



**Emergency Support Function 3  
Public Works and Engineering**



**Coordinating Agencies**

West Virginia Department of  
Transportation (WVDOT)  
WV Department of Health and Human  
Resources (WVDHHR)

**Primary Support Agencies**

WV Division of Homeland Security and  
Emergency Management (WVDHSEM)  
WV Department of Environmental  
Protection (WVDEP)

**Support Agencies and Organizations**

WV Department of Education (WVDE)  
WV Bureau of Senior Services (WVBSS)  
WV Department of Commerce  
WV Department of Military Affairs and  
Public Safety (WVDMAPS)  
West Virginia Parkways Authority (WVPA)  
WV Public Service Commission (PSC)  
WV Conservation Agency (WVCA)  
WV Department of Agriculture (WVDA)

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**Purpose**

Emergency Support Function (ESF) 3—Public Works and Engineering coordinates and organizes the resources of the State of West Virginia to facilitate debris removal and disposal, engineering and construction and utilities restoration.

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**Scope**

Activities within ESF 3 include conducting pre-incident and post-incident assessments of public works and state owned infrastructure. Assistance to affected localities will be based on life-saving and life-sustaining services first and then to other areas of the state as resources become available. Assistance will involve providing technical assistance to include engineering expertise, construction management; contracting and real estate services; and providing emergency repair of damaged public infrastructure and critical facilities.

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**Policies**

All agencies assigned responsibilities within ESF 3 will develop and maintain the necessary plans, standard operating procedures, mutual aid agreements, and model contracts to successfully accomplish their tasks.

*Local Governments*

- Local jurisdictions are responsible for their own infrastructures and have the primary responsibility for incident prevention, preparedness, response, and recovery and mitigation.
- Local jurisdictions are responsible for ensuring the private-sector is integrated into the planning and decision making processes as necessary.
- Upon activation of the WVEOP in response to an incident, the primary and supporting departments/divisions for ESF 3 will develop work priorities in cooperation with local jurisdictions.
- Local jurisdictions are responsible for obtaining required permits, waivers, and clearances related to ESF 3 support.

*Private Sector*

- The private sector is responsible for a large proportion of the infrastructure and participates in ESF 3 incident specific planning, response, and recovery.
- The private sector is the lead for the rapid restoration of their corporate infrastructure.

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## **Organizational Structure**

The West Virginia Department of Transportation (WVDOT) will be the lead for ESF 3, and during emergency operations will coordinate the activities of the primary and supporting agencies for Public Works and Engineering.

The ESF 3 annex contains two attachments that address specific sectors of the ESF 3 functions. Water and wastewater are addressed in Incident Specific Annex 6.

The attachments are:

- Attachment # 1 – Dam Safety
  - Attachment # 2 – Debris Management
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## **Concept of Operations**

### **A. General**

1. After a catastrophic event, damage to structures, homes, public buildings, infrastructure (water and waste water systems, power generation and distribution, gas mains, etc.), and dams may be extreme and leave systems inoperable and structures unusable. In addition, debris will need to be cleared and properly disposed of. A local jurisdiction's resources may be inadequate to meet the needs of the communities and infrastructure systems affected and will need assistance from the state. ESF 3 activities must provide damage assessment assistance, structural evaluation and emergency repairs/demolition to essential infrastructure to stabilize the environment, reduce hazards through demolition and removal of debris and restore critical services in conjunction with public and private stakeholders.

2. The West Virginia Secretary of Transportation will monitor and coordinate, the activities of the primary and supporting agencies with ESF 3 related duties and responsibilities supporting the incident response, recovery and mitigation operations. When the WVSEOC is activated and the WVEOP is implemented, WVDOT may request WVDHHR, WVDEP and WVDHSEM to assist with identifying additional departments/agencies that may be needed to assist with ESF 3 activities. It will be vital to implement coordination that will assure that the identified agencies are notified and ready to perform their assigned tasks.

3. The ESF 3 primary and supporting agencies must be able to identify and deploy personnel with public works, engineering, and construction skills along with equipment and materials from outside the affected area in order to restore critical lifesaving services. The WVSEOC will organize and deploy assessment teams to localities that have been affected and are unable to adequately assess their infrastructure, structures and dams. ESF 3 agencies may be asked to provide qualified technical persons to serve on these assessment teams.

4. Initial response activities that ESF 3 conducts during emergencies:

- a. Monitor and report the status of water and waste water systems, critical infrastructure and dams.
- b. Coordinate with the WVDHHR, municipalities and local jurisdictions on human health needs.
- c. Coordinate with ESF 4 the West Virginia Fire Commission, municipalities and local governments on firefighting needs.
- d. Pre-position resources in anticipation of a Public Works and Engineering emergency.

- e. Develop recommended courses of action to a potential or actual Public Works and Engineering emergency.

**B. Response**

1. Agencies and organizations responsible for ESF 3 will conduct the following on activation of the WVEOP:

a. Provide an Initial Damage Assessment (IDA) Report of water and waste water systems, critical infrastructure and dams to the WVSEOC within 24 hours of an incident and coordinate the following:

- 1) Notification of jurisdictions and municipalities impacted by water and wastewater restrictions resulting from damaged infrastructure.
- 2) Coordinate with supporting agencies to develop strategies for initial response.
- 3) Restoration/stabilization of critical water and waste water systems, critical infrastructure and dams.
- 4) Debris removal.

2. Establish communications with ESF 3 supporting agencies.

3. Establish communication with federal and adjacent state agencies.

4. Establish communication with voluntary organizations, nongovernmental organizations, and the private sector.

5. All ESF 3 supporting agencies will provide damage assessment assistance, structural evaluation and emergency repairs/demolition to essential infrastructure to stabilize the environment, reduce hazards through demolition and removal of debris and restoration of critical lifesaving services.

6. All ESF 3 supporting agencies will coordinate all requests through the WVSEOC.

7. WVDOT, WVDEP and WVDHHR will lead the continuing reassessment of critical water and waste water system, critical infrastructure and dams.

8. Begin debris removal and repairs to allow access into the disaster area.

9. Coordinating the efforts of ESF 3 agencies, local jurisdictions, and infrastructure stake holders.
10. ESF 3 will provide updated information to ESF 5 Emergency Management.
11. ESF 3 will coordinate with all ESFs for all response requirements beyond ESF 3 capabilities.

**C. Recovery**

1. Coordinate the restoration/stabilization and recovery of the water and waste water system, dams and critical infrastructure.
    - a. WVDOT will prioritize the restoration/stabilization and recovery of the water and waste water systems, dams and critical infrastructure based on resources being utilized for essential survival activities in support of disaster areas on a priority basis, and for the other areas of the state as available and required.
    - b. WVDOT will coordinate with the Governor and WVDHSEM to consider and/or implement accommodations for exemptions to state rules and regulations as needed to expedite the restoration of essential lifesaving services in the affected areas.
  2. Coordinate and support prevention, preparedness, response and recovery, and mitigation activities among infrastructure stakeholders.
    - a. WVDOT will coordinate with the federal, state and private infrastructure stakeholders to ensure continuity of management, protection of facilities, conservation of supplies, rerouting/restoration of damaged water and wastewater infrastructure, electrical production and transmission infrastructure, inspection and stabilization of dams, securing of necessary manpower, materials and services for recovery of the State of West Virginia's infrastructure.
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**Agency Responsibilities Matrix**

Supporting Agency	Acronym	Responsibilities
West Virginia Department of Health and Human Resources	WVDHHR	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams and guidance on restoration of the water supply and waste water systems with assistance from WVDEP</li> <li>• Provide guidance on testing of water and waste water systems</li> <li>• Provide guidance on provision of potable water</li> <li>• Provide guidance on water use</li> <li>• Provide guidance on health related issues</li> <li>• Provide guidance on debris management and disposal</li> </ul>
West Virginia Department of Transportation	WVDOT	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams and guidance on land-based debris removal in emergency situations</li> <li>• Clearing and opening major highways</li> <li>• Debris clearance of on-system secondary highways and roads</li> <li>• Debris clearance from state property</li> <li>• Coordinate with the private infrastructure stakeholders on debris removal</li> <li>• Immediate attention to situations in which a threat to life is created by the debris</li> <li>• Provide manpower and equipment for the transport of debris to landfills</li> </ul>
West Virginia Division of Homeland Security and Emergency Management	WVDHSEM	<ul style="list-style-type: none"> <li>• Monitor county debris removal activities and coordinate state assistance when county resources are insufficient</li> <li>• Provide personnel for the damage assessment teams and guidance on hazardous materials and environmental health and safety</li> </ul>
West Virginia Department of Military Affairs and Public Safety	WVDMAPS	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams and guidance on debris removal, demolition, stabilization</li> <li>• Provide manpower and equipment for water distribution</li> <li>• Provide manpower and equipment for debris removal</li> <li>• Provide personnel for the damage assessment teams, guidance on structure stability</li> <li>• Responsible for condemnation procedures for severely damaged or destroyed structures</li> <li>• Provide traffic management in and around roads that have been impacted or are inaccessible due to debris</li> <li>• Control traffic and support law enforcement activities</li> <li>• Enforce highway traffic regulations</li> </ul>

West Virginia Conservation Agency	WVCA	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams and guidance on stream-based debris removal in emergency situations</li> <li>• Remove debris from streams and waterways (not including navigable rivers and from the locks and dams system covered under the U. S. Army Corps of Engineers) that imminently threatens life or damage to real property</li> </ul>
West Virginia Department of Agriculture	WVDA	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams and guidance on animal and agriculture issues</li> <li>• Provide assistance to local government for debris removal of animal carcasses and agricultural products</li> </ul>
West Virginia Department of Environmental Protection	WVDEP	<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams, guidance on environmental issues and technical advice to other agencies and local authorities</li> <li>• Lead for inspection of Dams, will coordinate dam inspection, stabilization with federal, state, private infrastructure stake holders and private owners</li> <li>• Coordinate with and regulate landfills</li> <li>• Contract with private companies for solid waste issues</li> <li>• Contract with private companies for hazardous waste issues</li> <li>• Coordinate Waste Water treatment plant enforcement</li> <li>• Coordinate wildlife reviews for environmental impact</li> <li>• Obtain waivers for “tipping fees”, if appropriate</li> <li>• Provide emergency response and removal services for HAZMAT issues</li> <li>• Identify environmentally-sensitive areas</li> </ul>
West Virginia Department of Commerce		<ul style="list-style-type: none"> <li>• Provide personnel for the damage assessment teams, guidance on environmental issues and impacts</li> <li>• Conduct wildlife review for environmental impact</li> <li>• Issue appropriate permits</li> </ul>
West Virginia Public Service Commission	WVPSC	<ul style="list-style-type: none"> <li>• Assist and advise WVDHSEM on public infrastructure issues</li> </ul>
West Virginia Division of Corrections		<ul style="list-style-type: none"> <li>• Provide inmate support for emergency route clearance if situation warrants</li> </ul>

## **Authorities & References**

### *Authorities*

West Virginia Code, Chapter 15, Article 5, as amended

West Virginia Code, Chapter 17, Article 2A, Section 8, as amended

West Virginia Code, Chapter 20m, Article 1

West Virginia Code, Chapter 22, Article 5 and 5A, as amended

West Virginia Code, Chapter 29, Article 3, as amended

West Virginia Code Chapter 22, Article 14, Dam Control and Safety Act

West Virginia Code of State Rules, 47CSR34, Dam Safety Rule

Public Law 3-288, Section 403, Title 44

Code of Federal Regulations Title 44, Part 206.224

### *References*

State of West Virginia Emergency Operations Plan – Basic Plan

West Virginia Division of Highways Emergency Procedures



**Emergency Support Function 3  
Public Works and Engineering  
Attachment # 1 – Dam Safety**



## Purpose

To assist local jurisdictions, infrastructure stakeholders and private owners in the actions needed to protect human life or property in the event of an imminent dam failure or major spillway discharge.

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## Organizational Structure

In accordance with the West Virginia Dam Control and Safety Act, the West Virginia Department of Environmental Protection is responsible for the dam safety and protection program. Powers and duties of the department (and its secretary) are listed in Section 22-14-4 of the Dam Control & Safety Act, and include the following:

- To exercise regulatory jurisdiction over dams.
- To adopt, modify, repeal and enforce rules, and to issue orders.
- To take any lawful action necessary for the enforcement of the provisions of the statutes.
- To make any investigation or inspection necessary, implement and enforce the law, including the right of entry upon public or private property of any owner.

Owners of each dam are responsible for its safe and proper design, construction, operation, and maintenance. Owners of dams that are 25 feet or greater in height, impound 15 acre-feet (4,917,420 gallons) or greater of water volume; or 6 feet or greater in height and impound 50 acre-feet (16,391,400 gallons) volume or greater of water, must comply with the West Virginia Dam Control and Safety Act - W. Va. Code 22-14-3(f), and in the Dam Safety Rule (47CSR34-2.12).

Exemptions from state jurisdiction include:

- Dams owned by the Federal government.
  - Dams that do not normally impound water, such as road fills with culverts sized in capacity equal to WVDOH standards.
  - Dams built primarily for agricultural purposes and demonstrated to not cause loss of life if the dam fails.
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## **Concept of Operations**

Section 3.5 of the regulations lists as one of the requirements of the process of application for a certificate of approval the determination of the hazard potential of the proposed dam. The hazard potential is determined by the applicant and is based upon the potential loss that would result due to a failure.

*Class 1 (High Hazard) Dams* - Class 1 dams are those dams located where failure may cause loss of human life or major damage to dwellings, commercial or industrial buildings, main railroads, important public utilities, or where a high risk highway may be affected or damaged. This classification must be used if failure may result in the loss of human life.

*Class 2 (Significant Hazard) Dams* - Class 2 dams are those dams located where failure may cause minor damage to dwellings, commercial or industrial buildings, important public utilities, main railroads, or cause major damage to unoccupied buildings, or where a low risk highway may be affected or damaged. The potential for loss of human life resulting from failure of a Class 2 dam must be unlikely.

*Class 3 (Low Hazard) Dams* - Class 3 dams are those dams located in rural or agricultural areas where failure may cause minor damage to nonresidential and normally unoccupied buildings, or rural or agricultural land. Failure of a Class 3 dam would cause only a loss of the dam itself and a loss of property use, such as use of related roads, with little additional damage to adjacent property. The potential for loss of human life resulting from failure of a Class 3 dam must be unlikely. An impoundment exceeding forty (40) feet in height or four hundred (400) acre-feet storage volume shall not be classified as a Class 3 dam. A waste disposal dam, the failure of which may cause significant harm to the environment, shall not be classified as a Class 3 dam.

*Class 4 (Negligible Hazard) Dams* - Class 4 dams are dams where failure is expected to have no potential for loss of human life, no potential for property damage and no potential for significant harm to the environment. Examples of Class 4 dams include: dams across rivers, failure of which under any conditions will not flood areas above normal stream bank elevations; dams located in the reservoir of another dam which, under any conditions, can contain water released by failure of the Class 4 dam; and dams in series where the toe of the Class 4 dam(s) is in close proximity to the reservoir of a dam which can contain failure of the Class 4 dam(s) under any condition. In considering a request for a Class 4 designation, the director may require written concurrence from the owner(s) of downstream dams that may be affected by failure of the Class 4 dam. Approval for use of this classification is vested in the director, and will be based on engineering evaluation of the dam(s) and downstream areas in question.

Procedures for handling dam emergencies are spelled out in Section 22-14-10 of the Dam Control & Safety Act.

Responsibilities of the owner include:

- Determining that an emergency exists.
- Notifying the WVDEP and any persons who will be in danger if the dam fails.
- Taking immediate remedial action.

The State will:

- In a backup capacity, the WVSEOC will also notify affected cities and counties downstream.
- The WVDEP, once all notifications have been made, may take its own remedial action if imminent danger exists and there is not sufficient time to order the owner to correct the condition.
- The Director is authorized to take any of the following actions:
  - Taking full charge and control of the dam.
  - Lowering the water level or releasing all water impounded by the dam.
  - Performing necessary remedial or protective work at the dam site.
  - Taking any other steps necessary to safeguard life and property.

All remedial work and repairs, whether initiated by the owner or WVDEP, shall be at the expense of the owner. The department may recover such expenses from the owner by civil action if the owner at the department's request does not repay expenses.



**Emergency Support Function 3  
Public Works and Engineering  
Attachment # 2 – Debris Removal**

## Purpose

To provide guidance to individuals, agencies, organizations, facilitate and coordinate the collection, decontamination, removal, and disposal of debris following a significant incident or disaster. Debris removed and disposed of in a timely manner so it does not interfere with traffic or become a health and safety hazard.

## Organizational Structure

Debris clearance and removal is a function of the Public Works and Engineering Support function. WVDOT, WVDEP, and WVDHHR are the primary supporting agencies and will work in conjunction with designated supporting agencies, landfills, infrastructure stakeholders, waste management firms, and trucking companies, to facilitate debris clearance, collection, reduction, and disposal needs of the state, local jurisdictions, and infrastructure stakeholders following a disaster.

## Concept of Operations

Due to the burden of response and limited resources, the state, local jurisdictions and infrastructure stakeholders may rely on private contractors to fulfill the mission of debris removal, collection, and disposal.

WVDHSEM is responsible for coordination of support for local jurisdictions in their debris removal activities and in providing technical expertise through the supporting agencies.

Local jurisdictions have the responsibility for providing direction and control within their jurisdiction and should have plans that require the separation of hazardous materials and household hazardous waste, during the initial collection/debris clearing process. And:

- Areas with hazardous material debris, or those areas from which potentially hazardous debris was removed, should be marked clearly as a warning to the public so they can be easily located by appropriate inspectors.
- Hazardous materials should be disposed of at sites that have been established and approved by WVDEP for the receipt of hazardous materials.
- Should have employed, or under contract, technical experts who can inspect and analyze the impact of debris to environmentally-sensitive areas in which debris may have been released into water-ways.

*Debris Clearance and Removal Priorities*

The debris removal process must be conducted in an orderly, safe and effective manner to protect public health and safety following a major or catastrophic disaster.

- Clearance and Removal of debris from key routes in order to provide access for emergency vehicles and resources into the impacted area.
- Clearance and Removal of debris for access to critical infrastructure pre-identified by state and local jurisdictions.
- Repair, demolition, or barricading of heavily damaged and structurally unstable buildings, systems, or facilities that pose a danger to the public.
- Collection, decontamination, removal, and disposal of debris causing public health and safety issues.

*Debris Classification*

To facilitate the disposal process, debris will be segregated by type. The state will adapt the categories established for recovery operations by the US Army Corps of Engineers. Modifications to these categories can be made as needed. Hazardous and toxic materials/contaminated soils, and debris generated by the event will be handled in accordance with federal, state, and local regulations.

*Clearance vs Removal Clarification*

- ‘Debris Clearance’ is limited to opening road access and the like. This is a more temporary activity and is included in Public Assistance Category B (Emergency Protective Measures).
- ‘Debris Removal’ is a final disposal of debris, including burning and grinding for woody debris and other methods for HAZMAT, construction/demolition debris, etc. These activities are covered under Public Assistance Category A and usually involves higher costs.

Example: Trees are across 20 miles of a road

- Debris Clearance – trees are cut and pushed to the side of the road right of way.
- Debris Removal – trees are cut, loaded out, and taken to a tub grinder operation for reduction to shavings and possibly burned in an air curtain burner.