

Emergency Support Function #3 - Public Works and Engineering

Primary Department

Public Works Department

Secondary/Support Departments

Department of General Services
Facilities Management
Department of Neighborhood Services
Western Virginia Water Authority
Finance Department/Real Estate Valuation
Department of Planning, Building, and Development
Parks and Recreation Department
Roanoke City Schools
Fire-EMS Department
Police Department
City Attorney
Emergency Management
Department of Technology
Virginia Department of Transportation
Virginia Department of Environmental Quality
Virginia Department of Health - Roanoke Health Department

I. Introduction

A. Purpose:

Emergency Support Function (ESF) #3 - Public Works and Engineering assesses the overall damage to public and private property. ESF #3 will also conduct necessary inspections to ensure the integrity of buildings and bridges, assist with debris removal, route clearance, and ensure that any rebuilding complies with existing zoning and land-use regulations. This function is also responsible for the restoration of potable and waste water capabilities.

B. Scope:

ESF #3 is structured to provide public works and engineering-related support for the changing requirements of incident management to include preparedness, prevention, response, recovery, and mitigation actions. Activities within the scope of this function include:

1. Conducting pre-and post-incident assessments of public works (water and wastewater systems, bridges) and City infrastructure;
2. Coordinating primary and emergency route clearance for life safety and infrastructure support activities;
3. Executing emergency contract support for life-saving and sustaining services;
4. Conducting overall damage assessment to include private, business, and City-owned structures affected by disaster;

5. Providing technical assistance to include engineering expertise, construction management, and contracting and real estate services; and
6. Providing emergency repair of damaged infrastructure and critical facilities.

C. Policies:

1. Personnel will stay up to date with procedures through training and education;
2. Public Works will develop work priorities in conjunction with other agencies when necessary; and
3. Local authorities will obtain required waivers and clearances related to ESF #3 support.

II. Concept of Operations

A. General:

1. In a disaster, buildings and structures may be destroyed or severely damaged. Homes, public buildings, bridges, and other facilities may need be reinforced or demolished to ensure safety. Public utilities, including water and wastewater systems, may be damaged and be partially or fully inoperable. Access to the disaster areas may be dependent upon debris clearance and roadway repairs. Debris clearance and emergency road repairs will be given top priority to support immediate lifesaving emergency response activities.
2. Prompt assessment of the disaster area is required to determine critical response times and potential workloads. Early damage assessment must be made rapidly and be general in nature. Following an incident, a multitude of independent damage assessment activities will be conducted by a variety of organizations including Damage Assessment Teams, Insurance Companies, Virginia Department of Emergency Management, American Red Cross, Federal Emergency Management, and Utility Companies.

B. Organization:

1. To maintain a manageable span of control, the ESF 3 Group Supervisor may designate Unit Leaders for the following functions:
 - a. **Route Clearance & Bridge Inspection Unit**
 - b. **Debris Removal Unit**
 - c. **Water and Wastewater Systems Unit**
 - d. **Damage Assessment Unit**
2. Route clearance and bridge inspection refers to the safety of roads and bridges following a disaster. This includes the physical removal of debris on roadways, assistance on railroads and airstrips, etc. (as requested), critical for emergency vehicle passage, as well as the inspection of bridges to insure they may continue to be used and have not suffered severe damage as a result of a particular event. Assistance to road crews is provided through this mission.

3. The Transportation Division of the Public Works Department will serve as Unit Leader for the route clearance and bridge inspection function. Engineering will support, as required.
4. Debris removal refers to the process that may involve waste collection, separation, hauling, landfill disposal, incinerations and recycling. Debris must be removed and properly managed and includes vegetative debris (e.g., trees, limbs, shrubs), municipal solid waste (e.g., common household garbage and personal belongings), construction and demolition debris (in some instances, entire residential structures and all their contents), vehicles (e.g., cars, trucks, and boats), food waste, white goods (e.g., refrigerators, freezers, air conditioners), and household hazardous waste (e.g., cleaning agents, pesticides, pool chemicals).
5. The Solid Waste Management Division of the Public Works Department will serve as the Unit Leader for the debris removal function. The Parks and Recreation Department will support this function.
6. Water and Wastewater Systems Unit refers to the restoration of potable water and wastewater disposal capabilities following a disaster.
7. The Western Virginia Water Authority is responsible water and wastewater systems and will act as Unit Leader upon request of the ESF 3 Supervisor.
8. To minimize threats to public health and the environment, the Department of Public Works Environmental Administrator will serve as liaison with the Virginia Department of Environmental Quality (DEQ) and the City Attorney to secure the necessary emergency environmental waivers and legal clearances that would be needed to manage and dispose of emergency debris and materials from demolition activities.
9. The Division of Solid Waste Management within the Department of Public Works will coordinate with the Department of Environmental Quality and the Environmental Administrator to monitor disposal of debris materials.
10. The departments identified as primary and support will inspect all City buildings for structural, electrical, gas, plumbing and mechanical damage following a disaster situation. They will ensure that any repairs or rebuilding that occurs following the incident will comply with the City building codes, zoning, land-use regulations and comprehensive plan.
11. The City Building Commissioner or his/her designee is responsible for determining the state of a building and placing notification on the facility. The building owner retains responsibility for deciding whether to demolish or restore the structure. During the recovery phase, the Building Inspector is responsible for the facilitation of the building permit issuance process and for the review and approval of the site-related and construction plans submitted for the rebuilding/restoration of residential and commercial buildings.
12. A designated person within the Office of Real Estate Valuation will act as Unit Leader for Damage Assessment and report to the ESF 3 Group Supervisor. See Damage Assessment Annex for more information.
13. Real Estate Valuation along with the Parks and Recreation Department, Department of Finance, Department of Planning, Building, and Economic Development, Public Works/Engineering, Roanoke City Schools,

Department of Technology, Department of General Services/Facilities Management, and the Department of Housing and Neighborhood Services/Code Enforcement will participate and support with assessment.

14. The Health Department may assist the Damage Assessment Unit with assessments related to health hazards that may be caused by the disrupted disposal of sanitary wastes.
15. The ESF Group Supervisor or Damage Assessment Unit Leader will be responsible (and coordinate with the Director or Coordinator of Emergency Management) for deploying damage assessment teams, consolidating damage data, and compiling reports. At the Incident Commander's request, the Damage Assessment Teams' first priority will be to assess City structural/infrastructure damage.
16. An Initial Damage Assessment Report will be completed by Coordinator of Emergency Management and submitted to the Virginia Department of Emergency Management within 72 hours of the event, outlining the severity of the problems and the determination of need for further assistance. Federal/State supported damage assessment precedes delivery of a Presidential Disaster Declaration and defines the specific needs for a long-term recovery.

C. Actions

1. Alert personnel to report to the EOC;
2. Review plans;
3. Begin keeping record of expenses and continue for the duration of the emergency;
4. Prepare to make an initial damage assessment;
5. Activate the necessary equipment and resources to address the emergency; and
6. Coordinate response with local, state, federal departments and agencies.

D. Responsibilities

1. Primary Department (Public Works)
 - a. Coordinate activities to reduce the vulnerability of local facilities and other infrastructure to known hazards;
 - b. Assist in conducting initial damage assessment and compiling information to be sent forward to the State EOC;
 - c. Assist in coordinating response and recovery;
 - d. Prioritize debris removal;
 - e. Inspect buildings and bridges for structural damage;
 - f. Ensure all repairs comply with local building codes, zoning, land-use regulations and comprehensive plan;
 - g. Develop procedures for coordinating efforts of local departments and that may perform the public works or engineering functions and ensure appropriate emergency training for personnel;

- h. Serve as liaison with the Virginia Department of Environmental Quality to secure the necessary emergency environmental waivers and legal clearances;
 - i. Identify heavy and specialized equipment contractors prior to emergencies that may be willing to lend equipment during emergencies;
 - j. Provide ESF #7 a current list of public works and engineering resources; and
 - k. Assist in maintaining this ESF annex.
2. Engineering Division (Public Works Department)
- a. Assess damage to bridges, streets, City buildings, dams and containment ponds;
 - b. Provide specialized equipment to support emergency operations;
 - c. Assist Department of Technology with GIS mapping support;
 - d. Provide engineering services and advice to the Incident Commander and EOC staff;
 - e. Assist Real Estate Valuation in conducting damage assessments in the aftermath of an emergency; and
 - f. Safeguard vital engineering records.
3. Transportation Division (Public Works Department)
- a. Carry out pre-disaster protective actions for impending hazards, including identifying possible facilities for debris storage and reduction;
 - b. Repair damaged government facilities and/or protect such facilities from further damage;
 - c. Maintain emergency contracts to ensure timely delivery of disaster supplies such as sandbags, plastic sheeting, and plywood;
 - f. Serve as Unit Leader for the route clearance and bridge inspection function and supervise debris clearance from the public right-of-way and support debris removal operations;
 - g. Provide heavy equipment support for protective actions taken prior to an emergency and for response and recovery operations;
 - h. Assist in repairs to government-owned utilities and drainage systems;
 - i. Assist and support with debris clearance and removal;
 - j. Make emergency repairs to city roads, bridges, culverts, and drainage systems; and
 - k. Place barricades where needed for safety.
4. Solid Waste Management (Public Works)
- a) Serve as the Unit Leader for debris removal;
 - b) Collect and properly dispose of refuse as needed during disaster operations; and

- c) Support emergency public works, engineering, and parks and recreation operations with available resources.

5. Support Departments

a. General

1. Support Primary Agency in mission of ESF #1;
2. Maintain resource roster, inventory, and standard operating procedures;
3. All Support departments will participate and support with assessment; and
4. Assist public works efforts in mitigation, preparedness, response, and recovery.

b. Department of General Services (Facilities Management/ Fleet Management & Purchasing Department)

1. Participates in damage assessment of City-owned and maintained facilities;
2. Repairs damaged government facilities and protect such facilities from further damage;
3. Maintains stockpiles of disaster supplies such as sandbags, plastic sheeting, and plywood for critical City facilities;
4. Perform ongoing maintenance and operations of emergency generators in key facilities;
5. Ensure that Public Works equipment is maintained and perform emergency repairs as necessary;
6. Coordinate and assist with Emergency Purchasing orders and contracts on debris removal and emergency issues;
7. Repair or contract to repair Public Works equipment;
8. Maintain current listing of vendors for procurement of necessary emergency items;
9. Advise of appropriate procurement regulations during emergencies; and
10. Coordinate with City Attorney upon declaration of a local emergency and normal procurement procedures may be waived.

c. Neighborhood Services Department

1. Assist public works efforts in mitigation, preparedness, response, and recovery;
2. Assist with damage assessment operations;
3. Support departments ensuring all repairs comply with local building codes, zoning, land-use regulations and comprehensive plan; and

4. Support determining whether access to damaged structures should be restricted or if they should be condemned and demolished.

d. Western Virginia Water Authority

1. Assist public works efforts in mitigation, preparedness, response, and recovery;
2. Maintain/repair transmission lines for potable water and sanitary sewer services;
3. Serve as Water and Wastewater Systems Unit Leader upon request of the ESF 3 Supervisor;
4. Assist in identifying essential facilities;
5. Provide potable water and coordinate with Department of Health on the condition of potable water following a disaster;
6. Provide sanitary sewer service;
7. Assist with providing minimum essential sanitation service;
8. Assist with damage assessment;
9. Assist with hazardous materials clean-up;
10. Provide earth moving services for diking;
11. Assist with debris removal operations;
12. Identify emergency water supplies for activated shelters and disaster relief centers;
13. Ensure dam safety; and
14. Assist in assessing chemical releases which may affect water supplies or sewage treatment facility.

e. Department of Finance (Real Estate Valuation)

1. Assist public works efforts in mitigation, preparedness, response, and recovery;
2. A designated representative will serve as Unit Leader for Damage Assessment (See Damage Assessment Support Annex);
3. Responsible for deploying damage assessment teams, consolidating damage data, and compiling reports;
4. Coordinate damage assessment services for private homes and businesses; and
5. Evaluate structural damages in cooperation with Building Services.

f. Department of Planning, Building, and Development

1. Assist public works efforts in mitigation, preparedness, response, and recovery;

2. As requested, provide staff for EOC to coordinate business community needs;
3. Support departments ensuring all repairs comply with local building codes, zoning, land-use regulations and comprehensive plan;
4. Determine if access to damaged structures should be restricted or if they should be condemned and demolished;
5. Inspect expedient shelter and mass care facilities for safety;
6. Assist with the identification and acquisition of resources;
7. Assist with damage assessment;
8. Assist with reports and records;
9. Assist in the identification of facilities for use during recovery periods; and
10. Assist with GIS support, as necessary.

g. Emergency Management

1. Coordinate damage assessment with ESF Group Supervisor or Damage Assessment Unit Leader;
2. Coordinate with Unit Leaders and/or ESF Group Supervisors in compiling damage assessment, debris removal and other reports to submit to State Emergency Operations Center;
3. Assist public works efforts in mitigation, preparedness, response, and recovery;
4. Ensure essential functions are performed through coordination with ESF Supervisor, Branch Directors, or Unit Leaders; and
5. Assist Debris Removal Unit Leader to ensure compliance with State and Federal regulations.

h. Parks and Recreation Department

1. Provide support for the debris removal function;
2. Assess damage to parks and recreation facilities and assist in assessing damage to other facilities;
3. Provide personnel and light equipment support for public works and engineering operations; and
4. Establish and staff a facility to receive, document, and separate disaster debris.

i. City Schools

1. Staff EOC, as requested;
2. Provide pre-designated school buildings for use as shelters for the reception and care of evacuees;
3. Provide facility management and staff support (kitchen, janitorial and others) to activate school shelters;

4. Provide school buses/drivers for evacuation of the general public;
 5. Provide special school buses and drivers for the evacuation of special needs population, if requested;
 6. Provide damage assessment report on all school property; and
 7. Provide vehicle and building maintenance support personnel assistance to city departments, if requested.
- j. Police Department
1. Security, traffic control, and law enforcement evacuated areas and vital facilities and supplies;
 2. Evacuation and access control of threatened areas or damaged areas; and
 3. Assist public works efforts in mitigation, preparedness, response, and recovery.
- k. Fire-EMS Department
1. Coordinate search and rescue operations of damaged structures and properly mark/indicate findings on structures;
 2. Assist with damage assessment; and
 3. Assist public works efforts in mitigation, preparedness, response, and recovery.
- l. City Attorney
1. Provide legal support in EOC if requested;
 2. Advise the city concerning legal responsibilities, powers and liabilities regarding emergency operations and post-disaster assistance;
 3. Assist City Manager and City Council with maintaining continuity of government; and
 4. Develop any declarations or resolutions related to emergency situations.
- m. Health Department
1. Support testing and evaluation for the restoration of potable and waste water capabilities;
 2. Support City Environmental Administrator and the Virginia Department of Environmental Quality in monitoring and identifying guidelines for environmental public health for debris removal and emergency clearance and temporary housing of debris; and
 3. Assist the Damage Assessment Unit with assessments related to health hazards that may be caused by the disrupted disposal of sanitary wastes.

Tab 1 for Emergency Support Function #3

BUILDING POSTING GUIDE

1. All buildings within the area, regardless of damage are to be POSTED by the squad members at the site.
2. One of the following three posters is to be used
 - A. "SAFE FOR OCCUPANCY" GREEN POSTER
No damage to structural elements.
No damage to utilities.
There is only minor damage to walls or roof affecting weather resistance.
Generally 10% or less damage.
 - B. "LIMITED ENTRY" YELLOW POSTER
There is structural damage to a portion of the building.
The building needs utility or weather resistance repairs.
The building may be occupied safely.
Generally greater than 10% and less than 50% damage.
 - C. "THIS BUILDING IS UNSAFE" RED POSTER
There is major structural damage.
No occupancy is allowed.
May or may not need to be demolished.
Generally more than 50% damage.
3. If there is immediate danger to life from failure or collapse, the damage assessment team leader should inspect and, as appropriate sign or have Building Official sign demolition order or call the appropriate entities to shore-up structure.