

## GLOSSARY

**This resource defines terms that are used in or support the risk assessment document. These definitions were based on terms defined in documents included in the reference section, with modifications as appropriate to address the Pottawatomie County specific definitions and requirements.**

**100 – year flood** – A flood that has a 1-percent chance of being equaled or exceeded in any given year. This flood event is also referred to as the base flood. The term "100-year flood" can be misleading; it is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1- percent chance of being equaled or exceeded each year. Therefore, the 100-year flood could occur more than once in a relatively short period of time. The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management to determine the need for flood insurance.

**500 – year flood** – A flood that has a 0.2-percent chance of being equaled or exceeded in any one year.

**Aggregate Data** – Data gathered together across an area or region (for example, census tract or census block data).

**Annualized Loss** – The estimated long-term value of losses from potential future hazard occurrences of a particular type in any given single year in a specified geographic area. In other words, the average annual loss that is likely to be incurred each year based on frequency of occurrence and loss estimates. Note that the loss in any given year can be

substantially higher or lower than the estimated annualized loss.

**Annualized Loss Ratio Loss** – Represents the annualized loss estimate as a fraction of the replacement value of the local building inventory. This ratio is calculated using the following formula:  $\text{Annualized Loss Ratio} = \text{Annualized Loss} / \text{Exposure at Risk}$ . The annualized loss ratio gauges the relationship between average annualized loss and building value at risk. This ratio can be used as a measure of relative risk between hazards as well as across different geographic units.

**Asset** – Any man-made or natural feature that has value, including but not limited to people, buildings, infrastructure (such as bridges, roads, and sewer and water systems), and lifelines (such as electricity and communication resources or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks).

**At-Risk** – Exposure values that include the entire building inventory value in census blocks that lie within or border the inundation areas or any area potentially exposed to a hazard based on location.

**Base Flood** – Flood that has a 1-percent probability of being equaled or exceeded in any given year. It is 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 BFE is used as the standard for the National Flood Insurance Program.

**Benefit** – Net project outcomes, usually defined in monetary terms. Benefits may include direct and indirect effects. For the purposes of conducting a benefit-cost analysis of proposed mitigation measures, benefits are limited to specific, measurable, risk reduction factors, including a reduction in expected property losses (building, content, and function) and protection of human life.

**Beaufort Wind Scale for Land** – The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort wind force scale, although it is a measure of wind speed and not of force in the scientific senses.

**Dam** – A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams typically are constructed of earth, rock concrete, or mine tailings.

**Dam Failure** – A dam failure is the collapse, breach, or other failure of a dam structure resulting in potential downstream flooding.

**Drought** – Drought is a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals or people.

**Earthquake** – An earthquake is a sudden motion of trembling that is caused by a release of strain accumulated within or along the edge of Earth's tectonic plates. The severity of an earthquake is dependent on the amount of energy released from the fault or epicenter. An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface.

**Extreme Heat** – Extreme heat is defined as temperatures that hover 10 degrees or more above the average high for the area, and last for several weeks

**Enhanced Fujita Scale** –The Enhanced Fujita scale (EF-Scale) rates the strength of tornadoes in the United States and Canada based on the damage they cause.

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

**Flood Elevation** – Height of the water surface above an established datum (for example,

the National Geodetic Vertical Datum of 1929, North American Vertical Datum of 1988, or mean sea level).

**Flash Flooding** – Flash flooding is a short-term water inundation usually resulting from storm water drainage or low water crossings on roadways.

**Flooding** – Flood is defined as an overflow or inundation coming from a river or other body of water that causes or threatens damage. Floods are usually a result of heavy, slowly moving thunderstorms or rains extending over a long period. Floods can also occur through dam failure or over-topping.

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

**Flood Information Tool (FIT)** – Hazard U.S. Multi-Hazard (HAZUS-MH)- related tool designed to process and convert locally available flood information to data that can be used by the HAZUS-MH Flood Module. The FIT is a system of instructions, tutorials and geographic information system (GIS) analysis scripts. When provided with user-supplied inputs (such as ground elevations, flood elevations, and floodplain boundary information), the FIT calculates flood depth and elevation for river and coastal flood hazards.

**Flood Insurance Rate Map (FIRM)** – Map of a community, prepared by the FEMA that 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 (FMA) Program** – A program created as a part of the National Flood Insurance Report Act of 1994. FMA provides funding to assist communities and states in implementing actions that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other NFIP insurance structures, with a focus on repetitive loss properties.

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

**Flood Polygon** – A geographic information system vector file outlining the area exposed to the flood hazard. HAZUS-MH generates this polygon at the end of the flood computations in order to analyze the inventory at risk.

**Freezing Rain** – Rain that falls as a liquid but freezes into glaze upon contact with the ground.

**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 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 (wind speed less than 73 mph) indicates minimal damage such as broken tree limbs or signs, while an F5 (wind speeds of 261 to 318 mpg) indicated severe damage sustained.

**Geology** – The scientific study of the earth, including its composition, structure, physical properties, and history.

**Goals** – General guidelines that explain what you want to achieve. They are usually broad policy-type statements, long term in nature, and represent global visions.

**Geographic Information Systems (GIS)** – A computer software application that relates data regarding physical and other features on the earth to a database to be used for mapping and analysis.

**GIS Shape Files** – A type of GIS vector file developed by ESRI for their ArcView software. This type of file contains a table and a graphic. The records in the table are linked to corresponding objects in the graphic.

**Hail** – Hail forms in storm clouds when super cooled water droplets freeze on contact with condensation nuclei, such as dust.

**Hailstorm** – Storm associated with spherical balls of ice. Hail is a product of thunderstorms or intense showers. It is generally white and translucent, consisting of liquid or snow particles encased with layers of ice. Hail is formed within the higher reaches of a well-developed thunderstorm. When hailstones become too heavy to be caught in an updraft back into the clouds of the thunderstorm (hailstones can be caught in numerous updrafts adding a coating of ice to the original frozen droplet of rain each time), they fall as hail and a hailstorm ensues.

**Hazard** – A source of potential danger or an adverse condition that can cause harm to people or cause property damage. For this risk assessment, priority hazards were identified and selected for the pilot project effort. A natural hazard is a hazard that occurs naturally (such as flood, wind, and earthquake). A man-made hazard is one that is caused by humans (for example, a terrorist act or a hazardous material spill). Hazards are of concern if they have the potential to harm people or property.

**Hazards of Interest** – A comprehensive listing of hazards that may affect an area.

**Hazards of Concern** – Those hazards that have been analytically determined to pose significant risk in an area, and thus the focus of the particular mitigation plan for that area (a subset of the Hazards of Interest).

**Hazard Identification** – The process of identifying hazards that threaten an area.

**Hazardous Material Facilities** – Facilities housing industrial and hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

**Hazard Mitigation** – Sustained actions taken to reduce or eliminate the long-term risk and effects that can result from the occurrence of a specific hazard. For example, building a retaining wall can protect an area from flooding.

**Hazard Mitigation Grant Program (HMGP)** – Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster.

**Hazard Mitigation Plan** – A collaborative document in which hazards affecting the community are identified, vulnerability to hazards assessed, and consensus reached on how to minimize or eliminate the effects of these hazards.

**Hazard Profile** – A description of the physical characteristics of a hazard, including 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.

**Hazard Risk Gauge** – The graphic icon used during the initial planning process to convey

the relative risk of a given hazard in the study area. The scale ranges from green indicating relatively low or no risk to red indicating severe risk.

**Hazards U.S. (HAZUS)** – A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA. HAZUS was replaced by HAZUS-MH (see below) in 2003.

**Hazards U.S. – Multi-Hazard (HAZUS-MH)** – A GIS-based nationally standardized earthquake, flood, and wind loss estimation tool developed by FEMA. The purpose of this pilot project is to demonstrate and implement the use of HAZUS-MH to support risk assessments.

**HAZUS-MH Risk Assessment Methodology** – This analysis uses the HAZUS-MH modules (earthquake, wind--hurricane and flood) to analyze potential damages and losses. For this pilot project risk assessment, the flood and hurricane hazards were evaluated using this methodology.

**HAZUS-MH-Driven Risk Assessment Methodology** – This analysis involves using inventory data in HAZUS-MH combined with knowledge such as (1) information about potentially exposed areas, (2) expected impacts, and (3) data regarding likelihood of occurrence for hazards. For this risk assessment, a HAZUS-Driven Risk Assessment Methodology could not be used to estimate losses associated with any hazards because of a lack of adequate data. However, the methodology was used, based on more limited data to estimate exposure for the dam failure, urban fire, fuel pipeline breach, and HazMat release hazards.

**Heavy Snow** – Snowfall accumulating to 4” or more in depth in 12 hours or less; or snowfall accumulating to 6” or more in depth in 24 hours or less.

**High Potential Loss Facilities** – Facilities that would have a high loss associated with them, such as nuclear power plants, dams, and military installations.

**High Winds** – High winds are a common feature of thunderstorms, particularly severe thunderstorms.

**Hurricane** – An intense tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74 miles-per-hour or more and blow in a large spiral around a relatively calm center or "eye." Hurricanes develop over the North Atlantic Ocean, northeast Pacific Ocean, or the South Pacific Ocean (east of 160°E longitude). Hurricane circulation is counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

**Hydraulics** – That branch of science or of engineering, which addresses fluids (especially, water) in motion, its action in rivers and canals, the works and machinery for conducting or raising it, its use as a prime mover, and other fluid-related areas.

**Hydrology** – The science of dealing with the waters of the earth (for example, a flood discharge estimate is developed through conduct of 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, transportation system (such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, dry docks, piers and regional dams).

**Ice Jam** – An accumulation of ice in a river that acts as a natural dam and can flood low-lying areas upstream. They occur when warm temperatures and heavy rains cause rapid snow melt.

**Ice Storm** – Term used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication.

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**Intensity** – A measure of the effects of a hazard occurring at a particular place.

**Inventory** – The assets identified in a study region. It includes assets that can be lost when a disaster occurs and community resources are at risk. Assets include people, buildings, transportation, and other valued community resources.

**Keetch-Byram Drought Index (KBDI) Fire Danger Rating System** - The Keetch-Byram Drought Index (KBDI) is a mathematical system for relating current and recent weather conditions to potential or expected fire behavior. The system was originally developed for the southeastern United States and is based primarily on recent rainfall patterns. The KBDI is the most widely used drought index system by fire managers in the south. It is also one of the only drought index systems specifically developed to equate the effects of drought with potential fire activities. The result of this system is a drought index number ranging from zero to 800 that accurately describes the amount of moisture that is missing. A rating of zero defines the point where no moisture is deficient and 800 is the maximum drought possible. A level of 400 or higher on the KBDI is considered extreme and reason for fire warnings.

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

**Level 1 Analysis** – A HAZUS-MH analysis that yields a rough estimate or preliminary analysis based on the nationwide default database included in HAZUS-MH. A Level 1 analysis is a great way to begin the risk assessment process and prioritize high-risk communities without collecting or using local data.

**Level 2 Analysis** – A HAZUS-MH analysis that requires the input of additional or refined data and hazard maps that will produce more accurate risk and loss estimates. Assistance from local emergency management personnel, city planners, GIS professionals, and others may be necessary for this level of analysis.

**Level 3 Analysis** – A HAZUS-MH analysis that yields the most accurate estimate of loss and typically requires the involvement of technical experts such as structural and geotechnical engineers who can modify loss parameters based on the specific conditions of a community. This level analysis will allow users to supply their own techniques to study special conditions such as dam breaks and tsunamis. Engineering and other expertise is needed at this level.

**Lifelines** – Critical facilities that include utility systems (potable water, wastewater, oil, natural gas, electric power facilities and communication systems) and transportation systems (airways, bridges, roads, tunnels and waterways).

**Lightning** – A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds or between a rain cloud and the ground.

**Loss Estimation** – The process of assigning hazard-related damage and loss estimates to inventory, infrastructure, lifelines, and population data. HAZUS-MH can estimate the economic and social loss for specific hazard occurrences. Loss estimation is essential to decision making at all levels of government and provides a basis for developing mitigation plans and policies. It also supports planning for emergency preparedness, response, and recovery.

**Lowest Floor** – Under the NFIP, the lowest floor of the lowest enclosed area (including basement) of a structure. For the HAZUS-MH flood model, this information can be used to assist in assessing the damage to buildings.

**Magnitude** – A measure of the strength of a hazard occurrence. The magnitude (also referred to as severity) of a given hazard occurrence is usually determined using technical measures specific to the hazard. For example, ranges of wind speeds are used to categorize tornados.

**Major Disaster Declarations** – Post-disaster status requested by a state’s governor when local and state resources are not sufficient to meet disaster needs. It is based on the damage assessment, and an agreement to commit state funds and resources to the long-term recovery. The event must be clearly more than the state or local government can handle alone.

**Mean Return Period (MRP)** – The average period of time, in years, between occurrences of a particular hazard (equal to the inverse of the annual frequency of exceedance).

**Mercalli Intensity Scale** – The Mercalli intensity scale is a seismic scale used for measuring the intensity of an earthquake. It measures the effects of an earthquake, and is distinct from the moment magnitude usually reported for an earthquake (sometimes misreported as the Richter magnitude), which is a measure of the energy released.

**Mitigation Actions** – Specific actions that help you achieve your goals and objectives.

**Mitigation Goals** – General guidelines that explain what you want to achieve. They are usually broad policy-type statements, long term, and represent global visions.

**Mitigation Objectives** – Strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable.

**Mitigation Plan** – A plan that documents the process used for a systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in a state or community. The plan includes a description of actions to minimize future vulnerability to hazards. This plan should be developed with local experts and significant community involvement.

**National Flood Insurance Program (NFIP)** – Federal program created by Congress in

1968 that makes flood insurance available in communities that enact minimum floodplain management regulations in 44 Code of Federal Regulations (CFR) §60.3.

**National Oceanic and Atmospheric Administration (NOAA)** – An agency in the Department of Commerce that maps the oceans and conserves their living resources; predicts changes to the earth's environment; provides weather reports and forecasts floods and hurricanes and other natural disasters related to weather.

**National Severe Storms Laboratory (NSSL)** – The National Severe Storms Laboratory (NSSL) is a National Oceanic and Atmospheric Administration (NOAA) weather research laboratory under the Office of Oceanic and Atmospheric Research. It is one of seven NOAA Research Laboratories (RLs).

**National Weather Service (NWS)** – Organization that 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.

**Nor'Easter** – Named for the strong northeasterly winds blowing in ahead of the storm, are also referred to as a type of extra-tropical cyclones (mid-latitude storms, or Great Lake storms). A Nor'Easter is a macro-scale extra-tropical storm whose winds come from the northeast, especially in the coastal areas of the Northeastern U.S. and Atlantic Canada.

**Objectives** – Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific and measurable.

**Occupancy Classes** – Categories of buildings used by HAZUS-MH (for example, commercial, residential, industrial, government, and “other”).

**Oklahoma Water Resources Board** – A State of Oklahoma Agency whose primary duties and responsibilities include water use appropriation and permitting, water quality

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monitoring and standards, financial assistance for water/wastewater systems, dam safety, floodplain management, water supply planning, technical studies and research, and water resource mapping.

**Ordinance** – A term for a law or regulation adopted by local government.

**Outflow** – Associated with coastal hazards and follows water inundation creating strong currents that rip at structures and pound them with debris, and erode beaches and coastal structures.

**Palmer Drought Severity Index (PDSI)** – The Palmer Drought Severity Index was devised in 1965. It was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the Standardized Precipitation Index (SPI) and the Drought Monitor.

**Parametric Model** – A model relating to or including the evaluation of parameters. For example, HAZUS-MH uses parametric models that address different parameters for hazards such as earthquake, flood and wind (hurricane). For example, parameters considered for the earthquake hazard include soil type, peak ground acceleration, building construction type and other parameters.

**Planimetric** – 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.

**Post-disaster mitigation** – Mitigation actions taken after a disaster has occurred, usually during recovery and reconstruction.

**Presidential Disaster Declaration** – A post-disaster status that puts into motion long-term federal recovery programs, some of which are matched by state programs, and designed to help disaster victims, businesses, and public entities in the areas of human services, public assistance (infrastructure support), and hazard mitigation. If declared, funding comes from the President’s Disaster Relief Fund and disaster aid programs of other participating federal agencies.

**Preparedness** – Actions that strengthen the capability of government, citizens, and communities to respond to disasters.

**Priority Hazards** – Hazards considered most likely to impact a community based on frequency, severity, or other factors such as public perception. These are identified using available data and local knowledge.

**Provided Data** – The databases included in the HAZUS-MH software that allow users to run a preliminary analysis without collecting or using local data.

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

**Probability of Occurrence** – The probability of occurrence is the determination, based on past history and consideration of the elements necessary for a specific disaster event to occur. Combined with how many of those factors are present, estimates of how likely a hazard is to occur in a specific jurisdiction can better be estimated. In this plan, the Probability of Occurrence is measured in four levels. 0-None- The jurisdiction is located outside of the area at risk for the profiled hazard / There is no possibility of occurrence in the profiled jurisdictions. 1-Unlikely- Event is possible within the next 10 years. Event has up to 1 to 10 years chance of occurring. 2-Possible- Event is probable within the next 5 years. Event has up to 1 in 5 year’s chance of occurring. 3-Likely- Event is probable within the next three years. Event has up to 1 in 3 year’s chance of occurring. 4-Highly Likely- Event is probable within the calendar year. Event has a 1 in 1 year chance of occurring.

**Public Education and Outreach Programs** – Any campaign to make the public more aware of hazard mitigation and mitigation programs, including hazard information centers, mailings, public meetings, etc.

**Q3 Flood Zone Data** – FEMA flood data that delineate the 100- and 500-year flood boundaries. The Q3 Flood Data are digital representations of certain features of FEMA's Flood Insurance Rate Map (FIRM) product, intended for use with desktop mapping and GIS technology.

**Recovery** – The actions taken by an individual or community after a catastrophic event to restore order and lifelines in the community.

**Regulation** – Most states have granted local jurisdictions broad regulatory powers to enable the enactment and enforcement of ordinances that deal with public health, safety, and welfare. These include building codes, building inspections, zoning, floodplain and subdivision ordinances, and growth management initiatives.

**Recurrence Interval** – The average time between the occurrences of hazardous events of similar size in a given location. This interval 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 \$1,000 each have been paid within any 10-year period since 1978.

**Replacement Value** – The cost of rebuilding a structure. This cost 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.

**Resolutions** – Expressions of a governing body’s opinion, will, or intention that can be executive or administrative in nature. Most planning documents must undergo a council resolution, which must be supported in an official vote by a majority of representatives to be adopted. Other methods of making a statement or announcement about a particular issue or topic include proclamations or declarations.

**Resources** – Resources include the people, materials, technologies, money, etc., required to implement strategies or processes. The costs of these resources are often included in a budget.

**Richter Scale** – A numerical scale for expressing the magnitude of an earthquake on the basis of seismograph oscillations. The more destructive earthquakes typically have magnitudes between about 5.5 and 8.9; the scale is logarithmic and a difference of one represents an approximate thirtyfold difference in magnitude.

**Risk** – The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard occurring and 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 occurrence of a specific type of hazard. Risk also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

**Risk Assessment** – A methodology used to assess potential exposure and estimated losses associated with priority hazards. The risk assessment process includes four steps: (1) identifying hazards, (2) profiling hazards, (3) conducting an inventory of assets, and (4) estimating losses. This pilot project report documents this process for selected hazards addressed as part of the pilot project.

**Risk Factors** – Characteristics of a hazard that contribute to the severity of potential losses in the study area.

**Riverine** – Of or produced by a river (for example, a riverine flood is one that is caused by a river overflowing its banks).

**Saffir-Simpson Scale** – This scale categorizes or rates hurricanes from 1 (Minimal) to 5 (Catastrophic) based on their intensity. It is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the shape of the coastline, in the landfill region.

**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.

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

**Special Flood Hazard Area (SFHA)** – An area within a floodplain having a 1-percent or greater chance of flood occurrence in any given year (that is, the 100-year or base flood zone); represented on FIRMS as darkly shaded areas with zone designations that include the letter "A" or "V."

**Sperry-Piltz Ice Damage Index (SPIA)** –The Sperry–Piltz Ice Accumulation Index, or SPIA Index, is a scale for rating ice storm intensity, based on the expected footprint of an ice storm, the expected ice accumulation as a result of a storm, and the expected damage a storm inflicts on human-built structures, especially exposed overhead utility systems such as power lines.

**Stafford Act** – The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law (PL) 100-107 was signed into law on November 23, 1988. This law 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.

**Stakeholder** – Stakeholders are individuals or groups, including businesses, private organizations, and citizens, that will be affected in any way by an action or policy.

**Standardized Precipitation Index (SPI)** – The Standardized Precipitation Index (SPI) is a tool which was developed primarily for defining and monitoring drought. It allows an analyst to determine the rarity of a drought at a given time scale (temporal resolution) of interest for any rainfall station with historic data.

**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.

**Storm Prediction Center (SPC)** – The Storm Prediction Center (SPC) is a government agency that is part of the National Centers for Environmental Prediction (NCEP), operating under the control of the National Weather Service (NWS), which in turn is part of the National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce (DoC).

**Structure** – Something constructed (for example, a residential or commercial building).

**Study Area** – The geographic unit for which data are collected and analyzed. A study area can be any combination of states, counties, cities, census tracts, or census blocks. The study area definition depends on the purpose of the loss study and in many cases will follow political boundaries or jurisdictions such as city limits.

**Substantial Damage** – Damage of any origin sustained by a structure in a SFHA, for which

the cost of restoring the structure to its pre-hazard event condition would equal or exceed 50 percent of its pre-hazard event market value.

**Thunderstorm** – A local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder. It forms from a combination of moisture, rapidly rising warm air and a force capable of lifting air such a warm and cold front, a sea breeze, or a fountain.

**Topographic** – Map that shows natural features and indicate the physical shape of the land using contour lines based on land elevation. These maps also can include man-made features (such as buildings and roads).

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

**Transportation Systems** – One of the lifeline system categories. This category includes: airways (airports, heliports, highways), bridges, tunnels, roadbeds, overpasses, transfer centers; railways (tracks, tunnels, bridges, rail yards, depots), and waterways (canals, locks, seaports, ferries, harbors, dry docks, piers).

**Tropical Cyclone** – A generic term for a cyclonic, low-pressure system over tropical or sub-tropical waters containing a warm core of low barometric pressure which typically produces heavy rainfall, powerful winds and storm surge.

**Tropical Depression** – An organized system of clouds and thunderstorms with a defined surface circulation and maximum sustained winds of less than 38 mph. It has no “eye”(the calm area in the center of the storm) and does not typically have the organization or the spiral shape of more powerful storms.

**Tropical Storm** – An organized system of strong thunderstorms with a defined surface circulation and maximum sustained wind between 39 to 73 mph.

**Utility Systems** – One of the lifeline systems categories. This category includes potable water, wastewater, oil, natural gas, electric power facilities and communication systems.

**United States Department of Agriculture (USDA)** – A department of the United States government that manages various programs related to food, agriculture, natural resources, rural development and nutrition.

**Vulnerability** – Description of how exposed or susceptible an asset is to damage. This value 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 affects.

**Vulnerability Assessment** – Evaluation of 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 occurrences on the existing and future built environment.

**Watershed** – Area of land that drains down gradient (from areas of higher land to areas of lower land) to the lowest point; a common drainage basin. The water moves through a network of drainage pathways, both underground and on the surface. Generally, these pathways converge into streams and rivers, which become progressively larger as the water moves downstream, eventually reaching an estuary, lake, or ocean.

**Wildfire** – A wildfire is any uncontrollable fire that occurs in combustible vegetation and quickly spreads into dry vegetation, heavily wooded areas, and residential structures.

**Windstorm** – A storm characterized by high wind velocities.

**Wind Chill Index (WCI)** – The temperature your body feels when the air temperature is combined with the wind speed. It is based on the rate of heat loss from exposed skin caused by the effects of wind and cold.

**Winter Storm** – A winter storm is an event in which the dominant varieties of precipitation are forms that only occur at cold temperatures, such as snow or sleet, or a rainstorm where ground temperatures are cold enough to allow ice to form. A winter storm can range from moderate snow over a few hours to blizzard conditions with high winds, or can be freezing rain or sleet, heavy snowfall with blinding wind-driven snow and extremely cold temperatures that last several days. Winter storms vary in size from affecting several states to affecting only a small part of a single state.

**Zone** – A geographical area shown on a National FIRM that reflects the severity or type of flooding in the area.

**Zoning Ordinance** – Designation of allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components: a zoning text and a zoning map.