton Roads Hazard Mitigation Plan*

Additionally, Hazus estimates the number of buildings in Hampton Roads affected by an earthquake with a 1,000-year return period to be:

- 11,994 with slight damage
- 3,487 with moderate damage
- 428 with extensive damage
- 39 with complete structural failure

*Figure: Estimated Buildings by Damage State – 1,000-Year Return Period*

| SLIGHT | MODERATE | EXTENSIVE | COMPLETE |
|---|---|---|---|
| 11,994 | 3,487 | 428 | 39 |

*Source: Hazus*

*Source: Hazus, as reported in the 2022 Hampton Roads Hazard Mitigation Plan*

These estimates underscore the importance of earthquake preparedness, even in regions not traditionally associated with seismic risk. The Department of Emergency Management incorporates this data into its hazard mitigation and continuity planning to ensure a proactive, regionally informed approach.

## RISK AND ASSUMPTIONS

While the probability of a high-magnitude earthquake impacting Norfolk is low, the potential consequences could be significant. Earthquakes may cause structural failures, infrastructure disruption, cascading hazards, and long-term recovery challenges. The following assumptions guide planning and response efforts for the City of Norfolk:

- Public Alert and Notification: Residents may receive limited or no warning prior to ground shaking. When advance notice is available, public alerts may be disseminated via NOAA Weather Radio, the Integrated NWS Alert System (iNWS), Wireless Emergency Alerts (WEA), and local media. The Department of Emergency Management may also use Norfolk Alert and social media platforms to issue supplemental public information.
- Emergency Management Structure: The response will be managed using the National Incident Management System (NIMS) and the Incident Command System (ICS). Team Norfolk will adapt ICS structure to the scale and complexity of the incident.
- Resource Mobilization: City departments and partner agencies will deploy personnel, equipment, and resources in accordance with emergency protocols. Mutual aid agreements and regional coordination may be activated to support response operations.
- Spontaneous Volunteers: A significant earthquake is likely to attract unaffiliated volunteers seeking to assist. While well-intentioned, these individuals may complicate response operations if not managed effectively. Volunteer management protocols will be activated.
- Private Sector Involvement: Insurance disaster response teams will enter the area to assist policyholders, assess claims, and coordinate recovery services. Coordination between local officials and private sector representatives will be essential.
- Media Attention: A major earthquake in Hampton Roads will generate intense local, regional, and national media coverage. Accurate, timely, and coordinated public messaging will be critical to manage community expectations and counter misinformation.

These assumptions support the operational planning necessary to prepare for and respond to a seismic event in Norfolk. They reflect both historical precedent and current understanding of regional hazards as outlined in the 2022 Hampton Roads Hazard Mitigation Plan.

## CONCEPT OF OPERATIONS

This section outlines how the City of Norfolk will manage and coordinate operations during and after an earthquake. It provides a scalable and flexible framework for activating response resources,

organizing command and control, and transitioning into recovery. Using the National Incident Management System (NIMS) and the Incident Command System (ICS) as guiding principles, Norfolk will ensure that all agencies operate with unity of effort to protect life, stabilize the incident, and preserve property. Coordination among Emergency Support Functions (ESFs), field responders, and partner organizations is critical to effective implementation.

## GENERAL

Immediately following an earthquake, the Norfolk 911 Center is expected to receive a surge of emergency calls reporting structural damage, injuries, and public safety hazards. Norfolk Police Department and Norfolk Fire-Rescue will be the first to respond to impacted areas to address immediate life safety needs, including rescue operations, fire suppression, hazardous materials response, and security.

If the earthquake results in widespread or significant damage, the Emergency Operations Center (EOC) will be activated to coordinate multi-agency response efforts. The Department of Emergency Management will assume the lead role in coordinating interdepartmental communication, resource requests, and situational awareness in accordance with the City of Norfolk Emergency Operations Plan (EOP).

Key operational priorities in the immediate aftermath of an earthquake include:

- Life safety and medical care for injured individuals,
- Fire suppression and mitigation of secondary hazards,
- Damage assessment and structural integrity evaluation,
- Utility control and critical infrastructure protection,
- Public information and rumor control,
- Coordination of sheltering and mass care if needed.

If fatalities occur, the Office of the Chief Medical Examiner will assume jurisdiction over the deceased in accordance with the Code of Virginia §§ 32.1-277 to 32.1-288. Norfolk Fire-Rescue and Norfolk Police will assist in scene control and body recovery operations until the Medical Examiner's representatives arrive on scene.

The EOC will remain active throughout the response and into the recovery phase to support field operations, coordinate mutual aid, manage logistics, and serve as the centralized hub for emergency support functions.

## DIRECTION AND CONTROL

Immediately following an earthquake, initial direction and control will be managed by the on-scene Incident Command, which may include multiple incident sites depending on the scope of the event.

Each scene will follow Incident Command System (ICS) principles, led by the appropriate agency (e.g., Norfolk Fire-Rescue for rescue operations, Norfolk Police for security and traffic control).

As the situation evolves, overall coordination will transition to the Emergency Operations Center (EOC), operated by the Department of Emergency Management. The EOC will focus on strategic, citywide coordination and resource support, maintaining situational awareness across all affected areas.

Key responsibilities of the EOC include:

- Coordinating interagency communication and resource deployment,
- Managing public messaging and emergency alerts,
- Activating mass care and sheltering operations,
- Supporting damage assessment and reporting,
- Coordinating with state and federal agencies for mutual aid and disaster declarations,
- Planning for sustained response and transition to recovery operations.

The EOC serves as the central coordination point for all Emergency Support Functions (ESFs) and provides the operational structure necessary to integrate field-level response with citywide priorities.

Unified Command and Multi-Agency Coordination may be implemented if the incident involves multiple jurisdictions or sectors (e.g., critical infrastructure operators, regional transportation partners, or state agencies).

## ALERT AND INITIAL BRIEFING

Once an earthquake has occurred and initial impacts are confirmed, the Department of Emergency Management will issue a Wireless Emergency Alert (WEA) using FEMA's Integrated Public Alert and Warning System (IPAWS). The initial message will confirm that an earthquake has occurred and may include:

- General impact area (if known),
- Instructions to avoid calling 911 unless experiencing a true emergency,
- A non-emergency phone number or reporting method for the public to share observed damage.

Additional alerts and updates may be distributed through:

- Norfolk Alert (Everbridge),
- NOAA Weather Radio, if available via the National Weather Service,
- Social media platforms (Facebook, Twitter/X, etc.),
- Coordination with local media outlets.

Messaging will be coordinated through the Joint Information System (JIS) to ensure consistent, accurate information and to mitigate misinformation. Messaging priorities include:

- Public safety guidance (e.g., avoid damaged buildings, watch for aftershocks),
- Shelter locations (if activated),
- Transportation disruptions and closures,
- Resource distribution points (if necessary),
- Rumor control and updates as recovery progresses.

All alert and notification activities will be documented in accordance with the EOC Communications Unit and the Planning Section for potential after-action reporting and cost recovery purposes.

## EARTHQUAKE RESPONSE (PROTECTIVE ACTIONS)

Earthquakes strike without warning and can result in severe damage, injury, or loss of life. Understanding how to respond immediately, during and after the shaking, can significantly reduce risk and increase personal and community resilience. This section outlines key protective actions based on your location at the time of the earthquake and provides guidance for post-event safety.

If You Are Indoors During an Earthquake:

- Drop, Cover, and Hold On:
    - Drop to your hands and knees to prevent being knocked over.
    - Cover your head and neck. If possible, shelter under a sturdy table or desk. If no shelter is nearby, crouch in an interior corner away from windows and protect your head and neck with your arms.
    - Hold On to your shelter until the shaking stops. Be prepared for it to move.
- Stay away from windows, glass, mirrors, and heavy furniture or appliances that could fall.
- Do not run outside during the shaking, falling debris from building exteriors presents a serious hazard.

If You Are Outside During an Earthquake:

- Move to an open area, away from buildings, trees, streetlights, power lines, or utility poles.
- Drop to the ground and stay in place until the shaking stops.
- Be alert for ground cracks or shifting terrain during and after the shaking.
- If You Are Driving During an Earthquake:
- Pull over to a safe, clear location away from bridges, overpasses, power lines, large signs, and trees.
- Remain in your vehicle with your seatbelt fastened until the shaking stops.
- Avoid stopping in or near tunnels or structures that could collapse.

- After the shaking stops, drive cautiously, watch for damaged roads, traffic signal outages, and aftershocks.

After the Shaking Stops:

- Check yourself and others for injuries. Administer first aid if trained and call for help if needed.
- If inside a building, exit cautiously, watching for falling debris or structural damage. Do not re-enter until it has been declared safe.
- Inspect for immediate hazards, such as:
    - Gas leaks (smell of gas or hissing sounds),
    - Electrical hazards (sparks, downed lines),
    - Broken water lines, flooding, or debris.
- Use a battery-powered or car radio and official mobile alerts to stay informed.
- Limit phone use to emergency calls to preserve bandwidth for emergency communications.
- If located in a coastal area, be alert for tsunami warnings and follow evacuation orders if issued. Move inland and to higher ground immediately if advised.

By following these steps, individuals can significantly increase their safety and help reduce the strain on emergency responders, enabling a more effective and coordinated community-wide response.

## SITUATIONAL AWARENESS AND COORDINATION

Maintaining real-time situational awareness is essential to managing earthquake response and recovery operations. The Emergency Operations Center (EOC) will conduct regularly scheduled briefings with all Emergency Support Functions (ESFs), operational groups, and executive leadership to ensure a common operating picture.

To support information sharing and operational coordination, the following platforms and tools will be used:

- Homeland Security Information Network (HSIN) and Adobe Connect for virtual briefings, document sharing, and real-time coordination.
- Tools listed in the Basic Plan, including:
    - Dominion Energy Outage Map for real-time power restoration status,
    - STORM (Situational Tool for Operations and Response Management),
    - Everbridge for internal alerts and staff notifications,
    - WebEOC (if activated),
    - GIS mapping tools for damage overlays, resource tracking, and impact analysis.

All systems are dependent on internet connectivity, which may be limited in some locations following a seismic event. Contingency communication plans and redundant tools (such as radios, satellite phones, or hard-copy status boards) will be used if necessary.

The Planning Section will synthesize incoming data to produce situation reports (SitReps), incident action plans (IAPs), and briefings, all of which will guide operational decision-making and executive coordination.

## OPERATIONAL PERIODS AND SITUATIONAL REPORTS

Effective management of earthquake response operations requires structured coordination, timely resource deployment, and continuous information flow between on-scene responders and the Emergency Operations Center (EOC). Establishing operational periods ensures that tactical objectives are clearly defined and resourced for each phase of the incident. Situational reporting supports decision-making by providing leadership and response partners with accurate and updated information on incident status, resource needs, and community impacts.

**Operational Periods**

Operational periods will be established by the on-scene Incident Command, in coordination with the Emergency Operations Center (EOC) when activated. The duration and objectives of each operational period will be based on incident complexity, available resources, and the scope of impacts. Operational periods typically range from 8 to 12 hours in the initial response phase and may be adjusted as needed during sustained operations.

The Planning Section will develop Incident Action Plans (IAPs) for each operational period, in alignment with the goals and priorities set by Unified Command and the EOC Policy Group.

Resource Requests and Coordination

Resource requests from field Incident Commanders will be relayed to the EOC and coordinated through Emergency Support Function 7 (ESF-7): Logistics, as outlined in the Team Norfolk Emergency Operations and Resiliency Framework – Volume II: ESF-7 Annex. The Logistics Section is responsible for:

- Sourcing and allocating available city resources,
- Coordinating mutual aid through pre-established agreements,
- Requesting support through private-sector partners,
- Managing staging areas and distribution points.

If the incident exceeds Norfolk's capabilities:

- The City Manager (or designee) may declare a Local Emergency, enabling the formal request of state assistance.

- The Virginia Emergency Operations Center (VEOC) will be contacted for additional support through the Virginia Emergency Support Team (VEST).
- Federal assistance may be requested once local and state resources are fully committed, in accordance with the Commonwealth of Virginia Emergency Services and Disaster Law.

**Situational Reports**

The EOC Planning Section will compile and disseminate Situation Reports (SitReps) at regular intervals. These reports will include:

- Updated impact assessments,
- Incident status and objectives,
- Resource status,
- Unmet needs,
- Public information activities.

SitReps are shared with executive leadership, partner agencies, regional stakeholders, and the Virginia Department of Emergency Management (VDEM) to maintain a shared operating picture throughout the event.

## ORGANIZATION

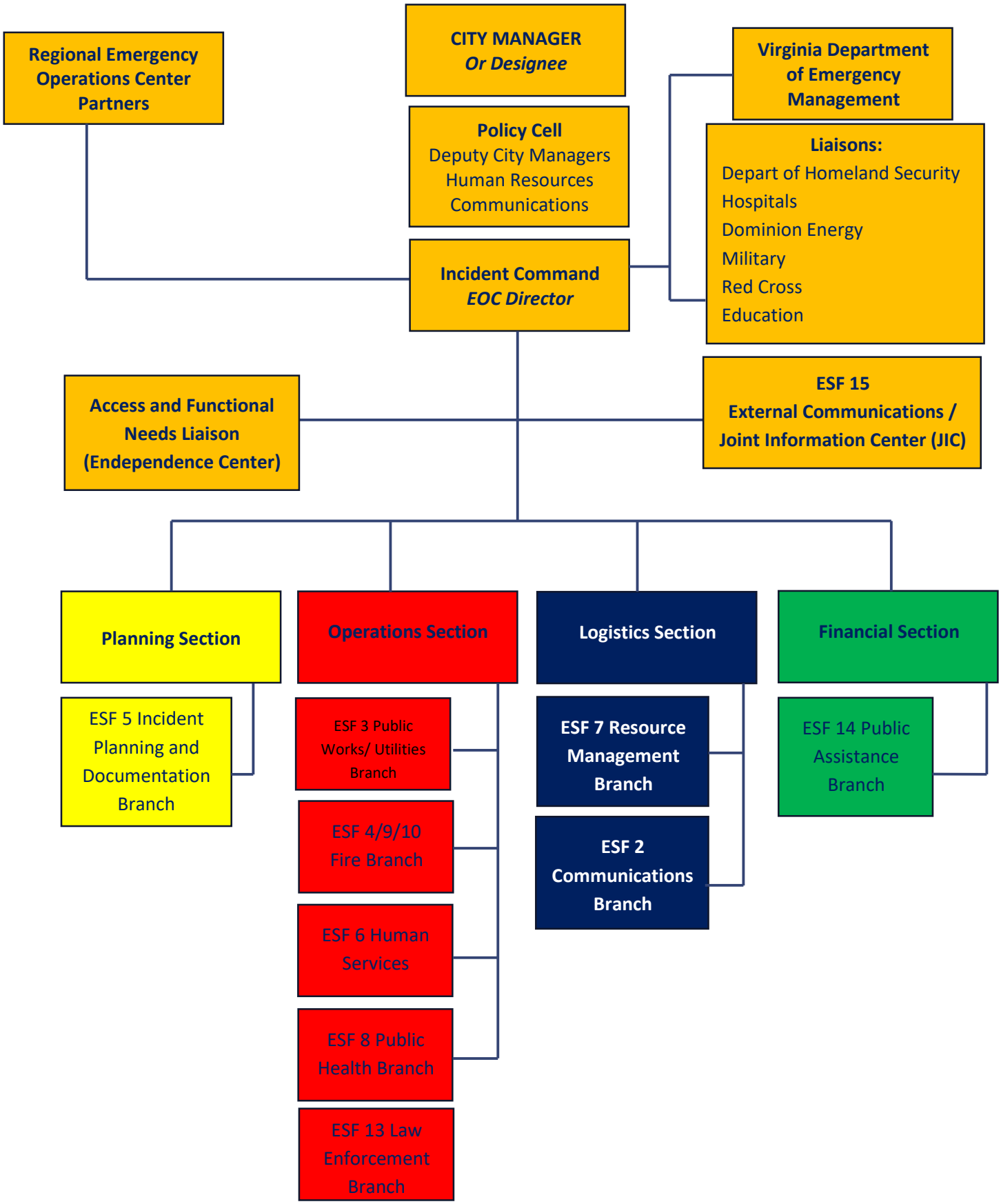
With the formal adoption of the National Incident Management System (NIMS) and Incident Command System (ICS), the City of Norfolk has implemented an ICS/ESF hybrid structure to support all-hazards incident response, including earthquake events. This approach allows for flexibility in field operations while ensuring coordination across all supporting agencies through defined Emergency Support Functions (ESFs).

During an earthquake response, the Emergency Operations Center (EOC) will operate under this hybrid model to integrate on-scene command with citywide coordination, resource support, and public information efforts.

The organizational structure used during EOC activation is scalable based on the scope and complexity of the incident. It ensures that both tactical operations in the field and strategic coordination at the EOC are effectively aligned.

The following organizational chart outlines the structure Norfolk Emergency Management will use to coordinate response and recovery efforts during an earthquake incident:

Figure: Organizational Chart


Regional Emergency Operations Center Partners
CITY MANAGER
Or Designee
Virginia Department of Emergency Management
Policy Cell
Deputy City Managers
Human Resources
Communications
Liaisons:
Depart of Homeland Security
Hospitals
Dominion Energy
Military
Red Cross
Education
Incident Command
EOC Director
Access and Functional Needs Liaison (Endependence Center)
ESF 15
External Communications / Joint Information Center (JIC)
Planning Section
Operations Section
Logistics Section
Financial Section
ESF 5 Incident Planning and Documentation Branch
ESF 3 Public Works/ Utilities Branch
ESF 4/9/10 Fire Branch
ESF 6 Human Services
ESF 8 Public Health Branch
ESF 13 Law Enforcement Branch
ESF 7 Resource Management Branch
ESF 2 Communications Branch
ESF 14 Public Assistance Branch

## 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 Public Works, Hampton Roads Transit (HRT), Norfolk Airport Authority

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

### KEY RESPONSIBILITIES

**Norfolk Public Works**

- Conduct initial damage assessments of city-owned transportation infrastructure, including roads, bridges, underpasses, and tunnels.
- Prioritize debris clearance operations on critical routes to enable emergency response and utility access.
- Coordinate with the EOC to identify and maintain accessible evacuation and supply distribution routes.
- Support restoration of transportation systems and coordinate barricades, detours, and traffic control measures as needed.

**Hampton Roads Transit (HRT)**

- Assess and report operational status of bus, light rail, and paratransit services.
- Provide transportation assets to support evacuation, shelter transport, and relocation of individuals with access and functional needs.
- Coordinate with ESF 6 (Mass Care) and ESF 8 (Health and Medical) for medical transport needs.
- Support communications and coordination with regional transit partners and VDEM.

**Norfolk Airport Authority**

- Assess structural integrity and functionality of runways, terminals, and support facilities at Norfolk International Airport.
- Coordinate flight service continuity and air traffic considerations with the FAA and air carriers.
- Support incoming/outgoing logistics for emergency supplies and personnel.

**Norfolk Police Department**

- Support traffic control operations and secure transportation corridors for emergency vehicles.
- Assist with route clearance and checkpoint management for damaged or restricted access areas.

**Norfolk Emergency Management**

- Coordinate resource support and situational awareness between transportation partners and the EOC.
- Integrate transportation status into the Incident Action Plan and public messaging.

**Norfolk Fire-Rescue**

- Conduct initial reconnaissance of roadways and tunnels for collapse hazards, gas leaks, or HAZMAT incidents.
- Assist in identifying safe ingress/egress for rescue operations.

**Norfolk Fleet Management**

- Ensure city fleet vehicles, including heavy equipment and buses, are inspected, fueled, and staffed to support operations.
- Deploy mobile maintenance support for transportation-related equipment.

**Norfolk Parks and Recreation**

- Assist with coordination and movement of evacuees and staff to shelters.
- Provide transportation for special needs populations if needed, in support of ESF 6.

**Additional Considerations**

- Bridge and Tunnel Vulnerability: Norfolk's dependence on critical transportation corridors such as the Midtown Tunnel, Downtown Tunnel, and Berkley Bridge necessitates early structural assessments to prevent cascading failures or secondary incidents due to aftershocks.
- Redundant Route Planning: Alternate transportation routes should be pre-identified in the event of bridge collapse, road damage, or tunnel closures. These should be included in situational reports and shared with partner agencies and the public.
- Access and Functional Needs (AFN): Ensure transportation resources are accessible for individuals with disabilities, limited mobility, or medical dependencies. This includes ADA-compliant vehicles and coordination with ESF 6 (Mass Care) and ESF 8 (Health and Medical).
- Traffic Signal Disruptions: Power outages may render traffic signals inoperable. Police and Public Works should coordinate the deployment of traffic control officers or temporary signage to manage intersections in high-priority areas.

## EMERGENCY SUPPORT FUNCTION 2: COMMUNICATIONS

**Primary Agencies:** Norfolk Department of Information Technology

**Support Agencies**: Norfolk Emergency Management, Norfolk Police Department, Norfolk Fire-Rescue, Norfolk Department of Communications, Norfolk Public Works, Amateur Radio Emergency Services (ARES), Virginia Department of Emergency Management (VDEM)

### KEY RESPONSIBILITIES

**Norfolk Department of Information Technology**

- Maintain and restore critical communications infrastructure, including city networks, voice-over-IP systems, and EOC connectivity.
- Coordinate with service providers to restore Internet, phone, and data systems impacted by earthquake-related damage.
- Deploy backup communications solutions (e.g., satellite phones, mobile hotspots) in areas with system failure.
- Monitor cybersecurity risks related to degraded systems or opportunistic cyber threats during disaster response.

**Norfolk Emergency Management**

- Maintain interoperability among agencies via radio systems, EOC communication platforms, and emergency messaging tools.
- Activate and manage the Emergency Operations Center's communication systems, including WebEOC, HSIN, Adobe Connect, and Everbridge.
- Coordinate use of the City's IPAWS-authorized alerting systems for public notifications and protective actions.
- Ensure reliable communications between field personnel, command posts, and the EOC.

**Norfolk Police Department & Norfolk Fire-Rescue**

- Maintain radio communications with field units and coordinate with the EOC during deployment.
- Ensure communication equipment caches are operational and ready for surge staffing.
- Support redundant communication methods in the event of radio tower or repeater failure.

**Norfolk Department of Communications**

- Work with Information Technology and Emergency Management to ensure public-facing systems (web, alerts, social media platforms) remain operational.

- Support message delivery and continuity of operations for city information systems.

**Norfolk Public Works**

- Coordinate with IT and Emergency Management to prioritize infrastructure restoration efforts that impact communications systems, including signal towers, underground conduit, and fiber optics.

**Amateur Radio Emergency Services (ARES)**

- Provide backup emergency communications using ham radio operators and equipment if primary systems fail.
- Support shelter sites, field teams, and the EOC with alternative communication capabilities.

**Virginia Department of Emergency Management (VDEM)**

- Support regional interoperability through the Virginia Interoperability Picture for Emergency Response (VIPER) and other state-level communication coordination systems.
- Coordinate with FEMA Integrated Public Alert and Warning System (IPAWS) program office and telecommunications providers for statewide system recovery.

**Additional Considerations**

- Redundancy is critical. Earthquakes may damage cellular towers, underground fiber lines, or radio repeaters. Ensure satellite phones, mobile radio systems, and battery backups are ready for deployment.
- Power dependency. Ensure all communication assets are connected to generators or uninterruptible power supply (UPS) systems.
- Cybersecurity vigilance. Disasters increase the risk of cyber incidents targeting disrupted systems; IT should monitor systems closely for anomalies.
- Field coordination. Pre-designated radio channels and cross-agency communication protocols must be reinforced with all field teams during briefings.

## EMERGENCY SUPPORT FUNCTION 3: PUBLIC WORKS, UTILITIES & ENGINEERING

**Primary Agencies:** Norfolk Public Works

**Support Agencies**: Norfolk Utilities, Norfolk Storm Water, Norfolk Waste Management, Norfolk Emergency Management, Norfolk Fire-Rescue, Norfolk Police Department, Norfolk Department of Information Technology, Virginia Department of Transportation (VDOT), Virginia Department of Emergency Management (VDEM), U.S. Army Corps of Engineers (USACE)

### KEY RESPONSIBILITIES

**Norfolk Public Works**

- Conduct rapid damage assessments of city infrastructure, including roads, bridges, storm drains, and public buildings.
- Clear debris from transportation routes to support emergency response access and restoration of critical lifelines.
- Coordinate structural safety evaluations of public facilities and assist in prioritizing unsafe buildings for evacuation or restriction.
- Deploy barricades and signage for roads and areas deemed unsafe or impassable.
- Coordinate with contractors and engineering teams for emergency repairs and debris removal.

**Norfolk Utilities**

- Assess and restore damage to the city's water distribution and wastewater systems.
- Address service interruptions, leaks, or contamination resulting from pipe fractures or infrastructure collapse.
- Coordinate boil water advisories or service alerts in collaboration with Public Health and Emergency Management.

**Norfolk Storm Water**

- Inspect and repair storm water infrastructure including outfalls, catch basins, and culverts affected by ground movement.
- Monitor areas for secondary flooding risks due to blocked drainage or shifting ground.

**Norfolk Waste Management**

- Ensure continuity of solid waste removal to avoid compounding public health risks.
- Support debris collection and removal in coordination with Public Works and Emergency Management.

**Norfolk Emergency Management**

- Coordinate resource requests through ESF 7 (Logistics) and integrate infrastructure status into EOC planning products.
- Facilitate damage assessment coordination with state and federal partners for potential disaster declarations.

**Norfolk Fire-Rescue & Norfolk Police Department**

- Support initial reconnaissance and hazard identification, especially for collapsed or unstable structures.
- Provide scene control and security around damaged infrastructure or hazardous areas.

**Norfolk Department of Information Technology**

- Support restoration of underground communication and utility conduit if damaged during seismic activity.
- Coordinate technical support for infrastructure monitoring systems.

**Virginia Department of Transportation (VDOT)**

- Assess and restore state-maintained roadways and bridges within Norfolk.
- Provide engineering support and assist with debris removal along key corridors.

**Virginia Department of Emergency Management (VDEM)**

- Support coordination for state-level engineering and recovery resources.
- Liaise with FEMA and USACE for infrastructure damage support and mission assignments.

**U.S. Army Corps of Engineers (USACE)**

- Provide technical expertise and support for structural assessments and debris management.
- Assist with temporary infrastructure repairs and critical facility evaluations as requested.

**Additional Considerations**

- Lifeline Prioritization: Prioritize inspections and repairs for lifeline sectors—transportation, communications, water, wastewater, and power.
- Secondary Hazards: Earthquakes may trigger gas leaks, water main breaks, or stormwater backups. Coordinate closely with Fire-Rescue and Utilities.
- Contractor Coordination: Pre-identified engineering and debris management contracts should be activated rapidly.

- Documentation for Reimbursement: Ensure that all damage assessments and response actions are well documented for potential FEMA Public Assistance reimbursement.

## EMERGENCY SUPPORT FUNCTION 4: FIREFIGHTING

**Primary Agency:** Norfolk Fire-Rescue

**Support Agencies:** Norfolk Emergency Management, Norfolk Police Department, Norfolk Public Works, Norfolk Utilities, Norfolk Department of Information Technology, Virginia Department of Forestry, Virginia Department of Emergency Management (VDEM), Mutual Aid Fire Agencies

### KEY RESPONSIBILITIES

**Norfolk Fire-Rescue**

- Conduct life safety operations, including search and rescue, fire suppression, and triage immediately following the earthquake.
- Respond to fires caused by ruptured gas lines, electrical faults, or hazardous materials incidents.
- Perform initial reconnaissance and rapid damage assessments of critical infrastructure and high-occupancy buildings.
- Coordinate structural collapse rescue operations in partnership with Urban Search and Rescue (USAR) teams if activated.
- Monitor for secondary hazards such as gas leaks, chemical spills, or downed power lines.
- Support the safety of emergency personnel operating in structurally compromised environments.
- Coordinate emergency medical services (EMS) for injured individuals, including transport to medical facilities.
- Staff the EOC Operations Section and provide updates on incident activity and operational needs.

**Norfolk Emergency Management**

- Facilitate resource requests through ESF 7 (Logistics) and coordinate mutual aid for firefighting and rescue assets.
- Integrate Fire-Rescue field reports into EOC situation reports and planning cycles.

**Norfolk Police Department**

- Assist with perimeter control and traffic management around fire scenes or structural collapse zones.
- Support joint operations involving rescue, evacuations, or incident security.

**Norfolk Public Works & Norfolk Utilities**

- Support utility shutoff operations (gas, electric, water) to prevent fires or mitigate hazards.
- Provide debris removal assistance to ensure access for emergency vehicles.
- Norfolk Department of Information Technology
- Support communication infrastructure used by Fire-Rescue, including mobile data terminals, radios, and CAD systems.

**Virginia Department of Forestry**

- Provide resources or personnel support if brush or wildland fires occur due to downed lines or infrastructure failure.

**Virginia Department of Emergency Management (VDEM)**

- Coordinate deployment of state firefighting resources and specialized teams, including USAR if needed.
- Support requests for additional equipment or personnel through the Virginia Emergency Operations Center (VEOC).

**Mutual Aid Fire Agencies**

- Provide personnel, apparatus, and equipment support through mutual aid agreements as needed.
- Integrate into Norfolk's ICS structure under the direction of Norfolk Fire-Rescue command.

**Additional Considerations**

- Urban Search and Rescue Activation: Earthquakes may cause structural collapses requiring specialized rescue capabilities. Norfolk Fire-Rescue should coordinate early with VDEM for potential USAR task force support.
- Personnel Fatigue Management: Ensure appropriate staffing rotations to reduce responder fatigue during prolonged operations.
- Hazard Identification: Responders should exercise caution around compromised buildings, utility infrastructure, and HAZMAT incidents.
- Fire Pre-Incident Planning: Utilize pre-identified high-risk facilities and critical infrastructure maps to guide response prioritization.

## EMERGENCY SUPPORT FUNCTION 5: INFORMATION AND PLANNING

**Primary Agency:** Norfolk Department of Emergency Management

**Support Agencies:** Norfolk Fire-Rescue, Norfolk Police Department, Norfolk Department of Communications, Norfolk Department of Information Technology, Norfolk Public Works, Norfolk Human Services, Virginia Department of Emergency Management (VDEM), Hampton Roads Planning District Commission (HRPDC), American Red Cross

### KEY RESPONSIBILITIES

**Norfolk Department of Emergency Management**

- Lead overall coordination of the City's response and recovery operations for the earthquake incident.
- Activate and manage the Emergency Operations Center (EOC) using the ICS/ESF structure.
- Facilitate development and distribution of the Incident Action Plan (IAP) for each operational period.
- Maintain situational awareness through field reports, ESF updates, GIS products, and regional/state inputs.
- Coordinate local declarations of emergency and requests for state/federal assistance.
- Activate and manage the WebEOC system and other EOC support tools (Adobe Connect, HSIN, Everbridge, etc.).
- Liaise with the Virginia Emergency Operations Center (VEOC) and other regional partners.
- Coordinate planning meetings, briefings, and policy group support.
- Ensure integration of access and functional needs (AFN) considerations into all planning efforts.
- Support the transition from response to recovery, including activation of Damage Assessment Teams and Recovery Task Forces.

**Norfolk Fire-Rescue & Norfolk Police Department**

- Provide command-level representation in the EOC to support tactical coordination and field integration.
- Assist with emergency planning for life safety, evacuation, and site stabilization.

**Norfolk Department of Communications**

- Support the development of emergency messaging and ensure alignment with operational objectives (in coordination with ESF 15).

- Provide communications staffing and logistical support for the EOC, as needed.

**Norfolk Department of Information Technology**

- Maintain EOC technology systems and ensure connectivity, redundancy, and cyber protection for emergency management platforms.

**Norfolk Public Works & Norfolk Human Services**

- Support integration of recovery and mass care considerations into operational planning and situational reporting.
- Assist in identifying unmet needs and coordinating with applicable ESFs.

**Virginia Department of Emergency Management (VDEM)**

- Coordinate with Norfolk on the flow of information, resource requests, and situation reporting.
- Provide state-level support and access to specialized response and recovery resources.

**Hampton Roads Planning District Commission (HRPDC)**

- Support regional coordination, data analysis, and planning alignment across localities.

**American Red Cross**

- Support shelter reporting, mass care planning, and coordination of unmet human needs with ESF 6 and Emergency Management.

**Additional Considerations**

- Documentation and Cost Recovery: Ensure detailed records are maintained throughout the response to support after-action reporting and FEMA reimbursement.
- Continuity of Operations (COOP): Coordinate with all departments to ensure their essential functions continue or are restored promptly.
- Recovery Integration: Begin planning for recovery operations early in the response phase, including long-term housing, infrastructure repair, and public assistance coordination.
- Equity and Inclusion: Emergency management operations must account for vulnerable populations, including individuals with disabilities, non-English speakers, and socially isolated residents.

## 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 Public Libraries, Norfolk Police Department, Norfolk Fire-Rescue, Norfolk Department of Communications, Norfolk Department of Information Technology, Faith-Based and Nonprofit Organizations, Virginia Department of Social Services (VDSS), Virginia Department of Emergency Management (VDEM)

### KEY RESPONSIBILITIES

**Norfolk Department of Human Services**

- Coordinate overall mass care efforts including sheltering, feeding, and support for displaced individuals.
- Activate and manage City-operated shelters in coordination with the American Red Cross and Norfolk Public Schools.
- Support reunification efforts for separated families or displaced individuals.
- Provide staff for shelter operations, intake, and support services.
- Coordinate with Norfolk Community Services Board for behavioral health and crisis counseling needs.

**American Red Cross**

- Support and co-manage general population shelter operations.
- Provide shelter supplies, feeding support, disaster health services, and initial casework.
- Assist with reunification services and referrals to recovery programs.

**Norfolk Emergency Management**

- Coordinate shelter activation and EOC support functions with ESF 6 lead agencies.
- Ensure Norfolk Alert and IPAWS are used to notify the public about shelter locations and status.
- Integrate shelter and mass care needs into operational planning and situational reporting.

**Norfolk Public Schools**

- Provide access to school facilities identified as shelter locations.
- Support shelter setup with custodial services and facility management.
- Coordinate with food services for meal distribution if needed.

**Norfolk Parks and Recreation**

- Provide staff to support shelter operations and recreational support services at shelter sites.
- Assist with transport and care for individuals with access and functional needs.

**Norfolk Department of Public Health**

- Conduct health inspections and monitor shelter environments for public health concerns.
- Provide guidance on sanitation, hygiene, and disease prevention.
- Support health-related messaging for shelter residents.

**Norfolk Public Libraries**

- Support public information needs and provide access to technology for displaced individuals.

**Norfolk Police Department & Norfolk Fire-Rescue**

- Ensure safety and security at shelter locations.
- Assist with transportation and wellness checks for vulnerable residents.

**Norfolk Department of Communications**

- Coordinate public messaging regarding shelter locations, services, and procedures.

**Norfolk Department of Information Technology**

- Support connectivity and communication needs at shelter sites.

**Faith-Based and Nonprofit Organizations**

- Assist with feeding, donations, emotional/spiritual care, and case management.
- Provide support services to displaced individuals and coordinate with ESF 6 for resource sharing.

**Virginia Department of Social Services (VDSS)**

- Coordinate with Norfolk DHS on eligibility, benefit continuity, and state-level support services.

**Virginia Department of Emergency Management (VDEM)**

- Assist with mutual aid coordination, shelter reporting, and access to state sheltering assets (e.g., pet shelter trailers, cots, etc.).

**Additional Considerations**

- Access and Functional Needs (AFN): Ensure all shelter operations comply with ADA requirements and provide necessary accommodations, such as medical cots, interpreters, and accessible transportation.
- Pet Sheltering: Coordinate with Norfolk Animal Care and Control and ESF 11 to provide co-located or adjacent pet sheltering options.
- Behavioral Health Support: Include mental health professionals and crisis counselors in shelter operations early to support those experiencing trauma or anxiety.
- Shelter Surge Capacity: Prepare alternate shelter sites or warming/cooling centers in case of extended displacement or damage to primary shelter facilities.

## EMERGENCY SUPPORT FUNCTION 7: LOGISTICS

**Primary Agency:** Norfolk Department of General Services

**Support Agencies:** Norfolk Emergency Management, Norfolk Department of Finance, Norfolk Public Works, Norfolk Fleet Management, Norfolk Department of Information Technology, Norfolk Police Department, Norfolk Fire-Rescue, Virginia Department of Emergency Management (VDEM), American Red Cross, Faith-Based and Volunteer Organizations

### KEY RESPONSIBILITIES

**Norfolk Department of General Services**

- Serve as the lead agency for coordinating the procurement, allocation, and distribution of equipment, supplies, and personnel in support of earthquake response operations.
- Manage staging areas, points of distribution (PODs), and warehouse operations to support incoming or outgoing resources.
- Coordinate fuel and maintenance support for response vehicles and equipment in conjunction with Fleet Management.
- Track resource requests and deliveries using the City's logistics tracking systems.
- Maintain accountability for city-owned response equipment and coordinate resupply efforts.

**Norfolk Emergency Management**

- Coordinate incoming mutual aid and mission requests from the Virginia Emergency Operations Center (VEOC) through the EOC.
- Identify gaps in capability and initiate resource requests for specialized teams, equipment, and materials.
- Integrate logistics data into Incident Action Plans (IAPs) and EOC situational reporting.

**Norfolk Department of Finance**

- Assist with procurement of emergency goods and services under emergency declarations.
- Monitor spending and provide financial tracking to support FEMA reimbursement documentation.

**Norfolk Public Works & Fleet Management**

- Provide transport vehicles and heavy equipment to support debris clearance, material transport, and restoration of infrastructure.
- Maintain fueling operations and mobile maintenance support to ensure continuous vehicle and generator readiness.

**Norfolk Department of Information Technology**

- Provide technical support for logistics systems, resource databases, and mobile communications to field support teams.

**Norfolk Police Department & Norfolk Fire-Rescue**

- Coordinate escort or security for high-value or critical resource shipments.
- Provide input on operational logistics needs from the field.

**Virginia Department of Emergency Management (VDEM)**

- Coordinate with Norfolk to fulfill mission requests for additional resources, specialized teams, or federal assets.
- Support mobilization of Emergency Management Assistance Compact (EMAC) and other state-level logistical aid.

**American Red Cross & Volunteer Organizations**

- Assist in distributing relief supplies to affected populations in coordination with General Services and Emergency Management.
- Support volunteer and donation management efforts for unsolicited goods and services.

**Additional Considerations**

- Resource Prioritization: Prioritize resources based on life safety, incident stabilization, and critical infrastructure restoration.
- Documentation for Reimbursement: Maintain detailed records of all procurement actions, mission requests, and deployment of goods to support FEMA Public Assistance claims.
- Donations and Volunteer Convergence: Implement management protocols for large volumes of unsolicited donations and spontaneous volunteers.
- Redundant Supply Lines: Pre-identify alternate routes and vendors in case of damaged infrastructure or disrupted supply chains.

## EMERGENCY SUPPORT FUNCTION 8: PUBLIC HEALTH AND MEDICAL SERVICES

**Primary Agency:** Norfolk Department of Public Health (Virginia Department of Health – Norfolk Health District)

**Support Agencies:** Norfolk Fire-Rescue, Norfolk Emergency Management, Norfolk Department of Human Services, Norfolk Police Department, Norfolk Public Schools, Norfolk Department of Public Works, Norfolk Department of Communications, Sentara Healthcare, Bon Secours, Norfolk Community Services Board (CSB), Virginia Department of Emergency Management (VDEM), American Red Cross

### KEY RESPONSIBILITIES

**Norfolk Department of Public Health**

- Assess and monitor public health threats following the earthquake, including communicable disease risks, environmental health concerns, and food/water safety.
- Provide public health guidance to shelter managers and the public, including boil water notices and hygiene advisories.
- Coordinate with ESF 15 to disseminate health-related messaging via traditional and digital platforms.
- Conduct inspections of shelters, mass care sites, and food distribution points.
- Activate or support mass prophylaxis or vaccination clinics if necessary.
- Coordinate mental and behavioral health services with Norfolk CSB.

**Norfolk Fire-Rescue**

- Lead Emergency Medical Services (EMS) response for triage, treatment, and transport of earthquake-related injuries.
- Coordinate field medical operations, including patient tracking and destination coordination.
- Support casualty collection points and medical surge operations.

**Norfolk Emergency Management**

- Facilitate coordination with regional healthcare coalitions and hospitals.
- Support medical logistics and resource requests through ESF 7.
- Activate medical shelter components if needed, including coordination with Norfolk Public Schools and Public Health.

**Norfolk Department of Human Services**

- Support crisis counseling and victim services in shelters and community centers.

- Coordinate with Norfolk CSB and the Virginia Department of Behavioral Health and Developmental Services for behavioral health surge staffing.

**Norfolk Police Department**

- Provide scene security for medical facilities, triage sites, and points of dispensing (PODs).
- Support the safety of mobile medical teams operating in the field.

**Norfolk Public Schools**

- Provide facilities and transportation support for medical shelter operations or emergency clinics.

**Norfolk Public Works**

- Assist in maintaining sanitation and environmental health conditions in shelters and high-risk areas.

**Norfolk Department of Communications**

- Disseminate health advisories, contamination warnings, and medical information in coordination with Public Health.

**Sentara Healthcare**

- Provide hospital status reports, coordinate surge capacity plans, and manage patient flow.
- Participate in regional healthcare coalition coordination calls and planning.

**Norfolk Community Services Board (CSB)**

- Deploy mental health specialists to shelters and support sites.
- Provide crisis intervention, behavioral health evaluations, and referrals.

**Virginia Department of Emergency Management (VDEM)**

- Support resource requests for state or federal medical assets (e.g., mobile medical teams, mortuary support).
- Coordinate with the Virginia Department of Health (VDH) and the Office of the Chief Medical Examiner.

**American Red Cross**

- Support basic health services in general population shelters.
- Provide health-related referrals and support unmet medical needs.

**Additional Considerations**

- Medical Surge: Earthquake injuries may overwhelm hospital capacity. Alternate care sites or medical shelters may be needed.
- Crisis Standards of Care: If local medical capacity is exceeded, regional or state guidance may be required to allocate limited medical resources.
- Behavioral Health Needs: Earthquakes can result in widespread emotional distress. Behavioral health support must be integrated early into shelters and response operations.
- Public Health Messaging: Clear communication is critical to prevent misinformation about contamination, disease outbreaks, or treatment availability.

## EMERGENCY SUPPORT FUNCTION 9: SEARCH AND RESCUE

**Primary Agency:** Norfolk Fire-Rescue

**Support Agencies:** Norfolk Police Department, Norfolk Emergency Management, Norfolk Public Works, Norfolk Department of Information Technology, Norfolk Department of Public Health, Virginia Department of Emergency Management (VDEM), Virginia Department of Fire Programs, Urban Search and Rescue (USAR) Teams, U.S. Coast Guard (USCG)

### KEY RESPONSIBILITIES

**Norfolk Fire-Rescue**

- Lead search and rescue (SAR) operations following structural collapse, entrapment, or debris-related incidents resulting from earthquake damage.
- Conduct structural triage, victim location, and extraction from partially or fully collapsed buildings.
- Coordinate light and heavy technical rescue operations in urban environments.
- Integrate hazardous materials detection and safety procedures into SAR activities.
- Request state or federal Urban Search and Rescue (USAR) task forces through VDEM if needed.
- Provide field updates to the EOC and coordinate with ESF 5 (Emergency Management) for resource needs and status reporting.

**Norfolk Police Department**

- Provide perimeter control, traffic management, and crowd control around search and rescue operations.
- Assist with missing persons reports, family reunification support, and coordination with investigative units.

**Norfolk Emergency Management**

- Coordinate mutual aid and mission requests for SAR support through the Virginia Emergency Operations Center (VEOC).
- Integrate SAR priorities into the Incident Action Plan (IAP).
- Facilitate communication between field SAR teams and other EOC functions.

**Norfolk Public Works**

- Provide debris removal and heavy equipment to support access for rescue operations.
- Assist with structural stabilization and safety support under guidance from Fire-Rescue.
- Norfolk Department of Information Technology

- Support SAR operations with GIS mapping tools, building preplans, drone imagery, and incident tracking technology.

**Norfolk Department of Public Health**

- Support health and safety monitoring for SAR personnel, including exposure risks and PPE guidance.
- Coordinate medical examiner response for recovery of deceased individuals, as needed.
- Virginia Department of Emergency Management (VDEM)
- Deploy state SAR resources or request federal support (FEMA USAR Task Forces) as appropriate.
- Coordinate mission requests and staging of external SAR assets.

**Virginia Department of Fire Programs**

- Provide additional SAR training and technical assistance to local teams if activated.

**Urban Search and Rescue (USAR) Teams**

- Provide specialized rescue capabilities, including K9 search, technical breaching, and structural collapse operations.
- Operate under local ICS but integrate with the state SAR coordination plan.

**U.S. Coast Guard (USCG)**

- Assist with maritime or waterfront-based search and rescue operations as needed.
- Provide aerial reconnaissance or overwater access for hard-to-reach sites.

**Additional Considerations**

- Aftershock Risk: Rescuers must operate with extreme caution in unstable structures. Safety officers should be embedded in all SAR operations.
- K9 Integration: Search dogs may be deployed for live-find and cadaver searches but require handlers and logistical support.
- Victim Tracking and Family Reunification: Ensure SAR outcomes are coordinated with mass care and reunification services.
- Coordination with Medical Examiner: For deceased individuals, ensure proper handoff and documentation per state law and protocols.

## EMERGENCY SUPPORT FUNCTION 10: OIL AND HAZARDOUS MATERIAL RESPONSE

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

**Support Agencies:** Norfolk Police Department, Norfolk Emergency Management, Norfolk Public Works, Norfolk Utilities, Norfolk Department of Public Health, Virginia Department of Emergency Management (VDEM), Virginia Department of Environmental Quality (DEQ), U.S. Environmental Protection Agency (EPA), U.S. Coast Guard (USCG)

### KEY RESPONSIBILITIES

**Norfolk Fire-Rescue (Hazmat Team)**

- Serve as the lead agency for response to hazardous materials (hazmat) incidents following an earthquake.
- Conduct assessments for hazardous materials leaks, spills, or releases resulting from structural collapse, utility rupture, or transportation incidents.
- Establish exclusion zones, conduct air monitoring, and implement containment or mitigation measures as needed.
- Coordinate decontamination of affected individuals, equipment, and environments.
- Advise field responders and EOC leadership on chemical, biological, radiological, or nuclear (CBRN) hazards.

**Norfolk Police Department**

- Provide scene control and perimeter security during hazmat operations.
- Support evacuation or shelter-in-place orders in coordination with ESF 2 and ESF 15.
- Norfolk Emergency Management
- Facilitate coordination with VDEM and DEQ for specialized response resources or regulatory assistance.
- Ensure hazmat incident information is integrated into situational reports and public messaging as needed.
- Activate plume modeling tools and coordinate with GIS staff to support impact projections and operational decision-making.

**Norfolk Public Works & Norfolk Utilities**

- Assist with utility shutdowns, particularly for water, sewer, or gas systems impacted by hazmat threats.
- Support secondary containment, environmental cleanup operations, and site restoration.
- Norfolk Department of Public Health

- Evaluate public health risks associated with chemical exposures, contaminated water, or hazardous debris.
- Provide guidance for protective actions and medical referrals.

**Virginia Department of Emergency Management (VDEM)**

- Deploy regional hazmat teams or support federal resource requests as needed.
- Coordinate technical assistance from the Virginia Department of Environmental Quality and other state agencies.

**Virginia Department of Environmental Quality (DEQ)**

- Provide regulatory oversight and environmental sampling support.
- Assist with long-term cleanup and remediation operations as needed.

**U.S. Environmental Protection Agency (EPA)**

- Support large-scale or complex hazardous materials releases, including Superfund or facility-related incidents.
- Provide technical expertise and federal cleanup resources upon request.

**U.S. Coast Guard (USCG)**

- Respond to hazmat releases impacting navigable waterways or port facilities.
- Coordinate containment and environmental response within coastal zones.

**Additional Considerations**

- Earthquake-Triggered Hazmat Events: Shaking may damage industrial facilities, underground storage tanks, laboratories, or gas pipelines—posing complex CBRN risks.
- Responder Safety: Ensure all hazmat teams operate with appropriate PPE, monitoring equipment, and decontamination capabilities.
- Public Messaging: Coordinate closely with ESF 15 to ensure protective action messaging is timely, accurate, and accessible.
- Environmental Monitoring: Consider ongoing air, soil, and water monitoring if a release occurs in a sensitive or high-population area.

## EMERGENCY SUPPORT FUNCTION 11: AGRICULTURE AND NATURAL RESOURCES ANNEX

**Primary Agency:** Norfolk Animal Care and Adoption Center (NACC)

**Support Agencies:** Norfolk Emergency Management, Norfolk Department of Public Health, Norfolk Parks and Recreation, Norfolk Public Schools, American Red Cross, Virginia Department of Agriculture and Consumer Services (VDACS), U.S. Department of Agriculture (USDA)

### KEY RESPONSIBILITIES

**Norfolk Animal Care and Adoption Center (NACC)**

- Coordinate sheltering, care, and reunification for household pets displaced by the earthquake.
- Operate or support pet sheltering operations, including co-located or adjacent shelters near general population shelters.
- Support field rescue of injured, trapped, or abandoned animals in coordination with Norfolk Police and Fire-Rescue.
- Maintain records of animals sheltered, reunited, or relocated.
- Enforce animal-related public health protocols in coordination with Public Health.

**Norfolk Emergency Management**

- Coordinate logistics for pet shelter supplies and integrate NACC needs into EOC resource planning.
- Include pet shelter locations and policies in public messaging through ESF 15.

**Norfolk Department of Public Health**

- Provide guidance on zoonotic disease concerns in shelters and support environmental health inspections.

**Norfolk Parks and Recreation & Norfolk Public Schools**

- Provide facilities or logistical support for pet sheltering operations as needed.

**American Red Cross**

- Collaborate on messaging and coordination of services related to household pets and evacuees.

**Virginia Department of Agriculture and Consumer Services (VDACS)**

- Provide support for animal disease monitoring, veterinary assistance, and coordination with state-level agricultural assets if necessary.

**U.S. Department of Agriculture (USDA)**

- May support inspections and emergency food safety operations if requested, particularly for mass feeding or damaged food supplies.

**Additional Considerations**

- Pets in Shelters: Ensure co-located pet sheltering is planned and resourced in advance. Animal separation during disasters often results in additional trauma for residents.
- Animal Triage and Transport: Earthquakes may cause animal injuries, including in-home pets. Support field triage and transport logistics in heavily impacted areas.
- Food Safety: Public Health and USDA may inspect commercial kitchens or food storage facilities damaged during the earthquake to ensure food safety.
- Natural Resource Damage: Although limited in Norfolk, fallen trees, damaged parks, or shoreline erosion should be monitored and reported.

## EMERGENCY SUPPORT FUNCTION 12: ENERGY

**Primary Agency:** Dominion Energy

**Support Agencies:** Norfolk Public Works, Norfolk Utilities, Norfolk Emergency Management, Norfolk Department of Information Technology, Norfolk Fire-Rescue, Norfolk Police Department, Virginia Department of Emergency Management (VDEM), Virginia State Corporation Commission (SCC)

### KEY RESPONSIBILITIES

**Dominion Energy**

- Assess and restore electrical power outages caused by earthquake-related infrastructure damage.
- Provide outage status updates to the City and public through coordination with Emergency Management and ESF 15.
- Coordinate with Public Works and Public Safety to prioritize restoration to critical facilities (e.g., hospitals, EOC, water treatment plants, shelters).
- Ensure worker safety protocols during line repairs, especially in unstable or damaged areas.
- Support temporary power generation and restoration of downed transmission/distribution systems.

**Norfolk Public Works & Norfolk Utilities**

- Coordinate restoration of water, sewer, and stormwater systems and identify dependencies on power infrastructure.
- Report utility damage assessments to EOC for regional situational awareness and prioritization.

**Norfolk Emergency Management**

- Coordinate energy resource needs and requests through ESF 7 (Logistics) and VDEM.
- Monitor and document critical facility status, including generator functionality and fuel needs.
- Liaise with Dominion Energy and SCC to support rapid restoration of services and integration into EOC situational reports.

**Norfolk Department of Information Technology**

- Monitor impacts to critical IT infrastructure and facilities dependent on power, including servers, data centers, and radio communications systems.
- Coordinate generator support for critical communications hubs if primary power fails.

**Norfolk Fire-Rescue & Norfolk Police Department**

- Respond to hazards involving downed power lines, electrical fires, or compromised energy infrastructure.
- Support public safety and access control around damaged or high-voltage areas.

**Virginia Department of Emergency Management (VDEM)**

- Coordinate mutual aid, mission requests, and fuel resupply through the Virginia Emergency Operations Center (VEOC).
- Support requests for state or federal energy sector resources or temporary generation capabilities.

**Virginia State Corporation Commission (SCC)**

- Monitor statewide energy restoration progress and coordinate regulatory support for private utility partners.

**Additional Considerations**

- Critical Infrastructure Prioritization: Restoration of power to emergency shelters, hospitals, EOC, and water/wastewater facilities should be prioritized.
- Fuel Supply Coordination: Earthquake impacts may disrupt fuel delivery. Coordinate with logistics and Fleet Management to ensure continuity of generator and fleet operations.
- Public Messaging: Provide timely updates to the public on outages, restoration timelines, and generator safety through ESF 15.
- Mutual Aid Activation: Utility mutual aid agreements may be activated for large-scale service disruptions. Coordinate with Dominion and VDEM early.

## EMERGENCY SUPPORT FUNCTION 13: PUBLIC SAFETY AND LAW ENFORCEMENT

**Primary Agency:** Norfolk Police Department

**Support Agencies:** Norfolk Fire-Rescue, Norfolk Sheriff's Office, Norfolk Emergency Management, Norfolk Department of General Services, Norfolk Department of Information Technology, Virginia State Police, Virginia Department of Emergency Management (VDEM), Virginia National Guard (if activated), Department of Homeland Security (DHS) – Federal Law Enforcement Partners

### KEY RESPONSIBILITIES

**Norfolk Police Department**

- Maintain law and order in impacted areas following an earthquake, including crime prevention, curfew enforcement (if enacted), and public safety presence.
- Provide security at critical infrastructure sites, emergency shelters, mass care locations, PODs, and fuel supply points.
- Support evacuation efforts, access control, and traffic management in coordination with Public Works and Fire-Rescue.
- Investigate incidents of theft, looting, or other criminal activity that may arise during power outages or building evacuations.
- Assist with search and rescue scene security and family reunification coordination in conjunction with ESF 9.

**Norfolk Fire-Rescue**

- Provide fire suppression and emergency medical response; support site safety and access during law enforcement operations.
- Coordinate with Police on unified command for scenes involving multiple hazards or public safety threats.

**Norfolk Sheriff's Office**

- Support detention center security and transportation of detainees if facilities are compromised.
- Provide supplemental law enforcement personnel for community patrols or critical infrastructure protection.
- Assist with evacuation or emergency relocation of incarcerated individuals, if necessary.

**Norfolk Emergency Management**

- Coordinate resource requests for additional law enforcement support through VEOC.
- Facilitate interagency briefings and incident action planning related to public safety operations.

**Norfolk Department of General Services**

- Provide physical security assets (barriers, fencing, lighting) for high-traffic or high-risk areas.

**Norfolk Department of Information Technology**

- Support video surveillance systems, communications platforms, and cybersecurity for public safety systems.

**Virginia State Police**

- Provide supplemental highway patrol and security resources as requested.
- Assist with major traffic diversions or public safety enforcement needs.

**Virginia Department of Emergency Management (VDEM)**

- Coordinate mutual aid, mission requests, and National Guard deployment support for security operations.

**Virginia National Guard (if activated)**

- Support crowd control, security, and force protection in coordination with local law enforcement under Governor's orders.

**DHS / Federal Law Enforcement Partners**

- Assist with facility protection, intelligence sharing, or investigative support in large-scale or critical infrastructure incidents.

**Additional Considerations**

- Security for Impacted Areas: Earthquake damage may lead to vacant structures, unsecured businesses, and public concern. Maintaining public confidence through visible security is essential.
- Evacuation Support: Provide law enforcement guidance and safety oversight for any neighborhood evacuations or reentry procedures.
- Curfew or Restricted Access Zones: Coordinate public messaging, access credentials, and enforcement if curfews or access control zones are enacted.
- Responder Safety: Ensure coordination between public safety teams operating in unstable environments, particularly where building collapse or aftershocks are a threat.

## EMERGENCY SUPPORT FUNCTION 14: CROSS-SECTOR BUSINESS AND INFRASTRUCTURE

**Primary Agency:** Norfolk Department of Economic Development

**Support Agencies:** Norfolk Emergency Management, Norfolk Department of Public Works, Norfolk Department of Information Technology, Norfolk Department of Communications, Norfolk Fire-Rescue, Norfolk Police Department, Hampton Roads Chamber of Commerce, Local Business Associations, Utility Providers, Virginia Department of Emergency Management (VDEM), Virginia Economic Development Partnership (VEDP), U.S. Department of Homeland Security (DHS)

### KEY RESPONSIBILITIES

**Norfolk Department of Economic Development**

- Serve as the primary liaison between the City and Norfolk's business community following an earthquake.
- Coordinate impact assessments of business disruption, facility damage, and utility outages in partnership with business owners and associations.
- Support business continuity and recovery through outreach, technical assistance, and coordination of available relief programs.
- Facilitate access to emergency loans, grants, and recovery incentives in partnership with state and federal agencies.
- Communicate operational status updates to businesses via Norfolk Business Recovery Hub and support two-way information sharing.

**Norfolk Emergency Management**

- Integrate business and infrastructure status into EOC briefings and planning efforts.
- Facilitate coordination between public and private sectors for infrastructure restoration, supply chain continuity, and mutual support.
- Coordinate with VDEM and DHS for access to federal recovery programs, cybersecurity support, and infrastructure assessments.

**Norfolk Department of Public Works**

- Support restoration of transportation and utility lifelines essential to commercial operations.
- Prioritize repair of infrastructure that supports economic recovery and business district access.

**Norfolk Department of Information Technology**

- Support continuity of city services relied upon by the private sector, including permitting, licensing, and web-based communications.

- Monitor impacts to digital infrastructure and coordinate cybersecurity support for business continuity if needed.

**Norfolk Department of Communications**

- Disseminate information to businesses regarding reopening, permitting, financial support, and city services.
- Collaborate with Economic Development to issue targeted updates through Norfolk Alert, city website, and social media platforms.

**Norfolk Fire-Rescue & Norfolk Police Department**

- Support safety inspections, access control, and scene security in damaged commercial or industrial areas.
- Assist with damage documentation and restricted area enforcement during early recovery.

**Hampton Roads Chamber of Commerce & Local Business Associations**

- Serve as force multipliers for information sharing, needs assessment, and coordinated messaging to the business community.
- Report member impacts and coordinate support through Norfolk Economic Development and the EOC.

**Utility Providers**

- Coordinate restoration priorities with Economic Development to minimize disruption to major employers and economic centers.
- Share updates on estimated restoration timelines with impacted commercial customers.

**Virginia Department of Emergency Management (VDEM)**

- Facilitate connection to state and federal business recovery programs, including SBA disaster loan access and infrastructure repair funding.
- Coordinate Business Emergency Operations Center (BEOC) engagement if activated.

**Virginia Economic Development Partnership (VEDP)**

- Support local recovery through state-level technical assistance, investment promotion, and targeted economic development programs.

**U.S. Department of Homeland Security (DHS)**

- Provide critical infrastructure protection and sector-specific support through Cybersecurity and Infrastructure Security Agency (CISA) and DHS Infrastructure Protection.

**Additional Considerations**

- Private Sector Coordination: Early and consistent communication with businesses is essential to support continuity, reassure the public, and promote rapid recovery.
- Critical Infrastructure Dependencies: Identify interdependencies across sectors (power, water, communications) that may slow business reopening.
- Equity in Recovery: Ensure small businesses and underserved areas receive equitable access to support programs and recovery resources.
- Cybersecurity Awareness: Earthquake impacts may expose vulnerabilities in digital infrastructure, coordinate protective guidance and resources through CISA and IT partners.

## 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 an earthquake.
- 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 earthquake confirmation, safety alerts, and recovery 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.
- Support livestreaming, emergency updates, and internal communication tools used for public information coordination.
- Norfolk Police Department & Norfolk 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 shelter health protocols, water safety, and behavioral health support.
- 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 the statewide Joint Information Center.

**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 supporting forecast information and situational awareness if aftershocks, tsunami threats, or weather impacts emerge.
- Coordinate 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 messaging across departments and agencies to avoid confusion or misinformation.
- Activate rumor control procedures and establish a central source of truth for city-related updates.
- Support public education pre- and post-incident to promote preparedness, recovery resources, and community resilience.

## TRAINING AND EXERCISES

Effective earthquake preparedness requires ongoing training and realistic exercises to ensure all departments, partners, and stakeholders understand their roles and responsibilities outlined in this annex. The City of Norfolk will incorporate earthquake-related hazards into its broader emergency management training and exercise program to build operational readiness across all phases of response and recovery.

Objectives:

- Familiarize city staff, first responders, and supporting agencies with the Earthquake Annex and associated procedures.
- Validate coordination between Emergency Support Functions (ESFs) and partner organizations.
- Test alert and notification procedures, situational awareness tools, and public messaging systems.
- Assess the city's ability to conduct damage assessments, evacuations, shelter operations, and debris management under earthquake scenarios.
- Improve multi-agency communication, operational coordination, and decision-making during no-notice events.
- Training Activities:
- Orientation Sessions: Conduct annual briefings for city departments, partner agencies, and EOC staff on earthquake-specific hazards and annex procedures.
- NIMS/ICS Training: Ensure all responders meet FEMA training requirements for ICS-100, 200, 700, and 800; and ICS-300/400 for command staff.
- Specialized Training: Provide targeted instruction for structural collapse rescue, debris management, damage assessment, sheltering, and public information under earthquake conditions.

Exercise Activities:

- Tabletop Exercises (TTX): Conduct discussion-based exercises to review earthquake response procedures, clarify roles, and identify gaps in coordination.
- Functional Exercises (FE): Test specific functions such as EOC activation, damage assessment workflows, or public information coordination.
- Full-Scale Exercises (FSE): Integrate earthquake scenarios into citywide or regional exercises to simulate real-world response and recovery activities.
- After-Action Reviews (AAR): Document lessons learned and develop improvement plans following all exercises involving earthquake-related objectives.

Integration:

- Earthquake preparedness will be included in the City of Norfolk Multi-Year Training and Exercise Plan (TEP).
- Exercises may be conducted independently or as part of broader all-hazards or regional Homeland Security Exercise and Evaluation Program (HSEEP)-compliant activities.
- The Department of Emergency Management will collaborate with regional partners, including VDEM, HRPDC, and the private sector, to enhance shared capabilities.

## SUPPORTING PLANS AND POLICIES

This Earthquake Annex is part of the City of Norfolk's comprehensive emergency management framework and should be used in conjunction with the following local, regional, state, and federal plans, policies, and guidelines:

**Local Plans and Policies**

- Team Norfolk Emergency Operations Plan (EOP) – including the Basic Plan and all Emergency Support Function (ESF) Annexes
- Team Norfolk Emergency Operations and Resiliency Framework – Volume II: ESF Annexes
- Team Norfolk Continuity of Operations (COOP) and Continuity of Government (COG) Plans
- Damage Assessment Plan
- Family Assistance and Reception Center Plan
- Shelter Operations Plan
- Mass Fatality Management Plan
- Norfolk Public Health Emergency Response Plan
- Departmental Emergency Action Plans (DEAPs)

**Regional and State Plans**

- 2022 Hampton Roads Hazard Mitigation Plan
- Hampton Roads Debris Management Plan
- Virginia Emergency Operations Plan (VEOP)
- Virginia Department of Emergency Management (VDEM) Earthquake Annex
- Virginia Mass Care and Shelter Coordination Plan
- Virginia Hazard Mitigation Plan
- Virginia Damage Assessment and Recovery Guidelines

**Federal Guidance and Resources**

- National Response Framework (NRF)
- National Disaster Recovery Framework (NDRF)
- FEMA Comprehensive Preparedness Guide (CPG) 101 – Developing and Maintaining Emergency Operations Plans
- FEMA HAZUS Earthquake Risk Modeling and Analysis Tools
- FEMA Public Assistance Program and Policy Guide (PAPPG)
- Stafford Act (Robert T. Stafford Disaster Relief and Emergency Assistance Act)

## AUTHORITIES

This annex is developed in accordance with applicable federal, state, and local laws, regulations, and policies governing emergency management and disaster response. The following authorities provide the legal basis for the implementation of this Earthquake Annex:

**Federal**

- Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended)
- Homeland Security Act of 2002
- Homeland Security Presidential Directive 5 (HSPD-5): Management of Domestic Incidents
- Post-Katrina Emergency Management Reform Act (PKEMRA) of 2006
- National Response Framework (NRF)
- National Incident Management System (NIMS)
- Federal Civil Defense Act of 1950 (Public Law 81-920, as amended)
- Disaster Mitigation Act of 2000

**State**

- Code of Virginia, Title 44: Military and Emergency Laws, particularly:
- § 44-146.13 through § 44-146.28: Emergency Services and Disaster Law
- § 32.1-277 through § 32.1-288: Authority of the Office of the Chief Medical Examiner
- Virginia Emergency Operations Plan (VEOP)
- Virginia Statewide Mutual Aid (SMA) Program Agreement
- Virginia Department of Emergency Management (VDEM) Guidance and Procedures

**Local**

- City of Norfolk Code of Ordinances, Chapter 2, Article IV, Division 2: Emergency Management
- City of Norfolk Continuity of Government Ordinance
- City of Norfolk Emergency Operations Plan (EOP)
- Resolutions adopted by the Norfolk City Council related to emergency declarations or mutual aid

## ACRONYMS

- AFN – Access and Functional Needs
- ARES – Amateur Radio Emergency Services
- COG – Continuity of Government
- COOP – Continuity of Operations Plan
- CPG – Comprehensive Preparedness Guide
- CSB – Community Services Board
- CSP – Critical Service Provider
- DHS – Department of Homeland Security
- DOT – Department of Transportation
- EAS – Emergency Alert System
- EOC – Emergency Operations Center
- EPA – Environmental Protection Agency
- ESF – Emergency Support Function
- FEMA – Federal Emergency Management Agency
- FSE – Full-Scale Exercise
- GIS – Geographic Information System
- HSEEP – Homeland Security Exercise and Evaluation Program
- ICS – Incident Command System
- IPAWS – Integrated Public Alert and Warning System
- IAP – Incident Action Plan
- IT – Information Technology
- JIC – Joint Information Center
- JIS – Joint Information System
- MMI – Modified Mercalli Intensity Scale
- NACC – Norfolk Animal Care and Adoption Center
- NIMS – National Incident Management System
- NOAA – National Oceanic and Atmospheric Administration
- NRF – National Response Framework
- NWS – National Weather Service
- PIO – Public Information Officer
- POD – Point of Distribution
- SCC – State Corporation Commission
- SitRep – Situation Report
- SMA – Statewide Mutual Aid
- TTX – Tabletop Exercise
- US&R / USAR – Urban Search and Rescue

- USCG – United States Coast Guard
- USDA – United States Department of Agriculture
- USGS – United States Geological Survey
- VEOC – Virginia Emergency Operations Center
- VDEM – Virginia Department of Emergency Management
- VDH – Virginia Department of Health
- VDOT – Virginia Department of Transportation
- VEDP – Virginia Economic Development Partnership
- WEA – Wireless Emergency Alerts
- WebEOC – Web-based Emergency Operations Center platform

## GLOSSARY

**Aftershock** – A smaller earthquake that follows the main shock and originates near the same fault. Aftershocks can occur for days, weeks, or even months after a major quake.

**All-Hazards Approach** – A preparedness and planning strategy that considers a broad range of potential threats and hazards, allowing flexible, scalable responses.

**Continuity of Operations (COOP)** – A plan that ensures essential functions can continue during and after a disaster.

**Debris Management** – The process of clearing, collecting, and disposing of debris resulting from a disaster, necessary for restoring access and public safety.

**Drop, Cover, and Hold On** – The recommended protective action during an earthquake: drop to the ground, take cover under sturdy furniture, and hold on until the shaking stops.

**Earthquake** – The shaking of the ground caused by a sudden slip on a fault, releasing energy in seismic waves.

Emergency Operations Center (EOC) – The centralized location where coordination of information and resources occurs during an emergency response.

**Epicenter** – The point on the Earth's surface located directly above the focus of an earthquake.

**Fault** – A fracture or zone of fractures in the Earth's crust where movement has occurred, resulting in earthquakes.

**Hazard Mitigation** – Actions taken to reduce or eliminate long-term risks to people and property from hazards and their effects.

**Hazus** – A nationally applicable standardized methodology developed by FEMA to estimate potential losses from disasters including earthquakes, floods, and hurricanes.

**Incident Command System (ICS)** – A standardized on-scene organizational structure for managing incidents, part of the National Incident Management System (NIMS).

**Intensity (Seismic)** – A qualitative measure of an earthquake's effects at specific locations, typically measured using the Modified Mercalli Intensity Scale.

**Magnitude** – A quantitative measure of the energy released by an earthquake, commonly expressed using the Richter or Moment Magnitude Scale (MMS).

**Moment Magnitude Scale (MMS)** – The modern scale used to measure the size of earthquakes in terms of energy released.

**Public Information Officer (PIO)** – The official responsible for interfacing with the public and media and coordinating information release.

**Resilience** – The capacity of individuals, communities, and systems to survive, adapt, and recover from disasters.

**Seismic Zone** – A geographic area that experiences a certain level or frequency of earthquakes due to underlying tectonic conditions.

**ShakeMap** – A USGS product that shows the extent of ground shaking immediately following an earthquake.

**Situational Awareness** – Real-time understanding of the evolving conditions and potential impacts during an incident to inform decisions.

**Tsunami** – A series of sea waves caused by the displacement of a large volume of water, often triggered by underwater earthquakes.

## APPENDICES

- Appendix A – Earthquake Damage Assessment Checklist
- Appendix B – Earthquake Battle Rhythm

## APPENDIX A – EARTHQUAKE DAMAGE ASSESSMENT CHECKLIST

This checklist is intended for use by trained assessors (Building Inspectors, Public Works, Emergency Management, and authorized responders) to rapidly identify damage severity, prioritize life safety, and inform response and recovery operations.

**General Guidelines**

- Conduct visual assessments only. Do not enter severely damaged structures.
- Record findings using mobile applications, forms, or photo documentation as applicable.
- Use the tags: Destroyed, Major, Minor, Affected, or No Damage.
- Coordinate with the EOC Damage Assessment Unit and submit reports as directed.
- Use GIS tools or paper maps to mark assessed zones and structures.

**Assessment Checklist**

1. Structure Information

- Address or location
- Building type (residential, commercial, government, critical facility)
- Construction type (wood-frame, masonry, steel, etc.)
- Number of stories / occupancy
- Year built (if known)

2. Exterior Damage Indicators

- Collapsed walls or roof
- Chimney failure or spalling
- Foundation cracks or shifting
- Broken windows or glass
- Tilted or leaning structure
- Displaced stairways or decks
- Visible cracks in load-bearing elements
- Fallen façade, signage, or parapets
- Roof or siding damage

3. Utility Hazards

- Downed power lines nearby
- Gas odor present
- Water or sewer line rupture visible
- Electrical hazards or exposed wiring
- Fire damage from post-quake ignition

4. Access and Safety Concerns

- Debris blocking road/access
- Unsafe to enter structure
- Entry requires USAR or fire support
- Immediate hazard to public or responders
- Barricades or signage needed

5. Critical Infrastructure & Lifelines

- Hospitals or clinics affected
- Police/fire station damage
- Utilities (substations, water treatment, towers) damaged
- Schools or shelters affected
- Bridges or tunnels impacted
- Traffic signals down

6. Casualties and Occupants

- Occupants trapped or injured
- Fatalities confirmed
- Structure evacuated
- Shelter needs identified
- Language or AFN considerations present

**Damage Classification Tags**

| Tag | Criteria Example |
|---|---|
| **Destroyed** | Structure completely collapsed, unsafe, or beyond repair |
| **Major** | Significant structural damage (e.g., foundation shifted, roof collapsed) |
| **Minor** | Cosmetic or repairable damage (e.g., broken windows, cracked walls) |
| **Affected** | Minimal damage (e.g., fallen ceiling tiles, minor non-structural issues) |
| **No Damage** | No visible damage |

## APPENDIX B - EARTHQUAKE BATTLE RHYTHM

| STATUS | ESF | ACTIONS |
|---|---|---|
| **Normal Operations** | 1 | Maintain infrastructure maps, inspect key routes, update detour plans. |
| **Normal Operations** | 2 | Maintain system redundancy, test alert tools (IPAWS, WEA), conduct interoperability tests. |
| **Normal Operations** | 5 | Maintain and update plans, conduct training and exercises, maintain situational awareness. |
| **Normal Operations** | 6 | Review sheltering protocols, train staff, verify MOUs with American Red Cross. |
| **Normal Operations** | 7 | Inventory emergency supplies, validate vendor contracts, update resource databases. |
| **Normal Operations** | 8 | Monitor disease trends, update shelter health protocols, conduct public outreach. |
| **Normal Operations** | 10 | Maintain hazmat response readiness, inspect known risk sites. |
| **Normal Operations** | 13 | Conduct patrols, community outreach, maintain mutual aid agreements. |
| **Normal Operations** | 15 | Conduct public education campaigns, maintain social media readiness, test notification systems. |
| **Response Phase** | 1 | Clear debris from key routes, assess transportation infrastructure, deploy detour signage. |
| **Response Phase** | 2 | Ensure radio/digital systems are operational, maintain situational reporting tools. |

| | | |
|---|---|---|
| **Response Phase** | 3 | Conduct damage assessments of city infrastructure, assist with debris clearance. |
| **Response Phase** | 4 | Perform life safety operations including suppression, rescue, and triage. |
| **Response Phase** | 5 | Fully activate EOC, coordinate all ESFs, issue SitReps, and facilitate briefings. |
| **Response Phase** | 6 | Open and staff shelters, support evacuees and displaced populations. |
| **Response Phase** | 7 | Deploy resources, track requests, manage staging and POD sites. |
| **Response Phase** | 8 | Provide public health services in shelters, monitor for outbreaks, support EMS. |
| **Response Phase** | 9 | Conduct structural search and rescue, coordinate with USAR if needed. |
| **Response Phase** | 10 | Respond to hazmat releases, establish exclusion zones. |
| **Response Phase** | 12 | Coordinate power restoration with Dominion, track outages affecting critical facilities. |
| **Response Phase** | 13 | Provide security, access control, traffic management, and support evacuations. |
| **Response Phase** | 14 | Assess private sector impacts, coordinate with business community. |
| **Response Phase** | 15 | Issue emergency messaging, manage media, operate JIC if needed. |
| **Recovery Phase** | 1 | Repair damaged infrastructure, restore transit routes. |

| | | |
|---|---|---|
| **Recovery Phase** | 3 | Manage long-term debris removal and reconstruction. |
| **Recovery Phase** | 5 | Lead recovery planning, coordinate unmet needs tracking, support AAR development. |
| **Recovery Phase** | 6 | Support long-term housing referrals, close shelters, support reunification. |
| **Recovery Phase** | 7 | Replenish supplies, demobilize equipment, support recovery logistics. |
| **Recovery Phase** | 8 | Monitor long-term health impacts, support behavioral health recovery. |
| **Recovery Phase** | 10 | Oversee cleanup and environmental remediation, assist regulatory reporting. |
| **Recovery Phase** | 12 | Finalize full system restoration, report infrastructure status. |
| **Recovery Phase** | 13 | Support reentry, maintain order in damaged areas, resume routine operations. |
| **Recovery Phase** | 14 | Coordinate business reopening efforts, connect stakeholders with state/federal recovery resources. |
| **Recovery Phase** | 15 | Share recovery information, support rumor control, conduct community outreach. |