Emergency Operations &

Resiliency Framework

Hazard-Specific Annex

Hurricane/Extra-Tropical Storm Hurricane

## Nor'easter

May 2025

PURPOSE AND SCOPE

The purpose of this Hazard-Specific Annex is to provide an organizational framework and response capability from which the city and its partners can respond to a tropical storm/hurricane/nor'easter. It is designed to not only meet the legal mandates outlined by State and local codes in the areas of emergency services and emergency management but to do so with unity of effort among all participating agencies.

BACKGROUND

Per the 2022 Southside Hampton Roads Hazard Mitigation Plan (p. 4:51), hurricanes and tropical storms are characterized by closed circulation developing around a low-pressure center in which the winds rotate counterclockwise in the Northern Hemisphere. Tropical cyclones act as a mechanism to transport built-up heat from the tropics toward the poles. In this way, they are critical to the earth's atmospheric heat and moisture balance. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes. Coastal areas, such as Norfolk, are particularly vulnerable to storm surges, wind-driven waves, and tidal flooding, which can prove more destructive than winds.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. Most hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is September 10th. However, Tropical Storm Climatology from the National Hurricane Center (NHC) shows that storms can form outside of hurricane season. Based on a 30-year climate period from 1991 to 2020, an average Atlantic hurricane season has 14 named storms, 7 hurricanes, and 3 major hurricanes (category 3,4, or 5), according to the National Hurricane Center.
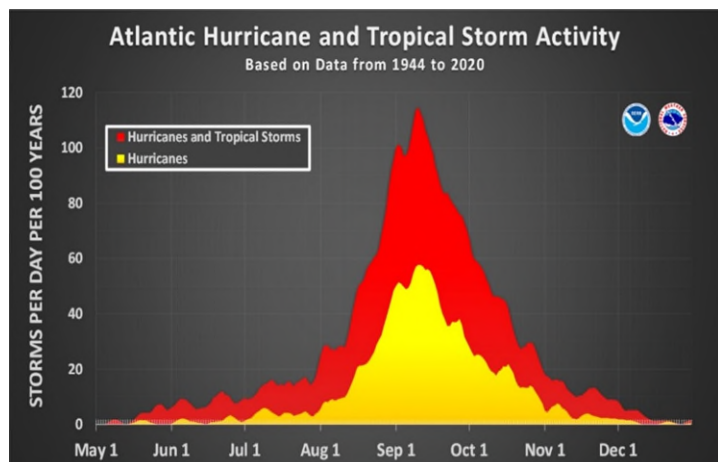
As a hurricane develops, barometric pressure (measured in millibars or inches) at its center falls, and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. It's at this point that the National Hurricane Center begins to issue a forecast track for the storm. **When maximum sustained winds reach or exceed 39 miles per hour (MPH), the system is designated a tropical storm and is given a name.** When sustained winds reach or exceed 74 MPH, the storm is deemed a hurricane. Hurricanes are classified by wind speed, using the Saffir-Simpson Hurricane Wind Scale. This scale categorizes hurricanes from Category 1 to Category 5.

SAFFIR-SIMPSON HURRICANE WIND SCALE		
Category	Maximum Sustained Wind Speed (MPH)	Damage Summary
1	74-95	Very dangerous winds will produce some damage
2	96-110	Extremely dangerous winds will cause extensive damage
3	111-129	Devastating damage will occur
4	130-156	Catastrophic damage will occur
5	157+	Catastrophic damage will occur
Source: National Hurricane Center		

Categories 3, 4, and 5 are classified as "major" hurricanes, and while hurricanes within this range comprise only 20% of total tropical cyclones making landfall, they account for over 70% of the damage in the United States.

In a hurricane, the strongest winds will be found in the area surrounding the center or eye of the storm, in an area referred to as the eyewall. This small area, typically 10-30 miles in diameter, is where the sustained hurricane-force winds will be located. However, sustained tropical storm force (39-73mph) winds can extend hundreds of miles out from the center of a storm.

STORM SURGE THREAT FROM HURRICANES

NHC defines storm surge as an abnormal water level rise generated by a storm over and above the predicted astronomical tide. Storm tide is the water level rise due to the combination of storm surge and the astronomical tide. This rise in water level can cause extreme flooding in coastal areas, particularly when storm surge coincides with a normal high tide, resulting in storm tides reaching up to 20 feet or more in some cases. However, to avoid confusion, "storm surge" is used interchangeably. Keep in mind that neither definition includes wave action occurring on top of the surge, which can add additional feet to the overall water level.

Storm surge is primarily caused by the strong onshore winds of a hurricane or tropical storm. Storm surge is a very complex phenomenon because it is sensitive to the slightest changes in **storm intensity,**

forward speed, size (radius of maximum winds), angle of approach to the coast, and the shape and characteristics of the coastline.

In Norfolk, storm surge can vary significantly across town due to the complex layout of our waterways. Rivers and creeks inland, away from the Elizabeth River or Chesapeake Bay, can experience water level rises when storms approach. Just because you live inland does not mean you're safe! If you live on a tidal creek, marsh, or along the shoreline, you are at risk from storm surge.
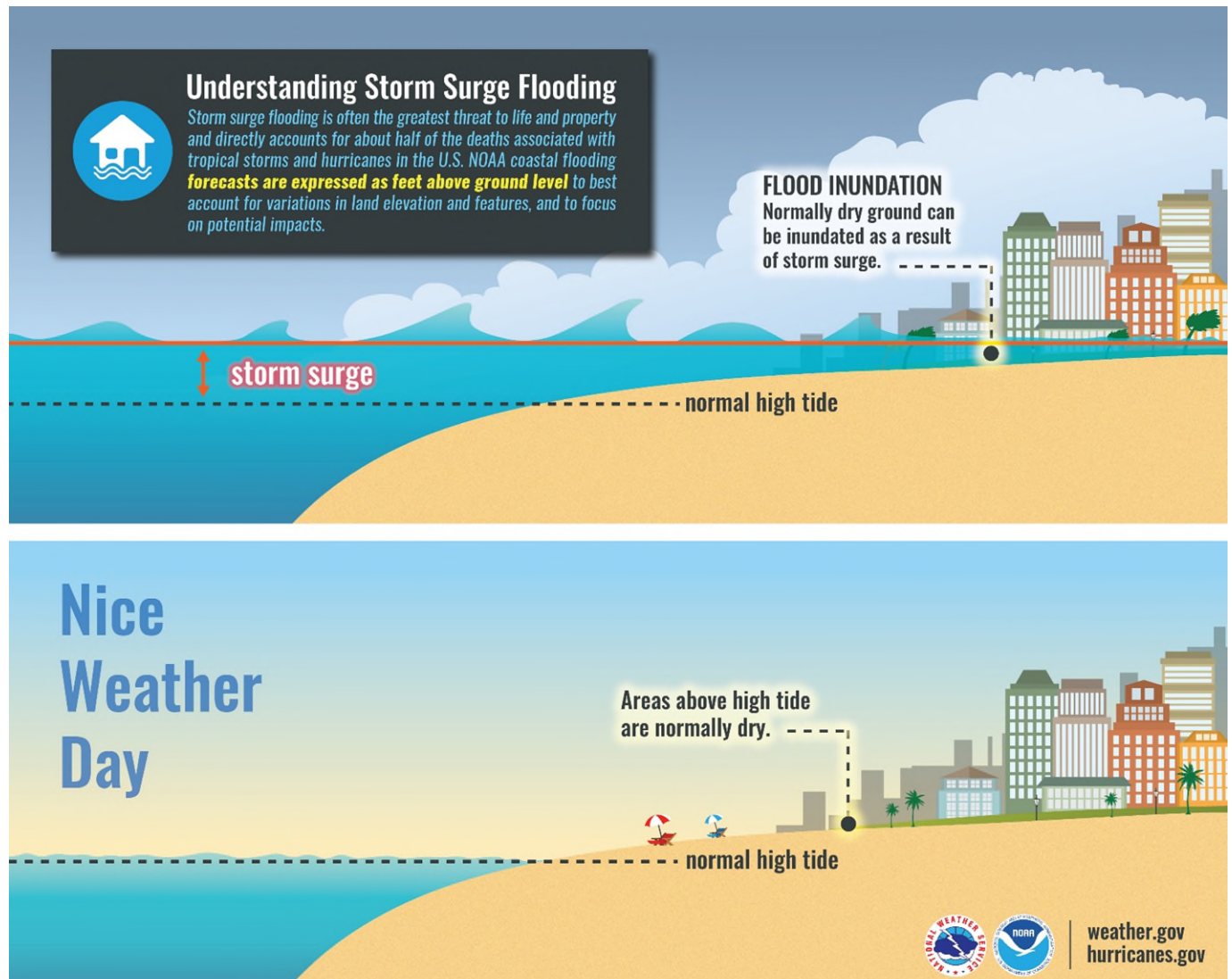
A storm does not have to make direct landfall to create a storm surge. Storms even far offshore can produce a higher than normal tide level that can create dangerous conditions.

Storm surge is one of the most dangerous parts of a hurricane. As such, this threat is often what requires evacuations. The mantra is to "run from the water; hide from the wind." Evacuation decisions are focused on areas vulnerable to storm surges. No longer associated with where a storm lies on the Saffir-Simpson scale, the decision to evacuate an area will be dependent on storm surge models depicting the storm's size, strength, speed, direction, projected landfall location, and depth of flooding. The order to evacuate would be given by the Evacuation Zone.

The City of Norfolk uses Zones A, B, and C. Review https://www.vaemergency.gov/know-your-zone as well as the Team Norfolk Functional Annex: Evacuation to ensure you know your evacuation zone.

ADDITIONAL THREATS FROM HURRICANES

Damage during hurricanes may also result from spawned tornadoes and inland flooding associated with the heavy rainfall that usually accompanies these storms. According to the NHC, tropical cyclones often produce widespread, torrential rains of more than 6 inches. Rainfall amounts are not directly related to the strength of tropical cyclones but rather to the speed and size of the storm, as well as the geography of the area. Slower-moving and larger storms produce more rainfall.

Waves, erosion, and rip currents, even from storms hundreds of miles off the coast, are also a threat from hurricanes in Norfolk.

Extended power outages, flood waters that linger even after the storm leaves, and roadway debris are likely following a hurricane.
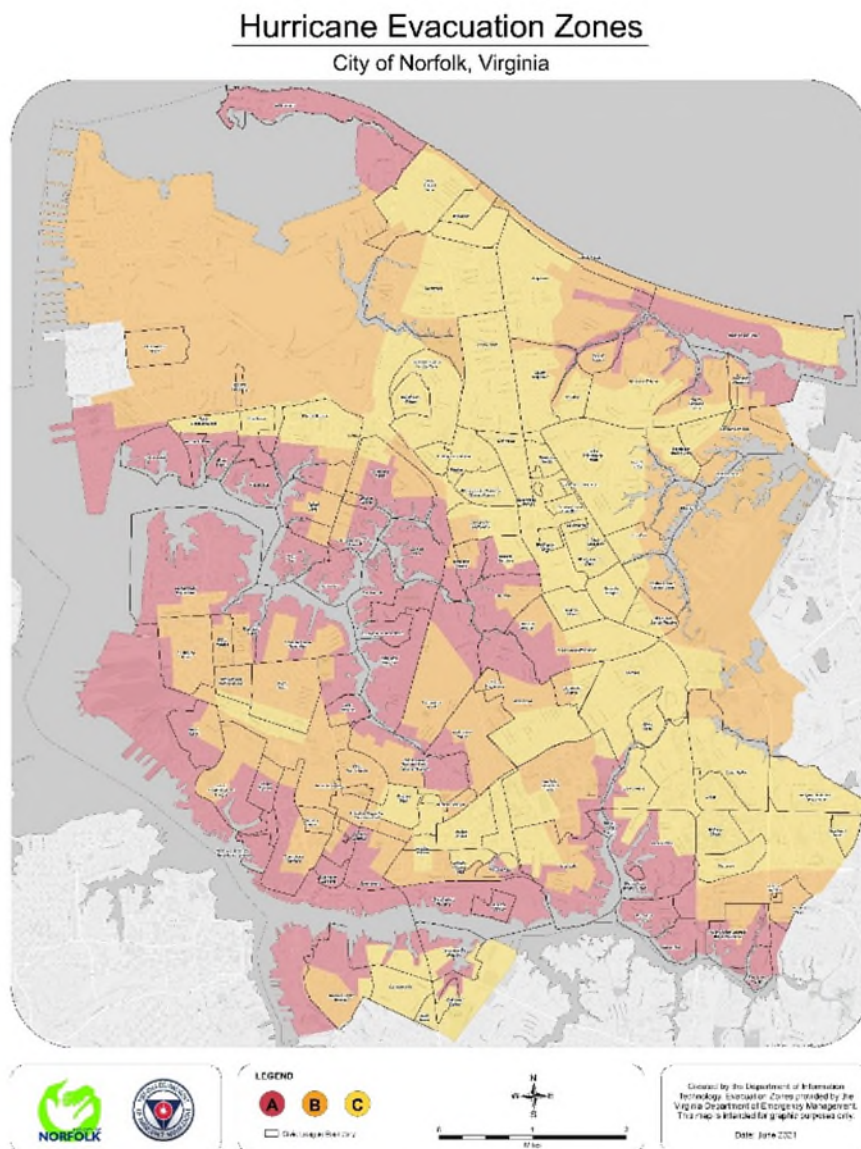
Hampton Roads is in an area that has a risk of seeing damage from a hurricane in any given year. Wind damage in the region from events in recent memory has been marked by many downed trees, damage to roofs, siding, and signs, power outages of typically less than a week because of downed power lines and trees across lines, wind-blown debris damage and accumulation. Downed trees can temporarily block roadways, impeding transportation; however, these blockages are typically repaired swiftly by the Virginia Department of Transportation (VDOT) and local roadway maintenance crews. Business interruptions resulting from power outages are commonplace, and many restaurants and cold storage facilities can be negatively impacted, especially by prolonged outages. Commodities such as ice and gas are in high demand to power both home and business generators. Since wind and flood events typically occur simultaneously, the combined impacts are more devastating in flood-prone areas. Roof damage from wind can subsequently result in rain damage to structures, as well. Combined storm surge and wind impacts to shorefront areas of Norfolk may make some homes and businesses uninhabitable for days to weeks at a time, according to the 2022 Southside Hampton Roads Hazard Mitigation Plan (P. 4:53).

The National Weather Service (NWS) began keeping weather records on January 1, 1871. Before that, information on past hurricanes and tropical storms to impact the Southside Hampton Roads region was taken from ship logs, accounts from local citizens, newspapers, and other sources. The NWS local office in Wakefield has compiled a list of historical hurricanes that have impacted Hampton Roads. In this, they note that hurricanes come close enough to produce hurricane-force winds approximately three times every 20 years. Two or three times a century, winds and tides produce considerable damage and significantly threaten life. Three known storms have been powerful enough to alter coastal features in Eastern Virginia. These include the widening of the Lynnhaven River (September 6, 1667) and the formation of Willoughby Spit (October 19, 1749). [1]

On September 14th, 1944, a hurricane created the fastest 1-minute wind speed of 134 mph at Cape Henry, which is the highest speed of record in this area. Gusts were estimated to be 150 mph. The NWS office, which at the time was in Norfolk, recorded 72 mph with gusts to 90 mph. NOAA's Historical Hurricane Tracks tool (https://coast.noaa.gov/hurricanes/), which includes storms since 1842 in its database, shows that 70 named storms (TS or hurricanes) have tracked within 75 miles of Norfolk. 23 of these 106 named storms were classified as hurricanes when they moved through this area. Other storms not of TS or Hurricane strength, including the remnants of storms, have moved through the area, resulting in heavy rain or flooding.

Hampton Roads also faces indirect impacts from tropical systems as they weaken after moving inland. The remnants of a tropical storm or hurricane that makes landfall on the Gulf Coast or other locations on the East Coast of the United States can move into the Norfolk area, bringing the risk of heavy rain,

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[1] The Hurricane History of Central and Eastern Virginia - https://www.weather.gov/media/akq/miscNEWS/hurricanehistory.pdf

flooding, and tornadoes. In 2004, the remnants of Hurricane Ivan, which made landfall along the Gulf Coast, spawned a tornado outbreak across Virginia.

Tropical Storms and Hurricanes within 75 miles of Norfolk, VA since 1842 (Source: NOAA Historical Hurricane Tracks)
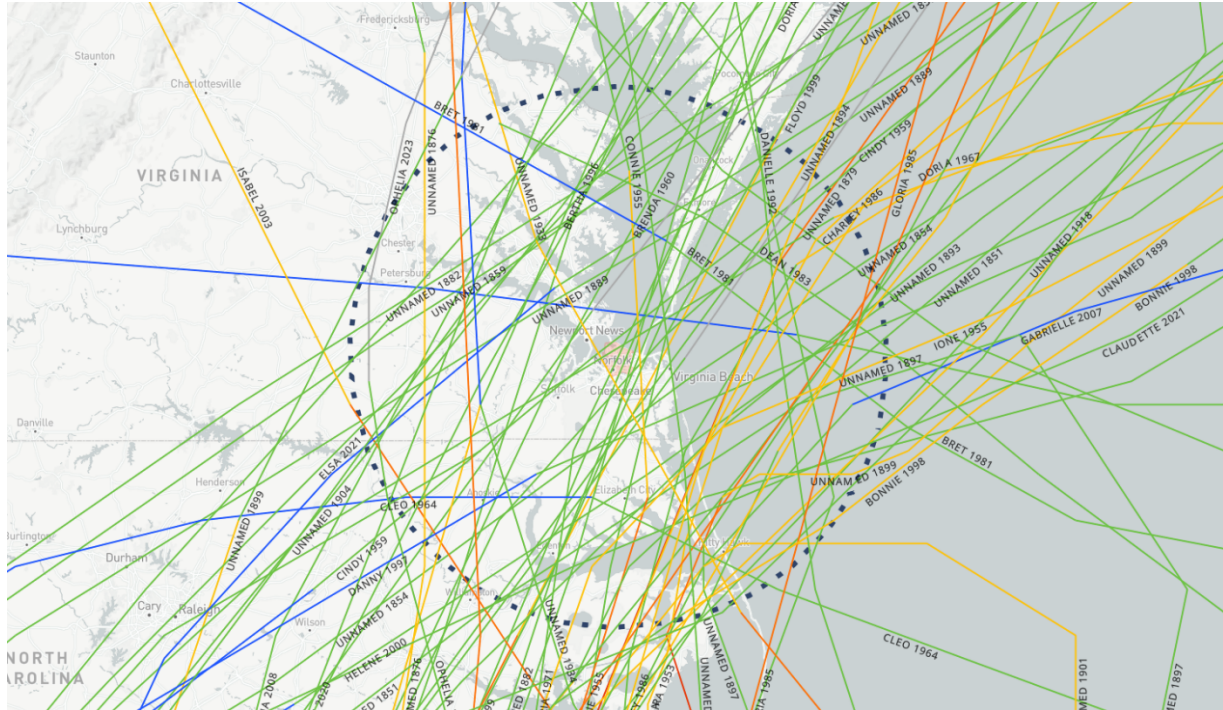
Hurricanes within 75 miles of Norfolk, VA since 1842 (Source: NOAA Historical Hurricane Tracks)
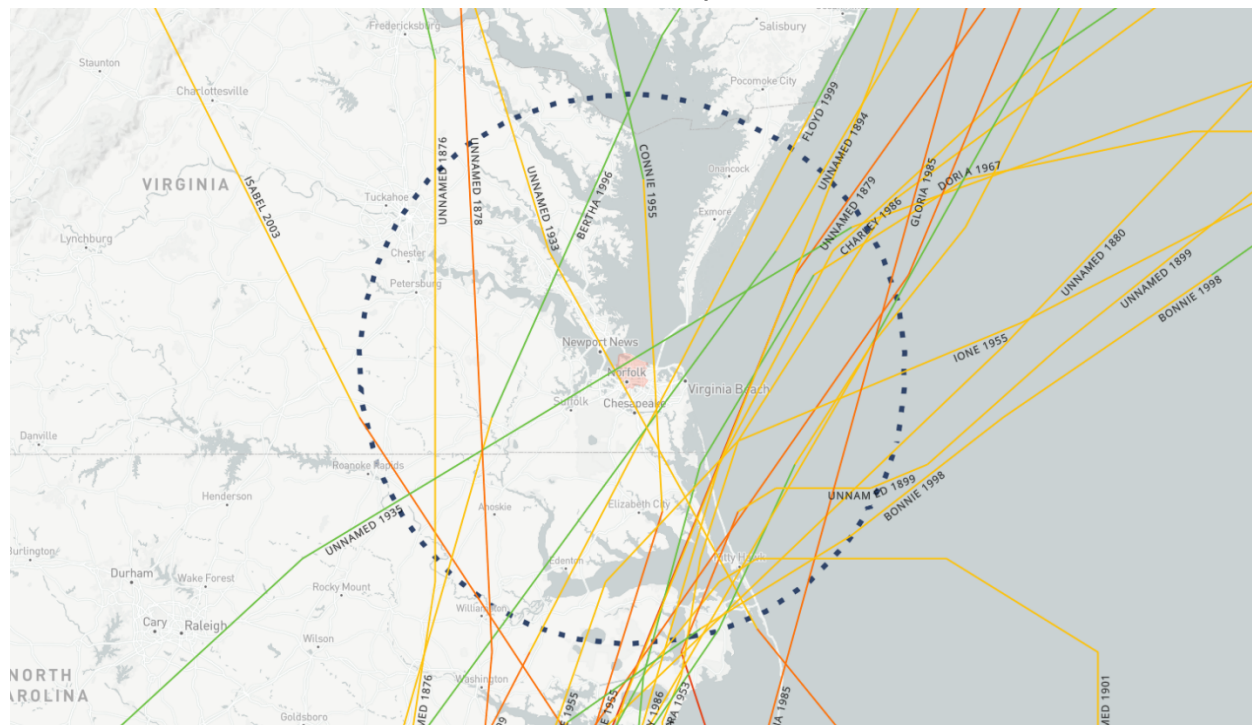
For a look at storm surge levels associated with some of these storms, see the chart on the next page

Some of the most memorable and impactful hurricanes in recent history are the Chesapeake-Potomac Hurricane of 1933, Hurricane Isabel, Hurricane Irene, and Hurricane Sandy. These storms are remembered for their major (>6.5 ft. MLLW) storm surge flooding of over 7 ft. MLLW at Sewells Point in Norfolk. Extensive flooding of areas adjacent to the Chesapeake Bay, James River, Lynnhaven River,

Sewells Pt (SWPV2) Historical Crests� (P.O.R= Jul 1927-Present)						
Rank	Ft./MLLW	Ft./MHHW	NAVD88	Date	LST/LDT	Event� (blue denotes Tropical)
1	8.02	5.26	6.41	8/23/1933	10:00	Ches-Potomac Hurricane
2	7.89	5.13	6.28	9/18/2003	17:00	Hurricane Isabel
3	7.74	4.98	6.13	11/12/2009	18:30	Ida Remnants *(6)
4	7.55	4.79	5.94	8/27/2011	20:18	Hurricane Irene
5	7.22	4.46	5.61	3/7/1962	10:00	Ash Wednesday Nor'easter *(3)
6	6.81	4.05	5.20	10/29/2012	9:12	Hurricane Sandy
7	6.77	4.01	5.16	11/22/2006	10:06	Nor'easter
8	6.72	3.96	5.11	9/18/1936	10:00	Hurricane 13
9	6.60	3.84	4.99	2/5/1998	4:00	Nor'easter *(3)
10	6.53	3.77	4.92	10/7/2006	9:30	Onshore Winds *(2)
11	6.50	3.74	4.89	10/4/2015	15:24	Hurricane Joaquin (offshore) *(3)
12	6.41	3.65	4.80	4/27/1978	0:01	Nor'easter
13	6.32	3.56	4.71	4/11/1956	22:00	Coastal Storm
14	6.28	3.52	4.67	1/3/2022	10:18	Nor'easter
15	6.18	3.42	4.57	12/19/2009	11:30	Nor'easter

Purple Shading indicates "MAJOR" Flooding   Red Shading indicates "MODERATE" Flooding

*(number) in event column denotes multiple tides hit at least Moderate flood thresholds
All Water Levels use Verified 6-min data when available

and tidal creeks of Norfolk occurred because of these storms.

Tidal levels are commonly reported in Mean Lower Low Water (MLLW), which is what the National Weather Service uses to define flood levels in products issued locally. MLLW is the mean of the lowest of the low tide values.

Historical hurricane history shows that the highest threat from tropical cyclones often occurs in the August – September - October timeframe in the Norfolk area. However, there is a threat of storms through the entire hurricane season, and residents should be prepared year-round.

CATEGORY	STAGE
Major Flooding	6.5 ft + MLLW
Moderate Flooding	5.5 ft MLLW
Minor Flooding	4.5 ft MLLW

ESTIMATES OF POTENTIAL LOSSES

Detailed loss estimates for the wind damage associated with the tropical storm hazard were developed based on probabilistic scenarios using Hazus (FEMA analysis tool for identifying areas of high risk). The table taken from the 2022 Hampton Roads Hazard Mitigation Plan (P. 5:48 Table 5.9) below shows estimates of potential building damage for WIND ONLY for the 100-year return period and annualized total losses. These figures are based on "worst-case" scenarios.

ESTIMATES OF POTENTIAL BUILDING DAMAGE – WIND ONLY				
	Building Damage	Contents and Inventory Damage	Total *	Annualized Total Losses
Norfolk	$168,291,000	$28,515,000	$213,399,000	$10,494,000

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

The table below provides a detailed listing of the number of residential structures expected to be damaged by flooding (coastal storm surge and riverine flooding), and the total dollar losses predicted for all structures for the 100-year event, and Average Annual Damages.

ESTIMATES OF POTENTIAL BUILDING DAMAGE – FLOODING ONLY					
	Number of Single Family Residential Buildings Damaged (100-year event)	Total All Building Type Losses (100 year event)	Total Content Losses (100 year event)	Total Losses (100 year event)	Average Annual Losses
Norfolk	2684	$163,342,598	$177,157,526	$340,500,124	$19,264,918

PROBABILITY

The region will likely be impacted by hurricanes and tropical storms in the future. The effects of smaller hurricanes (Categories 1 and 2 with wind speeds from 74-110 mph) and tropical storms (sustained wind speeds of at least 39 mph and torrential rains) will be more frequent, as storms make landfall along the North Carolina and Virginia coastlines could impact the region in any given year.

The 2022 Hampton Roads Hazard Mitigation Plan (P. 4:59) says that direct impacts from hurricanes category 3 and 4 intensities are rare in Hampton Roads due to 1) historical tracks remaining offshore or impacting land before reaching Hampton Roads; and 2) cooler Atlantic Ocean water temperatures north of Cape Hatteras, which diminish a storm's ability to maintain intensity, or intensify. A Category 5 hurricane is considered implausible in Hampton Roads due to the cooler water temperatures. However, history shows us that while the probability that a powerful hurricane with wind speeds of 111 mph or more will strike the region in any given year is low, such storms have occurred in the region's history, and a storm of that magnitude is possible in the future. It is also important to remember that wind speed is only part of a hurricane's destruction potential. Storm surge commonly associated with a greater strength storm can occur even in a weaker category storm. It's important to not focus on the category of a storm but on the overall impact. A strengthening storm or a weaker but bigger storm could bring wider impacts than a smaller, more compact, higher-category storm.

TERMS AND PRODUCTS

The National Weather Service uses the following terms while issuing watches and warnings:

Tropical Depression
An organized tropical system of persistent clouds and thunderstorms with a closed low-level circulation and maximum sustained winds of 38mph or less.

Tropical Storm

An organized tropical system of persistent clouds and thunderstorms with a closed low-level circulation and maximum sustained winds of 39-74mph.

Hurricane

A tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 74 mph or more.

Potential Tropical Cyclone

A term used in NWS advisory products to describe a disturbance that is not yet a tropical cyclone, but which poses the threat of bringing tropical storm or hurricane conditions to land areas within 72 hours. With these systems, a 5-day forecast and watches/warnings can be issued by the National Hurricane Center.

Storm Surge

An abnormal rise in sea level accompanying a hurricane or other intense storm, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the cyclone. Storm surge is usually estimated by subtracting the normal or astronomic high tide from the observed storm tide.

NHC Advisory

The National Hurricane Center is responsible for issuing forecast tracks and intensity information. Track forecasts are issued at 5 am, 11 am, 5 pm, and 11 pm. Intermediate advisories with updated storm/warning info are issued at 2 am,8 am, 2 pm, and 8 pm. When a storm gets close to land and can be seen by radar, position updates will be issued every hour.

WATCHES AND WARNINGS

Tropical Storm Watch (48-hour lead time)

Tropical storm conditions (sustained winds of 39 to 73 mph) are possible within the specified coastal area within 48 hours.

Hurricane Watch (48-hour lead time)

Hurricane conditions (sustained winds of 74 mph or higher) are possible within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical storm-force winds.

Tropical Storm Warning (36-hour lead time)

Tropical storm conditions (sustained winds of 39 to 73 mph) are expected within the specified coastal area within 36 hours in the eastern and central Pacific and Atlantic Basins and 24 hours in the rest of the Pacific.

Hurricane Warning (36-hour lead time)

Hurricane conditions (sustained winds of 74mph or higher) are expected somewhere within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

Coastal Flood Advisory (usually a 12-hour lead time)

Minor flooding of coastal areas is possible.

Coastal Flood Watch (12–48-hour lead time)

A Coastal Flood Watch is issued when moderate to major coastal flooding is possible. Such flooding would potentially pose a serious risk to life and property, with the inundation of buildings possible. Typically used for moderate or higher flooding levels in NON-TROPICAL related systems. See Storm Surge Watch/Warning for products issued during tropical systems.

Storm Surge Watch

The possibility of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 48 hours. Based on objective guidance and subjectively adjusted by the forecaster, the Potential Storm Surge Flooding Map shows the geographical areas where inundation from storm surge could occur and how high above ground the water could potentially reach in those areas, based on the latest official NHC forecast and its likely errors.

Coastal Flood Warning (12–24-hour lead time)

A Coastal Flood Warning is issued when moderate to major coastal flooding is occurring or is imminent. This flooding will pose a serious risk to life and property.

Storm Surge Warning

The danger of 'life-threatening' inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours. Based on objective guidance and subjectively adjusted by the forecaster, the Potential Storm Surge Flooding Map shows the geographical areas where inundation from storm surge could occur and how high above ground (**3' or**

greater) the water could potentially reach in those areas, based on the latest official NHC forecast and its likely errors.

Extreme Wind Warning (within the hour)
Alert for immediate arrival of extreme winds associated with a major hurricane. The criteria is defined as 115+ mph sustained surface winds. These levels of winds are usually associated with the eyewall. Take immediate shelter in the interior portion of a well-built structure.

Tornado Warning (within the hour)
A tornado has been spotted or indicated by Doppler radar. Take shelter on the lowest floor, in an interior room such as a hallway, bathroom or closet. Cover your head with pillows, blankets or a helmet.

Flash Flood Warning (within the hour)
Heavy rainfall is causing flooding now, or it is expected to cause flash flooding shortly. Remain alert for rising water and never drive down a flooded roadway.

WEA ALERTS AUTOMATICALLY SENT BY NWS

The issuance of a **HURRICANE WARNING** or **STORM SURGE WARNING** will automatically trigger a Wireless Emergency Alert to cell phones from the National Weather Service. Examples of the text included in these alerts are seen below:

"**National Weather Service: A HURRICANE WARNING** is in effect for this area for dangerous and damaging winds. This warning is issued up to 36 hours before hazardous conditions begin. Urgently complete efforts to protect life and property. Have food, water, cash, fuel, and medications for 3+ days. FOLLOW INSTRUCTIONS FROM LOCAL OFFICIALS."

"**National Weather Service: A STORM SURGE WARNING** is in effect for this area for the danger of life-threatening flooding. This warning is issued up to 36 hours before hazardous conditions begin. Urgently complete efforts to protect life and property. Follow evacuation orders if given for this area to avoid drowning or being cut off from emergency services."

ASSUMPTIONS

- In most cases, there will be a lead time before the incident occurs, which will vary depending on the storm.
- Forecasts will change in the days leading up to a storm, and they are generally more accurate as the event approaches.
- Even with designated evacuation zones, a mass evacuation, if necessary, will be extremely challenging due to heavy traffic. Expect bottlenecks at tunnels and construction zones.
- Mandatory evacuation orders will not achieve full (100%) compliance.

- Following a storm with strong winds, particularly if the ground is already saturated, a temporary loss of utilities such as power, communications, and potable water is expected due to downed trees and power lines. Restoration of power will be prioritized.
- Communication services, including AM and FM radio broadcasts, will be quickly restored if lost.
- After the emergency, there will be high demand for critical supplies like potable water, which may affect distribution.
- Medical support for the community may be strained, making it challenging to provide necessary services.
- Individuals with medical needs may be unable to attend critical appointments for post-storm life-sustaining care.

CONCEPT OF OPERATIONS

GENERAL

The Director of the Department of Emergency Management assumes the role of Incident Commander. There will be an activation of Norfolk's Emergency Operations Center, where representatives from each department and specified agencies will be expected.

DIRECTION AND CONTROL

Direction and control will be coordinated by the Emergency Operations Center. Regularly scheduled EOC briefings as well as the use of Email, Norfolk Alert, and the Homeland Security Information Network (HSIN) will provide situational awareness, facilitate information sharing, and otherwise document the incident.

OPERATIONAL PERIODS

Operation Periods will vary, starting 24 hours before landfall. From that point, 12-hour shifts will typically be conducted with operational periods of 7 am to 7 pm and 7 pm to 7 am. These periods can vary as determined by the EOC.

SITUATIONAL AWARENESS AND COORDINATION

The Office of Emergency Management will coordinate EOC briefings.

VDEM / VEOC will also schedule conference calls, sending notifications via email and SWAN (Statewide Area Network). Conference calls will also be scheduled before the storm by the Hampton Roads Planning District Commission among the Hampton Roads Chief Administrative Officers (CAOs).

U.S. Coast Guard Captain of the Port will organize a post-hurricane conference call with the appropriate stakeholders to assess, outline, and prioritize the maritime transportation system recovery effort.

HURRICANE TRACKING (FIND DETAILS IN THE APPENDIX AND HURREVAC FUNCTIONAL ANNEX).

WEATHER & TIDES

The National Weather Service in Wakefield and the National Hurricane Center provide products that can be useful during tropical/extra-tropical storm/hurricane or nor'easter events.

The National Hurricane Center webpage is https://www.nhc.noaa.gov/

Full Advisories (track and strength updates) from the National Hurricane Center are issued at 5 am, 11 am, 5 pm, and 11 pm. Additional intermediate advisories are issued at 2 am, 8 am, 2 pm, and 8 pm. When a system is close enough to the United States to be tracked by radar, a Position Update will be issued each hour. A Tropical Update can also be issued between these advisories to update any significant change in intensity or location.

Once it becomes apparent that the storm has the potential to impact the Norfolk area, local storm impact information can be found on the NWS Wakefield Tropical Weather page:
https://www.weather.gov/akq/Tropical

NWS Hurricane Local Statement from the Wakefield Office will be issued 60 minutes after the advisory and complements the local tropical weather page. These statements are often very long and detailed, with information on each individual impact and threat level for each.

NWS Wakefield will also provide periodic email updates and video briefings to the EOC.

During a storm, tidal information can be obtained by using the NWS's Water Prediction Service Tide Gauges: http://water.weather.gov/ahps2/index.php?wfo=AKQ

Note the two gauges of concern for Norfolk:
- Sewells Point (most referenced)
  - https://water.noaa.gov/gauges/SWPV2
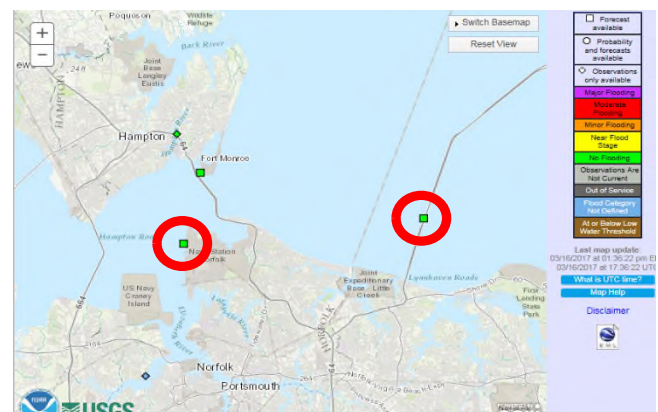
Minor Tidal Flooding- 4.5ft MLLW
Moderate Tidal Flooding – 5.5ft MLLW
Major Tidal Flooding – 6.5ft + MLLW
- Chesapeake Bay at Chesapeake Bay Bridge-Tunnel
  - https://water.noaa.gov/gauges/CHBV2
  - The Chesapeake Bay gauge will experience tidal anomalies before Sewell's Point

Norfolk STORM Map
https://orf.maps.arcgis.com/apps/webappviewer/index.html?id=5f602e6b500c4e159568dc560371088d

Commonwealth of Virginia – Flood Potential
https://vdemgis.maps.arcgis.com/apps/instant/portfolio/index.html?appid=6a2ece58649c4d5d95432d154b75da76

NWS Hurricane Threats and Impacts KMLs:
http://www.weather.gov/hti/

NOAA Historical Hurricane Tracks
https://coast.noaa.gov/hurricanes/

NWS Wakefield Briefing Page
https://www.weather.gov/akq/Brief

Local NWS forecast for Norfolk, VA
https://forecast.weather.gov/MapClick.php?lat=36.8461592&lon=-76.2858937

Current Wind Gusts from Weather Stations
https://www.wrh.noaa.gov/map/?&zoom=9&scroll_zoom=false&center=37.174542956111246,-75.80017089843751&boundaries=true,false,false,false,false,false,false,false,false,false,false&tab=observation&obs=true&obs_type=wind_gust&obs_popup=false&obs_density=20&obs_provider=ALL

24-Hour Rainfall Totals from Weather Stations
https://www.wrh.noaa.gov/map/?&zoom=8&scroll_zoom=false&center=37.07928445197303,-76.06384277343751&boundaries=true,false,false,false,false,false,false,false,false,false,false&tab=observation&obs=true&obs_type=precip&precip_interval=24&precip_filter=0.01,30&obs_popup=false&obs_density=20&obs_provider=ALL

Virginia Institute of Marine Science (VIMS) Tidewatch Map
http://cmap2.vims.edu/SCHISM/TidewatchViewer.html

Buoy Data for marine observations: https://www.ndbc.noaa.gov/
https://forecast.weather.gov/product.php?site=NWS&issuedby=AKQ&product=OMR&format=CI&version=1

Potential Storm Surge Flooding Map

This is the first map issued with the initial Hurricane Watch or, in some cases, with a Tropical Storm Watch. It is available about 60-90 minutes following the advisory release. Shown below is an example
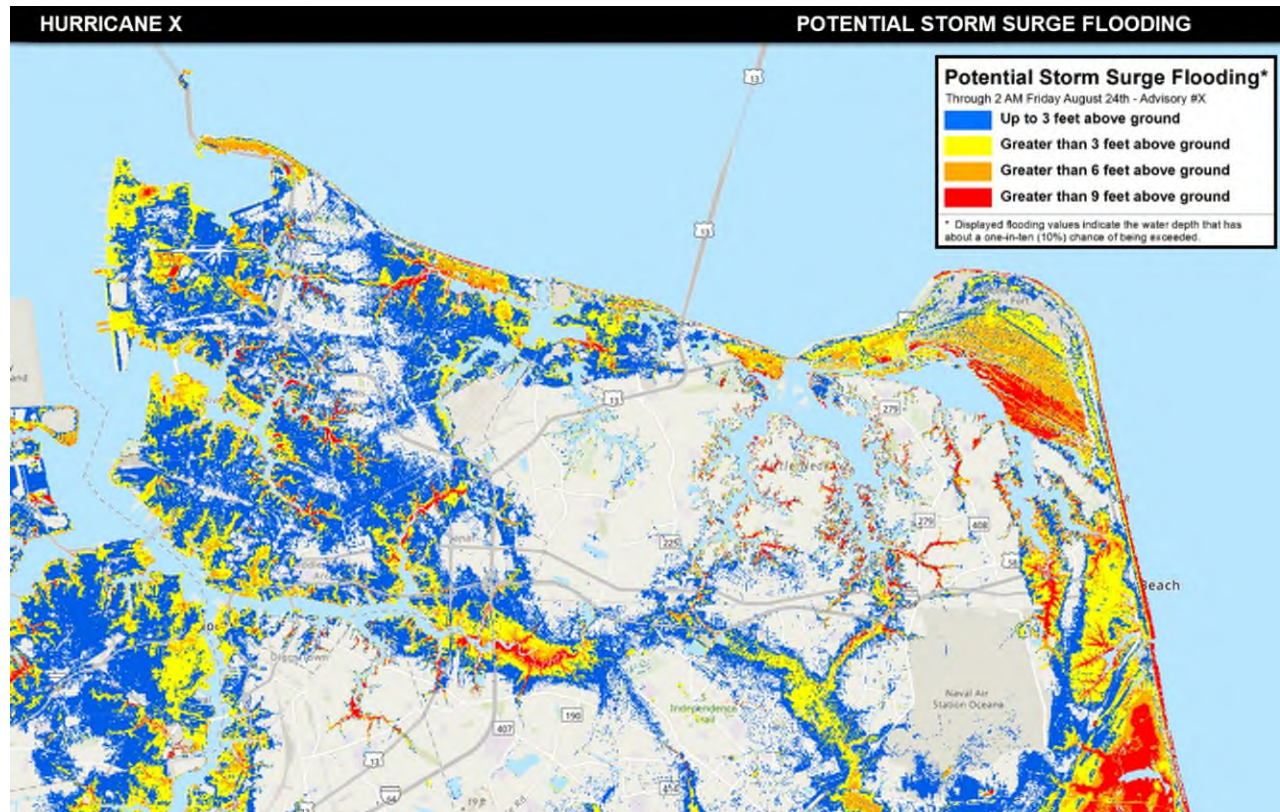
of what such a map may look like for Norfolk and the surrounding area if a hurricane approached with a significant amount of storm surge.

The map is designed as a risk assessment tool for decision-makers. It shows the height above ground that the water <u>could</u> reach based on the current forecast from the National Hurricane Center. The map also accounts for potential errors in the forecast track, intensity, forward speed, and size of the hurricane.

This product is not a forecast of expected conditions; rather, it displays a realistic <u>worst-case scenario for planning</u>.

- Displays storm surge flooding values that have a 1-in-10 chance of being exceeded at a given location.
- 9 out of 10 times, the surge will be less than what is on the map.

NWS Coastal Flood Threat Display
https://www.weather.gov/erh/coastalflood?wfo=akq

Probabilistic Extra-Tropical Storm Surge (PETSS)
https://slosh.nws.noaa.gov/petss/index.php?glat=All&display=0&type=e10&base=Ocean_Basemap&datm=datum&sorc=mean

Sea, Lake, and Overland Surge from Hurricanes (SLOSH)
https://slosh.nws.noaa.gov/sloshPub/disclaim.php

Maximum of the MEOWS (MOM) http://www.nhc.noaa.gov/surge/momOverview.php

Definition: Runs storms from all directions and retains the highest level at each spot. It is an all-encompassing product and appropriate when uncertainty is high and/or there is no tolerance for risk.

Maximum Envelope of Water (MEOW)
http://www.nhc.noaa.gov/surge/meowOverview.php

Definition: MEOW: Runs families of storms (from the same direction, different landfall locations) and retains the highest (worst-case) value that could occur in each spot = used to develop surge zones. MEOWs are appropriate when you can narrow them down to a more specific scenario.

Probabilistic Storm Surge (P-Surge) Explanation and Methodology
https://www.nhc.noaa.gov/surge/inundation/

P-Surge in Hurrevac (HVX) (Account Required)
https://hvx.hurrevac.com/hvx/

- From the menu of storm options, select the Operational Storm Surge Products option.
- Make sure to select the "Potential Flooding **with Tidal Mask**." This option helps to gray out areas that normally flood due to high tides. Note: it's currently unclear if the P-Surge data useful in HVX will be useful for this specific event. The good news is that "Potential Flooding with Tidal Mask" data is also based on the 10% exceedance.
- To see the Legend, select the key-shaped icon on the menu bar.
- You can control the opacity of the inundation layer by right-clicking and then using the slider at the bottom of the menu that pops up.
- You can also change the base map by clicking the "Basemaps" button in the lower right-hand corner of the screen.

NHC Storm Surge Unit
http://www.nhc.noaa.gov/surge/ssu.php

INFRASTRUCTURE IMPACT SUMMARIES REPORT

The Department of Homeland Security's Office of Cyber and Infrastructure Analysis (DHS/OCIA) produces Infrastructure Impact Summaries to address emerging risks to critical infrastructure and to provide increased awareness of related threats, vulnerabilities, and consequences. This product provides an analytical assessment of the potential impacts on critical infrastructure caused by an impending storm. This product also provides estimates regarding wave height, rainfall, projected power outages, and facilities of interest. This product was developed by OCIA's Operational Analysis Division (OAD). Access to the site will require the use of an assigned HSIN-CI username and password. Upon linking directly to the site, the user can then also navigate within HSIN-CI as well as within those Communities of Interest to which they have access.

USEFUL SITES FOR SITUATIONAL AWARENESS OF INFRASTRUCTURE STATUS

Dominion Energy Outage Map:
https://outagemap.dominionenergy.com/external/default.html

Norfolk Storm Water Pump Stations:
WebCTRL http://webctrl/ (Intranet)

Virginia 5-1-1 Road Conditions:
http://www.511virginia.org/

FEMA National Risk Index: https://hazards.fema.gov/nri/

ROLES AND RESPONSIBILITIES

INDIVIDUAL / HOMEOWNER / BUSINESS OWNER

1. Register for Norfolk Alert (https://member.everbridge.net/index/453003085612694#/login). This is our primary notification system for alerting the community and disseminating roles/responsibilities.
2. Monitor preferred source(s) for weather updates as well as the City of Norfolk webpage and social media.
3. Take steps before the incident to prepare yourself/family/loved ones, vehicle(s), and home/business (information available at Norfolk.gov/Emergency). Also, check on neighbors, particularly those with special needs.
4. Make copies of important paperwork (insurance, birth certificates, etc).
5. Take a photo/video tour of your home for insurance purposes
6. Ensure you have the necessary items in your emergency kit to sustain yourself after a storm
7. Secure all loose yard items that could become projectiles in heavy winds; assist in clearing storm drains near their home or business.

8. Be familiar with your evacuation zone (www.knowyourzoneva.org) and be prepared to evacuate or shelter based on directions from Norfolk EOC; Norfolk Alert message to be sent to those areas most threatened by storm surge.
9. Call Norfolk Cares Call Center (664-6510) with any non-emergency questions.

ALL CITY EMPLOYEES

1. Update contact information in PeopleSoft, as important incident-specific information will be sent to city staff via Norfolk Alert, which pulls contact information from PeopleSoft.
2. Review City Administrative Policy 5.3: "Emergency and Inclement Weather Regulations."
3. Maintain communication with your immediate Supervisor.
4. Monitor local radio and TV stations for announcements related to the designation and cancellation of emergency/inclement conditions.

Additional information is available on how to prepare for hurricanes, what your evacuation zone is, and how to sign up for Norfolk Alert on the Office of Emergency Management's website at Norfolk.gov/emergency

ALL EMERGENCY SUPPORT FUNCTIONS

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

For more information on Emergency Support Functions, visit the FEMA site.

EMERGENCY SUPPORT FUNCTION 1: TRANSPORTATION

Primary Agencies: Norfolk Department of Transit, Norfolk Department of Public Works, Hampton Roads Transit (HRT), Virginia Department of Transportation (VDOT)

Support Agencies: Norfolk Airport Authority, Virginia Port Authority, Elizabeth River Crossings (ERC), Amtrak, Norfolk Southern, CSX, United States Coast Guard – Sector Hampton Roads, Norfolk Police Department (Traffic Division), Norfolk Emergency Management, Virginia State Police

KEY RESPONSIBILITIES

Norfolk Department of Transit & Norfolk Department of Public Works

- Coordinate traffic control operations in anticipation of evacuations or post-storm access needs.
- Maintain local roads, traffic signage, and debris clearance to ensure emergency access to shelters, hospitals, and critical infrastructure.

- Coordinate with VDOT to manage ingress and egress routes, road closures, and public messaging.
- Provide status reports to the Norfolk EOC regarding damage, serviceability, and traffic disruptions.

Hampton Roads Transit (HRT)

- Modify public transit and Paratransit/Handi-Ride services to support transportation to shelters or Refuges of Last Resort (ROLR).
- Secure bus facilities, signage, and other assets that may become windborne debris hazards.
- Coordinate and communicate changes in transit operations with the Norfolk EOC and the public.
- Support re-entry operations with modified service routes, if safe and feasible.

Virginia Department of Transportation (VDOT)

- Maintain primary state route operations, including evacuation corridors and interstate flow.
- Post real-time traffic and weather alerts on variable message boards, 511 Virginia, and 1610 AM radio.
- Coordinate with local agencies on road conditions, hazards, and mutual support needs.
- Assist with debris removal along evacuation and access routes.

Norfolk Airport Authority

- Activate Airport EOC and provide operational updates via Norfolk HSIN.
- Coordinate with airlines and TSA on flight suspensions, sheltering passengers, and facility closures.
- Assist with aerial assessment or medical evacuation coordination as needed.

Virginia Port Authority

- Monitor port status and relay impacts through Norfolk HSIN and EOC channels.
- Support coordination for the movement of critical goods and emergency shipments post-impact.
- Assist in maritime recovery efforts in conjunction with the U.S. Coast Guard and shipping partners.

Elizabeth River Crossings (ERC)

- Monitor and maintain tunnel and bridge operations, including pump stations, ventilation, and signage.

- Provide regular status updates to the Norfolk EOC regarding closures, structural issues, or operational constraints.
- Coordinate reopening procedures with city traffic and emergency management officials.

Amtrak

- Notify the Norfolk EOC of rail service changes, including suspensions or anticipated delays.
- Coordinate alternate routing and passenger information through Norfolk's public information systems.
- Ensure rail assets are secured prior to impact.

Norfolk Southern & CSX

- Communicate track closures, service suspensions, and potential hazardous cargo risks to the Norfolk EOC.
- Participate in post-storm assessments of rail infrastructure.
- Support the restoration of freight rail lines to assist in recovery logistics.

United States Coast Guard – Sector Hampton Roads

- Through the Captain of the Port (COTP), implement Port Conditions and control vessel movement.
- Enforce maritime safety zones, coordinate damage assessments, and manage post-storm vessel traffic.
- Lead a post-storm maritime stakeholder conference call to prioritize recovery of the region's marine transportation system.

Norfolk Police Department (Traffic Division) & Virginia State Police

- Provide traffic control support during evacuation and re-entry operations.
- Support law enforcement presence at transportation choke points and critical infrastructure sites.
- Assist with the escort of emergency or logistics convoys.

Additional Considerations

Transportation infrastructure may sustain damage, including debris blockages, flooding, and structural failure. Norfolk Public Works and VDOT must prioritize restoration of access to public safety facilities, shelters, and medical centers.

Inter-agency coordination is critical to ensure unified messaging around transportation service changes, including road closures, transit operations, and airport and port statuses.

Norfolk Emergency Management will facilitate transportation briefings during EOC activation to synchronize efforts across all agencies.

All agencies should maintain pre-scripted messaging and redundant communication pathways with the Norfolk EOC to ensure timely and consistent information sharing during rapidly evolving conditions.

EMERGENCY SUPPORT FUNCTION 2: COMMUNICATIONS

Primary Agencies: Norfolk Department of Emergency Communications (ECC), Communications Unit Leader (COML), Norfolk Emergency Management

Support Agencies: Amateur Radio Emergency Services (ARES/RACES), Information Technology, Norfolk Public Safety Departments, Norfolk Cares Call Center, Norfolk Geographic Information Services (GIS), Joint Information Center (JIC), U.S. Army Corps of Engineers

KEY RESPONSIBILITIES

Norfolk Emergency Communications / 911 (ECC)

- Serve as the primary Public Safety Answering Point (PSAP) for emergency calls from the public.
- Provide timely and accurate notifications of incidents to Norfolk Emergency Management, public safety agencies, and mutual aid partners.
- Assign tactical dispatchers to support operations, including the Norfolk Cares Call Center, as needed for high call volume during hurricane-related emergencies.
- Ensure interoperability of radio systems and continuous operation of CAD, 911, and radio dispatch functions throughout the incident.

Communications Unit Leader (COML)

- Develop, distribute, and manage the ICS-205 Communications Plan for the incident.
- Coordinate radio frequencies, talkgroups, and assignment of communication resources to ensure effective interoperability across departments and mutual aid responders.
- Support the deployment of mobile radio caches, satellite phones, and other communication assets if primary systems are degraded.
- Work with ECC and Information Technology to identify and resolve system outages or degraded functionality.

Information Technology

- Prepare and harden critical systems in advance of tropical storm or hurricane impacts, including servers, networks, and data centers.
- Support technology needs in the Emergency Operations Center, including connectivity, audio-visual systems, GIS platforms, and virtual coordination tools.

- Maintain communication infrastructure and monitor the operational status of phone, internet, and data systems.
- Provide rapid troubleshooting and recovery support for degraded or damaged systems during response and recovery.

Norfolk Cares Call Center

- Serve as the primary answering point for non-emergency public inquiries related to hurricanes or tropical storms.
- Provide accurate and current information to residents, including evacuation details, shelter availability, and safety guidance.
- Coordinate with the Joint Information Center (JIC) to relay patterns of frequently asked questions and emerging community concerns.
- Share call trend data with Norfolk Emergency Management to inform situational awareness and messaging.

Norfolk Geographic Information Services (GIS)

- Provide mapping support to the EOC using real-time and predictive tools to maintain a common operating picture.
- Download and display official Storm Surge Watch and Warning KML files to visualize threat areas within Norfolk.
- Integrate and overlay emPOWER data from public health with power outage information to assist in identifying vulnerable populations.
- Support field response teams and shelter managers with custom maps as requested.

Amateur Radio Emergency Services (ARES/RACES)

- Deploy licensed amateur radio operators to key locations such as the EOC, shelters, healthcare facilities, and field command posts.
- Maintain emergency communications capability if traditional systems are disrupted or unavailable.
- Log all traffic and ensure integration into the ICS structure through coordination with the COML.
- Coordinate with the Healthcare Emergency Amateur Radio Team (HEART) to support hospitals and medical facilities as requested through the RHCC and VHASS.

U.S. Army Corps of Engineers

- Upon Department of Defense direction, activate the Debris Planning and Response Team (PRT) to support debris removal operations that may impact communications infrastructure.

- Provide emergency power support through generator assessment teams and technical assistance upon request through FEMA or Norfolk Emergency Management.

Additional Considerations

- Communications systems must remain interoperable across city, regional, state, and federal response agencies. Redundancy through mobile satellite systems, FirstNet, and amateur radio should be maintained.
- The Communications Unit Leader (COML) will work closely with ECC and Norfolk IT to ensure resilience across all platforms.
- Public messaging coordination between ECC, the Norfolk Cares Call Center, and the JIC is essential to reduce misinformation and maintain trust.
- All communications staff should be familiar with failover procedures, resource tracking tools, and radio discipline during prolonged operations.

EMERGENCY SUPPORT FUNCTION 3: PUBLIC WORKS, UTILITIES & ENGINEERING

Primary Agencies: Norfolk Public Works, Norfolk General Services

Support Agencies: Norfolk Public Utilities, Norfolk Recreation Parks and Open Space, Norfolk Neighborhood Development, Norfolk Emergency Management, Naval Station Norfolk

KEY RESPONSIBILITIES

Norfolk Public Works – Operations

- Operate and monitor the city's flood control systems, including floodgates and stormwater drainage infrastructure. Coordinate with Naval Station Norfolk regarding the Mason Creek floodgate.
- Maintain traffic control infrastructure to support evacuation, emergency response, and re-entry operations.
- Clear primary and secondary roadways of debris as conditions allow, prioritizing routes to shelters, hospitals, and public safety facilities.
- Collect and remove debris and waste that pose risks to public health and safety.
- Support drainage operations to mitigate street flooding and facilitate the removal of storm surge water.

Norfolk General Services

- Coordinate the opening of designated parking garages for public use, especially in flood-prone areas.
- Provide status updates on city-owned facilities, fleet vehicles, fuel levels, and operations at the city's animal care facilities.
- Support emergency procurement, staging of equipment, and continuity of critical city services throughout the incident.

Norfolk Public Utilities

- Monitor and report the operational status of water distribution and wastewater systems.
- Identify and relay critical debris clearance needs that impact access to or operation of water, sewer, or stormwater infrastructure.
- Support emergency repairs and service restoration in coordination with Public Works and Emergency Management.

Norfolk Recreation, Parks, and Open Space

- Support initial road clearing and damage assessment teams with personnel and equipment.
- Coordinate the removal of vegetative and wooded debris in parks, rights-of-way, and residential areas.
- Assist with the setup and support of community assistance points or post-storm recovery events, if needed.

Norfolk Neighborhood Development

- Conduct windshield damage assessments in coordination with the city's Damage Assessment Teams.
- Support the Joint Information Center (JIC) by sharing neighborhood-level impacts, concerns, and recovery needs.
- Assist in relaying community updates from the EOC to neighborhood leaders or civic leagues.

Additional Considerations

- Public Works and General Services must maintain priority access routes to critical infrastructure, including hospitals, shelters, EOC facilities, and pump stations.
- Coordination with Naval Station Norfolk is essential for joint floodgate operations.
- All damage assessment data should be relayed to Emergency Management for consolidation and reporting to VDEM and FEMA.
- Fuel, tire, and vehicle inventories must be tracked and maintained to support extended operations, especially in prolonged response or recovery periods.

- Public messaging related to road closures, debris pickup, and utility service status should be coordinated with the JIC.

EMERGENCY SUPPORT FUNCTION 4: FIREFIGHTING

Primary Agency: Norfolk Fire-Rescue

Support Agencies: Naval Station Norfolk Fire Department, Norfolk Airport Fire & Rescue, Norfolk Police Department, Norfolk Public Works, Norfolk Public Utilities, Norfolk Department of Public Health, Norfolk Emergency Management, Dominion Energy, Virginia Department of Fire Programs (VDFP), Virginia National Guard

KEY RESPONSIBILITIES

Norfolk Fire-Rescue

- Assign Advanced Life Support (ALS) and Basic Life Support (BLS) medic units to provide emergency medical coverage at designated shelter locations.
- Assign a firefighter liaison to the Norfolk Emergency Communications Center (ECC) radio room to support real-time coordination of emergency calls and resource allocation.
- Assign a firefighter representative to the Dominion Energy emergency coordination center to enhance communication regarding downed power lines, electrical hazards, and power restoration prioritization.
- Continue to respond to structure fires, emergency medical calls, and hazardous material releases in accordance with Norfolk Fire-Rescue operational policies and when conditions are deemed safe.
- Participate in initial road clearing and damage assessment operations, deploying personnel to accompany Public Works and Emergency Management teams.
- Conduct post-storm search and rescue operations, including door-to-door welfare checks in impacted neighborhoods.
- Assist with high-water or swift water rescue missions using trained personnel and specialized equipment as necessary.
- Coordinate with Norfolk Public Health for medical surge or triage operations if EMS resources become strained.
- Support firefighter wellness and sustainment during extended deployments through logistical coordination and rehabilitation resources.

Naval Station Norfolk Fire Department

- Provides firefighting, hazmat, and emergency response within the Naval installation and may support mutual aid agreements for incidents near or adjacent to base property. Their coordination is critical during coastal or port-related storm impacts.

Norfolk Airport Fire & Rescue

- Responsible for Aircraft Rescue and Firefighting (ARFF) operations and response to incidents on airport property. May support city response efforts depending on staffing and airport status.

Virginia Department of Fire Programs (VDFP)

- Supports resource coordination, personnel certification, and may deploy resources (e.g., fire strike teams or foam trailers) under state mutual aid requests.

Virginia National Guard (Firefighting Assets)

- May provide logistics, search and rescue, or firefighting assets through coordinated emergency declarations.

Norfolk Department of Public Works

- Supports road clearance operations that enable fire apparatus movement and emergency access.

Norfolk Department of Public Health

- May coordinate EMS surge, mass casualty care, or responder health monitoring during sustained operations.

Additional Considerations

- Fire stations should ensure continuity of operations by securing facilities, confirming backup generator status, and maintaining adequate fuel, water, and medical supplies before storm landfall.
- Norfolk Fire-Rescue's Urban Search and Rescue capabilities may be requested by the Virginia Department of Emergency Management (VDEM) for mutual aid missions outside city limits.
- Fire-Rescue leadership will coordinate with the EOC to ensure deployment of resources aligns with current threat conditions and recovery priorities.
- Personnel must be rotated and accounted for regularly during extended operations, and safety officers should monitor responder fatigue and exposure risk.

- Situational updates should be provided to the EOC regularly to inform resource requests, shelter support needs, and public safety messaging.

EMERGENCY SUPPORT FUNCTION 5: INFORMATION AND PLANNING

Primary Agency: Norfolk Emergency Management

Support Agencies: Norfolk Department of Information Technology, Norfolk Geographic Information Services (GIS), Norfolk Department of Communications and Marketing, Norfolk Fire-Rescue, Norfolk Police Department, Norfolk Public Works, Norfolk Human Services, Norfolk Cares Call Center, Virginia Department of Emergency Management (VDEM), Federal Emergency Management Agency (FEMA), Policy Group / City Manager's Office

KEY RESPONSIBILITIES

Norfolk Emergency Management

- Monitor storm threats using guidance from the National Weather Service (NWS), National Hurricane Center (NHC), and state and federal partners.
- Announce the incident and activate the Emergency Operations Center (EOC) as appropriate.
- Create an incident in STORM (minimum 5-day duration), and coordinate with IT and GIS to launch the iVIEW dashboard on Norfolk.gov.
- Develop and maintain all required ICS forms, including ICS-203, ICS-204s, and ICS-205s; produce the Incident Action Plan (IAP) for each operational period.
- Assign Emergency Management staff to serve as Planning Section Chief and Logistics Section Chief if required.
- Maintain communication with Norfolk departments, the Policy Group, and regional stakeholders; recommend operational decisions to the City Manager.
- Submit emergency declarations when necessary and coordinate local emergency ordinance preparation.
- Conduct daily EOC briefings, ensure cross-departmental coordination, and distribute situation updates to Team Norfolk.
- Submit timely Situation Reports (SITREPs) and Resource Requests (RRs) to the Virginia Emergency Operations Center (VEOC).
- Activate Norfolk Alert, Wireless Emergency Alerts (WEA), and Emergency Alert System (EAS) as needed to inform the public.
- Maintain contact with Norfolk Public Schools, higher education institutions, and Naval Station Norfolk to share incident updates and coordinate response actions.
- Review and disseminate FEMA Recovery Resources to appropriate departments and incorporate recovery considerations into ongoing planning.

Norfolk Department of Information Technology

- Provide technical infrastructure to support EOC operations, virtual platforms, and STORM/iVIEW integration.
- Monitor system status and ensure failover capabilities for data networks, server access, and collaboration tools.
- Coordinate with the COML and GIS staff to ensure data access and communications resilience during EOC operations.

Norfolk Geographic Information Services (GIS)

- Create and update storm-related maps, including surge zones, shelter locations, power outage overlays, and impacted infrastructure.
- Download and apply official NWS and NHC KML files to provide visual layers of watch/warning areas.
- Share emPOWER data with Emergency Management and overlay it with utility outage data to identify at-risk populations.
- Maintain and update the iVIEW public dashboard for situational awareness.

Norfolk Department of Communications and Marketing

- Assist in preparing daily public information products, situation summaries, and briefings for media and stakeholders.
- Coordinate with the Joint Information Center (JIC) to ensure messaging reflects the latest situational analysis and priorities.
- Support the development of graphics and visual aids for public consumption, including map products and infographics.

Norfolk Fire-Rescue & Norfolk Police Department

- Provide field-level updates on emergency incidents, search and rescue activities, road conditions, and emerging life-safety needs.
- Submit status updates to Planning and contribute to ICS forms and Situation Reports.
- Serve as key operational liaisons in developing real-time threat assessments and coordinating tactical field intelligence.

Norfolk Public Works & Human Services

- Report on infrastructure status, shelter operations, unmet needs, and community impacts.
- Contribute to planning efforts related to debris clearance, transportation, public health, and human services.

- Submit post-landfall field data, damage reports, and access challenges to the Planning Section for mapping and documentation.

Norfolk Cares Call Center

- Aggregate trends in resident inquiries and share key themes or emerging concerns with Emergency Management and the JIC.
- Provide Planning with non-emergency situational data, such as reports of blocked roads, flooded areas, or accessibility issues.
- Assist in message testing or public resource information updates coordinated through the EOC.

Virginia Department of Emergency Management (VDEM)

- Receive Situation Reports and Resource Requests from Norfolk EOC; provide guidance on resource allocation and state coordination.
- Offer planning support tools, templates, and real-time feedback during EOC activations.
- Assign a Regional Liaison Officer to Norfolk's EOC (virtually or in person) when activated.
- Support pre- and post-landfall planning efforts and assist in disaster declaration coordination.

Federal Emergency Management Agency (FEMA)

- Provide post-disaster recovery technical assistance and documentation guidance.
- Issue public assistance, hazard mitigation, and individual assistance program guidance in coordination with Emergency Management.
- Support Norfolk's Planning Section during Joint Preliminary Damage Assessments (PDAs) and long-term recovery scoping meetings.

Policy Group / City Manager's Office

- Participate in scheduled EOC briefings and decision-making sessions.
- Review operational recommendations from Emergency Management and issue executive guidance or policy decisions as needed.
- Approve declarations, public messaging priorities, and continuity decisions across departments.

Additional Considerations

- Situation Reports must include field-level input and be submitted at a minimum daily cadence during EOC activation.
- Planning and Logistics Section Chiefs must track staffing levels, resource deployments, unmet needs, and upcoming operational requirements.
- EOC Section Chiefs and liaisons should use HSIN for internal updates and coordination, with IMPACT assisting in data tracking via STORM Mobile.

- All documentation (IAPs, SITREPs, declarations, maps) should be archived and formatted for potential FEMA reimbursement and after-action analysis.
- Maintain continuity with regional planning partners (HRMMRS, UASI, VDEM Region 5) to ensure alignment of situational awareness and planning timelines.

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

Primary Agency: Norfolk Department of Human Services

Support Agencies: Norfolk Public Schools, Norfolk Community Services Board, Endependence Center, Norfolk Office of Human Resources – Safety and Wellness, Norfolk Department of Recreation Parks and Open Space (RPOS), Community Emergency Response Team (CERT), Salvation Army, Union Mission, Foodbank of Southeastern Virginia, Sentara Mobile Meals, Senior Services of Southeastern Virginia, American Red Cross, Norfolk Emergency Management, Norfolk Department of Communications and Marketing, Virginia Department of Social Services (VDSS), FEMA

KEY RESPONSIBILITIES

Norfolk Department of Human Services

- Coordinate with Norfolk Public Schools and RPOS on the activation and staffing of general population shelters.
- Lead the Human Services Branch in the EOC, overseeing shelter operations, food coordination, and support for vulnerable populations.
- Convene the Meals Task Force with partners including the Foodbank, Senior Services, and Sentara Mobile Meals to coordinate mass feeding operations.
- Oversee shelter registration, case management, reunification, and temporary housing programs.
- Coordinate Emergency SNAP (Food Stamp) benefits and provide Individual Assistance guidance to residents.
- Serve as the lead agency for unmet needs coordination and track requests through the recovery phase.
- Collaborate with the JIC to communicate service availability, shelter status, and human services resources to the public.
- Work with the American Red Cross and ESF-17 to facilitate family reunification and support at shelters and other locations.

Norfolk Public Schools

- Coordinate with Human Services and Emergency Management to open designated schools for sheltering.
- Provide shelter staff, including principals, food service workers, and custodians.
- Supply meals for shelter residents until Red Cross feeding operations begin.
- Assign ADA-accessible buses and drivers for shelter transportation.
- Maintain shelter readiness in accordance with the MOU being finalized between NPS and the City of Norfolk.

Norfolk Community Services Board (CSB)

- Staff shelters with behavioral health specialists to support residents experiencing mental health or substance use issues.
- Coordinate transportation and shelter access for clients experiencing homelessness, including with Union Mission and the Salvation Army.
- Provide disaster behavioral health services and crisis intervention as needed.
- Support unmet needs and community recovery in collaboration with Human Services and the JIC.

Endependence Center

- Deploy a liaison to the Norfolk EOC to represent individuals with access and functional needs.
- Provide outreach to clients in advance of the storm and share information on shelter accessibility and transportation resources.
- Coordinate with Human Services to support sheltering and resource needs for individuals with disabilities.

Norfolk Office of Human Resources – Safety and Wellness

- Share post-storm health and wellness messaging to all city staff via ALLNORFOLK and internal communications channels.
- Coordinate with the JIC to ensure consistency and accuracy in staff safety messaging.
- Support staff mental wellness resources throughout storm response and recovery.

Norfolk Parks and Recreation

- Coordinate with Human Services to open and staff recreation centers designated as shelters or assistance points.
- Support shelter operations logistically, including setup, supply delivery, and limited pet support.
- Provide access to shelter cleaning and restocking teams as needed post-landfall.

Community Emergency Response Team (CERT)

- Assist with logistics and support for pet sheltering operations, including setup, supply tracking, and coordination with shelter managers.
- Provide staffing support to shelter intake areas, community assistance points, or distribution events if requested.

Salvation Army & Union Mission

- Provide overnight accommodations and basic services to individuals experiencing homelessness during periods when public shelters are unavailable or at capacity.
- Coordinate shelter usage and support with Human Services and CSB prior to and during inclement weather events.

Foodbank of Southeastern Virginia, Sentara Mobile Meals, Senior Services

- Participate in the Meals Task Force and assist with the identification, preparation, and distribution of food for impacted residents.
- Coordinate mass feeding in coordination with Human Services and the Red Cross.
- Prioritize delivery to high-risk populations, including seniors and those unable to evacuate.

American Red Cross

- Support general population shelter operations in coordination with Human Services, including staffing, feeding, and registration.
- Assist with family reunification and emotional care at shelters and assistance centers.
- Coordinate with FEMA and Human Services to begin Individual Assistance support if a federal declaration is made.

Virginia Department of Social Services (VDSS)

- Provide guidance on activation of Emergency SNAP and Disaster Case Management programs.
- Coordinate with Norfolk Human Services to ensure shelter protocols align with state guidance.
- Offer surge staffing or technical support if Norfolk requests assistance during major disaster events.

FEMA

- Provide Individual Assistance (IA) guidance and registration materials at Disaster Recovery Centers (DRCs).
- Coordinate with Human Services and Red Cross on shelter inspections and housing transition planning.

- Support long-term housing recovery and unmet needs assistance following a federal disaster declaration.

Additional Considerations

- Sheltering plans must comply with ADA and access and functional needs guidance. Coordination with the Endependence Center is critical to meeting these requirements.
- Pets must be accommodated at designated shelters or co-located facilities. Norfolk CERT and Animal Control should support intake and tracking.
- Feeding operations should be coordinated across the city's public, nonprofit, and volunteer networks. Meals Task Force coordination is essential.
- The Reunification Plan and Shelter Inspection Checklist should be activated and reviewed for each shelter site.
- Behavioral health surge support should be identified in advance, particularly for large shelter populations or high-impact areas.
- Transportation plans must be validated pre-landfall to ensure continuity for those needing shelter, especially individuals with mobility challenges or without access to vehicles.

EMERGENCY SUPPORT FUNCTION 7: LOGISTICS

Primary Agency: Norfolk Emergency Management (Logistics Section Chief)

Support Agencies: Norfolk Parks and Recreation, Norfolk Department of General Services, Norfolk Department of Human Services, Norfolk Economic Development, Norfolk Cares Call Center, Norfolk Information Technology, Norfolk Police Department, Norfolk Public Works, Norfolk Public Health, Community Services Board, Faith-Based Organizations, Local Nonprofits, Virginia Department of Emergency Management (VDEM), FEMA, City of Chesapeake Emergency Management, City of Virginia Beach Emergency Management

KEY RESPONSIBILITIES

Logistics Section Chief (Norfolk Emergency Management)

- Coordinate resource requests and deliveries across departments, shelters, and community partners during pre-landfall and response operations.
- Manage transportation coordination for sheltering, including collaboration with the Norfolk Cares Call Center, Human Services, and transit providers.
- Support Team Norfolk partners by coordinating donations, volunteer management, and mission assignments from private sector and nonprofit partners.

- Work with Norfolk Economic Development, the Community Services Board, and local faith-based organizations to identify potential Refuges of Last Resort (ROLRs) and ensure resource delivery to those sites.
- Coordinate mutual aid and logistics resource sharing with the Cities of Chesapeake and Virginia Beach, particularly during regional sheltering and mass care operations.
- Maintain inventory visibility of city resources and support staging or deployment of assets using STORM or WebEOC.
- Ensure that all requests for external support (state, federal, or mutual aid) are documented and submitted via the Resource Request process in coordination with Planning.
- Post-landfall, coordinate with Economic Development and General Services to support rapid business re-entry needs, including power, sanitation, and infrastructure staging.
- Establish and maintain receiving and distribution points (RDPs) and/or points of distribution (PODs) for commodities, as required.

Norfolk Parks and Recreation

- Provide facility access, equipment, and staffing to support the distribution of supplies and commodities.
- Assist in staging locations or logistics bases using city parks or recreation centers if needed.
- Support the setup and operations of community assistance points or relief supply stations post-impact.

Norfolk Department of General Services

- Manage the deployment of city-owned assets such as generators, fuel trucks, and fleet vehicles.
- Maintain facilities readiness for logistics operations and ensure service contracts are on standby for critical equipment repairs or maintenance.
- Provide warehousing or staging space as needed for incoming resources.

Norfolk Department of Human Services

- Identify resource needs at shelter sites and coordinate service deliveries such as food, cots, hygiene supplies, and medical resources.
- Communicate unmet human needs for escalation to state or federal partners through Logistics.

Norfolk Economic Development

- Liaise with business owners to assess supply chain disruptions and logistical needs for reopening.
- Coordinate with the Logistics Section to support emergency permits, infrastructure access, or equipment for business continuity.

- Help identify potential ROLRs in commercial or mixed-use properties for interim sheltering.

Norfolk Cares Call Center

- Receive and route transportation and supply-related calls from the public, particularly related to shelter access and post-storm needs.
- Share frequently reported resource shortages or logistical concerns with the Logistics Section Chief and Planning.

Norfolk Information Technology

- Provide system and technology support for STORM, iVIEW, EOC connectivity, and mobile logistics coordination tools.
- Maintain readiness for field communication assets and asset tracking systems.

Norfolk Police Department & Public Works

- Assist in escort and transportation coordination for critical resources.
- Ensure traffic control, secure transport routes, and debris clearance for supply chain operations.

Norfolk Public Health & Community Services Board

- Identify and communicate resource needs for vulnerable populations, homebound individuals, and clients in managed care.
- Coordinate medical support logistics such as durable medical equipment, medications, and oxygen replenishment.

Faith-Based and Nonprofit Partners

- Provide in-kind donations, staffing, facilities, or volunteer support for resource staging and distribution.
- Coordinate with Emergency Management to align offers of support with actual unmet needs.

Virginia Department of Emergency Management (VDEM)

- Review and approve resource requests submitted through WebEOC and coordinate state resource deployments.
- Support logistics planning and provide technical assistance as needed.
- Activate state commodity points of distribution if city resources are exhausted.

FEMA

- Coordinate logistics support at the federal level, including shipments of water, meals, tarps, generators, and other emergency commodities.
- Assist in establishing federal staging bases if requested by the Commonwealth.

Chesapeake & Virginia Beach Emergency Management

- Coordinate mutual aid logistics for shelter overflow, staging locations, or regional points of distribution.
- Share regional resource availability and priorities to maximize efficiency and avoid duplication of effort.

Additional Considerations

- All logistics operations should be tracked using STORM, ICS 213RRs, and daily ICS 209/ICS 215 forms where applicable.
- ROLRs must be pre-vetted for access, ADA compliance, and safety, and logistics support must be integrated into their activation plans.
- Logistical support for pets, oxygen-dependent residents, and individuals with disabilities must be pre-coordinated with CERT, Public Health, and the Endependence Center.
- Fuel, vehicle maintenance, and generator resupply plans should be tested pre-season and activated as part of pre-landfall checklists.
- FEMA resource support requests should follow state protocols through VDEM and be approved prior to deployment.
- Donations and volunteers should be coordinated through VOAD or a designated Donation Management Plan lead to prevent convergence issues.
- All vendors providing contracted emergency services should be pre-identified and onboard in compliance with procurement regulations.

EMERGENCY SUPPORT FUNCTION 8: PUBLIC HEALTH AND MEDICAL SERVICES

Primary Agency: Norfolk Department of Public Health

Support Agencies: Norfolk Community Services Board (CSB), Eastern Virginia Healthcare Coalition (EVHC), Regional Hospital Coordination Center (RHCC), Local Hospitals and Licensed Care Facilities, Medical Reserve Corps (MRC), Office of the Chief Medical Examiner (OCME), Norfolk Emergency Management, Norfolk Human Services, Norfolk Public Works, American Red Cross, Virginia Department of Health (VDH), U.S. Department of Health and Human Services (HHS), FEMA

KEY RESPONSIBILITIES

Norfolk Department of Public Health

- Serve as the ESF-8 lead at the Norfolk EOC, maintaining situational awareness of healthcare operations, shelter medical needs, and public health conditions.
- Use the HHS/ASPR emPOWER map tool to identify vulnerable populations who rely on power-dependent medical devices or dialysis. Overlay this data with Dominion Energy outage information to prioritize outreach.
- Maintain regular communication with EVHC, RHCC, and local hospitals regarding patient surge, evacuation plans, and facility status.
- Provide public health messaging to the Joint Information Center (JIC) related to food and water safety, mold, post-flood cleanup, and vector control.
- Monitor and advise on public health risks including mosquito breeding grounds and sanitation issues.
- Conduct post-storm inspections of food vendors, shelters, and public facilities to ensure compliance with health standards.
- Coordinate with Norfolk Emergency Management and the State Health Department (VDH) to determine the need for medical resource assistance or federal surge assets.

Norfolk Community Services Board (CSB)

- Provide behavioral health support during response and recovery operations, including staffing shelters with licensed mental health professionals.
- Identify and prioritize clients in need of post-landfall trauma or behavioral health interventions, including children and adults.
- Coordinate with Union Mission, the Salvation Army, and Human Services to ensure behavioral health access for individuals experiencing homelessness.
- Collaborate with the JIC to distribute messaging related to stress, trauma, and coping mechanisms during and after the event.

Eastern Virginia Healthcare Coalition (EVHC)

- Coordinate communications with hospitals, licensed care facilities, and the Norfolk Public Health ESF-8 desk in the EOC.
- Facilitate resource sharing and status updates among healthcare partners.
- Support patient movement coordination through the RHCC and maintain updates in VHASS.
- Collaborate with Norfolk Emergency Management and Public Health to support continuity of medical operations and evacuation planning.

Regional Hospital Coordination Center (RHCC)

- Coordinate hospital operations across the region, including bed availability, surge capacity, and mutual aid between facilities.
- Support hospitals with patient evacuation coordination, transport logistics, and resource requests.
- Communicate directly with the ESF-8 desk at the Norfolk EOC for operational alignment.

Local Hospitals and Licensed Care Facilities

- Maintain accurate status reporting in VHASS regarding bed availability, emergency operations status, and resource needs.
- Coordinate with EVHC, RHCC, and Norfolk ESF-8 for support or mutual aid.
- Determine the need to evacuate or relocate patients and notify the EOC by H-75 if evacuation is anticipated.
- Ensure all federal requirements for patient transfer and tracking are followed, including submission of evacuation requests through HHS no later than H-72.

Medical Reserve Corps (MRC)

- Upon request, contact vulnerable populations with preparedness information in advance of storm impacts.
- Provide support staffing for shelter medical operations, mobile outreach, and post-incident follow-up.
- Assist in medication replacement, durable medical equipment logistics, and patient movement coordination.

Office of the Chief Medical Examiner (OCME)

- Exercise legal authority over all fatalities in accordance with the Code of Virginia §§ 32.1-277 to 32.1-288.
- Coordinate with Norfolk Emergency Management to plan for and, if necessary, establish temporary morgue facilities.
- Support identification, transport, and storage of decedents in compliance with state and federal standards.

Virginia Department of Health (VDH)

- Provide technical assistance, public health guidance, and surge staffing as needed.
- Support vector control programs, communicable disease monitoring, and health risk messaging.
- Coordinate with Norfolk Public Health on the activation of regional assets and emergency health waivers.

U.S. Department of Health and Human Services (HHS)

- Approve and deploy federal public health support assets upon state request, including the Disaster Medical Assistance Team (DMAT), National Nurse Response Team, and National Pharmacy Response Team.
- Provide enhanced emPOWER data access during emergency declarations and assist with targeted outreach.
- Coordinate with CMS on regulatory waivers and patient tracking across state lines if needed.

FEMA

- Coordinate long-term recovery support for public health and medical infrastructure.
- Provide reimbursement guidance for medical expenditures under Public Assistance or Individual Assistance programs.
- Activate Disaster Recovery Centers (DRCs) with embedded medical and behavioral health assistance, if requested.

Additional Considerations

- emPOWER data provides critical insight into medically vulnerable populations but requires a Governor's Declaration or imminent threat to release detailed information. During planning phases, ZIP-code level access is available.
- Healthcare and licensed facilities are required by CMS to maintain an all-hazards emergency preparedness plan; coordination with EVHC and VDH ensures these plans are followed during hurricanes.
- Federal medical teams (e.g., DMAT, Nurse Response) must be requested early through VDEM or FEMA coordination.
- Shelter medical staffing should include both physical and behavioral health capability. CERT, MRC, and CSB should be pre-integrated into the staffing matrix.
- Infection control and sanitation standards must be enforced in all shelter and mass care environments post-landfall.
- Public messaging should emphasize mold safety, personal hygiene, medication continuity, and illness prevention (e.g., tetanus, carbon monoxide risks, mosquito exposure).
- OCME coordination is essential during high-fatality scenarios. Pre-identified temporary morgue options should be validated annually.

Primary Agency: Norfolk Fire-Rescue

Support Agencies: Norfolk Police Department, Norfolk Sheriff's Office, Norfolk Community Emergency Response Team (CERT), U.S. Coast Guard – Sector Virginia, Naval Station Norfolk, Virginia Department of Emergency Management (VDEM), Virginia National Guard, Civil Air Patrol, FEMA Urban Search and Rescue (USAR), National Park Service

KEY RESPONSIBILITIES

Norfolk Fire-Rescue

- Serve as the lead agency for Urban Search and Rescue (USAR) operations, including structural collapse response and confined space rescues.
- Conduct land-based search operations within Norfolk to locate, extricate, and provide medical care to individuals affected by storm impacts.
- Coordinate with Norfolk Emergency Management to deploy resources based on incoming 911 calls, field intelligence, and priority area mapping.
- Support flood rescue operations, high-water evacuations, and entry into inaccessible neighborhoods using appropriate apparatus and watercraft.
- Provide safety officers, logistics coordination, and rescue task force structure under the ICS framework.
- Collaborate with the Planning Section to track incident locations and document SAR outcomes.

Norfolk Police Department

- Support missing persons investigations and field intelligence gathering related to unaccounted-for individuals post-storm.
- Assist with door-to-door welfare checks in severely impacted neighborhoods.
- Provide security during SAR operations, especially in high-risk or flooded areas.
- Coordinate with EOC and GIS to overlay last-known locations or priority search areas.

Norfolk Sheriff's Office

- Support SAR efforts through manpower assistance, welfare checks, and transportation of displaced persons.
- Provide communications support to field teams if requested by the COML or ECC.
- Assist with shelter-in-place verification operations for vulnerable populations.

Norfolk Community Emergency Response Team (CERT)

- Support SAR operations by conducting neighborhood wellness checks under Norfolk Fire-Rescue supervision.
- Provide initial damage assessments, light rescue, and support to displaced individuals.
- Document and report findings through the EOC for coordination and resource allocation.

U.S. Coast Guard – Sector Virginia

- Lead maritime/coastal search and rescue missions and conduct overwater evacuations.
- Support aerial or surface search efforts for vessels in distress within Norfolk's jurisdictional waters.
- Maintain close coordination with Norfolk Emergency Management and Fire-Rescue during joint coastal incidents.

Naval Station Norfolk

- Conduct SAR operations within Navy-controlled property and coordinate support through existing mutual aid agreements.
- Share base impact data, access needs, or sheltering support requests with Norfolk EOC.

Virginia Department of Emergency Management (VDEM)

- Coordinate mutual aid SAR resources across regions, including Task Force deployments if requested by Norfolk.
- Activate and deploy the Virginia Search and Rescue Coordination Center (VASARCO) if additional search assets are needed.
- Support requests for aerial or specialty search capabilities.

Virginia National Guard

- Deploy high-water vehicles, aviation, and support personnel to assist in SAR operations during and after a state declaration. The request must be made in WebEOC.
- Assist with access to cut-off neighborhoods or delivery of life-saving supplies to isolated populations. The request must be made in WebEOC.

Civil Air Patrol

- Provide aerial reconnaissance to identify stranded individuals, blocked roadways, or areas of interest for ground SAR teams.
- Coordinate with Norfolk Emergency Management and the Planning Section to deliver imagery or GPS data for response planning.

FEMA Urban Search and Rescue (USAR)

- Deploy federal USAR teams upon request through VDEM and FEMA Region III.
- Provide advanced SAR capabilities including canine teams, technical rescue, structural assessments, and medical stabilization.
- Support operations in large-scale collapse events or catastrophic flooding.

National Park Service

- Support SAR operations in or near parklands and water-based recreational areas, if applicable.
- Coordinate with Norfolk Fire-Rescue and Emergency Management if jointly impacted during coastal storm events.

Additional Considerations

- All SAR operations should be documented using ICS 214 Unit Logs and integrated into Situation Reports.
- Urban Search and Rescue teams must follow safety protocols when entering compromised structures or flooded zones.
- Evacuees located by SAR teams should be triaged and transported to shelters, hospitals, or family reunification points.
- EOC GIS and Public Safety should jointly maintain a live SAR dashboard with updates from the field and public tip lines.
- CERT teams should be trained annually on SAR integration and report protocols.
- All SAR responders should maintain awareness of power lines, gas leaks, structural instability, and contaminated floodwaters.
- Requesting federal USAR teams requires coordination through VDEM and documentation of need.

Primary Agency: Norfolk Fire-Rescue – Hazardous Materials Team

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

KEY RESPONSIBILITIES

Norfolk Fire-Rescue – Hazardous Materials Team

- Serve as the lead agency for hazardous materials response operations, including identification, containment, and mitigation of chemical, biological, or radiological hazards.
- Monitor known hazardous materials sites for storm-related damage or breaches.
- Respond to reports of fuel, chemical, or unknown substance releases during or after storm impact.
- Coordinate decontamination procedures, protective measures, and responder safety.
- Provide technical guidance and risk assessments for impacted facilities or spill sites.

Norfolk Public Utilities

- Monitor wastewater and water treatment facilities for spills, overflows, or chemical leaks caused by flooding or power loss.
- Report any hazardous discharge from treatment operations to DEQ and the Norfolk EOC.
- Support post-storm assessment of backflow systems and pump stations that may contribute to environmental contamination.

Norfolk Public Works

- Coordinate with Fire-Rescue and Utilities to address stormwater runoff and any visible surface contamination.
- Identify and report debris or containers suspected of containing hazardous substances.
- Support cleanup operations for minor fuel or chemical releases affecting roadways or public spaces.

Norfolk Emergency Management

- Maintain situational awareness of high-risk hazmat sites during storm tracking and post-landfall damage assessments.
- Coordinate with DEQ, EPA, and Coast Guard to activate external support if the scope of contamination exceeds local capacity.

- Integrate hazmat incidents into the IAP and Situation Reports.

U.S. Coast Guard – Sector Virginia

- Monitor and respond to marine-based hazardous materials incidents, including vessel spills or port facility leaks.
- Establish and enforce safety zones if hazardous conditions affect navigable waterways.
- Coordinate with EPA and DEQ on marine pollutant response under the National Contingency Plan.

U.S. Environmental Protection Agency (EPA)

- Provide technical support and environmental hazard guidance upon request through VDEM or FEMA.
- Oversee cleanup operations if a major hazardous release exceeds local/state capacity.
- Coordinate sampling, testing, and disposal of contaminated materials if needed.

Virginia Department of Environmental Quality (DEQ)

- Provide oversight for regulated facilities impacted by storm events.
- Receive incident notifications from Norfolk and direct monitoring, sampling, or enforcement actions.
- Coordinate with EPA and local responders on environmental restoration and compliance.

Virginia Department of Emergency Management (VDEM)

- Facilitate requests for hazmat mutual aid teams or federal support through WebEOC.
- Activate the Virginia HAZMAT Officer or Regional Liaison to assist with technical planning and response.
- Assist in coordinating debris and contaminated material disposal.

Additional Considerations

- Hazmat incidents should be integrated into the ICS structure, with documentation using ICS 214s and inclusion in SITREPs.
- Flooded substations, tank farms, and utility facilities should be prioritized for inspection post-landfall.
- Any release of reportable quantities of hazardous substances must be communicated to DEQ and EPA as required by law.
- The Norfolk Hazmat Team should maintain updated facility preplans and Tier II information to support rapid site assessments.

- Public messaging on spills or environmental health risks (e.g., sheen on floodwater, gas odors) should be coordinated through the JIC.

EMERGENCY SUPPORT FUNCTION 11: AGRICULTURE AND NATURAL RESOURCES ANNEX

Primary Agency: Norfolk Parks and Recreation

Support Agencies: Norfolk Department of Public Health, Norfolk Emergency Management, Norfolk Community Emergency Response Team (CERT), Norfolk Department of General Services, Norfolk Public Libraries and Museums, Virginia Department of Agriculture and Consumer Services (VDACS), Virginia Department of Historic Resources, Virginia Cooperative Extension (VCE), U.S. Department of Agriculture (USDA)

KEY RESPONSIBILITIES

Norfolk Parks and Recreation

- Lead post-storm damage assessments and debris clearance for trees, limbs, and vegetation on public lands, rights-of-way, and in parks.
- Coordinate with Public Works and General Services on arborist services and removal of hazardous trees affecting roads, facilities, or shelters.
- Support emergency sheltering operations for household pets co-located with human shelter sites.
- Oversee city-owned green spaces and ensure they are safe for public use post-impact.

Norfolk Department of Public Health

- Support vector control operations for pests and insects, particularly mosquito control after flooding.
- Provide guidance to the JIC on pet health and safety messaging, including rabies exposure prevention, leash laws, and bite risk management.
- Coordinate with Parks and Recreation and Animal Control on sanitation in pet sheltering areas.

Norfolk Emergency Management

- Coordinate with CERT and partner agencies to ensure emergency pet sheltering and supplies are available.
- Maintain planning relationships with VDACS, VCE, and other state-level ESF 11 support agencies.
- Include cultural and natural resource considerations in recovery planning and damage assessments.

Norfolk CERT

- Support pet sheltering operations with setup, registration, feeding, and sanitation efforts.
- Assist with animal tracking and reunification in coordination with shelter managers and animal control officers.

Norfolk Department of General Services

- Provide logistical support for arborist equipment, chainsaw crews, and debris staging areas.
- Assist in structural protection and preservation of historic facilities and sites managed by the City of Norfolk.

Norfolk Public Libraries and Museums

- Monitor city-managed cultural facilities for damage.
- Coordinate with Emergency Management and General Services to protect historic artifacts and sensitive archival collections.
- Participate in long-term recovery coordination if cultural sites are impacted.

Virginia Department of Agriculture and Consumer Services (VDACS)

- Provide technical guidance and support for animal health and emergency pet sheltering.
- Coordinate animal disease surveillance or regulatory issues if needed post-storm.
- Support local pet sheltering efforts with planning tools and surge assets when requested.

Virginia Department of Historic Resources

- Provide technical support to assess and preserve historically registered properties or sites affected by the storm.
- Advise on recovery strategies for damaged landmarks and cemeteries.

Virginia Cooperative Extension (VCE)

- Assist with public education around mold, food safety, and backyard garden recovery.
- Serve as a local resource for community recovery related to environmental impacts of storm events.

U.S. Department of Agriculture (USDA)

- May provide technical or financial support for tree replanting or conservation restoration in applicable public spaces post-declaration.
- Coordinate with VDACS and local government for any eligible federal agriculture assistance, though impact is expected to be minimal in Norfolk.

Additional Considerations

- Pet sheltering plans should include intake, tracking, feeding, and reunification protocols; CERT must be integrated.
- Tree and debris clearance should be prioritized based on risk to life safety, accessibility, and facility operations.
- Any chemical, fertilizer, or hazardous material impacts at parks or community gardens should be assessed in coordination with Public Health and Fire-Rescue Hazmat.
- Cultural institutions should have Continuity of Operations Plans (COOP) in place to protect collections and documents.
- Vector control operations should begin immediately post-landfall in flood-prone areas and be closely coordinated with Public Health.

EMERGENCY SUPPORT FUNCTION 12: ENERGY

Primary Agency: Norfolk Department of General Services

Support Agencies: Norfolk Department of Public Utilities, Norfolk Department of Information Technology, Norfolk Emergency Management, Norfolk Fire-Rescue, Dominion Energy, Virginia Natural Gas, Virginia State Corporation Commission (SCC), Virginia Department of Emergency Management (VDEM), U.S. Department of Energy (DOE)

KEY RESPONSIBILITIES

Norfolk Department of General Services

- Serve as the primary liaison for monitoring municipal energy infrastructure, including generators, fuel reserves, and fleet support.
- Track the operational status of backup generators at critical facilities (EOC, shelters, pump stations, emergency services).
- Coordinate fuel deliveries and distribution to public safety, debris clearance, and sheltering operations during and after the storm.
- Assist departments with emergency procurement of generators, fuel, or energy services when needed.

Norfolk Department of Public Utilities

- Monitor pump station operations and coordinate generator deployment for wastewater and stormwater systems.
- Report utility-related damage that affects power-dependent water or sewer infrastructure.
- Prioritize restoration requests in coordination with Emergency Management and Dominion Energy.

Norfolk Department of Information Technology

- Monitor energy availability and redundancy for critical communications systems and data infrastructure.
- Coordinate generator support or battery backup for IT-dependent systems at the EOC and key government sites.
- Assist in power restoration prioritization for digital infrastructure impacting response operations.

Norfolk Emergency Management

- Maintain situational awareness of citywide energy outages, power restoration priorities, and coordination with Dominion Energy and VDEM.
- Track unmet energy needs via STORM and relay resource requests to the State EOC if necessary.
- Coordinate with the COML and Planning Section to ensure power-dependent systems remain functional.
- Prioritize energy restoration for shelters, medical facilities, and critical infrastructure.

Norfolk Fire-Rescue

- Support post-storm assessments of downed power lines or damaged substations that pose a fire or safety risk.
- Respond to electrical hazards and coordinate scene safety with Dominion Energy and Virginia Natural Gas.
- Participate in damage assessments impacting public safety infrastructure.

Dominion Energy

- Serve as the primary electricity provider and lead restoration entity for all service areas within Norfolk.
- Provide regular updates to the Norfolk EOC regarding outage areas, restoration timelines, and critical facility prioritization.
- Coordinate closely with Public Works, General Services, and Emergency Management to identify and assess impacted areas.

Virginia Natural Gas

- Monitor gas distribution system integrity and report outages, leaks, or system vulnerabilities to Norfolk EOC.
- Coordinate with Public Safety on any incidents involving gas leaks or infrastructure damage.

- Support restoration operations and provide technical guidance on system safety and reactivation.

Virginia State Corporation Commission (SCC)

- Oversee the regulatory framework for utility services, including rate suspension, service waivers, and customer protections post-disaster.
- Monitor restoration performance and coordinate with the State EOC on critical energy issues affecting the public.

Virginia Department of Emergency Management (VDEM)

- Coordinate requests for additional fuel, generators, or energy assistance when local resources are exhausted.
- Maintain contact with utility providers statewide and support priority restoration for government, healthcare, and emergency infrastructure.
- Provide fuel tracking templates and support emergency contracts for generator deployment.

U.S. Department of Energy (DOE)

- Monitor regional energy infrastructure impacts and coordinate federal technical support.
- Support requests for temporary energy waivers or bulk power delivery under a Stafford Act declaration.
- Activate Emergency Support Function 12 at the federal level for long-term recovery if warranted.

Additional Considerations

- The city must track fuel consumption for generator sites to ensure adequate resupply during extended outages.
- Dominion Energy should provide GIS-based outage mapping to the Planning Section for integration into iVIEW.
- Generator inspection and testing must be completed before hurricane season for all essential sites.
- Restoration prioritization should include shelters, hospitals, pump stations, 911 dispatch, and the EOC.
- Coordination between General Services, VDEM, and FEMA is essential for generator reimbursement under Public Assistance.
- Norfolk should maintain a vendor list for generator rentals, fuel deliveries, and emergency repairs.

Primary Agency: Norfolk Police Department

Support Agencies: Norfolk Sheriff's Office, Norfolk Fire-Rescue, Norfolk Emergency Management, Norfolk Public Works, Norfolk Department of General Services, Virginia State Police, Virginia National Guard, Naval Station Norfolk Base Police, Virginia Port Authority Police, Norfolk Airport Authority Police, Old Dominion University Police, Norfolk State University Police, U.S. Coast Guard – Sector Virginia

KEY RESPONSIBILITIES

Norfolk Police Department

- Serve as the lead agency for law enforcement operations during hurricanes and tropical storms.
- Provide security at shelters, critical infrastructure sites, and transportation hubs.
- Enforce evacuation orders and maintain access control around high-risk or restricted areas.
- Conduct high-visibility patrols to deter looting and support community safety.
- Coordinate with the EOC for deployment of personnel based on emerging threats and situational needs.

Norfolk Sheriff's Office

- Provide perimeter and shelter security support in coordination with Norfolk Police.
- Assist in evacuation operations for secure facilities or at-risk populations as needed.
- Support detainee management operations and transport during facility disruptions.
- Augment law enforcement presence in impacted areas post-storm.

Norfolk Fire-Rescue

- Support scene safety during SAR, hazmat, or fire-related responses that require law enforcement coordination.
- Assist with perimeter control at downed infrastructure or areas deemed unsafe for public access.
- Coordinate with police during the evacuation of hospitals, nursing homes, or other critical facilities.

Norfolk Emergency Management

- Coordinate all public safety operations through the EOC to ensure consistent communication and alignment with overall incident objectives.
- Provide situational awareness to law enforcement partners through STORM and ICS reporting.

- Facilitate mutual aid requests for public safety resources through VDEM.

Norfolk Public Works & General Services

- Support law enforcement operations by clearing access routes and providing fuel, barricades, signage, and logistical support.
- Assist with facility security needs at city buildings, public safety sites, and designated shelters.

Virginia State Police

- Assist Norfolk Police in traffic control, highway access, and enforcement on major evacuation routes.
- Support security missions for infrastructure, fuel convoys, or critical personnel movement.
- Coordinate with the Norfolk EOC and VDEM for regional law enforcement resource allocation.

Virginia National Guard

- Deploy security teams to support traffic control, security patrols, and infrastructure protection under a Governor's Declaration.
- Augment city law enforcement if widespread disruptions or civil unrest occur post-landfall.
- Coordinate directly with the Norfolk EOC through the assigned Liaison Officer.

Naval Station Norfolk Base Police

- Secure Navy-controlled infrastructure and coordinate with city officials on access or mutual support needs.
- Monitor waterfront facilities and military port security throughout the storm event.

Virginia Port Authority Police

- Provide law enforcement services at port terminals and surrounding maritime facilities.
- Support port closure enforcement and access control measures during Port Condition escalations.
- Coordinate with the U.S. Coast Guard and Norfolk Police on joint patrol or enforcement operations.

Norfolk Airport Authority Police

- Maintain security at Norfolk International Airport before, during, and after storm events.
- Support passenger screening, restricted access enforcement, and coordination with TSA and airlines.
- Assist in transition to emergency sheltering or flight diversion operations if needed.

Old Dominion University Police & Norfolk State University Police

- Monitor and protect campus properties, residence halls, and students.
- Coordinate with Norfolk Police on emergency sheltering or evacuations for on-campus populations.
- Support community awareness, campus lockdowns, or reunification if necessary.

U.S. Coast Guard – Sector Virginia

- Maintain maritime security and enforce restricted access zones in coordination with the Captain of the Port.
- Monitor potential threats to bridges, tunnels, and waterfront assets under federal jurisdiction.
- Support port security, inspections, and law enforcement missions in coordination with local partners.

Additional Considerations

- Security support must be coordinated across multiple jurisdictions, including universities, federal partners, and regional law enforcement.
- Law enforcement officers assigned to shelters must be briefed on shelter rules, civil rights protections, and coordination with shelter managers.
- Curfews, checkpoints, and restricted zone access must be communicated clearly through the JIC.
- Interoperable communications (e.g., 800 MHz radios, FirstNet) must be issued to mutual aid law enforcement teams and tracked through the COML.
- Incident Action Plans should include security assignments, staging locations, and shift rotation for all law enforcement personnel.
- Post-storm priorities should include anti-looting patrols, business district presence, and support to debris removal crews.

Primary Agency: Norfolk Economic Development

Support Agencies: Norfolk Emergency Management, Norfolk Department of General Services, Norfolk Department of Finance, Norfolk Public Utilities, Norfolk Information Technology, Norfolk Public Works, Dominion Energy, Downtown Norfolk Council, Hampton Roads Chamber of Commerce, Hampton Roads Transit (HRT), VisitNorfolk, Virginia Department of Emergency Management (VDEM), Virginia National Guard, FEMA

KEY RESPONSIBILITIES

Norfolk Economic Development

- Lead the coordination of business continuity and economic recovery efforts following storm impact.
- Serve as the primary liaison to Norfolk businesses for damage assessments, recovery resources, and technical assistance.
- Conduct business outreach via email, phone, and field visits to assess damages and identify resource needs.
- Coordinate with Emergency Management and Planning to prioritize restoration of critical commercial corridors.
- Support identification of interim spaces or temporary infrastructure for displaced businesses.

Norfolk Emergency Management

- Maintain coordination with Economic Development through the EOC to ensure alignment of re-entry priorities, business access needs, and logistics support.
- Support resource requests for commercial reentry, including signage, barricades, or law enforcement access.
- Share disaster declarations and Small Business Administration (SBA) updates with Norfolk Economic Development for business dissemination.

Norfolk Department of General Services

- Assist in providing temporary infrastructure, power access, or facilities support for businesses if applicable.
- Help with staging locations for mobile units or business recovery centers.
- Support logistics for generator deployments and other short-term continuity assets.

Norfolk Department of Finance

- Track disaster-related economic impacts and coordinate potential financial relief or recovery programs.
- Assist with grant documentation, recovery finance strategies, and state/federal reimbursement efforts.
- Support procurement and vendor access for emergency business-related expenditures.

Norfolk Public Utilities

- Prioritize restoration of water, sewer, and stormwater services to commercial zones based on input from Economic Development.
- Communicate service status and estimated restoration timelines to business owners through coordinated messaging with Economic Development.

Norfolk Information Technology

- Support business continuity by ensuring public-facing digital services remain functional (e.g., Norfolk.gov business portal).
- Provide virtual coordination capabilities for Economic Development to host outreach briefings and technical support.

Norfolk Public Works

- Prioritize debris removal and street clearance in business districts and commercial hubs.
- Support restoration of signage, traffic signals, and access routes to enable safe re-entry for business operations.
- Assist in reopening roads near impacted commercial centers and damaged infrastructure.

Dominion Energy

- Coordinate with Norfolk Economic Development to identify priority business zones for power restoration.
- Provide updates to the EOC and Economic Development regarding estimated restoration timelines and critical load facilities.

Downtown Norfolk Council & Hampton Roads Chamber of Commerce

- Act as conduits for business community input and feedback to the city.
- Assist in distributing updates, surveys, and available resources to members.
- Support Economic Development in identifying unmet needs and facilitating business recovery efforts.

Hampton Roads Transit (HRT)

- Provide modified service routes to support employee reentry and business operations in critical areas.
- Coordinate with the city on transportation restoration to business and industrial corridors.

VisitNorfolk

- Coordinate with tourism stakeholders to track impacts to hotels, attractions, and convention centers.
- Support outreach to the hospitality sector to assess losses and disseminate recovery support materials.
- Provide status updates to Economic Development and the JIC for public messaging.

Virginia Department of Emergency Management (VDEM)

- Support business recovery planning and grant coordination through the Virginia Business Emergency Supply Chain Network.
- Facilitate access to state resources and programs supporting economic recovery and resilience.
- Assist with submission of SBA disaster declaration requests in coordination with FEMA and Economic Development.

Virginia National Guard

- Provide infrastructure protection or escort services if needed to secure commercial areas during re-entry.
- Support debris operations in business zones at the direction of the City and VDEM.

FEMA

- Provide recovery assistance through the Public Assistance (PA) program and coordinate SBA Business Disaster Loan programs.
- Assist with long-term recovery planning and support the establishment of Disaster Recovery Centers (DRCs).
- Coordinate with Economic Development on Community Development Block Grant – Disaster Recovery (CDBG-DR) options if available.

Additional Considerations

- Business re-entry must be coordinated with public safety to ensure areas are structurally safe and free of immediate hazards.
- The EOC should maintain a Business Impact Dashboard or shared platform where reported impacts and service restoration statuses are tracked.

- SBA and FEMA resources should be communicated to businesses via newsletters, public briefings, and website updates coordinated through the JIC.
- Economic Development should partner with Planning and Building Codes to streamline post-disaster permitting and inspections.
- Short-term recovery priorities should include small businesses in flood-prone corridors, food vendors, and essential supply retailers.
- Consider activation of business recovery task forces or focus groups in collaboration with the Chamber and Downtown Norfolk Council.

EMERGENCY SUPPORT FUNCTION 15   EXTERNAL AFFAIRS

Primary Agency: Norfolk Department of Communications and Marketing

Support Agencies: Norfolk Emergency Management, Norfolk Cares Call Center, Department Public Information Officers (PIOs), Norfolk Information Technology, Norfolk Public Safety Departments (Fire, Police, Sheriff), Virginia Department of Emergency Management (VDEM), FEMA, Local and Regional Media Outlets, Community and Faith-Based Organizations

KEY RESPONSIBILITIES

Norfolk Department of Communications and Marketing

- Serve as the lead agency for all external communications and public information related to hurricane or tropical storm events.
- Activate and manage the Joint Information Center (JIC) when the Emergency Operations Center is activated.
- Draft, coordinate, and release citywide emergency messaging through social media, Norfolk.gov, press releases, and media briefings.
- Work with Emergency Management and the EOC Planning Section to ensure public messaging aligns with operational updates and priorities.
- Monitor media, social media, and community feedback to detect and correct misinformation or rumors.
- Coordinate the creation and dissemination of multilingual materials and accessible communications for all populations.

Norfolk Emergency Management

- Provide accurate operational updates and incident action plans to Communications and Marketing for message development.
- Activate and issue alerts using Norfolk Alert, Wireless Emergency Alerts (WEA), and Emergency Alert System (EAS) when appropriate.

- Collaborate with Communications and Marketing to schedule press briefings, community updates, and leadership messaging.
- Maintain situational awareness dashboards and mapping tools (iVIEW, STORM) for public and media-facing platforms.

Norfolk Cares Call Center

- Serve as the public's first point of contact for non-emergency storm-related questions and concerns.
- Provide consistent messaging aligned with the JIC and assist in rumor identification through high-frequency call trends.
- Support communications surge operations, including answering questions about shelters, closures, and city services.
- Relay common questions and concerns back to the JIC for inclusion in FAQs, messaging updates, or press briefings.

Department Public Information Officers (PIOs)

- Coordinate with the JIC to ensure department-specific messaging is consistent with citywide communication.
- Support media interviews, social media updates, and internal department briefings as assigned.
- Participate in daily JIC coordination calls or briefings and ensure approval chains for outbound messaging.

Norfolk Information Technology

- Maintain functionality of Norfolk.gov and other digital platforms supporting public information access.
- Ensure reliability of virtual coordination tools (e.g., JIC Teams Channels, STORM document access, EOC briefings).
- Support livestreaming, recording, and digital distribution of press conferences and city updates.

Norfolk Public Safety Departments (Fire, Police, Sheriff)

- Provide real-time public safety updates and participate in press briefings or social media coordination as necessary.
- Assist Communications and Marketing with timely field updates, public warnings, or threat messaging.

Virginia Department of Emergency Management (VDEM)

- Coordinate public information across jurisdictions and provide template messaging or media guidance as needed.

- Amplify Norfolk's messaging through the Ready Virginia platform and State Joint Information System (SJIS).
- Support risk communication for regional hazards and public assistance program awareness.

FEMA

- Coordinate federal messaging and ensure alignment with state and local public information efforts.
- Assist with translation, accessibility, and public education materials post-declaration.
- Support media coordination and response to national-level inquiries affecting Norfolk operations.

Local and Regional Media Outlets

- Serve as key distribution channels for urgent public information during all phases of the storm.
- Partner with the JIC to distribute accurate and timely updates, press releases, and interviews.
- Provide two-way communication by relaying public feedback and misinformation reports to the city.

Community and Faith-Based Organizations

- Assist in amplifying accurate city messaging to vulnerable or hard-to-reach populations.
- Support the distribution of flyers, alerts, and translated materials in neighborhoods and congregations.
- Serve as trusted messengers for public health and safety information before and after the storm.

Additional Considerations

- A daily media briefing schedule should be established and announced early in the event.
- The JIC should maintain an internal message approval workflow, rumor tracking log, and FAQ repository.
- Messaging should be accessible in multiple formats: visual, audio, and plain language.
- All public messaging must be archived for potential documentation and after-action reporting.
- FEMA and VDEM public information officers should be integrated into the JIC if a federal or state declaration is issued.
- Communications should reflect both operational updates (e.g., shelter openings) and public reassurance, including positive stories and community resilience.
- Internal communications (e.g., ALLNORFOLK) should be coordinated in parallel to ensure employee awareness.

SUPPORTING PLANS AND POLICIES

- Commonwealth of Virginia Emergency Operations Plan: Hazard-Specific Annex #3: Hurricane & Tropical Storm Response (October 2021)
- Norfolk Public Works, Division of Operations: 2017 Coastal Emergency Operations Framework.
- Team Norfolk EOP Functional Annex: Crisis Communications
- Team Norfolk EOP Functional Annex: Mass Care and Sheltering
- Team Norfolk EOP Functional Annex: Mass Evacuation
- VDH Hazardous Weather Response Plan (12/16/16)
- Port of Hampton Roads Maritime Severe Weather Contingency Plan (U.S. Coast Guard, Sector Hampton Roads, May 2023)
- 2024 VEST Hurricane Playbook

AUTHORITIES

- Norfolk Administrative Policy 5.3: Emergency and Inclement Weather Regulations
- Virginia Code § 44-146.23: "Immunity from Liability", Sections A and F (#2),
- Title 33, Code of Federal Regulations (CFR), Parts 160 and 165

REFERENCES

- Commonwealth of Virginia Emergency Operations Plan: Hurricane Response Plan, Volume V
- DHS National Planning Scenario
- 2022 Southside Hampton Roads Hazard Mitigation Plan
- Hampton Roads Threat and Hazard Identification / Risk Assessment
- National Response Framework
- DHS National Planning Scenario 10: Natural Disaster - Hurricane
- The Hurricane History of Central and Eastern Virginia
  - https://www.weather.gov/media/akq/miscNEWS/hurricanehistory.pdf
- Ready.Gov: Floods: https://www.ready.gov/floods
- Ready.Gov: Hurricanes: https://www.ready.gov/hurricanes
- Southeast Virginia / Northeast North Carolina Category 3 Hurricane Annex
- Glossary of NHC Terms: https://www.nhc.noaa.gov/aboutgloss.shtml#h
- NHC Storm Surge Overview: https://www.nhc.noaa.gov/surge/
- City of Norfolk Office of Emergency Management Website:
  - https://www.norfolk.gov/6140/Emergency-Management

NORFOLK'S HISTORICAL RESOURCES

The Sargeant Memorial Collection (SMC) is the local history and genealogy collection for the City of Norfolk. The SMC contains a wealth of historical research information that focuses on the City of Norfolk and the surrounding region, including more than 24,000 books, 10,500 microforms, 150,000 photographs, 3,000 maps, and 2,500 linear feet of archives and manuscript collections. The collection offers a wide variety of resources chronicling major events in Norfolk's history, including floods, hurricanes, snowfalls, and other storms such as the Ash Wednesday storm; fires and other major

disasters such as the great Berkley fire; epidemics and health crises such as the yellow fever epidemic; and civil disturbances such as protests during the civil rights era. Some content is available online through the Norfolk Public Library's website; however, many of our resources must be accessed through an in-person visit to the library. The Sargeant Memorial Collection is in the Slover Library and is open to the public seven days a week. You can search online resources at the following address: SMC Digital Collections | Norfolk Public Library.

ACRONYMS

- ADA – Americans with Disabilities Act
- ARES – Amateur Radio Emergency Services
- ASPR – Administration for Strategic Preparedness and Response
- BLS – Basic Life Support
- CAO – Chief Administrative Officer
- CAP – Civil Air Patrol
- CERT – Community Emergency Response Team
- CSB – Community Services Board
- COTP – Captain of the Port
- COML – Communications Unit Leader
- DHS/OCIA – Department of Homeland Security/Office of Cyber and Infrastructure Analysis
- DEQ – Department of Environmental Quality
- DMAT – Disaster Medical Assistance Team
- DOE - U.S. Department of Energy
- EAS – Emergency Alert System
- EOC – Emergency Operations Center
- EPA – Environmental Protection Agency
- ERC – Elizabeth River Crossings
- EVHC – Eastern Virginia Healthcare Coalition
- FEMA – Federal Emergency Management Agency
- GIS – Geographic Information System
- HHS – Health and Human Services
- HSIN – Homeland Security Information Network
- HSIN-CI – Homeland Security Information Network-Critical Infrastructure
- HVX – HURREVAC Website for EMs
- HRT – Hampton Roads Transit
- ICS – Incident Command System
- IAP – Incident Action Plan
- JIC – Joint Information Center

- KML – Keyhole Markup Language
- MLLW – Mean Lower Low Water
- MOU – Memorandum of Understanding
- MOM – Storm Surge Maximum of the Maximum
- MEOW – Maximum Envelope of High Water
- NHC – National Hurricane Center
- NOAA – National Oceanic and Atmospheric Administration
- NPS – Norfolk Public Schools
- OAD – Operational Analysis Division
- OCME – Office of the Chief Medical Examiner
- PDA – Preliminary Damage Assessment
- PIO – Public Information Officer
- PRT – Planning and Response Team

- PSAP – Public Safety Answering Point
- RACES – Amateur Radio Emergency Services
- RDP – Receiving and Distribution Point
- RHRCC – Regional Healthcare Coordination Center
- RHCC – Regional Hospital Coordination Center
- ROLR – Refuge of Last Resort
- SBA – Small Business Administration
- SITREP – Situation Report
- SLOSH – Sea, Lake, and Overland Surge from Hurricanes
- SWAN – Statewide Area Network
- STORM – Norfolk Storm Report Tracking System
- SNAP – Supplemental Nutrition Assistance Program
- TSA – Transportation Security Administration
- UASI – Urban Area Security Initiative
- USDA – U.S. Department of Agriculture
- USAR – Urban Search and Rescue
- VCE – Virginia Cooperative Extension
- VDH – Virginia Department of Health
- VDEM – Virginia Department of Emergency Management
- VDACS – Virginia Department of Agriculture and Consumer Services

- VDSS – Virginia Department of Social Services
- VDOT – Virginia Department of Transportation
- VDFP – Virginia Department of Fire Programs
- VPA – Virginia Port Authority
- VIMS – Virginia Institute of Marine Science
- VHASS – Virginia Healthcare Alerting and System Status
- VOAD – Voluntary Organizations Active in Disaster
- VIMS – Virginia Institute of Marine Science
- WEA – Wireless Emergency Alerts

APPENDICES

- Battle Rhythm

POSTURE	ESF	NOR'EASTER / TROPICAL STORM / HURRICANE BATTLE RHYTHM
		--This document serves as a guide and is subject to change--
		Condition Assumed at Start of Hurricane Season
Readiness Condition 5 **Normal Operations**		**ALL – Identify administrative logistical needs**
		ALL – Develop / Maintain mutual support agreements, as required
		ALL – Participate in training / exercises
		ALL – Routinely test communications equipment
	3	**ESF-3 – Coordinate vehicle/equipment loading plan with MARAD's Cape Race**
	5	**ESF-5 – Update / familiarize Hurricane Evacuation Study products**
	5	**ESF 5 – Coordinate with community partners**
	5	**ESF 5 – Maintain Operational Readiness of EOC**
	5	**ESF-5 – Coordinate with USGS any temporary water level / barometric pressure sensors**
	6	**ESF 6 – Work with EOC to confirm availability of shelters and refuges of last resort**
	15	**ESF-15 – Message / Infographic – Know Your Zone**
		https://www.norfolk.gov/659/Evacuation-Information
	15	**ESF 15 – Message promoting Norfolk Alert**
		https://member.everbridge.net/453003085612694/login
	15	**ESF 15 – Message / Infographic about Hurricane Supplies**
		https://www.norfolk.gov/1463/Hurricanes-Noreasters
	15	**ESF-15 – Message / Infographic: Avoiding Hurricane Damage for Homeowners**
		https://www.ready.gov/hurricanes
	15	**ESF 15 – Message / Infographic encouraging flood insurance / insurance checkup**
		https://www.floodsmart.gov/flood-insurance/why
Readiness Condition 4 Normal Operations **T-144 to T-96 Hours**	H-144	**A tropical weather system has developed which has the potential to impact the locality within 144-96 hours (D-6 to D-4 days)**
		VEOC – VEST Activated
		Policy Group – Announce Operational Readiness Condition 4
	ALL	**ALL – Alert and brief staff; develop staffing plans**
	ALL	**ALL – Review and implement Department Playbooks and Checklists**
	ALL	**ALL – Establish Communications with ESF Community Partners**
	ALL	**ALL – Begin documenting / tracking all incident-related costs**
	ALL	**ALL – Begin preparatory actions by identifying stocks of materials, pre-warning emergency services, personnel, etc.**
	ALL	**ALL – Identify resources which may need to be moved/secured for protection.**

Readiness Condition 4 Normal Operations **T-144 to T-96 Hours**		ALL	ALL – Identify resource needs and availability
		2	ESF 2 – Test EOC emergency power, technology and communications
		2	ESF 2 – (COML) Establish ICS-205 Communications Plan
		3	ESF 3 – Ensure fuel supply is maxed; request if necessary
		3	ESF 3 – Check / test backup generators
		5	ESF 5 – Prepare EOC for activation; Schedule and Conduct EOC briefing
		5	ESF 5 – Prepare HSIN and STORM; schedule Just-in-Time training as necessary.
		5	ESF-5 – Review 2- and 5-Day NHC Tropical Weather Outlook (available at 2am, 8am, 2pm, 8pm).
			Note: 5- Day Outlook shows where storm might form, not where it's heading.
		5	ESF-5 – Advisories will be available at 5am, 11am, 5pm, 11pm
			Note: Refer to Planning Section Schedule.
		5	ESF 5 – Continue to track the weather system; monitor and maintain HSIN for situational awareness and documentation
		5	ESF-5 – Submit situation report to VEOC
		5	ESF 5 – Make contact with community partners thru Team Norfolk EOC updates
		6	ESF 6 – Ensure operational capability and availability of shelters
		6	ESF 6 – Ensure operational capability of busses and availability of drivers
		6	ESF 6 – Schedule meals task force call / date for food collection and packing
		7	ESF 7 – Review staffing plans for PODs and/or staging areas
		7	ESF 7 – Consider request for Army National Guard to provide support to assist with transport of critical staff and those with medical needs.
		14	ESF 14 – Economic Development to submit list of available space to EOC.
		15	ESF-15 – Message – City Preps – Storm drain/ditches preps, flood gate tests
		15	ESF-15 – Message / Infographic – Check on your neighbors	
		15	ESF-15 – Create network folder / location for all incident-related pictures (HSIN)
	H-120		Governor's Declaration
			Local Declaration
		FINANCE	FINANCE – Assign incident budget code; arrange P-Cards for emergency purchases and ID code for tracking.
		ALL	ALL – Begin Tracking Incident-Related Costs
		5	ESF-5 – Review NHC Public Advisories, Forecast Discussions, Wind Speed Probabilities, Track Forecast and Cone and Probabilistic wind timing (HURREVAC)
			Note: Run SLOSH Maximum of Maximums (MOM) for storm within 120 hours
		5	ESF-5 – Begin developing Incident Action Plan
		5, 8	ESF-5, 8 – HHS Patient Movement Conference Call if necessary
	H-120	8	ESF 8 – Request orfolk information
	H-96	to	State to activate the Joint Information Center (JIC)

Readiness Condition 3 T-96 to T-48 Hours	**H-96 H-96-72**		Forecasted arrival of tropical storm force winds within 96-48 hours.
			VDEM JIC to hold conference call with State and Local PIOs.
			Prepositioning of State Resources for Evacuation Activities
		POLICY	**Policy Group – Announce Operational Readiness Condition 3**
		POLICY	**Policy Group – Partial EOC Activation (Virtual)**
		POLICY	**Policy Group – Send internal email regarding Emergencies & Closures Policy.**
			Consider appropriate municipal and event delays / closures / discretionary leave
			Coordinate w/ NWS, Public Works, RPOS, General Services, Schools, Navy, Libraries, Culture
			Facilities, Arts & Entertainment, Zoo, Nauticus, FestEvents
		ALL	**ALL – Maintain Regular Situational Awareness through HSIN**
		5	**ESF 5 – Set Operational Periods / EOC Schedule; Initiate Incident Action Plan**
		5	**ESF-5 – Request CERT volunteers for shelter transportation coordination; establish and maintain communications with Hampton Roads Transit / Paratransit**
		5	**ESF-5 – Request unmanned aerial vehicle services**
		5	**ESF-5 – Request VIMS Assistant Research Scientist flooding and rainfall modeling.**
		6	**ESF 6 – Coordinate w/ NPS available Shelters; Place shelter teams on standby; notify Mercy Chefs for meal support.**
		6	**ESF-6 – Coordinate with NF-R the movement and set up of Shelter Support Unit**
		7	**ESF-7 – Review Resource Lists for All Departments / ESF's**
		7	**ESF-7 – Determine when to open parking garages to protect vehicles; share with JIC (Fountain Park, Freemason Street, Main Street (not the Hilton), Town Point Garage, West Plume and York Street); Request availability of ODU parking garages.**
		8	**ESF-8 – Communicate / Coordinate with Hospitals and Health Care Facilities**
		8	**ESF-8 – HHS Patient Movement Conference Call**
		15	**ESF-15 – Message – Parking Garages – Announce availability of parking garages to protect vehicles from flood waters (partner with ODU and NPS).**
		16	**ESF-16 – Navy Sets Tropical Storm Condition of Readiness (COR) V**
Readiness Condition 3 T-96 to T-48 Hours	**H-72 H-72-48**		**Governor's Evacuation Briefing**
			VDEM JIC to activate 2-1-1 Virginia;
			Norfolk EOC also to request 2-1-1 Virginia support
		POLICY	**Policy Group – Schedule Opening of EOC Planning and Logistics Sections; EOC-Plans@norfolk.gov / EOC-Logistics@norfolk.gov**
		POLICY	**Policy Group – Schedule Opening of Joint Information Center; JIC@norfolk.gov**
		1	**ESF-1 – USCG to set Port Condition WHISKEY (Open to all commercial traffic)**

		1	ESF-1 – USCG to set Port Condition X-RAY (Open to all commercial traffic)
		1	ESF-1 – Coordinate the removal of Lime Scooters.
		2	ESF-2 – Internal messaging about technology preparations.
		3	ESF-3 – Begin clearing ditches, drains and inspecting pump stations
		5	ESF-5 – Begin review wind timing (HURREVAC), Surge MEOWs & QPF Rainfall forecasts
			Begin Preparing Scenarios for possible Evacuations
		5	ESF-5 - Schedule Regional EOC Conference Call for H-40
		5	ESF-5 – Coordinate with ESF-2 to place ARES/RACES on alert.
		5	ESF-5 – Submit situation report TO VEOC
		8	ESF-8 – HHS Patient Movement Conference Call
		16	ESF-16 - Navy Sets Tropical Storm Condition of Readiness (COR) IV
		17	ESF-17 – Request post-storm volunteer hotline with Operation Blessing
	H-60	8	ESF-8 – If Patient Movement, Conference Call and Federal Boots on Ground at APOE's and FCC's
	H-52	8	ESF-8 – If Patient Movement, Non-Critical Patient Movement Begins
	H-50	8	ESF-8 – If Patient Movement, FCC Receives First Patient; SAT's Move Out to Hospitals
Readiness Condition 2 T-48 to T-24 Hours	H-48		Hurricane Watch Issued
			Forecasted Arrival of Tropical Storm Force Winds within 48 to 24 hours
			Governor Consultation w/ Local Officials about Mandatory Evacuation
			State Agency Lane Reversal Decision (for CAT-3+)
		C&C	Command & Control – Announce Operational Readiness Condition 2
		C&C	Command & Control – Determine Municipal Operating Status
		ALL	ALL – Complete all actions not accomplished from Readiness Condition 3
		ALL	ALL – Continue to Brief Personnel
		PLAN/2	Planning Cell / ESF-2 - Finalize ICS-205 Communication Plan
		5	ESF-5 – Begin review of Hurricane Local Statements
		5	ESF-5 – Review Surge Probabilities
			Note: Run SLOSH Maximum Envelope of Water (MEOW) for storm within 48 hours.
		5	ESF-5 - View NOAA Probabilistic Hurricane Storm Surge – available 48 hours prior to the arrival of TS winds and/or when a watch or warning is issued. (http://www.weather.gov/mdl/psurge/). Both P-Surge & P- Surge Flooding Map.
			Note: P-Surge made available at 5:30am, 11:30am, 5:30pm, 11:30pm (I.e. 30min after advisories) – Note: may be 60-90 minutes after advisory.

Readiness Condition 2 **T-48 to T-24 Hours**		5	ESF-5 – Expect Hourly Updates from the NHC when eye of storm can be tracked by local radar.
		15	ESF-15 – Message – Hurricane Preparedness: https://www.weather.gov/wrn/hurricane_infographics
		5	ESF-5 –Request surge run from NHC Storm Surge Unit if not a tropical cyclone (i.e. for Nor'easter, etc.).
		5	ESF-5 – Confirm drone assistance for immediate post-landfall damage assessments, locations.
		5	ESF-5 – Coordinate with JIC evacuation messaging via Norfolk Alert and WEA.
		5	ESF-5 – Submit situation report to VEOC
		6	ESF-6 – Communicate with Refuges of Last Resort as necessary
		8	ESF-8 CSB to conduct outreach to vulnerable clients in flood-prone areas; coordinate shelter transportation pick-up points with EOC and NPS.
Readiness Condition 2 **T-48 to T-24 Hours**		15	ESF-15 – Active emergency bar on Norfolk.gov
		15	ESF-15 – Message - Store loose items https://www.norfolk.gov/1463/Hurricanes-Noreasters
		15	ESF-15 – Norfolk Alert to flood zones ordered to evacuate – Know Your Zone: https://www.vaemergency.gov/hurricane-evacuation-zone-lookup
		16	ESF-16 - Navy Sets Tropical Storm Condition of Readiness (COR) III
		15	ESF-16 - Navy- Marine Corps Relief Society issues evacuation funding for those Active Duty and Retired Navy and Marine Corps Service families who need to leave the area
		17	ESF-17 – CERT to assist clearing storm drains near their homes upon request.
			Local EOC Briefing – Based on Governor's Briefing and State Evacuation Decision
	H-47	5	ESF-5 - Conduct Regional EOC Conference Call
	H-40		Mandatory Evacuation Implemented
	H-36		National Hurricane Center to issue a Hurricane Warning and/or Storm Surge for the projected impact areas
		5	ESF-5 – Review Flood Outlooks, Surge Inundation products & HAZUS output
			Governor's Lane Reversal "Go / No Go" Decision (for CAT-2+)
			State Managed Shelters are Operational [if activated]
			If Phase III Evacuation, Local Reception Center Setup Begins
			Initiate Lane Reversal (for CAT-3)
	H-30		If Phase III Evacuation, Reception Center(s) Operational
			If Phase III Evacuation, Pickup and Transport to Reception Center Begins
			Forecasted Arrival of Tropical Storm Force Winds within 24 hours
READINESS CONDITION 1	H-24	C&C	Command & Control – Announce Operational Readiness Condition 1

		C&C	**Command & Control – Activate Full EOC**
		ALL	**ALL - Complete all actions not performed from Readiness Condition 2**
READINESS CONDITION 1 **T-24** **TO** **T+72** **HOURS**		1	**ESF-1 - USCG Sets Port Condition YANKEE (Vessel traffic control measures in effect**
		1	**ESF-1 – Monitor progress of evacuation**
		2	**ESF-2 – Amateur Radio to arrive and set up at EOC and all activated shelters**
		2	**ESF-2 – Identify date/time by which partner agencies need to report in after landfall to confirm communication and what alternate capability to use if normal means are impacted (fax? amateur radio? Sat phone? Out of Area Contact – Richmond or VEOC?)**
READINESS CONDITION 1		5	**ESF-5 – Submit situation report to VEOC**
		6	**ESF-6 – Open Shelter(s)**
		7	**ESF-7 – Open Parking Garages if not open already**
		8	**ESF-8 – If Patient Movement, Conference Call**
		15	**ESF-15 – Shelter Locations and Guidelines**
			https://www.norfolk.gov/647/Shelter-Information
		15	**EFS-15 - Message/Infographic - Safety During Storm**
			https://www.noaa.gov/stay-protected-during-storms
		15	**ESF-15 – Message / Infographic – Do not drive or play in flood waters**
			https://www.weather.gov/wrn/flood_infographics
		15	**ESF-15 – Message / Infographic – Check on Neighbors**
			https://www.fema.gov/node/check-your-neighbors
		15	**ESF-15 – Message – Document and dispose of flood damaged items**
T-24 **TO** **T+72** **HOURS**		16	**ESF-16 - Navy Sets Tropical Storm Condition of Readiness (COR) II**
	H-18	8	**ESF-8 – If Patient Movement, Evacuation Operations Cease**
	H-12		**Navy Sets Tropical Storm Condition of Readiness (COR) I**
			USCG Sets Port Condition ZULU (Port closed to all commercial vessel traffic)
		6	**ESF-6 - Refuges of last resort opened**
		8	**ESF-8 – If Patient Movement, HHS Redeployment Complete**
	H-6		**Termination of Lane Reversal (CAT-3)**
		3	**ESF-3 – Place Debris Management Contractors on Stand-By (if not already)**
		6	**ESF-6 – Reception Center Demobilized**
READINESS CONDITION 1	H-0		**0 HOUR – ARRIVAL OF TROPICAL STORM-FORCE WINDS** **39mph Sustained – Midtown Tunnel Closes** **40mph Winds – Secure Government Vehicles.** **45mph Sustained – HRBT, MMBT, JRB, Downtown Tunnel, High Rise Bridge Close** **45mph Sustained – Discontinue local response operations** **40mph Winds – CBBT Level 1 Vehicle Restrictions** **50mph Winds – CBBT Level 2 Vehicle Restrictions** **60mph Winds – CBBT Level 3 Vehicle Restrictions**

T-24 TO T+72 HOURS			**Hurricane Wind – CBBT CLOSED**
			  *CBBT Hurricane Plan says the tunnel could be restricted at lower winds with an approaching hurricane
			  *~7ft above MLLW may also result in a HRBT closure *~8.0ft MLLW – Midtown Tunnel closure

		ALL	**ALL – BEGIN REVIEW OF HURRICANE RESPONSE / RECOVERY PLANS**
		3	**ESF-3 – Finalize Debris Removal Storage Sites**
		6	**ESF-6 – Refresh Longer-Term Sheltering / Housing Strategy**
		7	**ESF-7 – Determine initial POD locations**
		8	**ESF-8 – If Patient Movement, Conference Call 1**
READINESS CONDITION 1 **T-24 TO T+72 HOURS**		ALL	**ALL - Conduct Rapid Needs Assessment / Impact Assessment; Report Them to the Norfolk EOC**
		1	**ESF-1 - USCG to establish & enforce safety zones; return to Port Condition Yankee if possible**
		1	**ESF-1 – Determine main / significant impacts to road infrastructure**
		5	**ESF-5 – Submit situation report to VEOC**
		3	**ESF-3 – Activate debris management plan(s) if not already completed**
		9	**ESF-9 – Initiation of search and rescue operations**
		13	**ESF 13 – Review damage assessments and determined curfew needs.**
	H+4	8	**ESF-8 - If Patient Movement, SAT's Conduct Daily Conference Calls with IRCT Patient Movement Branch & EMG**
	H+6	8	**ESF-8 – If Patient Movement, Patient Discharge from NDMS Hospital** **Discuss restoration prioritization strategy for essential services: power, water, roads, etc.** **Identify most essential routes to address most critical infrastructure.**
		3	**ESF-3 – Finalize Debris storage areas based on damage reports; begin preparations for removal.**
		5	**ESF-5 – Keep HSIN current; submit situation report to VEOC**
		5	**ESF-5 – Schedule initial damage assessment (IDA) meeting.**
		7	**ESF-7 – Finalize POD locations based on damage reports.**
		12	**ESF-12 – Coordinate with ESF-7 location(s) of mobile charging stations.**
		15	**ESF-15 – CDC - Food safety after a flood** https://www.cdc.gov/foodsafety/keep-food-safe-after-emergency.html
		15	**ESF-15 – CDC infographic and site - CDC 8 Tips to Clean Up Mold** https://www.cdc.gov/mold/cleanup-guide.html
		15	**ESF-15 – Message – Be cautious around tree branches and downed power wires.** https://www.ready.gov/hurricanes#after
		15	**ESF-15 – Message – Beware of storm repair scams; check license before hiring** https://www.consumer.ftc.gov/features/dealing-weather-emergencies
		15	**ESF-15 – Message – Generator Safety https://www.ready.gov/power-outages#** https://www.fema.gov/node/generator-safety-stay-safe

H+24	6	ESF-6 – Assess shelter operations for long-term sheltering needs	
	7	ESF-7 - Begin establishment of POD's	
	7	ESF-7 – Identify location(s) for assistance center / insurance relief vehicles	
		Phase-out shelters as appropriate	
H+48	5	ESF-5 / Finance Section – Begin process for local / state / federal PDA	
		ESF-5 – Request Hind-cast from NHC Storm Surge Unit	
H+48		Initial Damage Report due to State within 72 hours of incident	
		Request federal declaration (if not already)	
	5	ESF-5 – Coordinate VDEM / SBA and FEMA Damage Assessment efforts	
		TRANSITION TO SHORT-TERM / INTERMEDIATE RECOVERY	
		Refer to Short-Term / Intermediate Recovery Plan	
	C&C	COMMAND & CONTROL – Conduct Recovery Operations Briefing	
	5	ESF- 5 – Look for NWS preliminary summary 5 days after landfall	
	6	ESF- 6 – Coordinate individual housing needs with federal partners	
	15	ESF-15 – Info on reporting price gouging	
	15	ESF-15 – Info on reporting insurance problems to the SCC	
		Intermediate Recovery (NRDF, p. 10) – (short-term recovery = up to 6 months)	
		Long-Term Recovery Phase (NRDF, p. 10-11) (longer than 6 months	