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# ***Appendix A: Glossary of Terms***

**Anchoring**: Special connections made to ensure that a building will not float off, blow off or be pushed off its foundation during a flood or storm.

**Base Flood**: Flood that has a 1 percent probability of being equaled or exceeded in any given year. Also known as the 100-year flood.

**Base Flood Elevation (BFE)**: Elevation of the base flood in relation to a specified datum, such as the National Geodetic Vertical Datum of 1929. The Base Flood Elevation is used as the standard for the National Flood Insurance Program.

**Basement**: Any floor level below grade.

**Bedrock**: The solid rock that underlies loose material, such as soil, sand, clay, or gravel.

**Building**: A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.

**Community Rating System (CRS)**: A National Flood Insurance Program (NFIP) that provides incentives for NFIP communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of policyholders in these communities are reduced.

**Computer-Aided Design And Drafting (CADD)**: A computerized system enabling quick and accurate electronic 2-D and 3-D drawings, topographic mapping, site plans, and profile/cross-section drawings.

**Consequences**: The damages, injuries, and loss of life, property, environment, and business that can be quantified by some unit of measure, often in economic or financial terms.

**Contour**: A line of equal ground elevation on a topographic (contour) map.

**Critical Facility**: Facilities that are critical to the health and welfare of the population and that are especially important during and following hazard events. Critical facilities include shelters, police and fire stations, schools, childcare centers, senior citizen centers, hospitals, disability centers, vehicle and equipment storage facilities, emergency operations centers, and city hall. The term also includes buildings or locations that, if damaged, would create secondary disasters, such as hazardous materials facilities, vulnerable facilities, day care centers, nursing homes, and housing likely to contain occupants who are not very mobile. Other critical city infrastructure such as telephone exchanges and water treatment plants are referred to as lifelines. See Lifelines.

**Dam Breach Inundation Area:** The area flooded by a dam failure or programmed release.

**Debris:** The scattered remains of assets broken or destroyed in a hazard event. Debris caused by a wind or water hazard event can cause additional damage to other assets.

**Development:** Any man-made change to real estate.

**Digitize:** To convert electronically points, lines, and area boundaries shown on maps into x, y coordinates (e.g., latitude and longitude, universal transverse mercator (UTM), or table coordinates) for use in computer applications.

**Duration:** How long a hazard event lasts.

**Earthquake:** A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of earth's tectonic plates.

**Emergency:** Any hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe in any part of the United States which requires federal emergency assistance to supplement State and local efforts to save lives and protect property, public health and safety, or to avert or lessen the threat of a disaster. Defined in Title V of Public Law 93-288, Section 102(1).

**Emergency Operations Center (EOC):** A facility that houses communications equipment that is used to coordinate the response to a disaster or emergency.

**Emergency Operations Plan (EOP):** Sets forth actions to be taken by State or local governments for response to emergencies or major disasters.

**Emergency Response Plan:** A document that contains information on the actions that may be taken by a governmental jurisdiction to protect people and property before, during, and after a disaster.

**Extent:** The size of an area affected by a hazard or hazard event.

**Fault:** A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are differentially displaced parallel to the plane of fracture.

**Federal Emergency Management Agency (FEMA):** The independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery.

**FIPS:** Stands for Federal Information Processing Standards. Under the Information Technology Management Reform Act (Public Law 104-106), the Secretary of Commerce approves standards and guidelines that are developed by the National Institute of Standards and Technology (NIST)

for Federal computer systems. These standards and guidelines are issued by NIST as Federal Information Processing Standards (FIPS) for use government-wide. NIST develops FIPS when there are compelling Federal government requirements such as for security and interoperability and there are no acceptable industry standards or solutions.

**Fire Potential Index (FPI)**: Developed by United States Geological Survey (USGS) and United States Forest Service (USFS) to assess and map fire hazard potential over broad areas. Based on such geographic information, national policy makers and on-the-ground fire managers established priorities for prevention activities in the defined area to reduce the risk of managed and wildfire ignition and spread. Prediction of fire hazard shortens the time between fire ignition and initial attack by enabling fire managers to pre-allocate and stage suppression forces to high fire risk areas.

**Flash Flood**: A flood event occurring with little or no warning where water levels rise at an extremely fast rate.

**Flood**: A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.

**Flood Depth**: Height of the flood water surface above the ground surface.

**Flood Elevation**: Elevation of the water surface above an established datum, e.g. National Geodetic Vertical Datum of 1929, North American Vertical Datum of 1988, or Mean Sea Level.

**Flood Hazard Area**: The area shown to be inundated by a flood of a given magnitude on a map.

**Flood Insurance Rate Map (FIRM)**: Map of a community, prepared by the Federal Emergency Management Agency, which shows both the special flood hazard areas and the risk premium zones applicable to the community.

**Flood Insurance Study (FIS)**: A study that provides an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations in a community or communities.

**Flood Mitigation Assistance Program (FMA)**: A planning and project implementation grant program funded by the National Flood Insurance Program. Provides pre-disaster grants to State and local governments for both planning and implementation of mitigation strategies. Grant funds are made available from NFIP insurance premiums, and therefore are only available to communities participating in the NFIP.

**Flood of Record**: The highest known flood level for the area, as recorded in historical documents.

**Floodplain:** Any land area, including watercourse, susceptible to partial or complete inundation by water from any source.

**Floodproofing:** Protective measures added to or incorporated in a building to prevent or minimize flood damage. “Dry floodproofing” measures are designed to keep water from entering a building. “Wet floodproofing” measures minimize damage to a structure and its contents from water that is allowed into a building.

**Floodway:** The stream channel and that portion of the adjacent floodplain which must remain open to permit conveyance of the base flood. Floodwaters are generally the swiftest and deepest in the floodway. The floodway should remain clear of buildings and impediments to the flow of water.

**Freeboard:** A margin of safety added to a protection measure to account for waves, debris, miscalculations, lack of scientific data, floodplain fill, or upstream development.

**Frequency:** A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1 percent chance – its probability – of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.

**Fujita Scale of Tornado Intensity:** Rates tornadoes with numeric values from F0 to F5 based on tornado wind speed and damage sustained. An F0 indicates minimal damage such as broken tree limbs or signs, while an F5 indicates severe damage sustained.

**Functional Downtime:** The average time (in days) during which a function (business or service) is unable to provide its services due to a hazard event.

**Geographic Area Impacted:** The physical area in which the effects of the hazard are experienced.

**Geographic Information System (GIS):** A computer software application that relates physical features on the earth to a database to be used for mapping and analysis.

**Ground Motion:** The vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter, but soft soils can further amplify ground motions.

**Hazard:** A source of potential danger or adverse condition. An event or physical condition that has the potential to cause fatalities, injuries, property and infrastructure damage, agriculture loss, damage to the environment, interruption of business, or other types of harm or loss. Hazards, as defined in this study, will include naturally occurring events such as floods, dam failures, levee failures, tornadoes, high winds, hailstorms, lightning, winter storms, extreme heat, drought,

expansive soils, urban fires, wildfires that strike populated areas, and earthquakes. A natural event is a hazard when it has the potential to harm people or property. For purposes of this study, hazardous materials events are also included.

**Hazard Event:** A specific occurrence of a particular type of hazard.

**Hazard Identification:** The process of defining and describing a hazard, including its physical characteristics, magnitude and severity, probability and frequency, causative factors, and locations or areas affected.

**Hazard Mitigation:** Sustained actions taken to reduce or eliminate long-term risk to human life and property from natural and technological hazards and their effects. Note that this emphasis on long-term risk distinguishes mitigation from actions geared primarily to emergency preparedness and short-term recovery.

**Hazard Mitigation Grant Program (HMGP):** Authorized under Section 404 of the Stafford Act; a FEMA disaster assistance grant program that funds mitigation projects in conformance with post-disaster mitigation plans required under Section 409 of the Stafford Act. The program is available only after a Presidential disaster declaration.

**Hazard Mitigation Plan:** The plan resulting from a systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards present in society that includes the actions needed to minimize future vulnerability to hazards. Section 409 of the Stafford Act requires the identification and evaluation of mitigation opportunities, and that all repairs be made to applicable codes and standards, as condition for receiving Federal disaster assistance. Enacted to encourage identification and mitigation of hazards at all levels of government.

**Hazard Profile:** A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.

**HAZUS (Hazards U.S.):** A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA.

**Hydrology:** The science of dealing with the waters of the earth. A flood discharge is developed by a hydrologic study.

**Infrastructure:** The public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, and includes an area's transportation system such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots, and waterways, canals, locks, and regional dams.

**Insurance Service Office, Inc. (ISO):** An insurance organization that administers several programs that rate a community's hazard mitigation activities.

**Intensity:** A measure of the effects of a hazard event at a particular place.

**Landslide:** Downward movement of a slope and materials under the force of gravity.

**Lifelines:** Systems necessary for human life and urban function, especially during emergencies. Transportation and utility systems, as well as emergency service facilities are considered the lifelines of a community. Transportation systems include interstate, US, and state highways, roadways, railways, waterways, ports, harbors, and airports. Utility systems consist of electric power, gas and liquid fuels, telecommunications, water, and wastewater. Emergency service facilities include Emergency Alert System communication facilities, hospitals, and the police and fire departments.

**Liquefaction:** The phenomenon that occurs when ground shaking causes loose soils to lose strength and act like viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.

**Lowest Floor:** Under the NFIP, the lowest floor of the lowest enclosed area (including basement) of a structure.

**Magnitude:** A measure of the strength of a hazard event. The magnitude (also referred to as severity) of a given hazard event is usually determined using technical measures specific to the hazard.

**Mitigation:** Sustained action taken to reduce or eliminate the long-term risk to human life and property from natural and technological hazards and their effects. Note that this emphasis on long-term risk distinguishes mitigation from actions geared primarily to emergency preparedness and short-term recovery (Burby, 1998).

**National Flood Insurance Program (NFIP):** A federal program created by Congress in 1968 that provides the availability of flood insurance to communities in exchange for the adoption and enforcement of a minimum floodplain management ordinance specified in 44 CFR §60.3. The ordinance regulates new and substantially damaged or improved development in identified flood hazard areas.

**National Geodetic Vertical Datum of 1929 (NGVD):** Datum established in 1929 and used in the NFIP as a basis for measuring flood, ground, and structural elevations, previously referred to as Sea Level Datum or Mean Sea Level. The Base Flood Elevations shown on most of the Flood Insurance Rate Maps issued by the Federal Emergency Management Agency are referenced to NGVD.

**National Weather Service (NWS):** Prepares and issues flood, severe weather, and coastal storm warnings and can provide technical assistance to Federal and state entities in preparing weather and flood warning plans.

**Oklahoma Department of Civil Emergency Management (ODCEM):** The State department responsible for hazard mitigation, community preparedness, emergency response, and disaster recovery.

**Oklahoma Water Resources Board (OWRB):** The State agency responsible for administration of the National Flood Insurance Program, and the dam safety program.

**Planimetric:** Describes maps that indicate only man-made features like buildings.

**Planning:** The act or process of making or carrying out plans; the establishment of goals, policies and procedures for a social or economic unit.

**Planning for Post-Disaster Reconstruction:** The process of planning (preferably prior to an actual disaster) those steps the community will take to implement long-term reconstruction with one of the primary goals being to reduce or minimize its vulnerability to future disasters. These measures can include a wide variety of land-use planning tools, such as acquisition, design review, zoning, and subdivision review procedures. It can also involve coordination with other types of plans and agencies but is distinct from planning for emergency operations, such as restoration of utility services and basic infrastructure.

**Preparedness:** Activities to ensure that people are ready for a disaster and respond to it effectively. Preparedness requires figuring out what will be done if essential services break down, developing a plan for contingencies, and practicing the plan.

**Probability:** A statistical measure of the likelihood that a hazard event will occur.

**Project Impact:** A program that encourages business, government agencies and the public to work together to build disaster-resistant communities.

**Reconstruction:** The long-term process of rebuilding the community's destroyed or damaged buildings, public facilities, or other structures.

**Recovery:** The process of restoring normal public or utility services following a disaster, perhaps starting during but extending beyond the emergency period to that point when the vast majority of such services, including electricity, water, communications, and public transportation have resumed normal operations. Recovery activities necessary to rebuild after a disaster include rebuilding homes, businesses and public facilities, clearing debris, repairing roads and bridges, and restoring water, sewer and other essential services. Short-term recovery does not include the reconstruction of the built environment, although reconstruction may commence during this period.

**Recurrence Interval:** The time between hazard events of similar size in a given location. It is based on the probability that the given event will be equaled or exceeded in any given year.

**Repetitive Loss Property:** A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least \$1000 each have been paid within any 10-year period since 1978. While Repetitive Loss Properties constitute only 2% of insured properties, they account for 40% of flood damage claims against the NFIP.

**Replacement Value:** The cost of rebuilding a structure. This is usually expressed in terms of cost per square foot, and reflects the present-day cost of labor and materials to construct a building of a particular size, type and quality.

**Retrofitting:** Modifications to a building or other structure to reduce its susceptibility to damage by a hazard.

**Richter Scale:** A numerical scale of earthquake magnitude devised by seismologist C.F. Richter in 1935.

**Risk:** The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

**Risk Assessment:** A process or method for evaluating risk associated with a specific hazard and defined in terms of probability and frequency of occurrence, magnitude and severity, exposure and consequences. Also defined as: "The process of measuring the potential loss of life, personal property, housing, public facilities, equipment, and infrastructure; lost jobs, business earnings, and lost revenues, as well as indirect losses caused by interruption of business and production; and the public cost of planning, preparedness, mitigation, response, and recovery. (Burby, 1998).

**Riverine:** Of or produced by a river.

**Scale:** A proportion used in determining a dimensional relationship; the ratio of the distance between two points on a map and the actual distance between the two points on the earth's surface.

**Scarp:** A steep slope.

**Scour:** Removal of soil or fill material by the flow of flood waters. The term is frequently used to describe storm-induced, localized conical erosion around pilings and other foundation supports where the obstruction of flow increases turbulence.

**Seismicity:** Describes the likelihood of an area being subject to earthquakes.

**Special Flood Hazard Area (SFHA)**: An area within a floodplain having a 1 percent or greater chance of flood occurrence in any given year (100-year floodplain); represented on Flood Insurance Rate Maps by darkly shaded areas with zone designations that include the letter A or V.

**Special Needs**: The FEMA National Response Framework (NRF) definition for “special needs” provides a function-based approach for planning and seeks to establish a flexible framework that addresses a broad set of common function-based needs irrespective of specific diagnosis, statuses, or labels (e.g., children, the elderly, transportation disadvantaged). In other words, this function-based definition reflects the capabilities of the individual, not the condition or label. Governments that choose to align their language to the NRF definition will improve inter-government communication during an incident. The definition of “special needs populations” as it appears in the NRF is as follows:

Populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to:

- Maintaining independence
- Communication
- Transportation
- Supervision
- Medical care

Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency; or who are non-English speaking; or who are transportation disadvantaged.

The definition focuses on the following function-based aspects:

- **Maintaining Independence** – Individuals requiring support to be independent in daily activities may lose this support during an emergency or a disaster. Such support may include consumable medical supplies (diapers, formula, bandages, ostomy supplies, etc.), durable medical equipment (wheelchairs, walkers, scooters, etc.), service animals, and/or attendants or caregivers. Supplying needed support to these individuals will enable them to maintain their pre- disaster level of independence.
- **Communication** – Individuals who have limitations that interfere with the receipt of and response to information will need that information provided in methods they can understand and use. They may not be able to hear verbal announcements, see directional signs, or understand how to get assistance due to hearing, vision, speech, cognitive, or intellectual limitations, and/or limited English proficiency.
- **Transportation** – Individuals who cannot drive or who do not have a vehicle may require transportation support for successful evacuation. This support may include accessible vehicles (e.g., lift-equipped or vehicles suitable for transporting individuals who use oxygen) or information about how and where to access mass transportation during an evacuation.
- **Supervision** – Before, during, and after an emergency individuals may lose the support of caregivers, family, or friends or may be unable to cope in a new environment (particularly if they have dementia, Alzheimer’s or psychiatric conditions such as schizophrenia or intense anxiety). If separated from their caregivers, young children may

be unable to identify themselves; and when in danger, they may lack the cognitive ability to assess the situation and react appropriately.

- **Medical Care** – Individuals who are not self-sufficient or who do not have adequate support from caregivers, family, or friends may need assistance with: managing unstable, terminal or contagious conditions that require observation and ongoing treatment; managing intravenous therapy, tube feeding, and vital signs; receiving dialysis, oxygen, and suction administration; managing wounds; and operating power dependent equipment to sustain life. These individuals require support of trained medical professionals.

(Source: FEMA 301, “Interim Emergency Management Planning Guide for Special Needs Populations.”)

**Stafford Act:** The Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-107 was signed into law November 23, 1988 and amended the Disaster Relief Act of 1974, PL 93-288. The Stafford Act is the statutory authority for most Federal disaster response activities, especially as they pertain to FEMA and its programs.

**State Hazard Mitigation Team:** Composed of key State agency representatives, the team evaluates hazards, identifies strategies, coordinates resources, and implements measures that will reduce the vulnerability of people and property to damage from hazards. The Oklahoma State Hazard Mitigation Team is convened by the Oklahoma Department of Civil Emergency Management (ODCEM), and includes the State departments of Agriculture, Climatological Survey, Commerce, Environmental Quality, Health, Human Services, Insurance, Transportation, Wildlife Conservation, Conservation Commission, Corporation Commission, Historical Society, Insurance Commission, Water Resources Board, Association of County Commissioners (AACCO), Oklahoma Municipal League (OML), Department of Housing and Urban Development (HUD), and the U.S. Army Corps of Engineers (USACE).

**State Hazard Mitigation Officer (SHMO):** The representative of state government who is the primary point of contact with FEMA, other state and Federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

**Stormwater Management:** Efforts to reduce the impact of stormwater or snowmelt runoff on flooding and water quality.

**Stormwater Detention:** The storing of stormwater runoff for release at a restricted rate after the storm subsides, or the flood crest passes.

**Substantial Damage:** Damage of any origin sustained by a structure in a Special Flood Hazard Area whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage.

**Surface Faulting:** The differential movement of two sides of a fracture – in other words, the location where the ground breaks apart. The length, width, and displacement of the ground characterize surface faults.

**Tectonic Plate:** Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that cause seismic activity.

**Topographic:** Characterizes maps that show natural features and indicate the physical shape of the land using contour lines. These maps may also include man-made features.

**Tornado:** A violently rotating column of air extending from a thunderstorm to the ground.

**Vulnerability:** Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct ones.

**Vulnerability Assessment:** The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard events on the existing and future built environment.

**Wildfire:** An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

**Zone:** A geographical area shown on a Flood Insurance Rate Map (FIRM) that reflects the severity or type of flooding in the area.

