

## **ANNEX G – PUBLIC WORKS & ENGINEERING (ESF #3)**

### **I. PURPOSE**

The purpose of this annex is to outline duties and responsibilities of the engineering, utility and public work segments of the county in the event of a major emergency.

### **II. MISSION AREAS AND LIFELINES**

#### **A. Mission Areas**

1. **Mitigation:** Public works and engineering services work to mitigate problems with roadways and utilities through hardening of services and construction of resilient infrastructure before incidents occur, and taking those incidents into consideration in selection of construction and operational guidelines.
2. **Response:** Public works and utilities coordinate with other responders to clear roadways for emergency access, to restore the most critical services the earliest as is possible, and to remove debris and obstructions for other response as soon as possible.

#### **B. Lifelines**

1. **Safety and Security:** Access to community properties, functioning utilities in both commercial and residential property and the ability to move about the community without difficulty is a critical step in response and recovery.
2. **Health and Medical:** Public works and utilities are restored to the medically dependent and functionally impaired in an expedited manner when possible to minimize their injury and suffering, and to sustain lives. Access to homes by caregivers and family is necessary for the survival of these individuals.
3. **Energy:** Restoration and repair of utilities and access to goods and services is critical for the elderly, functionally impaired, and children. Utilities are restored with this in mind when possible. Roads are cleared with the same priorities when possible.
4. **Transportation:** Access to critical facilities, shelters, medical care and other life sustaining services is critical, especially for those with functional needs, illness, or special circumstances. Mass or public transit is the only form of transportation for some individuals, especially elderly, and therefore must have access to roadways to provide that service.

### **III. SITUATION AND ASSUMPTIONS**

#### **A. Situation**

1. Disasters could cause any or all of the following disruptions to public works functions: roads and bridges can be damaged or blocked by debris, roads, bridges and culverts can be flooded and impassable, downed power lines can interrupt service as well as block roads and other access, disruptions to communications can be caused by downed wires and damaged towers, wastewater discharges can be overwhelmed, broken water mains can cause or worsen flooding, and ruptured underground storage tanks can cause contamination and hazardous materials leaks and releases or explosions.
2. Structures affected by a hazard may require repair, replacement, reinforcement, demolition, inspections, or isolation to ensure safety. All agencies or utilities with responsibilities in this plan will conduct inspections of their lines, structures, towers and other equipment, as needed, prior to allowing the general public to return to the impacted area.

3. Debris removal and hauling from urban, rural, and industrial sites are common emergency activities following many emergencies, and must be done before utility lines and infrastructure can be repaired or replaced.
4. The Office of the Shelby County Engineer is co-located with the County Highway Garage at 500 Gearhart Rd., Sidney.
5. The following cities, Villages and Townships have engineering, street and/or sanitation departments:
  - a. Engineering Departments: Engineering services are performed by the Shelby County Engineer and the City of Sidney Engineer.
  - b. Street Departments: All municipalities have some capabilities for street repair and maintenance.
  - c. Water Departments: The City of Sidney, the Villages of Jackson Center, Anna, Botkins, Russia, and Ft. Loramie have water departments that distribute water to residents. Shelby County Sewer District has two water treatment plants; one is located at Arrowhead Hills Subdivision and the other at Fair Haven County Home.
  - d. Wastewater Departments: Shelby County Sewer District provides sanitation services for the Hickory Dell Estates Subdivision, Millcreek Subdivision, Lake Loramie Area Sewer District, McCartyville, and the Village of Kettlersville. Other wastewater departments include City of Sidney, and the villages of Jackson Center, Anna, Botkins, and Russia.
6. Shelby County is part of the North Central Ohio Solid Waste District. Shelby County Villages including Anna, Botkins, Fort Loramie, Jackson Center, Kettlersville & Russia are joined in one curbside recycling contract. The recyclables are collected at the curb by Republic/Allied Waste and are taken to Shelby County Recycling Center for processing. The City of Sidney offers low volume pick up or recycling services from Republic Services. The following state-level departments have offices/facilities in Shelby County and may assist, within their jurisdictional capabilities.
  - a. The Ohio Department of Transportation (Garage), District 7, 1001 St. Marys Avenue, Sidney, OH 45365.
  - b. The Ohio Department of Natural Resources (ODNR), located at the Ft. Loramie State Park, 4401 Fort Loramie-Swanders Rd, Minster, OH 45865.
7. The following electric utility carriers service Shelby County:
  - a. Dayton Power and Light and Pioneer Rural Electric Cooperative. The village of Jackson Center is served by the Jackson Center Municipal Electric System.
8. The following gas utility carriers service Shelby County:
  - a. Vectren Energy Delivery of Ohio and Dominion East Ohio
9. The following Telecommunication companies service Shelby County:
  - a. Centurylink, Time Warner (Spectrum), and NKTELCO.
10. The following pipeline companies have underground pipelines running through Shelby County:
  - a. BP Oil, Buckeye Pipeline Company, Columbia Gas Transmission, Vectren Energy, Southeastern Natural Gas Company, and TEPPCO

B. Assumptions

1. Engineering and public works equipment and personnel will be available during disasters.
  - a. Equipment in the immediate disaster area may be damaged or inaccessible.

- b. Resources may have to be deployed from outside the affected area in order to ensure an effective response.
  - c. Emergency personnel are available 24/7/365 and respond immediately.
  - d. Personnel will work in collaboration with public safety responders to address issues like life safety and evacuation.
2. Local public works and utility departments may not have sufficient resources to respond sufficiently to multiple sites caused by a major disaster.
  - a. Local or regional resources may be available from other utility or public works providers, contractors, or response companies.
  - b. Municipal utilities and public works have Memorandum of Understanding agreements with each other and neighboring providers.
  - c. In the event of a large incident, assistance from state and federal agencies may be required.
  - d. Local contractors may provide additional resources to backup engineering and public works recovery efforts.
3. Public utilities may be partially or fully inoperable following an emergency.
  - a. Life-saving and human health issues will have priority in engineering, public works, and utility missions.
  - b. A prioritization of restoration of services is established by the utility companies and involves restoring power generation or critical components first and then moving to distribution lines in a systematic manner.

#### **IV. CONCEPT OF OPERATIONS**

##### **A. Core Capabilities**

1. **Planning:** Engineering services plan with other first responders to coordinate activities and to be able to clear roads and restore services on a prioritized basis to those where services are most life sustaining.
2. **Operational Coordination:** Engineering services coordinates response through participation in the EOC and coordination of activities through communication in a common response organization via the ICS.
3. **Access Control and Identify Verification:** Engineering services control access to critical utility areas such as water treatment areas, power generation areas, and energy distribution facilities to prevent inappropriate or unauthorized access.
4. **Infrastructure:** Public works and engineering services assess damages, establish response plans, and execute response to restore and repair all utilities and infrastructure and by doing so to facilitate rapid recovery of the community without unnecessary difficulty or casualty.
5. **Critical Transportation:** Access to all areas, especially those with commodities, services and other critical goods is important to a response; this infrastructure repair is prioritized based upon helping the most people in the shortest period of time.
6. **Physical Protective Measures:** Protective measures are taken to limit access to power and utility areas, to limit access to road repair and maintenance facilities, and to give access to only those individuals who are there to perform response and restoration services.
7. **Risk Management for Protective Programs & Activities;** Public works and engineering staff work during mitigation efforts to diminish the risk for infrastructure failure through hardening

of utilities, mitigation of road damage or blockage, and resilience of equipment and supplies to facilitate infrastructure management.

8. Logistics and Supply Chain Management: Public works and engineering works to have continual access to the personnel, goods and supplies necessary to expand operations due to a disaster, and to ensure that rapid response is possible with high functioning equipment and personnel.

## B. Local Operations

1. The Shelby County Engineer may activate mutual aid with adjacent counties when additional emergency resources are needed.
  - a. The Shelby County Engineer will prioritize the repair, replacement and reopening of county and township roads, bridges, and culverts based upon the ability to perform the work, and may request assistance from other county or city engineering departments as needed.
  - b. The Shelby County Engineer may work with utility companies to activate their internal mutual aid programs to facilitate rapid restoration of electricity and other utilities in the county.
  - c. Certain utilities and providers, including electric companies and pipeline owners, may activate their own internal mutual aid system without consultation with the Shelby County Engineer.
2. When state, federal, or private resources arrive in Shelby County to assist in engineering and public works, the Shelby County Engineer and/or the Sidney City Engineer will act as their local contact depending upon the location of the activity.
  - a. The Shelby County Engineer will work to provide information about the location of major lines and pipelines as well as load limits and other information about bridges and culverts.
  - b. The Shelby County Engineer will work with all contractors providing restoration and repair services to clear roadways and other access to areas to the extent possible.
3. Repair and restoration of local roads, bridges, and culverts will be identified, prioritized, and coordinated between the entity responsible for completing the work and the Shelby County Engineer.
  - a. The County Highway Department and municipal street departments will provide priority service to clearing of debris, snow, and ice from roadways in order to provide safe routes for emergency services and access to shelters, as necessary.
  - b. Road-closures and establishing alternate routes may be necessary while emergency crews are repairing the structure or removing debris.
  - c. The Shelby County Engineer may work with ODOT or other jurisdictions to establish alternate routing and detours due to debris, damage, or destruction of infrastructure.

## C. The prioritization for restoring electrical power following an emergency is based upon a standard called Priority Customers and follows this order.

1. Restoring live wires that are down
2. Restoring power to hospitals and Long-Term Care facilities
3. Restoring power to fire stations and law enforcement
4. Restoring power to other utilities

5. Restoring electricity to the largest number of residents possible
6. Addressing specific problems at individual residences

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

### **A. Organization**

#### **1. Shelby County**

- a. The County Engineer will be the overall coordinator of engineering and public works functions in the event of a major emergency in the county.
- b. The Shelby County Engineer's Department consists of approximately 40 employees.
- c. The Building Authority and Map Room GIS for the county are part of the Engineer's Department.

#### **2. City of Sidney**

- a. The following departments of the City of Sidney are a part of the engineering and public works functions. These offices work under the auspices of the Public Works Director
  - 1) Engineering Department
  - 2) Fleet Maintenance
  - 3) Solid Waste Program
  - 4) Street Department
  - 5) Transportation: Shelby Public Transit, Sidney City Airport
  - 6) Utility Department: Underground utilities, Water Treatment Plant, and Wastewater Treatment Plant

#### **3. Townships and Villages**

- a. All townships and villages have at least one employee charged with responsibility for infrastructure maintenance, or they contract with an outside entity for such services.

#### **4. Private sector resources may be requested to supplement engineering and public works staff in a large-scale emergency. Due to cost factors, state and federal resources may be requested first during major disasters.**

- a. All private utilities (carriers) cited above, maintain a staff of emergency service and repair personnel (with incident-specific equipment) for 24-hour restoration of services in emergency situations. In addition, any of these firms will also maintain agreements with other providers, primary and sub-contractors for service restoration assistance. These agreements are established and maintained by individual contractors and corporations and will be enacted only upon a specific (conditional) situation or request.

### **B. Assignment of Responsibilities**

#### **1. Shelby County Engineer**

- a. Coordinate and oversee engineering and public works activities after a disaster.
- b. Direct assigned response staff and volunteers in performing emergency functions.
- c. Identify local private contractors who can provide backup support.
- d. Develop and maintain resource lists for engineering materials and equipment.

- e. Develop and maintain resources for alternate suppliers of critical equipment and supplies such as heavy equipment rental, fuel supplies, and generators.
  - f. Develop and maintain SOGs for engineering emergency response functions.
  - g. Participate in the development, execution and evaluation of emergency exercises.
  - h. Determine the safety of emergency operations facilities, public shelters, and Reception and Care Centers in a post-disaster environment in which those buildings may have been damaged.
  - i. Determine the safety of evacuation routes.
  - j. Serve on, or designate a representative to, Damage Assessment and Debris Management Teams.
  - k. Designate staging areas for engineering equipment and personnel.
2. County Engineer's Department
- a. Serve as the lead representative of engineering and public works within the command system, including service within Command or General Staff roles.
  - b. Support the ICS structure by providing staff to serve in other roles in county response that are relevant and the responsibility of the County Engineer's Office.
  - c. Support debris and garbage disposal operations and identify and coordinate debris segregation plans, holding sites for debris, and landfill access and operations for debris receipt.
  - d. Perform damage assessment operations to determine the viability and safety of county-owned structures, roadways, and bridges or culverts.
  - e. Assist with damage assessment as it relates to structural integrity and building codes and/or local regulations
  - f. Provide engineering services and advice to municipalities and jurisdictions as necessary.
  - g. Acquire, store and provide fuel for county vehicles including hazardous response vehicles. Support heavy equipment rescue needs.
  - h. Maintain contact with the Engineer's liaison at the EOC and provide timely and relevant information to be distributed to the public and other community partners.
  - i. Update county maps with damage reports, closures, and other limitations of use.
  - j. Support traffic control efforts with equipment and personnel as needed.
  - k. Clear ditches and streams that are blocked and clean out or clear storm drains that are county property.
  - l. Provide generators as needed for emergency response and recovery operations.
  - m. Inspect and designate hazardous structures, especially those owned by jurisdictions.
  - n. Designate staging areas for heavy equipment, utility crews, and other resources arriving in Shelby County to provide assistance.
  - o. Provide code enforcement officials to inspect or assist in evaluation of residential structures.
  - p. Assist in large equipment decontamination operations.
  - q. Participate in development, execution and evaluation of emergency exercises related to engineering or public works capabilities.
  - r.

3. City of Sidney Public Works Director
  - a. Coordinate engineering and public works activities within the City of Sidney, and serve as assigned within the General Staff of the ICS.
  - b. Direct assigned response staff and volunteers in performing emergency functions relevant and appropriate to their jobs.
4. Township Road Crews
  - a. Clear debris from township property and roads in an emergency.
  - b. Provide equipment and operators (as available) to service the township.
  - c. Assess damages to township property.
  - d. Maintain contact with the engineering and public works supervisor and/or the EOC.
5. Sanitation Departments
  - a. Coordinate protection of sewage systems from the effects of emergencies within the jurisdiction.
  - b. Obtain additional equipment needed for debris removal in the jurisdiction in conjunction with the EOC.
  - c. Monitor sewage systems during floods and hazardous material releases within the jurisdiction.
  - d. Provide temporary sanitary facilities as necessary in the jurisdiction.
  - e. Maintain contact with the engineering and public works supervisor and/or the EOC.
6. Water Departments
  - a. Coordinate protection of the raw and stored water supply from the effects of major disasters.
  - b. Determine location and extent of any main breaks in the jurisdiction.
  - c. Assist other departments with water main breaks as necessary.
  - d. Coordinate with utility companies for shutting down water lines and pumping out flooded areas.
  - e. Arrange for potable water supplies until water service is restored.
  - f. Coordinate utility start-up procedures with maintenance personnel and utility companies.
  - g. Coordinate with fire and police officials for needed evacuations.
  - h. Maintain contact with the engineering and public works supervisor and/or the EOC.
7. All Electric Power Utilities
  - a. Determine extent of a power failure and report information to the EOC.
  - b. Coordinate for support of emergency power at hospitals, long-term care facilities, and for individuals with identified emergency power needs.
  - c. Provide physical security at sites to prevent unauthorized entry.
  - d. Assist with fire prevention related to downed lines.
  - e. Activate in-house emergency response plans.
  - f. Advise the EOC regarding alternate communications and warning systems until power is restored.

- g. Follow standard prioritization lists for restoration of service and notify the IC and/or EOC of any necessary deviations from the plan.
        - h. Provide restoration time estimates as available to the EOC.
        - i. Maintain contact with the engineering and public works supervisor and/or the EOC.
  - 8. Gas and Pipeline Companies
    - a. Notify fire departments of ruptured, breached, or leaking gas lines.
    - b. Collaborate with fire departments to mitigate further damage and to contain any existing leaks or releases.
    - c. Assist the fire department in determining the ill effects of the leak, including but not limited to the health effects of exposure, the need to protective gear, and the procedures to contain the release.
    - d. Determine extent of risk area and coordinate with fire and law enforcement for evacuation as needed.
    - e. Request the closure of access routes and general limitations for the affected area from the Shelby County Engineer or designee.
    - f. Work with the EOC to release relevant warning and notification to the public.
    - g. Coordinate with other utilities and fire departments in shutting down systems that might present additional hazards.
    - h. Ensure that site is ventilated to disperse accumulations of natural gas.
    - i. Assist emergency forces in erecting barricades.
    - j. Coordinate utility start-up procedures.
    - k. Provide security at sites to prevent unauthorized entry.
    - l. Maintain communication with the engineering and public works supervisor and EOC regarding status of the situation and controls or actions in effect.
- C. Engineering, utility and public works personnel are dispatched from their own locations.
- 1. Dispatch can be moved to the Emergency Operations Center (EOC) if the primary dispatch point is in a hazardous area.
  - 2. Additional radios can be requested from the EOC if required during the emergency.

## **VI. DIRECTION AND CONTROL**

- A. The County Engineer or his designee will relocate to the Emergency Operations Center, as needed, during an emergency to advise decision makers and coordinate response efforts with utilities, municipal and village departments, state, federal, and volunteer organizations.
  - 1. If the Engineer must be at the site of the emergency, A senior employee will be appointed to be the representative at the EOC.
- B. Internal resources of all operating departments will be managed by individual departmental procedures and policies.
- C. Each responding organization will communicate directly with its own field forces, and in turn will keep the Emergency Operations Center informed of appropriate information (casualties, damage



observations, evacuation status, radiation levels, chemical exposure, etc.) during emergency operations.

- D. Engineering and public works will integrate into the ICS in a manner that facilitates communication and sharing of incident objectives; the likely way in which this can occur is through establishment of an Engineering/Public Works Branch or Group with the Shelby County Engineer serving as the Branch Director or Group Leader.

## **VII. CONTINUITY OF GOVERNMENT**

- A. The line of succession for the County Engineer (who will serve as the primary coordinator for engineering and public works in the EOC) is:
  - 1. The Shelby County Engineer
  - 2. The Shelby County Deputy Engineer
  - 3. Succession of authority for water departments, street departments, sanitation departments and utility personnel are contained in organizational SOGs developed and maintained by the jurisdictions.
  - 4. Refer to Appendix 3, Procedures for the Relocation and Safeguarding of Vital Records in the Basic Plan and Appendix 1, Procedures for the Protection of Government Resources, Facilities, and Personnel in Annex N, Resource Management.

## **VIII. ADMINISTRATION AND LOGISTICS**

- A. Administration
  - 1. Additional equipment or services needed to address an emergency by county/municipal responders will be requested through the Public Works liaison in the activated EOC.
  - 2. If the EOC is not activated, requests for additional equipment or services needed to address an emergency will be made to the County Commissioners (for a county agency) or the Chief Executive Officer or other appropriate authority of the jurisdiction.
  - 3. The Shelby County EMA Resource Manual lists equipment and services in the county. The Public Works Liaison will assist organizations in the cooperative use of equipment and personnel.
  - 4. Procurement of any resources will follow the proper procedures established by law in Shelby County and in consideration of any fiscal management requirements of funds intended to be used to support the operation.
  - 5. Areas needing assistance in utility restoration, debris removal, flood drainage, sanitation and related areas will be plotted on maps in the EOC and prioritized for response by the EOC Coordinator and the Incident Commander, with advice from the Engineering/Public Works supervisor.
  - 6. Engineering, utility, and public works responders will provide information for the After-Action Report as requested by the County Emergency Management Director.
  - 7. Requests for mutual-aid assistance from adjacent counties and assistance from the state and federal government for engineering and public works will be made through the Public Works Liaison in the activated EOC.

**B. Logistics**

1. Responders will coordinate the placement of work crews, supply lines, staging areas and emergency command centers.
2. All responding organizations will provide regular reports to the EOC Coordinator on their location, activities and status at the site.
3. Logistical support for the dispatch points, including food, water, emergency power, fuel and lighting will be provided internally by the organizations. Support will be given by the EOC when internal resources are exhausted.

**IX. PLAN DEVELOPMENT AND MAINTENANCE**

- A. The Shelby County Engineer (in cooperation with the organizations listed in this Annex and the Shelby County EMA Director) is responsible for updating this annex based on deficiencies identified through drills and exercises and changes in government structure and emergency organizations.
- B. The Shelby County EMA Director will prepare, coordinate, publish and distribute necessary changes and revisions to this annex.

**X. AUTHORITIES AND REFERENCES**

- A. Authorities
  1. Ohio Revised Code Chapter 315
- B. References
  1. Not used.

**XI. ADDENDA**

Not used.

**XII. AUTHENTICATION**

\_\_\_\_\_  
Shelby County Engineer

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Date

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Shelby County EMA Director

\_\_\_\_\_  
Date