

Map
MODERNIZATION
Federal Emergency Management Agency



FEMA's Flood Hazard Mapping Program

**Guidelines and
Specifications**
for
**Flood Hazard
Mapping Partners**

Glossary



FEDERAL EMERGENCY MANAGEMENT AGENCY

www.fema.gov/fhm/dl_cgs.shtm

April 2003

Glossary of Terms

The terms listed below are used throughout this document and in other FEMA Flood Hazard Mapping Program documents.

0.2-Percent-Annual-Chance Flood—The flood that has a 0.2-percent chance of being equaled or exceeded in any given year.

1-Percent-Annual-Chance Flood— The flood that has a 1-percent chance of being equaled or exceeded in any given year.

2-Percent-Annual-Chance Flood—The flood that has a 2-percent chance of being equaled or exceeded in any given year.

10-Percent-Annual-Chance Flood—The flood that has a 10-percent chance of being equaled or exceeded in any given year.

10-Year Flood—See 10-Percent-Annual-Chance Flood.

50-Year Flood—See 2-Percent-Annual-Chance Flood.

100-Year Flood—See 1-Percent-Annual-Chance Flood.

500-Year Flood—See 0.2-Percent-Annual-Chance Flood

Accuracy—The degree of correctness attained in a measurement.

Alluvial Fan—The sedimentary deposit located at a topographic break, such as the base of a mountain front, escarpment, or valley side, that is composed of streamflow and/or debris flow sediments and has the shape of a fan, either fully or partially extended. These characteristics can be categorized by composition, morphology, and location.

Alluvial Fan Flooding—The flooding that occurs on an alluvial fan as defined above. The term *alluvial fan flooding* encompasses both active alluvial fan flooding and inactive alluvial fan flooding.

Alluvial Fan Flooding (Active)—Flooding that occurs only on alluvial fans and is characterized by flow path uncertainty so great that this uncertainty cannot be set aside in realistic assessments of flood risk or in the reliable mitigation of the hazard. An active alluvial fan flooding hazard is indicated by three related criteria: (1) flow path uncertainty

below the hydrographic apex; (2) abrupt deposition and ensuing erosion of sediment as a stream or debris flow loses its ability to carry material eroded from a steeper, upstream source area; and (3) an environment where the combination of sediment availability, slope, and topography creates an ultrahazardous condition for which elevation on fill will not reliably mitigate the risk.

Alluvial Fan Flooding (Inactive)—Flooding that is similar to traditional riverine flood hazards, but occurs only on alluvial fans. Inactive alluvial fan flooding is characterized by flow paths with a higher degree of certainty in realistic assessments of flood risk or in the reliable mitigation of the hazard. Unlike active alluvial fan flooding hazards, an inactive alluvial fan flooding hazard is characterized by relatively stable flow paths. However, like areas of active alluvial fan flooding, inactive alluvial fan flooding, may be subject to sediment deposition and erosion, but to a degree that does not cause flow path instability and uncertainty.

Alphanumeric Data—Data consisting of both letters and numbers, and possibly symbols such as punctuation marks.

American Standard Code for Information Interchange (ASCII)—A popular standard for the exchange of alphanumeric data.

Appeal—The formal objection to proposed or proposed modified Base Flood Elevations (BFEs), submitted by a community official or an owner or lessee of real property within the community during the statutory 90-day appeal period. An appeal must be based on data that show the proposed or proposed modified BFEs are scientifically or technically incorrect.

Appeal Period—The statutory period, beginning on the date of second publication of proposed BFEs and/or proposed modified BFEs in the local newspaper, during which community officials or owners or lessees of real property within the community may appeal proposed or proposed modified BFEs by submitting data to show those BFEs are scientifically or technically incorrect.

Application/Certification Forms—The comprehensive, easy-to-use forms that were implemented by FEMA in October 1992 to facilitate the processing of requests for revisions or amendments to National Flood Insurance Program maps.

Approved Model—A numerical computer model that has been accepted by FEMA for use in performing new or revised hydrologic or hydraulic analyses for National Flood Insurance Program purposes. All accepted models must meet the requirements set forth in Subparagraph 65.6(a)(6) of the National Flood Insurance Program regulations.

Approximate Study—A flood hazard study that results in the delineation of floodplain boundaries for the 1-percent-annual-chance (100-year) flood, but does not include the determination of BFEs or flood depths.

Area—The level of spatial measurement referring to a two-dimensional defined space

Area Not Included (ANI)—An area that is excluded from the mapping for a subject community because (1) the area is under the jurisdiction of another community and is shown on the mapping for that community, or (2) access to the area is limited for security reasons (e.g., military installations).

Artwork—The various layers prepared by the cartographic staff that are components of the manually produced Flood Insurance Rate Map and/or Flood Boundary and Floodway Map.

As-Built—A term used to describe mapping and mapping-related data that reflect conditions within a floodplain based on flood-control and other structures being completed.

Assistance Officer (AO) —The FEMA Regional Office staff person that is responsible for the administration of funding and funding-related activities for a specific contract or agreement.

Area of Special Consideration (ASC) —The name given to a special floodprone area around closed-basin lakes. The ASC is an area that is known to be subject to flooding, but the percent chance of the area being flooded in any given year is not defined.

Attribute—The descriptive characteristic or quality of a feature. An attribute value is a measurement assigned to an attribute for a feature instance.

Backwater—Water backed up or retarded in its course as compared with its normal or natural condition of flow.

Base Flood—The flood that has a 1-percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE) —The elevation of a flood having a 1-percent chance of being equaled or exceeded in any given year.

Base Map—The map of the community that depicts cultural features (e.g., roads, railroad, bridges, dams, culverts), drainage features, and corporate limits.

Batch Processing—The system by which computers process, without operator intervention, all input for an application at one time to produce the desired output, even though input data might have been collected periodically.

Bench Mark (BM)—A permanent monument established by any Federal, State, or local agency, whose elevation and description are well documented and referenced to the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988.

Bit—An abbreviation for binary digit, a number that can have only a value of 0 or 1.

Block—A group of bytes treated as one unit of information, sometimes called a physical record.

Buffer Zone—An area of specified distance (radius) around a map item or items.

Building—See Structure.

Byte—A group of bits that can be stored and retrieved as a unit.

Cell—The defined geometric shape that stores data or defines an area that is labeled. The most common mapping cell is a square. Also the basic element of spatial information in raster data structures.

Centroid—The point interior to a polygon whose coordinates are the averages of the corresponding coordinates for all points included in the polygon.

Channel—A naturally or artificially created open conduit that periodically or continuously contains moving water or which forms a connecting link between two bodies of water.

Chief Executive Officer (CEO)—The official of a community who has the authority to implement and administer laws, ordinances, and regulations for that community.

Choropleth Map—A map with shaded or hatched areas. (Choro = place and pleth = value.)

Coastal Barrier Resources System (CBRS)—A system of protected coastal areas (including the Great Lakes). The areas within the CBRS are defined as depositional geologic features consisting of unconsolidated sedimentary materials; subject to wave, tidal, and wind energies; and protecting landward aquatic habitats from direct wave attack.

Coastal Flooding—Flooding that occurs along the Great Lakes, the Atlantic and Pacific Oceans, and the Gulf of Mexico.

Coastal High Hazard Area—An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high-velocity wave actions from storms or seismic sources.

Code of Federal Regulations (CFR)—The codification of the general and permanent rules published in the *Federal Register* by the Executive Departments and agencies of the Federal

Government. National Flood Insurance Program regulations are printed in Parts 59 through 77 of Title 44 of the CFR.

Community—Any State or area or political subdivision thereof, or any Indian tribe or authorized tribal organization, or Alaska Native village or authorized native organization, which has the authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

Community Assistance Call (CAC)—A telephone call made by FEMA Regional Office staff or the State National Flood Insurance Program Coordinator to a community to supplement or replace a Community Assistance Visit.

Community Assistance Program (CAP)—A FEMA program, funded by the National Flood Insurance Program (NFIP), under which cost-shared funds are provided to States to provide technical assistance support to communities participating in the NFIP. The purpose of the CAP is to identify, prevent, and resolve floodplain management issues in NFIP participating communities before a flood occurs, or before poor performance or noncompliance warrant enforcement and intervention by FEMA.

Community Assistance Visit (CAV)—A visit by FEMA Regional Office staff or the State National Flood Insurance Program Coordinator to a community to assess whether the community's floodplain management program meets National Flood Insurance Program participation requirements.

Community Coordination Meeting—A meeting during which Flood Hazard Mapping Partners discuss plans for a Flood Map Project, interim results of a Flood Map Project, and final results of a Flood Map Project for a particular community or group of communities.

Community Identification Number (CID)—A six-digit code used by FEMA to identify each community that is potentially subject to flood hazards.

Community Information System (CIS)—An Oracle database system used by FEMA to track and report on all communities identified by FEMA as potentially floodprone, especially with regard to mapping actions, including Letters of Map Change, taken by FEMA to identify flood hazards in each community.

Community Rating System (CRS)—A FEMA initiative, established under the National Flood Insurance Program, to recognize and reward communities that have implemented floodplain management measures beyond the minimum required by National Flood Insurance Program regulations. Under the CRS, those communities that choose to participate voluntarily may reduce the flood insurance premium rates for property owners in the community by taking these additional actions.

Compliance Period—The period that begins with the issuance of a Letter of Final Determination and ends when a new or revised Flood Insurance Rate Map becomes effective. During the compliance period, a community must enact and adopt new or revised floodplain management ordinances required for participation in the National Flood Insurance Program.

Computer-Assisted Drafting and Design (CADD)—Software with the capability of assisting the operator with the performance of standard engineering and architecture design functions.

Conditional Letter of Map Amendment (CLOMA)—The FEMA response to a requester who believes his or her proposed structure, when constructed on natural ground at or above the BFE, will be outside the 1-percent-annual-chance floodplain. CLOMAs may not be issued for unimproved or undeveloped property.

Conditional Letter of Map Revision (CLOMR)—The FEMA response to a community request for FEMA's comment on proposed alterations to the floodplain conditions within that community. The CLOMR describes the effect of the proposed project, if constructed as proposed, on the effective FIRM, FBFM, and/or FIS report. A CLOMR often contains detailed information on conditions that must be met by a requester before FEMA will issue a final determination regarding revising the FIRM, FBFM, and/or FIS report.

Conditional Letter of Map Revision Based on Fill (CLOMR-F)—The FEMA response to a community request for FEMA's comment on the effect(s) that a proposed project involving the placement of earthen fill within the SFHA will have on the Special Flood Hazard Area designation for one or more legally defined parcels of land or one or more proposed structures.

Consultation Coordination Officer (CCO)—The individual on the FEMA Regional Office staff who is responsible for coordinating with a community on activities related to National Flood Insurance Program.

Contracting Officer (CO)—The FEMA Headquarters staff person that is responsible for the administration of funding and funding-related activities for a specific contract or agreement.

Control Point—Any station in a horizontal or vertical control network that is identified in a dataset of photograph and used for correlating the data shown in the data set or photograph.

Cooperating Technical Partners (CTP) Initiative—An innovative FEMA program to create partnerships between FEMA and participating National Flood Insurance Program communities, regional agencies, and State agencies that have the interest and capability to become more active participants in the FEMA Flood Hazard Mapping Program.

Coordinate Geometry (COGO)—The use of bearings and distances, azimuths, and coordinate locations to enter and describe graphic data. COGO is usually used for civil engineering and survey applications.

Coordinate Pair—A set of cartesian coordinates describing the location of a point, line or area (polygon) feature in relation to the common coordinate system of the data base.

Coordinate System—A particular kind of reference frame or system, such as plane rectangular coordinates or spherical coordinates, which use linear or angular quantities to designate the position of points within that particular reference frame or system (e.g., State Plane).

Countywide Format—A format used by FEMA to show flooding information for the entire geographic area of a county, including the incorporated communities in the county, on one map and in one report.

Cultural Features—Railroads, airfields, streets, roads, highways, levees, dikes, seawalls, dams and other flood-control structures, and other prominent manmade features and landmarks shown on a National Flood Insurance Program map.

Database—A collection of information related by a common fact or purpose.

Database Management System (DBMS) —A systematic approach to maintaining, accessing, and manipulating data base files. A DBMS may consist of a single program or a collection of task-specific programs.

Data Capture—The series of operations required to encode data in a computer-readable form (digitizing).

Data Layer—Refers to data having similar characteristics being contained in the same plane or overlay (e.g., roads, rivers) of a Geographic Information System. Usually information contained in a data layer is thematically related and is designed to be used with other layers.

Dataset or Datafile—A named collection of logically related data records arranged in a prescribed manner. The physical set of data of one data type being referred to or being used in the context of a data processing operation.

Detailed Study—A flood hazard study that, at a minimum, results in the delineation of floodplain boundaries for the 1-percent-annual-chance (100-year) flood and the determination of BFEs or flood depths.

Differential Global Positioning System (DGPS)—Global Positioning System (GPS) positioning techniques that use two or more GPS receivers, with a base station on a position of known location, and one or more roving receivers taking GPS measurements at unknown locations.

Digital Data—Data displayed, recorded, or stored in binary notation.

Digital Elevation Model (DEM)—A file with terrain elevations recorded for the intersection of a fine-grained grid and organized by quadrangle as the digital equivalent of the elevation data on a topographic base map.

Digital Flood Insurance Rate Map (DFIRM)—A Flood Insurance Rate Map that has been prepared as a digital product, which may involve converting an existing manually produced FIRM to digital format, or creating a product from new digital data sources using a Geographic Information System environment. The DFIRM product allows for the creation of interactive, multi-hazard digital maps. Linkages are built into an associated database to allow users options to access the engineering backup material used to develop the DFIRM, such as hydrologic and hydraulic models, Flood Profiles, data tables, Digital Elevation Models, and structure-specific data, such as digital elevation certificates and digital photographs of bridges and culverts.

Digital Flood Insurance Rate Map–Digital Line Graph (DFIRM-DLG)—The product created by extracting the flood risk thematic data from the DFIRM. The format of this product is the U.S. Geological Survey Digital Line Graph Level 3 optional format. The DFIRM-DLG does not include base map information, or graphic data required to create a FIRM in hardcopy format. The DFIRM-DLG is intended to be the primary means of transferring flood risk data depicted by FIRMs to Geographic Information Systems through a public domain data exchange format. The DFIRM-DLGs are tiled the to U.S. Geological Survey 1:24,000 scale topographic map series.

Digital Flood Insurance Rate Map (DFIRM) Spatial Database—A database designed to facilitate collecting, storing, processing, and accessing data developed by FEMA, enabling Mapping Partners to share the data necessary for the DFIRM production and conversion process. Where possible, all mapping and engineering data elements are linked to physical geographic features and georeferenced. The use of a Geographic Information System as a component of the DFIRM spatial database provides the ability to georeference and overlay the mapping and engineering data, allowing the database to support a wide variety of existing and forthcoming FEMA engineering and mapping products.

Digital Line Graph (DLG)—A computer file format for mapping data that provides a topological structure to describe points, lines, and polygons. FEMA has adopted the U.S. Geological Survey (USGS) Digital Line Graph Level 3 optional format for National Flood Insurance Program mapping and engineer requirements. A DLG may contain lists of point coordinates describing boundaries, drainage lines, transportation routes, and other linear features, which are organized by USGS quadrangle areas. These data are the digital equivalent of the linear hydrographic and cultural data on a topographic base map. The flood risk thematic layers developed by FEMA will fit the quadrangle as an overlay.

Digital Line Graph Level 3 (DLG-3)—Data files that are fully topologically structured and are designed to be integrated into Geographic Information Systems.

Digital Orthophoto Quadrangle (DOQ)—Photographic maps distributed by the U.S. Geological Survey. A DOQ is an aerial photograph that is adjusted to remove distortions caused by variations in terrain and the camera lens to produce a photograph that displays features in their planimetrically correct location. This term is sometimes used loosely to mean any photographic map produced by this process.

Digital Terrain Model (DTM)—A land surface represented in digital form by an elevation grid or lists of three-dimensional coordinates.

Digitizing—A process of converting an analog image or map into a digital format usable by a computer.

Disaster Field Office (DFO)—The term used to describe the office that is the central coordinating point for all response and recovery efforts by State and Federal agencies as a result of widespread damage caused by a disaster. The DFO does not directly serve the public, but functions as a headquarters from which emergency managers operate.

Drawing Exchange File (DXF)—A commonly used format for the exchange of graphic data.

Edge Matching—The comparison and graphic adjustment of features to obtain agreement along the edges of adjoining map sheets.

Effective Date—The date on which the National Flood Insurance Program Map for a community becomes effective and all sanctions of the National Flood Insurance Program apply.

Effective Map—The National Flood Insurance Program map issued by FEMA that is in effect as of the date shown in the title block of the map as “Effective Date,” “Revised,” or “Map Revised.”

Elevation Reference Mark (ERM) — Temporary vertical control monument established by a FEMA Study Contractor during the performance of a study or restudy.

Elevation Reference Point (ERP)—A temporary mark, the elevation of which is determined by levels or Differential Global Positioning System positioning from a bench mark or

elevation reference mark. For purposes of the National Flood Insurance Program, ERPs are submitted with copies of field notes or a documented summary of procedures.

Emergency Phase—The phase of the National Flood Insurance Program that was implemented, on an emergency basis, to provide a first-layer amount of insurance on all insurable structures before the effective date of the initial Flood Insurance Study and Flood Insurance Rate Map.

Emergency Preparedness and Response Directorate—The component of the U.S. Department of Homeland Security that, among other responsibilities, administers the National Flood Insurance Program.

Emergency Program—See **Emergency Phase**.

Encroachment—Construction, placement of fill, or similar alteration of topography in the floodplain that reduces the area available to convey floodwaters.

Engineering Study Data Package (ESDP) Project—A project designed to maintain archival engineering data and other pertinent flood hazard data in hardcopy and electronic form and to distribute these data to interested parties.

Engineering Study Data Package Facility (ESDPF) —The facility, maintained for FEMA by a contractor, where archival engineering data and other pertinent flood hazard data, are prepared in final form ready for distribution to interested parties.

Exporting—The process of transferring digital data or software from one system to another system.

Existing Data Study (XDS)—This term is used to describe the process by which FEMA uses previously published flood hazard information to prepare a Flood Insurance Study report and Flood Insurance Rate Map for a community that does not have a FIRM using previously published flood hazard information. This flood hazard information comes from reports prepared by Federal agencies for purposes other than the National Flood Insurance Program, such as Flood Hazard Analyses Reports and Floodplain Information reports; other engineering reports prepared by Federal, State, or local agencies; or Flood Insurance Study reports and maps issued by FEMA for adjacent communities (especially previously unincorporated areas of a county).

Existing Data Restudy (RXDS)—An Existing Data Study for a community that is already participating in the Regular Phase of the National Flood Insurance Program without a flood map.

External Data Request (EDR)—A request from a State, community, or other non-FEMA source for the archived technical and administrative support data developed and maintained by FEMA for the National Flood Insurance Program.

Extraterritorial Jurisdiction (ETJ) Limits—Areas outside of a community's corporate limits where the community has authority to regulate zoning and issue building permits.

Federal Contractors—The five Federal agencies that conduct flood studies, under contract with FEMA, for the Limited Map Maintenance Program: U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Soil Conservation Service, U.S. Bureau of Reclamation, and Tennessee Valley Authority.

Federal Emergency Management Agency (FEMA)—The component of the Emergency Preparedness and Response Directorate within the U.S. Department of Homeland security that oversees the administration of the National Flood Insurance Program.

FEMA Levee Inventory System (FLIS)—A Web-based database and information retrieval system used by FEMA to collect and maintain information on structures shown on effective and soon-to-be-effective Flood Insurance Rate Maps, including levees, dikes, floodwalls, and road and railroad embankments.

Federal Register—The document, published daily by the Federal Government, that presents regulation changes and legal notices issued by Federal agencies. FEMA publications in the Federal Register include Proposed, Interim, and Final Rules for BFE determinations; Compendium of Flood Map Changes published twice each year; and Final Rules concerning community eligibility for the sale of flood insurance.

Fee-Charge System Administrator—The individual that is responsible for processing and maintaining records of payments submitted to the National Flood Insurance Fund for conditional and final map change requests and requests for technical and administrative support data.

FEMA Lead—FEMA staff member (usually the Regional Project Officer or the Flood Map Production Coordination Contractor Project Officer at FEMA Headquarters) that oversees project scope, schedule, and budget, and coordinate the Project-related activities of the various Flood Hazard Mapping Partners.

Fill—Soil that is brought in to raise the level of the ground. Depending on where the soil is placed, fill may change the flow of water or increase flood elevations. Fill may be used to elevate a building to meet National Flood Insurance Program requirements. Sometimes fill is combined with other methods of elevation such as pilings or foundation walls. Placement of fill requires a local permit from the community.

Fiscal Year—The 12-month period that begins on October 1 and ends on September 30.

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 or (2) the unusual and rapid accumulation or runoff of surface waters from any source.

Flood Boundary and Floodway Map (FBFM)—The floodplain management map issued by FEMA that depicts, based on detailed flood hazard analyses, the boundaries of the 1-percent-annual-chance (100-year) and the 0.2-percent-annual-chance (500-year) floodplains and, when appropriate, the regulatory floodway. The FBFM does not show flood insurance risk zones or BFEs.

Flood-Control Storage—Storage of water in reservoirs to abate flood damage.

Flood Elevation Determination Docket (FEDD) — A file maintained by FEMA that includes all correspondence between FEMA and the community concerning a flood study; reports of meetings held among FEMA representatives, community representatives, the State NFIP Coordinator, private citizens, FEMA and community contractors, or other interested parties; relevant publications (e.g., newspaper notices, Federal Register notices); Letter of Final Determination; a copy of the Flood Insurance Study report; and a copy of the Flood Insurance Rate Map and FBFM.

Floodflow-Frequency Curve—A graph showing the number of times per year on the average that floods of certain magnitudes are equaled or exceeded.

Flood Hazard Analyses Report (FHAR) — A flood hazard report prepared by the Natural Resources Conservation Service (formerly, the U.S. Soil Conservation Service) for purposes other than the National Flood Insurance Program.

Flood Hazard Boundary Map (FHBM)—The initial insurance map issued by FEMA that identifies, based on approximate analyses, the areas of the 1-percent-annual-chance (100-year) flood hazard within a community.

Flood Hazard Mapping Program—The program undertaken by FEMA to conduct FISs and prepare reports and maps delineating flood hazards in floodprone communities throughout the United States.

Flood Insurance Rate Map (FIRM)—The insurance and floodplain management map produced by FEMA that identifies, based on detailed or approximate analyses, the areas subject to flooding during a 1-percent-annual-chance (100-year) flood event in a community. Flood insurance risk zones, which are used to compute actuarial flood insurance rates, also are shown. In areas studied by detailed analyses, the FIRM shows Base Flood Elevations (BFEs) to reflect the elevations of the 1-percent-annual-chance flood. For many communities, when detailed analyses are performed, the FIRM also may show areas inundated by 0.2-percent-annual-chance (500-year) flood and regulatory floodway areas.

Flood Insurance Rate Zones— See Flood Insurance Risk Zones.

Flood Insurance Restudy (RFIS)—A revised study of flood hazards performed for a community that already has an effective FIRM (and, in some cases, FBFM). An RFIS also may be referred to as a “Type 19 RFIS” or a “Type 19 restudy.” FEMA Study Contractors have traditionally performed RFISs. However, communities, regional agencies, and States that are participating in the Cooperating Technical Partner initiative also may perform these types of Flood Map Projects.

Flood Insurance Risk Zones—The zones, also referred to as “risk premium rate zones” and “flood insurance rate zones,” shown on a FIRM or FHBM that are used to determine flood insurance premium rates for properties in the community covered by the FIRM or FHBM. The flood insurance risk zones include Special Flood Hazard Areas (i.e., Zones A, A1-30, AE, A0, A99, AH, AR, AR/A, AR/A1-30, AR/AE, AR/A99, V, V1-30, VE, V0) and areas outside Special Flood Hazard Areas (i.e., Zones B, X, D, M, N, P, E).

Flood Insurance Study (FIS)—The initial study of flood hazards performed for a community that does not have an effective Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM). An FIS also may be referred to as a “Type 15 FIS” or a “Type 15 study.” FEMA Study Contractors have traditionally performed FISs. However, communities, regional agencies, and States that are participating in the Cooperating Technical Partners initiative also may perform these types of Flood Map Projects.

Flood Insurance Study (FIS) Report—A document, prepared and issued by FEMA, that documents the results of the detailed flood hazard assessment performed for a community. The primary components of the FIS report are text, data tables, photographs, and Flood Profiles.

Flood Map Production Coordination Contractor (MCC)—A private-sector engineering firm that, under contract to FEMA, reviews and processes new and revised flood studies, appeals and protests related to the new and revised flood studies, conditional and final map amendments, conditional and final map revisions, and requests for Letters of Determination Review; performs activities related to program development and program support; and maintains regional archives of flood hazard mapping and related data.

Flood Map Project—Any activity undertaken by FEMA or a Flood Hazard Mapping Partner to create a new flood map or update an existing flood map, including detailed studies, approximate studies, and redelineations of floodplain boundaries based on updated topographic information.

Floodplain—Any land area that is susceptible to being inundated by water from any source.

Floodplain Information Report (FPI)—A flood hazard report prepared by a Federal agency (usually, the U.S. Army Corps of Engineers or U.S. Geological Survey) for purposes other than the National Flood Insurance Program.

Floodplain Management—The operation of a program of corrective and preventative measures for reducing flood damage, including, but not limited to, emergency preparedness plans, flood-control works, and floodplain management regulations.

Floodplain Management Regulations—The zoning ordinances, subdivision regulations, building codes, health regulations, special-purpose ordinances, and other applications of enforcement used by a community to manage development in its floodplain areas.

Floodprone Area—See Floodplain.

Floodprone Community—Any community that is subject to inundation by the base (100-year) flood.

Flood Profile—A graph showing the relationship of water-surface elevation to location, with the latter generally expressed as distance above the mouth for a stream of water flowing in an open channel.

Flood Protection System—Those physical works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area subject to a “special flood hazard” and the extent of the depths of the associated flooding. Flood protection systems typically include hurricane tidal barriers, dams, reservoirs, levees, or dikes.

Floodway—See Regulatory Floodway.

Floodway Fringe—The portion of the 1-percent-annual-chance (100-year) floodplain that is not within the regulatory floodway and in which development and other forms of encroachment may be permitted under certain circumstances.

Frame—Refers to the size of a FIRM or FBFM panel as follows: A Frame (28"x21"); B Frame (28"x24"); C Frame (28"x28"); D Frame (28"x32"); E Frame (28"x40").

Freeboard—A factor of safety usually expressed in feet above a flood level for purposes of floodplain management.

Fully Analytical Aerial Triangulation (FAAT)—A process for the extension of horizontal and vertical control whereby the measurements of angles and/or distances on overlapping photographs are related into a spatial solution using the perspective principles of the photographs, obtained totally by computational routines.

Future-Conditions Floodplain or Flood Hazard Area—The land area that would be inundated by the 1-percent-annual-chance (100-year) flood based on future-conditions hydrology.

Future-Conditions Hydrology—The flood discharges associated with projected land-use conditions based on a community’s zoning maps and/or comprehensive land-use plans and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.

Geocoding—The process of associating geographic coordinates or grid cell identifiers to data, points, lines, and shapes.

Geographic Information System (GIS)—A system of computer hardware, software, and procedures designed to support the capture, management, manipulation, analysis, modeling, and display of spatially referenced data for solving complex planning and management problems.

Geographic Resources Analysis and Support System (GRASS)—Geographic Information System software that was developed by the U.S. Army Corps of Engineers and is used by several Federal agencies.

Georeference System—An X,Y or X,Y,Z coordinate system that locates points on the surface of the earth as a reference to points on a map.

Global Positioning System (GPS)—A satellite-based navigation and positioning system that enables horizontal and vertical positions to be determined

Grid—A network of uniformly spaced horizontal and perpendicular lines that enclose an area with an associated value assigned. A defined aggregate spatial object.

Hazard—An event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, and other types of loss or harm.

Hazard Mitigation Grant Program (HMGP)—The program, authorized under Section 404 of the Stafford Act, under which FEMA provides grants to States and local governments to implement long-term hazard mitigation measures after a presidential 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 presidentially declared disaster.

Headquarters (HQ) —The FEMA office in Washington, DC.

Horizontal Control—A network of stations of known geographic or grid positions referred to a common horizontal datum, which control the horizontal positions of mapped features with respect to parallels and meridians, or northing and easting grid lines shown on the map.

Hydraulic Analysis—An engineering analysis of a flooding source carried out to provide estimates of the elevations of floods of selected recurrence intervals.

Hydraulic Computer Model—A computer program that uses flood discharge values and floodplain characteristic data to simulate flow conditions and determine flood elevations.

Hydraulic Methodology—Analytical methodology used for assessing the movement and behavior of floodwaters and determining flood elevations and regulatory floodway data.

Hydrograph—A graph showing stage, flow, velocity, or other properties of water with respect to time.

Hydrologic Analysis—An engineering analysis of a flooding source carried out to establish peak flood discharges and their frequencies of occurrence.

Hydrology—The science encompassing the behavior of water as it occurs in the atmosphere, on the surface of the ground, and underground.

Ice Jam—An accumulation of ice in a stream that reduces the cross-sectional area available to carry streamflow and increases the water-surface elevation of the stream.

Importing—The process of bringing data or software into a dissimilar system.

Initializing—The process of setting program variables to their starting values, commonly zero, at the beginning of a program.

Interior Drainage Systems—Systems associated with levee systems that usually include storage areas, gravity outlets, pumping stations, or a combination thereof.

Island—A closed two-dimensional figure. In a GIS, an island is a unit of land cover lying completely within another land-cover unit.

Kilobyte—A unit of memory representing 1,024 bytes and often designated with the symbol K, as 4Kb or 4 kilobytes. The symbol K is also used to refer to 1,024 words of any specified size.

Layer—The various "overlays" of data, each of which normally deals with one thematic topic. The overlays are registered to each other by the common coordinate system of the database. In a GIS, a layer or a theme represents a specific kind of data.

Legally Defined Parcel of Land—A parcel of land for which a metes and bounds description or a plat has been recorded. Structure may exist on legally defined parcels of land.

Letter of Determination Review (LODR)—A FEMA response to a request from a borrower and lender that FEMA provide its concurrence or disagreement with the lender's determination on whether the borrower's building is in the SFHA shown on the effective National Flood Insurance Program map.

Letter of Final Determination (LFD)—The letter in which FEMA announces its final determination regarding the flood hazard information, including (when appropriate) proposed and proposed modified BFEs, presented on a new or revised FIRM, FIS report, and (when appropriate) FBFM for a particular community. In the LFD, FEMA begins the compliance period and establishes the effective date for the new or revised FIRM, FIS report, and/or

Letter of Map Amendment (LOMA) —An official determination by FEMA that a property has been inadvertently included in an SFHA as shown on an effective FHBM or FIRM and is not subject to inundation by the 1-percent-annual-chance flood. Generally, the property is located on natural high ground at or above the BFE or on fill placed prior to the effective date of the first National Flood Insurance Program map designating the property as within an SFHA. Limitations of map scale and development of topographic data more accurately reflecting the existing ground elevations at the time the maps were prepared are the two most common bases for LOMA requests.

Letter of Map Change—A collective term used to describe official amendments and revisions to National Flood Insurance maps that are accomplished by a cost-effective administrative procedure and disseminated by letter.

Letter of Map Change Revalidation (LOMC-VALID) Letter—A letter issued by FEMA, immediately before the effective date of a revised FIRM, to notify community officials about LOMAs, LOMR-Fs, and LOMRs that will remain in effect after the FIRM is published.

Letter of Map Revision (LOMR)—A letter issued by FEMA to revise the FIRM, FBFM, and/or FIS report for a community to change in BFEs, floodplain and floodway boundary delineations, and coastal high hazard areas.

Letter of Map Revision Based on Fill (LOMR-F)—A Letter of Map Change issued by FEMA when FEMA determines that a legally defined parcel of land or structure has been elevated above the BFE based on the placement of earthen fill after the date of the first National Flood Insurance Program map.

Levee—A manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

Light Detection and Ranging (LIDAR) System—An airborne laser system, flown aboard rotary or fixed-wing aircraft, that is used to acquire x, y, and z coordinates of terrain and terrain features that are both manmade and naturally occurring. LIDAR systems consist of an airborne Global Positioning System with attendant base station(s), Inertial Measuring Unit, and light-emitting scanning laser.

Limited Map Maintenance Program Project Revision (LMMP)—A limited-scope restudy of flood hazards that generally involves a single community and one watercourse. The data submitted to FEMA by the SC for an LMMP are similar in format and level of detail to those submitted for an RFIS.

Line—A level of spatial measurement referring to a one-dimensional defined object having a length, direction, and connecting at least two points.

Local Newspaper—The community newspaper, identified by the CEO or other designated community official, in which FEMA publishes notices at the beginning of a Flood Map Project, at the beginning of the appeal period, and at other times during the processing of a new or revised FIRM when required.

Lot—A parcel of land for which a metes and bounds description or a plat has been recorded and on which one or more structures may be built.

Lowest Adjacent Grade (LAG)—The lowest natural elevation of the ground surface next to a structure.

Lowest Finished Floor Elevation (LFFE)—The lowest floor of the lowest enclosed area (including basement) of a structure.

Manning's n—A coefficient of roughness, used in a formula for estimating the capacity of channel to convey water.

Manufactured Home—Any building that is transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. Park trailers, recreational vehicles, and other similar vehicles are not considered manufactured homes.

Map Amendment—A change to an effective National Flood Insurance Program map that results in the exclusion from the Special Flood Hazard Area of an individual structure or legally defined parcel of land that has been inadvertently included in the Special Flood Hazard Area (i.e., no alterations of topography have occurred since the date of the first National Flood Insurance Program map that showed the structure or parcel to be within the Special Flood Hazard Area.

Map Assistance Center—A FEMA customer service center staffed by Map Specialists that are specially trained to answer specific questions about the status of active and completed studies, restudies, conditional and final map revision requests, and conditional and final map amendment requests; answer questions about technical and administrative support data available from the FEMA archives; link callers with other FEMA service and fax numbers and the FEMA website; and provide information regarding, or copies of, FEMA products, brochures, and publications.

Map Needs Update Support System (MNUSS)—The computerized database system that is used by FEMA and its Flood Hazard Mapping Partners to compile information on mapping needs nationwide collected using the Mapping Needs Assessment Process.

Mapping Activity Statement (MAS)—An agreement signed by FEMA and a participant (community, regional agency, or State agency) in the CTP initiative under which the participant will complete specific mapping activities.

Mapping Needs Assessment Process (MNAP)—The process by which FEMA identifies mapping needs nationwide by contacting States, regional agencies, and mapped participating communities for information; verifies the validity of the identified needs; and compiles information on those needs into a computerized database.

Map Revision—A change to an effective National Flood Insurance Program map that is accomplished by a LOMR or a Physical Map Revision.

Memorandum of Agreement—See Partnership Agreement.

Minimally Floodprone Community—A community that FEMA has determined to be subject to inundation by the 1-percent-annual-chance (100-year) flood, but for which existing conditions indicate that the area is unlikely to be developed in the foreseeable future. The criteria used by FEMA to evaluate a community's development potential are as follows: (1) Floodplains are publicly owned and designed for open space or preservation; (2) Zoning laws, sanitary codes, subdivision regulations, shore land regulations, or community regulations effectively prohibit floodplain development; (3) Surrounding land use or topography effectively limits the development potential; (4) Population is decreasing or stable, and there is no foreseeable pressure for floodplain development; and (5) Floodplains are remote and uninhabited, and future development is unlikely.

Mitigation—A sustained action taken to reduce or eliminate long-term risk to people and property from flood hazards and their effects. Mitigation distinguishes actions that have a long-term impact from those more closely associated with preparedness for, immediate response to, and short-term recovery from specific events.

National Flood Insurance Fund (NFIF) —The fund used as the funding mechanism for the National Flood Insurance Program.

National Flood Insurance Program (NFIP) — Federal Program under which flood-prone areas are identified and flood insurance is made available to the owners of the property in participating communities.

Network Analysis—Analytical technique concerned with the relationships between locations on a network, such as the calculation of optimal routes through road networks, capacities of network systems, best locations for facilities along networks.

Node—A point at which two or more lines meet; called an edge or vertex in graph theory.

Non-Floodprone Community—A community that FEMA has determined not to be subject to inundation by the 1-percent-annual-chance (100-year) flood. The FEMA guidelines employed for determining whether a community is designated as non-floodprone are that all of its SFHAs are less than 200 feet wide and all drain less than 1 square mile, or physiographic features that preclude floodplain development exist in the community.

Non-Participating Community—A community that has been identified by FEMA as being floodprone but has chosen not to participate in the National Flood Insurance Program.

Notice-To-User Revision—A revision made by FEMA to correct a non-technical problem with a published FIS Report, FIRM, or FBFM quickly and inexpensively. These types of revisions are intended solely to correct a noted defect with the product and cannot be used to establish new or revised flood hazard information.

Operating System—The master control program that governs the operation of a computer system, running job entry, input/output services, data management, and supervision or housekeeping.

Otherwise Protected Area (OPA)—An undeveloped coastal barrier within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization, primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes.

Participating Community—Any community that voluntarily elects to participate in the National Flood Insurance Program by adopting and enforcing floodplain management regulations that are consistent with the standards of the National Flood Insurance Program.

Partnership Agreement—An agreement, also referred to as a Memorandum of Agreement, that is signed by FEMA and a community, regional agency, or State agency that wishes to participate in the Cooperating Technical Partners initiative. The Partnership Agreement is a broad statement of principle, emphasizing the value of the National Flood Insurance Program's three components of insurance, floodplain management, and mapping.

Permanent Identifier (PID)—The six-character alphanumeric code used by the National Geodetic Survey to identify control points and stations.

Physical Map Revision (PMR)—A revision made by FEMA to a FIRM, FBFM, or FIS report based on community-supplied data. FEMA issues PMRs when (1) changes resulting from the requested revision are extensive, affecting significant portions of a FIRM panel or multiple FIRM panels; (2) revision will add significant SFHAs to the effective FIRM; or (3) revision will result in an increase in the BFEs and/or regulatory floodway.

Pixel—The smallest discrete element that makes up a digital image. (Short for "picture element".)

Planimetric Map—A map representing only horizontal positions from features represented; distinguished from a topographic map by the omission of relief in measurable form. A planimetrically accurate map shows accurate horizontal distances between features.

Point—A level of spatial measurement that refers to an object that has no dimension.

Point Data—In a vector structure, the data that consist of a single, distinct X,Y coordinate. In a raster structure, the data that consist of single cells.

Polygon—A two-dimensional figure with three or more sides intersecting at a like number of points. (In GIS, a polygon is an area.)

Ponding—The result of runoff or flows collecting in a depression that may have no outlet, subterranean outlets, rim outlets, or manmade outlets such as culverts or pumping stations. Impoundments behind manmade obstructions are included in this type of shallow flooding as long as they are not backwater from a defined channel or do not exceed 3.0 feet in depth.

Position Dilution of Precision (PDOP)—In a study area, an indicator of the positional accuracy that can be derived from the current Global Positioning System satellite geometry, which varies continuously; the smaller the PDOP number, the higher the data quality.

Primary Airport Control (PAC) Stations—The geodetic control station that provides the reference frame for the positioning of all critical features on an airport.

Primary Frontal Dune—A continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms.

Probability Density Function (PDF)—A distribution of probability for a continuous random variable.

Project Officer (PO)—A FEMA Headquarters staff member who performs contract monitoring functions, which include providing technical direction to FEMA contractors, monitoring the progress of contractors' work, and evaluating contractor performance.

Proposed Base Flood Elevations/Depths and Proposed Modified Base Flood Elevations/Depths—Those Base Flood Elevations and base flood depths that FEMA publishes in a local newspaper and in the *Federal Register* at the start of the 90-day appeal period.

Protest—An objection to any information, other than BFEs, shown on an NFIP map that is submitted by community officials or interested citizens through the community officials during the 90-day appeal period.

Q3 Flood Data Product—A digital representation of certain features of the FIRM that is intended for use with desktop mapping and Geographic Information System technology. The Q3 Flood Data product is created by scanning the effective FIRM paper maps and digitizing selected features and lines.

Quadrangle—A U.S. Geological Survey (USGS) topographic map;

Quality Assurance/Quality Control (QA/QC) Reviews—The reviews of the Flood Insurance Study reports, maps, and related products and data performed to ensure compliance with FEMA standards.

Raster—The pattern of horizontal, parallel scan lines comprising the image on a CRT screen, on which each scan line consists of segments varying in intensity.

Record—A group of items in a file treated as a unit.

Recurrence Interval—The average interval of time within which a given flood will be equaled or exceeded once.

Regional Offices (ROs)—The FEMA offices located in Boston, Massachusetts; New York, New York; Philadelphia, Pennsylvania; Atlanta, Georgia; Chicago, Illinois; Denton, Texas; Kansas City, Missouri; Denver, Colorado; San Francisco, California; and Bothell, Washington.

Regional Project Officer (RPO)—A FEMA Regional Office staff member in the who performs contract monitoring functions, which include providing technical direction to FEMA contractors, monitoring the progress of contractors' work, and evaluating contractor performance.

Regression Equation—An experimentally determinable equation of a regression curve; that is, an approximate, generally linear relation connecting two or more quantities and derived from the correlation coefficient.

Regular Phase—The phase of a community's participation in the National Flood Insurance Program when more comprehensive floodplain management requirements are imposed and higher amounts of insurance are available. The FIRM forms the basis for this phase of participation in the National Flood Insurance Program.

Regular Program—See Regular Phase.

Regulatory Floodway—A floodplain management tool that is the regulatory area defined as the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood discharge can be conveyed without increasing the BFEs more than a specified amount. The regulatory floodway is not an insurance rating factor.

Riverine Flooding—The overbank flooding of rivers and streams.

River Mile Marker (RMM) —A marker that indicates the distance in miles from a reference point on a river or other major watercourse.

Root Mean Square Error (RMSE) —The square root of the average of the set of squared differences between dataset coordinate values and coordinate values from an independent source of higher accuracy for identical points RMSE is used to estimate both horizontal and vertical accuracy.

Scale—A representative fraction of a paper map distance to ground distance.

Scanner—Any device that systematically decomposes a sensed image or scene into pixels and then records some attribute of each pixel.

Scanning—The process of using an electronic input device to convert analog information into a digital format usable by a computer.

Secondary Airport Control (SAC) Stations—The geodetic control stations that, together with the PAC Station, provide the reference frame for the positioning of all critical features on an airport.

Sediment—Fragmental material that originates from the weathering of rocks and is transported by, suspended in, or deposited by water or air or is accumulated in beds by other natural occurrence.

Scientifically Incorrect Base Flood Elevations—Those Base Flood Elevations determined through analyses in which the methodologies used and/or assumptions made are inappropriate for the physical processes being evaluated or are otherwise erroneous.

Shallow Flooding— Unconfined flows over broad, relatively low relief areas, such as alluvial plains; intermittent flows in arid regions that have not developed a system of well-defined channels; overbank flows that remain unconfined, such as on delta formations; overland flow in urban areas; and flows collecting in depressions to form ponding areas. For National Flood Insurance Program purposes, shallow flooding conditions are defined as flooding that is limited to 3.0 feet or less in depth where no defined channel exists.

Sheet Runoff—The broad, relatively unconfined downslope movement of water across sloping terrain that results from many sources, including intense rainfall and/or snowmelt, overflow from a channel that crosses a drainage divide, and overflow from a perched channel onto deltas or plains of lower elevation. Sheet runoff is typical in areas of low topographic relief and poorly established drainage systems.

Special Conversion—An action taken by FEMA to convert a community to the Regular Phase of the National Flood Insurance Program without preparing a FIRM with detailed flood risk zones. The exact action taken depends on whether FEMA determines the community is “non-floodprone” or “minimally floodprone.”

Special Conversion Recommendation Report (SCRR) —A report, prepared by the FEMA Regional Office and submitted to FEMA HQ, that documents the reasons a community should be converted to the Regular Phase of the National Flood Insurance Program without a detailed engineering study being performed and recommends a specific conversion action.

Special Flood Hazard Area (SFHA)—The area delineated on a National Flood Insurance Program map as being subject to inundation by the base flood. SFHAs are determined using statistical analyses of records of riverflow, storm tides, and rainfall; information obtained through consultation with a community; floodplain topographic surveys; and hydrologic and hydraulic analyses.

Special Problem Report (SPR) —A report, prepared by the Flood Hazard Mapping Partner that is performing an engineering study or other mapping activity, that documents special problems or issues encountered during the performance of the work.

Stage—The height of a water surface above an established datum plane.

Standard Interchange Format (SIF)—A commonly used format for the exchange of alphanumeric data.

State—Any State, the District of Columbia, the territories and possessions of the United States, the Commonwealth of Puerto Rico, and the Trust Territory of the Pacific Islands.

State Coordinating Agency— See State National Flood Insurance Program Coordinator.

State National Flood Insurance Program (NFIP) Coordinator—The agency of the State government, or other office designated by the Governor of the State or by State statute at the request of FEMA to assist in the implementation of the National Flood Insurance Program in that state.

State Plane Coordinates—A system of X,Y coordinates defined by the U.S. Geological Survey for each state. Locations are based on the distance from an origin within each state.

Stillwater Flood Elevation (SWEL)—Projected elevation that flood waters would assume, referenced to National Geodetic Vertical Datum of 1929, North American Vertical Datum of 1988, or other datum, in the absence of waves resulting from wind or seismic effects.

Stillwater Flood Level (SWFL)—Rise in the water surface above normal water level on the open coast due to the action of wind stress and atmospheric pressure on the water surface.

Structure—For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home. For flood insurance purposes, a walled and roofed building, other than a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a manufactured home on a permanent foundation.

Study Contractor (SC)—An architectural and engineering firm or a Federal, State, or local agency that performs flood hazard studies under contract with FEMA.

Subcritical Flow—Flow with a mean velocity that is less than the critical velocity; in other words, tranquil flow.

Summary of Map Actions (SOMA)—A list, generated by FEMA and delivered to the community that summarizes the LOMAs, LOMR-Fs, and LOMRs that are or will be affected by a physical update to a FIRM.

Supercritical Flow—Flow with a mean velocity that is greater than the critical velocity; in other words, rapid flow.

Tagged Information File Format (TIFF)—The technical exchange format for raster or image files.

Technical Evaluation Contractor (TEC)—See Flood Map Production Coordination Contractor.

Technical Support Data Notebook (TSDN)—The format for the FEMA-maintained file that contains all of the technical and administrative support data for a community for which FEMA published an National Flood Insurance Program map and all revisions to that map.

Technically Incorrect Base Flood Elevations (BFEs)/Depths—Those BFEs and base flood depths determined through analyses in which the methodologies used have not been applied properly, are based on insufficient or poor-quality data, or do not account for the effects of physical changes that have occurred in the floodplain.

Temporary Bench Mark (TBM)—Benchmark established for a particular Flood Map Project or community.

Topologically Integrated Geographic Encoding and Referencing System (TIGER)—The nationwide digital database of planimetric base map features developed by the U.S. Bureau of the Census for the 1990 Census.

Topology—A branch of geometric mathematics that is concerned with order, continuity, and relative position, rather than actual linear dimensions.

Transect—Cross section taken perpendicular to the shoreline to represent a segment of coast with similar characteristics

Transformation—The conversion of coordinates between alternative referencing systems.

Triangulated Irregular Network (TIN)—A set of non-overlapping triangles developed from irregularly spaced points that are used to represent the facets of a surface.

Undeveloped Coastal Barrier—Any land area adjacent to the Atlantic Ocean, Pacific Ocean, or Great Lakes, where flood insurance will not be available for new or substantially improved structures. These areas are protected by law to discourage development in an attempt to preserve dunes, beaches, and wildlife habitats.

Unit Hydrograph—The hydrograph of direct runoff from a storm uniformly distributed over a drainage basin during a specified unit of time.

Universal Transverse Mercator (UTM) Grid—A system of plane coordinates based on 60 north-south trending zones, each 16 degrees of longitude wide, that circle the globe.

Unnumbered A Zones—Flood insurance rate zones, designated “Zone A” on a FIRM, that are based on approximate studies.

Vector—A directed line segment with magnitude commonly represented by the coordinates for the pair of endpoints.

Vector Data—Data in the form of an array with one dimension.

Vector Product Format (VPF)—A standard format, structure, and organization, used by the National Imagery and Mapping Agency, for large geographic databases that are based on a georelational data model and are intended for direct use. VPF is designed to be compatible with a wide variety of applications and products. VPF uses tables and indexes that permit direct access by spatial location and thematic content and is designed to be used with any digital geographic data in vector format that can be represented using nodes, edges, and faces. VPF defines the format of data objects, and the georelational data model provides a data organization within which software can manipulate the VPF data objects.

Velocity Zone—See Coastal High Hazard Area.

Violation—The failure of a structure or other development to be fully compliant with a community's floodplain management regulations. A structure or other development without an Elevation Certificate, other certifications, or other evidence of compliance required in Section 60.3 of the National Flood Insurance Program regulations is presumed to be in violation until such time as that documentation is provided.

Watershed—An area of land that drains into a single outlet and is separated from other drainage basins by a divide.

Water-Surface Elevations (WSEs)—The heights of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas, in relation to a specified vertical datum.

Wave Height—Vertical distance between the wave crest and the wave trough.

Wave Runup—Rush of wave water up a slope or structure.

Wave Setup—The Increase in the still water surface near the shoreline, due to the presence of breaking waves.

Work Map—Floodplain mapping submitted to FEMA by a Mapping Partner, reflecting the results of a flood study or other mapping activity. The work map depicts floodplain boundaries, regulatory floodway boundaries, BFES, and cross sections, and provides the basis for the presentation of this information on a FIRM.

Zone Gutter—Boundary, shown on a FIRM, dividing SFHAs of different BFES, base flood depths, flow velocities, or flood insurance risk zone designations.