

Appendix A

Glossary

100-year flood or 1% flood: The flood elevation that has a 1% chance of being equaled or exceeded each year (see also BFE, SFHA). Thus, the 1% 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 and to determine the need for flood insurance.

500-year flood or 0.2% flood: The flood elevation that has a .02% chance of being equaled or exceeded each year.

Acquisition: Local governments can acquire lands in high hazard areas through conservation easements, purchase of development rights, or outright purchase of property.

Acquisition of hazard prone structures: Local governments can acquire lands in high hazard areas through conservation easements, purchase of development rights, or outright purchase of property.

All-hazards approach: Integrated hazard mitigation strategy that incorporates planning for and consideration of all potential natural and manmade hazard threats.

Asset: Any manmade or natural feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.

Base flood: Flood that has a 1% 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.

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

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, contents, and function) and protection of human life.

Benefit-cost analysis (BCA): Benefit-cost analysis is a systematic, quantitative method of comparing the projected benefits to projected costs of a project or policy. It is used as a measure of cost effectiveness.

Biological event: An occurrence of a biological substance that poses a threat to the health of living organisms, primarily that of humans. This can include medical waste or samples of a microorganism, virus or toxin (from a biological source) that can impact human health. It can also include substances harmful to animals.

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.

CFR: Code of Federal Regulation

Contour: A line of equal ground elevation on a topographic map.

Critical facility: Facilities that are vital to the health and welfare of the population and that are especially important following disasters. Critical facilities include, but are not limited to, shelters, police and fire facilities, and hospitals.

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

DFRIM: Digital Flood Insurance rate Map

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.

Disaster Mitigation Act of 2000 (DMA 2000): DMA 2000 (Public Law 106-390) was signed into law on October 10, 2000. This legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur.

Drought: The consequence of anticipated natural precipitation reduction over an extended period of time, usually a season or more in length.

Environmental disaster: An incident which causes harm or negative consequences to the natural environment due to human activity. Environmental disasters may be exacerbated by natural phenomenon, but they do not originate from nature.

Ward County, ND Hazard Mitigation Plan
Appendix A: Glossary of Terms

Erosion: Wearing away of the land surface by detachment and movement of soil and rock fragments, during a flood or storm or over a period of years, through the action of wind, water, or other geologic processes.

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

Federal Emergency Management Agency (FEMA): Independent agency created in 1979 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery. The agency was later merged into the US Department of Homeland Security.

Federal Insurance Administration: A division of FEMA responsible for administering the flood insurance aspects of the NFIP.

Flash flood: A flash flood is a specific type of flood that appears and moves quickly across the land with little warning, making it very dangerous. A flash flood is the fastest-moving type of flood. It happens when heavy rain collects in a stream or gully, turning the normally calm area into an instant rushing current.

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 of runoff of surface water from any source.

Flood boundary and floodway map: A flood plain management map issued by FEMA that shows, based on detailed and approximate analyses, the boundaries of the 1% and .02% floodplains and the 1% floodway.

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 fringe: That portion of the 1% floodplain outside the floodway in which total encroachment is permissible.

Flood Hazard Boundary Map (FHBM): The initial insurance map issued by FEMA that identifies approximate areas of 1% flood hazard in a community.

Flood Insurance Rate Map (FIRM): Also referred to as **DFIRM (Digital Flood Insurance Rate Map)**; the official map of a community for which FEMA has delineated both the special hazard areas (1% floodplain) and the risk premium zones applicable to the community.

Flood Insurance Study (FIS): A study that is produced by FEMA and evaluates flood hazard areas, describes its causes, and identifies flood protection measures. Depending on the area studied, the FIS may include water surface elevations. An FIS is developed in conjunction with a Flood Insurance Rate Map (FIRM).

Floodplain: Any land susceptible to inundation by floodwaters from any source.

Floodproofing: Any combination of structural and non-structural additions, changes or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

Fujita scale: The Fujita Scale measures tornado damage severity by assigning numerical values based on wind speeds. Tornadoes are categorized from 0 to 5 depending on wind speeds. The letter "F" often precedes the numerical value. As with the Fujita scale, the **Enhanced Fujita Scale** remains a damage scale and only a proxy for actual wind speeds. While the wind speeds associated with the damage listed have not undergone empirical analysis (e.g., detailed physical or any numerical modeling) owing to excessive cost, the wind speeds were obtained through a process of expert elicitation based on various engineering studies since the 1970s as well as from field experience of meteorologists and engineers. In addition to damage to structures and vegetation, radar data, photogrammetry, and cycloidal marks (ground swirl patterns) may be utilized when available.

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.

Hazard: A source of potential danger or adverse conditions.

Hazard identification: The process of identifying hazards that threaten an area.

Hazard mitigation: Sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.

Hazard Mitigation Grant Program (HMGP): Provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

Hazard profile: A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent.

Hazardous materials incident: A biological, chemical or physical agent with the potential to cause harm to the environment or people on its own or when combined with other factors or materials.

Ward County, ND Hazard Mitigation Plan
Appendix A: Glossary of Terms

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

Heat index: Heat stress can be indexed by combining the effects of temperature and humidity. The National Weather Service will initiate alert procedures such as special weather statements when the heat index is expected to exceed 105°F-110°F (depending on local climate), for at least two consecutive days.

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

Infrastructure: Refers to 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, piers, and regional dams.

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.

Lightning: An atmospheric discharge of electricity accompanied by thunder, which typically occurs during thunderstorms, and sometimes during volcanic eruptions or dust storms. In the atmospheric electrical discharge, a leader of a bolt of lightning can travel at speeds of 130,000 MPH, and can reach temperatures approaching 54,000 °F, hot enough to fuse silica sand into glass.

Local Emergency Planning Committee (LEPC): LEPCs consist of community representatives and are appointed by the State Emergency Response Commissions (SERCs), as required by Superfund Amendments and Reauthorization Act (SARA), Title III. They develop an emergency plan to prepare for and respond to chemical emergencies. They are also responsible for coordinating with local facilities to find out what they are doing to reduce hazards, prepare for accidents, and reduce hazardous inventories and releases. The LEPC serves as a focal point in the community for information and discussions about hazardous substances, emergency planning, and health and environmental risks.

Loss of Function: Damage to a facility or interruption of service to a point that the facility or service can no longer provide a public benefit. Most often associated with utilities and critical service providers, such as police and fire facilities.

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

Ward County, ND Hazard Mitigation Plan
Appendix A: Glossary of Terms

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

Mitigate: To cause something to become less harsh or hostile, to make less severe or painful.

Mitigation: The process of reducing the severity of the impact of natural hazards through planning. Each hazard requires a specific type of mitigation. In some cases, we can use engineering solutions (such as an earthquake-resistant building) to at least temporarily reduce the impact of a natural hazard. In other cases, the only form of mitigation that is guaranteed to be successful is to limit or not allow human activities where the hazard occurs (such as in floodplains).

Mitigation plan: A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in the state and includes a description of actions to minimize future vulnerability to natural hazards.

Monitoring: periodic collection of data to study changes in an environment over time.

National Fire Danger Rating System (NFDRS): A set of computer programs and algorithms that allow land management agencies to estimate today's or tomorrow's fire danger for a given rating area. NFDRS characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period. Calculations of fire behavior are based on fuels, topography and weather, or what is commonly called the fire triangle.

National Flood Insurance Program (NFIP): A federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

Natural disaster: A natural hazard event, such as a flood or tornado, which results in widespread destruction of property or caused injury and/or death.

NFIP: National Flood Insurance Program

NOAA: National Oceanic and Atmospheric Administration

PA: Public Assistance

Palmer Drought Index: This index was developed by Wayne Palmer in the 1960s and uses temperature and rainfall information in a formula to determine dryness. It has become the semi-official drought index. The Palmer Index is most effective in determining long term drought.

PDA: Preliminary Damage Assessment

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

Pre-Disaster Mitigation Program (PDM): Authorized by Section 204 of the Robert T. Stafford Disaster Assistance and Emergency Relief Act (Stafford Act), 42 USC, as amended by 102 of the Disaster Mitigation Act Mitigation Fund to assist States and local governments (to include Indian Tribal governments) in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program.

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

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

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

Regulatory Power: Local jurisdictions have the authority to regulate certain activities in their jurisdiction. With respect to mitigation planning, the focus is on such things as regulating land use development and construction through zoning, subdivision regulations, design standards, and floodplain regulations.

Repetitive Flood Claims (RFC): The Repetitive Flood Claims (RFC) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108-264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S. C. 4001, et al).

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 \$1,000.00 each have been paid within any 10-year period of time since 1978.

Response: The actions taken during an event to address immediate life and safety needs and to minimize further damage to properties.

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 management: the process by which the results of an assessment are integrated with political, economic, and engineering information to establish programs, projects, and policies for reducing future losses and dealing with the damage after it occurs.

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.

Scour: Removal of soil or fill material by the flow of floodwaters. 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.

Severe Repetitive Loss (SRL): The Severe Repetitive Loss (SRL) grant program was authorized by the Bunning-Bureuter-Blumenaure Flood Insurance Reform Act of 2004, which amended the National Flood Insurance Act of 1968 to provide funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss (SRL) structures insured under the National Flood Insurance Program (NFIP).

Special Flood Hazard Area (SFHA): A high-risk area defined as any land that would be inundated by a flood having a 1% chance of occurring in any given year (see also BFE, 100-year flood). The SFHA is commonly identified on NFIP Flood Insurance Rate Maps (FIRMs). A structure located within a SFHA shown on a FIRM has a 26% chance of suffering flood damage during the term of a 30-year mortgage.

Stafford Act: The Robert t. Stafford Disaster Relief and Emergency Act, P.L. 100-107 was signed into law November 23, 1988 and amended the Disaster Relief Act of 1974, P.L. 23-288. 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 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.

Substantial damage: Damage of any origin sustained by an obstruction whereby the cost of restoring the obstruction to its before-damage condition would equal or exceed 50 percent of the market value of the obstruction before the damage occurred.

Substantial improvement: Any reconstruction, rehabilitation, addition, or other improvement of an obstruction, the cost of which equals or exceed 50% of the obstruction before “start of construction” of the improvement. This includes obstructions which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either (1) any project for improvement of a structure or other obstruction to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living condition, or (2) any alteration of a “historic structure,” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

Technological disaster: A disaster that results from a technological or man-made hazard event.

Technological hazard: A hazard that originates in accidental or intentional human activity (oil spill, chemical spill, building fires, terrorism, etc.).

Topographic map: A map that shows natural features and indicates the physical shape of land using contour lines. These maps may also include manmade features.

Tornado: A violently rotating column of air extending ground-ward.

Tornado and Storm Research Organization (TORRO) Scale: The scale extends from H0 to H10 with its increments of intensity or damage potential related to hail size (distribution and maximum), texture, numbers, fall speed, speed of storm translation, and strength of the accompanying wind. This scale is often used in conjunction with the **NOAA hail intensity scale**, which focuses on diameter and description (compared to objects such as coins) for the purpose of measuring hail events.

UHMA: Unified Hazard Mitigation Assistance Program

USACE: United States Army Corps of Engineers

USDA: United States Department of Agriculture

US Drought Monitor: Provides a consolidated depiction of national drought conditions based on a combination of drought indicators and field reports.

USGS: United States Geological Survey

Vulnerability: Describes how exposed or susceptible to damage an asset is. Vulnerability depends upon 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.

Vulnerability assessment: the qualitative or quantitative examination of the exposure of some component of society, economy, or the environment to natural hazards.

Wildfire An uncontrollable fire spreading through vegetative fuels, exposing and possibly consuming structures.

Wind: The horizontal motion of the air past a given point. Winds begin with differences in air pressures. Pressure that's higher at one place than another sets up a force pushing from the high toward the low pressure. The greater the difference in pressures, the stronger the force. The

Ward County, ND Hazard Mitigation Plan
Appendix A: Glossary of Terms

distance between the area of high pressure and the area of low pressure also determines how fast the moving air is accelerated. Meteorologists refer to the force that starts the wind flowing as the "pressure gradient force." High and low pressures are relative. There's no set number that divides high and low pressure. Wind is used to describe the prevailing direction from which the wind is blowing with the speed given usually in miles per hour or knots.

Zone A (Unnumbered): Special Flood Hazard Areas subject to inundation from the 1% flood. Because detailed hydraulic analyses have not been performed, no base flood elevations or depths are shown. Mandatory flood insurance purchase requirements apply.

Zone AE and A1-30: Special Flood Hazard Areas subject to inundation by the 1% flood determined in a Flood Insurance Study by detailed methods. Base flood elevations are shown within these zones. Mandatory flood insurance purchase requirements apply. (Zone AE is used on new and revised maps in place of Zones A1-30.)

Zone AH: Special Flood Hazard Areas subject to inundation by 1% shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base flood elevations derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements apply.

Zone AO: Special Flood Hazard Areas subject to inundation by 1% shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone B, C, and X: Areas that have been identified in the community flood insurance study as areas of moderate or minimal flooding from a principal source in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Flood insurance is available in participating communities but is not required by regulation in these zones. (Zone X is used on new and revised maps in place of Zones B and C.)

Zone D: Unstudied areas where flood hazards are undetermined but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.