

## **PUBLIC WORKS & ENGINEERING (ESF-3)**

2025

### **I. INTRODUCTION**

#### **A. PURPOSE**

The Public Works and Engineering Emergency Support Function (ESF-3) assists the State Emergency Response Team (SERT), upon activation of the State Emergency Operations Center (EOC), by facilitating the deployment of requested resources, including personnel, services, equipment, facilities, materials, and supplies, through established partner agencies. These resources are necessary to support public works systems, infrastructure, and other emergency needs during domestic events and incidents affecting the state.

#### **B. SCOPE**

ESF-3 is designed and structured to provide public works and engineering resource support to assist in domestic event and incident management. Public Works and Engineering involves technical advice and evaluations, engineering services, construction management and inspection, emergency contracting, emergency repair of public water supply, wastewater, solid waste facilities and dam infrastructure. Activities within the scope of ESF-3 functions include:

1. Processing and coordinating requests for public works and infrastructure support, including identifying resources, assigning responsibilities, and facilitating deployment through appropriate channels;
2. Reporting damage to infrastructure as a result of an incident;
3. Facilitating emergency protective measures of critical public works facilities infrastructure;
4. Managing disaster debris removal; and
5. Coordinating and supporting the preparedness, response, recovery and mitigation activities necessary to support the state's public works facilities infrastructure.

### **II. SITUATION AND ASSUMPTIONS**

#### **A. SITUATION**

After an incident, significant damage may cause public works infrastructure to be destroyed or severely weakened. This can include critical systems

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such as water/wastewater plants, water distribution lines and sewage collection systems, all of which are essential for the daily functioning of communities. The destruction or severe weakening of these infrastructures can lead to widespread disruptions in essential services, posing significant challenges for both emergency responders and the affected population.

Many disaster situations have the potential to create sewage and waste disposal problems. Facilities may be damaged or destroyed creating additional public health problems. Emergencies may involve hazardous chemicals, sewage, waste, and pesticides that may threaten the environment critical to health and safety. State resources may be required to be deployed from outside the affected area to ensure a timely, efficient, and effective response.

**B. ASSUMPTIONS**

1. Local governments will initially utilize their own engineering personnel and those available through mutual aid agreements. If additional engineering services are required beyond the capabilities of state and local resources, these services may be secured through contracts with private organizations or prearranged agreements with other governmental entities.
2. Assistance from the state may be needed to clear debris, perform damage assessments, conduct structural evaluations, coordinate emergency repairs to essential public facilities, and provide emergency water for human health needs.
3. State agencies will not remove debris from private property without a properly executed "Right-of-Entry" agreement.
4. Rapid damage assessment of the disaster area may be required to determine potential workload and ongoing assessments by qualified personnel.
5. Emergency environmental waivers, legal clearances, and "Rights-of-Entry" (on private property), will be needed for disposal of material from debris clearance activities.
6. Significant numbers of personnel with engineering and construction skills along with construction equipment and materials may be required to assist in the response and recovery from the disaster.

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

#### **A. LEAD STATE AGENCY**

##### **1. NC DEPARTMENT OF PUBLIC SAFETY (NCDPS)**

###### **NORTH CAROLINA EMERGENCY MANAGEMENT (NCEM)**

- a. Serve as lead agency to support NC Department of Environmental Quality (NCDEQ) to plan, direct, and coordinate a multi-agency emergency response to request from affected jurisdictions. Support includes public works assistance concerning debris collection, removal, and reduction; engineering services support; sewage and waste disposal facility repairs; and air and water quality evaluation and support.
- b. Serve as lead agency to support NCDEQ to plan, administer, and coordinate damage assessment throughout the state in response to emergencies.
- c. Gather, compile, and submit damage and needs assessment data for public as required for public works infrastructure.
- d. Contract engineering services through NCEM Procurement and Logistics if NCDEQ does not have the capability.

#### **B. LEAD TECHNICAL AGENCY**

##### **1. NC DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ)**

- a. NCDEQ sets regulations for waste treatment facilities and will monitor the restoration of damaged wastewater systems to a safe, functioning condition. Regulations for the safety of the public water supply and clean air are set by NCDEQ. NCDEQ will monitor the restoration of systems to a safe, clean level.
- b. Consult with SERT partners to provide temporary alternative solutions that have been implemented when systems or infrastructure are damaged or unavailable.
- c. Provide staffing and resources necessary to conduct impact assessment of the impacted area.

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- d. Provide engineering, technical, and specialty support and coordination.

### **DIVISION OF WATER RESOURCES (DWR)**

- a. Assume the lead role for coordinating the response to sewage and wastewater problems resulting from an emergency.
- b. Assist with damage assessment and restoration of wastewater treatment plants.
- c. Provide information, guidance, and instructions concerning standards for emergency wastewater treatment problems.
- d. Assist local governments in evaluating ramifications from chemical spills or releases that adversely affect the environment.
- e. Evaluate water quality when public water supplies are threatened by contamination resulting from any spill or emergency.

### **DIVISION OF WATER RESOURCES (DWR)**

#### **PUBLIC WATER SUPPLY SECTION**

- a. Initiate boil water advisories and/or notices in situations where the water system has known or potential contamination for the period of time until water supply has been reestablished.
- b. Apply regulatory enforcement as situation demands.
- c. Assist in damage assessment to support restoration of water supply.
- d. Provide consulting assistance as required for public water supply concerns and emergencies.

#### **DIVISION OF WASTE MANAGEMENT (DWM)**

- a. Identify procedures for temporary storage of debris pending disposal, recycling, or reuse in conjunction with partner agencies.
- b. Approve use of existing inventory of temporary debris storage sites at the request of local governments or NCDOT.

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- c. Conduct NCDEQ base level compliance site assessments, Natural Heritage Program (NHP) and State Historic Preservation Office (SHPO) reviews, and issue emergency authorizations for temporary debris storage sites.
- d. Identify landfills or recycling facilities that could accept contaminated solid waste depending on the type of waste and contaminant.
- e. Identify facilities and vendors that will accept and treat contaminated liquid waste to utilize or dispose of debris depending on the type of liquid waste, the contaminant and how it would be treated, and assist in determining the regulatory agency to provide proper guidance.
- f. Conduct post-event site inspections to close out removal of debris, complete site restoration activities and deactivate the site.

### **DIVISION OF ENERGY, MINERAL AND LAND RESOURCES (DEMLR)**

- a. Assume the consulting role to the SERT for the response to dam safety emergencies.
- b. As available, perform dam inspection/assessments to develop an analysis of the conditions to determine appropriate response measures.
- c. Provide information, guidance, and instructions concerning standards for emergency response and Emergency Action Plans (EAPs).
- d. Assist in evaluating ramifications from dam threats or failures.
- e. Apply dam safety regulations and statutes, as required.
- f. As available, provide technical assistance in a dam safety emergency.
- g. Assist in damage assessments.

### **2. NC GEOLOGICAL SURVEY**

- a. Provide detailed geologic and derivative maps.
- b. Provide mineral resource and geochemical information.
- c. May provide topographic maps and digital products.

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- d. Provide consulting services and specially prepared reports to agencies that need geological information.
- e. Monitor North Carolina's oil and gas regulations.

### **GEOHAZARDS**

- a. Provide a qualified geohazards specialist to serve as a technical advisor to the SERT Leader for earthquakes, landslides, ground collapse, or other incidents.
- b. Provide preliminary geohazards assessment and recommend further assessments as required.
- c. Collaborate with the U.S. Geological Survey (USGS) to estimate damage based on the magnitude and location of the incident.

## **C. SUPPORTING STATE AGENCIES**

### **1. NC DEPARTMENT OF TRANSPORTATION (NCDOT)**

- a. Assume the lead role for vegetative debris removal on NCDOT maintained rights-of-way during and after an emergency or disaster.
- b. Provide coordination as needed for debris removal off right-of-way when it is a threat to health and safety and has been ordered by the Governor.
- c. Provide assistance in clearing wreckage from public property as requested by the Governor after a disaster.
- d. Conduct internal engineering evaluations as necessitated by damage to state highway systems including roadways, bridges, signs, traffic signals.

### **2. NC DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES (NCDA&CS)**

#### **NORTH CAROLINA FOREST SERVICE (NCFS)**

- a. Assist in damage assessment of state-owned property.
- b. Assist with debris removal from state-owned property.

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- c. Provide personnel and equipment to assist in coordination of debris removal when environmental concerns exist.
- d. Assist NCDOT in obtaining permits and clearances for disposal of debris and wreckage.

### **3. OFFICE OF STATE FIRE MARSHAL (OSFM)**

- a. Provide engineering services support for damage surveys and other technical support as needed to respond to missions assigned to Public Works and Engineering.

### **4. NC DEPARTMENT OF HEALTH AND HUMAN SERVICES (NCDHHS)**

#### **DIVISION OF PUBLIC HEALTH (DPH)**

- a. Provide assistance to local public health organizations.
- b. Provide assistance through the Epidemiology Section as required.

### **5. NC WATER/WASTEWATER AGENCY RESPONSE NETWORK (WaterWARN)**

- a. Provide a system of aid that may be utilized by water/wastewater utilities requiring emergency assistance from member utilities.
- b. Provide voluntary mutual aid and assistance network to combat water-related incidents throughout the state in the form of personnel, emergency equipment, materials, and other required resources.

## **D. SUPPORTING FEDERAL AGENCIES**

### **1. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)**

- a. Provide emergency hydrographic surveys, search and recovery, obstruction location to assist safe vessel movement, and vessel traffic rerouting in ports and waterways.
- b. Provide expertise and conduct/support specialized salvage/wreck removal operations as part of a coordinated response and restoration strategy.
- c. Support response to significant transportation disruptions by providing expertise and conducting underwater obstruction surveys to search for dangers to navigation.

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### **2. U.S. ARMY CORPS OF ENGINEERS (USACE)**

- a. Provide an LNO familiar with authorities and capabilities to the State EOC to explain capabilities and coordinate efforts as related to temporary emergency power, debris management, infrastructure assessment, and critical public facilities.
- b. In the event of a major disaster impacting the state, provide support under the following authorities: PL 84-99 (Flood Control and Coastal Emergencies), Civil Works Authorities (USACE Flood Control Works), and the Stafford Act.
- c. Support USACE-controlled dam projects impacting North Carolina.

### **3. U.S. DEPARTMENT OF HOMELAND SECURITY (DHS)**

#### **CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY (CISA)**

- a. In response to threats, events and incidents impacting the state, CISA will have a dedicated Protective Security Advisor (PSA) report to the State EOC to coordinate critical infrastructure impact information resulting from the incident.
- b. The PSA provides expert knowledge of the impacted infrastructure providing vital information on interdependencies, cascading effects and damage assessments.
- c. The PSA coordinates closely with critical infrastructure owner/operators on incident impacts and makes recommendations on critical infrastructure reconstitution prioritization, re-entry and recovery efforts.
- d. The PSA will utilize the Events and Incident Tracker to track, in near real time, facilities' pre-incident and post-incident status to provide situational awareness to counties and the State EOC as well as CISA leadership.

### **4. U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)**

- a. Consult with the appropriate regional or district office regarding situations potentially requiring temporary or permanent relocation of the State EOC. In the event of a declared federal disaster, coordinate with the FEMA Federal Coordinating Officer (FCO) as appropriate.

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- b. Coordinate with lead state and technical agencies to collect and/or distribute pertinent information on the discharge or release including: source and cause; Responsible Party; nature, amount, location, direction, and time of discharge; pathways to human and environmental exposure; potential impact on and protection priorities for human health, welfare, and safety, and the environment; possible impact on natural resources and property, and estimated response costs.
- c. Coordinate with lead state and technical agencies to collect and/or distribute pertinent information on the impacts to water infrastructure.
- d. Provide emergency laboratory analytical support on an as-needed basis in the event of a water contamination event.

## **IV. CONCEPT OF OPERATIONS (CONOPS)**

### **A. GENERAL**

Public Works and Engineering support supplements local emergency response actions immediately following a disaster. Representatives of Public Works and Engineering agencies will report to the State EOC upon request to coordinate assistance. Lead technical agencies will determine, according to the nature of the emergency/disaster, which support agencies need to be SERT participants.

- Mission assignments for public works support are received from the local NCEM Branchy Offices or affected municipalities then tasked through NCSPARTA by the SERT Infrastructure Branch to ESF-3 partner agencies for action.
- ESF-3 communications are established, maintained and coordinated with ESF-5 (Emergency Management) to facilitate the expeditious and accurate exchange of information necessary to conduct mission management activities.
- ESF-3 receipt, and reporting of assessment and status information is coordinated with ESF-5 (Emergency Management), ESF-7 (Logistics management and Resource Support), NCDOT, state and federal agencies, and other emergency management as required.
- ESF-3 provides a structure for managing and coordinating:
  - Resource deployment into and out of the incident area.

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- Facility recovery, restoration, safety and security.
- ESF-3 may obtain resources through member agency contractors, vendors, and suppliers. Resources may also be obtained from local, state, regional, national, and public and private associations or groups.
- ESF-3 resources may be used to:
  - Provide public works support to other ESFs;
  - Provide information and support to entities conducting evacuation and re-entry efforts;
  - Monitor, control, and coordinate all requests for assistance for public works and facilities;
  - Provide infrastructure status reports for all impacted public works facilities;
  - Identify temporary alternative solutions that can be implemented when systems or infrastructure are damaged or unavailable;
  - Coordinate mapping and schematics for critical public works, water treatment facilities and others;
  - Identify, assess, and prioritize repairs of damage sustained to public works facilities and infrastructure; and
  - Prioritize and initiate emergency work to clear debris and obstructions from, and make emergency repairs to, the multi-modal transportation infrastructure.

### **B. NOTIFICATION**

ESF-3 will utilize the following notification processes during State EOC activations:

- SERT Infrastructure will notify designated ESF-3 personnel to report to the State EOC as directed by the SERT Leader.
- As warranted by the scope of the impending event or incident, NCDEQ will notify the appropriate supporting divisions within their agency and request necessary support.

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- The designated supporting agencies will respond to the NCDEQ Duty Officer's request, report to the State EOC and ensure the necessary staffing for the remainder of the activation.
- The SERT Leader, through the SERT Infrastructure, will notify designated ESF-3 personnel to end operations at the State EOC, as directed and upon notification of the deactivation of the State EOC.

### **C. RESPONSE ACTIONS**

#### **1. INITIAL**

Immediately upon notification of a threat, event, or incident, the following consideration is given by ESF-3:

- Support requests and directives leading to, and resulting from, Presidential and Gubernatorial Executive Orders and Declarations and requests for federal assistance.
- Develop and maintain manual and automated templates, documents and listings for the following:
  - Agency emergency points of contact and Subject Matter Experts (SME) that are assigned or otherwise available to ESF-3.
  - Points of contact for agency, contractor and vendor obtainable public works resources.
  - Websites and other electronic resources identified to assist all supporting agencies.
  - State EOC briefings, situation reports, and/or action plans.
- Initiate reporting to and from ESF-3 agencies.
- Implement plans to ensure adequate staff and administrative support.
- Coordinate with supporting agencies to inventory available personnel, equipment, and materials.
- Establish priorities and develop plans for mobilization.
- Preposition resources as appropriate.

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- Evaluate and task public works support requests for impacted areas.
- Monitor the status of public works facilities.

### **2. CONTINUING**

Upon an activation of the SERT, the following consideration is given by ESF-3:

- Contact ESF-3 counterparts in the threatened or impacted county(s) according to established procedures.
- Coordinate state and federal assets in support of staging and preparation of public works facilities to fulfill mission assignments.
- Coordinate support to the appropriate state, local, and tribal entities regarding the movement of people and goods to, from, and within the impacted area(s), and providing information regarding issues such as movement restrictions, critical facilities closures, and evacuations.
- Coordinate the administrative support of individuals involved in regional emergency operations and for managing all financial transactions undertaken through mission assignments to ESF-3.
- Evaluate impacts to infrastructure through damage assessments conducted by SERT partners in the threatened and/or impacted area as appropriate, and task personnel for response and recovery work.
- Track resources and re-allocate as necessary.
- As the situation develops, begin pre-planning for recovery actions by coordinating with the NCEM Public Assistance Branch to arrange for disaster cost reimbursement to local governments.
- Maintain records of work schedules and costs incurred by ESF-3 agencies during an event.

### **IV. DIRECTION, CONTROL AND COORDINATION**

#### **A. LOCAL**

Each jurisdiction within the state is responsible for its own requirements. Only when local and mutual aid resources are exhausted or projected to be exhausted may the jurisdiction request assistance from the state. Local governments will use their own engineering personnel and those under

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prearranged mutual aid agreement and/or contracts to conduct public works response and recovery missions and should have pre-arranged agreements or contracts in place for debris removal and disposal.

Local governments are normally responsible for the operation of local sewage and waste disposal systems in accordance with state standards. Reports and/or requests for assistance are made to the nearest NC Department of Commerce field office that notifies NCDEQ. Local governments maintain a capability to monitor and react to local air and water contamination to ensure readings are compatible with public health standards and requirements.

### **B. STATE**

As a part of the SERT, ESF-3 may be needed at several facilities or participate on several emergency management teams simultaneously. ESF-3 may be represented and participate at the State EOC and their respective agency EOCs to manage the different roles and functions necessary to efficiently and effectively accomplish all mission assignments. Public Works and Engineering has been categorized into five support elements. The primary agencies for these categories include NCEM (damage assessment), NCDOT (debris removal), NCDOA (engineering services), NCDEQ (air/water quality and sewage/waste disposal), and the NCDHHS (testing/sampling).

### **C. FEDERAL**

When resources beyond those at the state and local level are required, assistance may be requested from federal ESF-3 partners. This will be accomplished through the State EOC.