CHAPTER 12-D

New 03/24/26

FLOOD DAMAGE PREVENTION

Section 12-D.010 Statutory Authorization, Findings of Fact, Purpose and Methods

A. Statutory Authorization. The Legislature of the State of Utah Code. Ann. § 10-3-701 has delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the City Council of Lehi, Utah, does ordain as follows:

The city of Lehi elects to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended). The National Flood Insurance Program (NFIP) is a voluntary program administered by the Federal Emergency Management Agency (FEMA The National Flood Insurance Program, established in the aforesaid act, provides that areas of the town having a special flood hazard be identified by the Federal Emergency Management Agency and that floodplain management measures be applied in such flood hazard areas. The National Flood Insurance Program was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994. The National Flood Insurance Program is administered by the Federal Emergency Management Agency, a component of the U.S. Department of Homeland Security.

B. Findings of Fact. The flood hazard areas of Lehi City are subject to periodic inundation by flood waters, which results in potential loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief; all of which adversely affect the public health, safety and general welfare.

These potential flood losses are caused by:

1. The cumulative effect of obstructions in floodplains that are known to cause increases in flood heights and velocities;
2. The occupancy of flood hazard areas by structures vulnerable to floods because they are inadequately elevated or otherwise unprotected from flood damages; and
3. Uses deemed unsuitable for floodplain areas or that do not account for the increased flood risk.

C. Statement of Purpose. It is the purpose of this chapter to promote the public health, safety and general welfare of the community and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health;
2. Minimize damage to public infrastructure, including but not limited to utilities, streets, and bridges that are susceptible to flooding;
3. Minimize prolonged business interruptions caused by flooding;
4. Minimize public expenditures on flood control projects;
5. Minimize the need for rescue and relief efforts associated with flooding and are generally undertaken at the expense of the public;
6. Protect and safeguard the welfare and safety of first responders should an emergency response is needed;
7. Help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize future flood blight areas; and
8. Promote that potential buyers are notified if properties are in a flood area.

D. Methods of Reducing Flood Losses. To accomplish the purposes outlined in Section 12-D.010 C. Statement of Purpose, this chapter applies the following methods:

1. Restricts or prohibits land uses that are dangerous to health, safety, or property in times of flooding, or cause excessive increases in flood heights or velocities;
2. Requires that land uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
3. Controls the alteration of natural floodplains, stream channels, and natural

protective barriers, which are involved in the accommodation of flood waters;

4. Controls filling, grading, dredging and other developments that may increase flood damage; and
5. Prevents or regulates the construction of flood barriers that will unnaturally divert floodwaters or may increase flood hazards to other lands.

Section 12-D.020 Definitions

Unless specifically defined below, words or phrases used in this chapter shall be interpreted to give them the meaning they have in common usage and to give this chapter its most reasonable application.

100-Year Flood means a flood having a recurrence interval that has a 1-percent chance of being equaled or exceeded during any given year (1-percent-annual-chance flood). The terms "100-hundred-year flood" and "1-percent-annual-chance flood" are synonymous. The term does not imply that the flood will necessarily happen once every 100 hundred years. Mandatory flood insurance requirements may apply.

500-Year Flood means a flood having a recurrence interval that has a 0.2-percent chance of being equaled or exceeded during any given year (0.2-percent-annual-chance flood). The term does not imply that the flood will necessarily happen once every 500 years and mandatory flood insurance requirement generally does not apply.

Accessory Structure is a structure that is on the same parcel of property as a principal structure. Its use is incidental to the use of the principal structure; the ownership of the accessory structure is the same owner as of the principal structure. An accessory structure is a non-residential structure of low value that is used solely for the parking of vehicles and storage of tools, materials, or equipment. No human habitation is allowed within an accessory structure.

Addition is any improvement that expands the enclosed footprint or increases the square footage of an existing structure. This includes lateral additions added to the side, front, or rear of a structure; vertical additions added on top of a structure; and enclosures added underneath a structure.

Alluvial Fan Flooding means flooding occurring on the surface of an alluvial fan or similar landform that originates at the apex. It is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

Appurtenant Structure—see ***Accessory Structure***.

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

Area of Shallow Flooding means a designated AO, AH, AR/AO, or AR/AH zone on a community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of Special Flood-Related Erosion Hazard is the land within a community that is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Hazard Boundary Map (FHBM). After the detailed evaluation of the special flood-related erosion hazard area, in preparation for publication of the FIRM, Zone E may be further refined.

Area of Special Flood Hazard is the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, or V1-30, VE, or V. For purposes of these regulations, the term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard".

Base Flood means the flood having a 1-percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE) is the water surface elevation of the 1-percent-annual-chance flood event. It is the height in relation to mean sea level expected to be reached by the waters of the base

flood at pertinent points in the floodplains of coastal and riverine areas. It is also the elevation shown on the FIRM and found in the accompanying Flood Insurance Study (FIS) for Zones A, AE, AH, A1-A30, AR, V1-V30, or VE that indicates the water surface elevation resulting from the flood that has a 1-percent chance of equaling or exceeding that level in any given year.

Basement means any area of the building having its floor subgrade (below ground level) on all sides. A walkout basement that does not require a step up to grade is not considered a basement.

Best Available Data is existing flood hazard information adopted by a community and reflected on an effective FIRM, FBFM, and/or within an FIS report; or draft or preliminary flood hazard information supplied by FEMA or from another source. Other sources may include, but are not limited to, the state, other federal agencies, or local studies, the more restrictive of which would be reasonably used by the community.

Breakaway Wall means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system. Any walls below the lowest floor in a building in a V or VE Zone should give way under wind and water loads without causing collapse, displacement, or other damage to the elevated portion of the building of the supporting pilings or columns. Breakaway walls apply only to V or VE Zones.

Building—see ***Structure***.

Channelization means the artificial creation, enlargement, realignment, or alteration of a stream channel's slope, shape, or alignment. Streambank restoration may be deemed as channelization.

Coastal A Zone (CAZ) means an area within a special flood hazard area, landward of a V zone or landward of an open coast without mapped V zones. In a Coastal A Zone, the principal source of flooding must be astronomical tides, storm surges, seiches, or tsunamis, not riverine flooding. During the base flood conditions, the potential for wave heights shall be greater than or equal to 1.5 feet. Coastal A Zones are not normally designated on FIRMs. (see Limit of Moderate Wave Action (LiMWA))

Coastal Barrier Resources System (CBRS) **c**onsists of undeveloped portions of coastal and adjoining areas established by the Coastal Barrier Resources Act (CoBRA) of 1982, the Coastal Barrier Improvement Act (CBIA) of 1990, and subsequent revisions, and includes areas owned by Federal or State governments or private conservation organizations identified as Otherwise Protected Areas (OPA).

Coastal High Hazard Area means a Special Flood Hazard Area 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 action from storms or seismic sources. The area is designated on a FIRM, or other adopted flood map as determined in Article 3, Section B of this chapter, as Zone VE.

Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

Conditional Letter of Map Revision (CLOMR) is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic and/or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, and/or the SFHA. The letter does not revise an effective map; it indicates whether the project, if built as proposed, would be recognized by FEMA.

Conditional Letter of Map Revision Based on Fill (CLOMR-F) is FEMA's comment on a proposed structure or property. The letter does not revise an effective map; it indicates whether the project, if built as proposed, would be removed from the floodplain.

Crawlspace means an under-floor space that has its interior floor area (finished or not) no more than 4 feet from the bottom floor joist the next higher floor elevation, designed with proper openings that equalize hydrostatic pressures of flood water, and is not used for habitation. Reference: **Section 12-D.050 B.4 Crawlspace**

Critical Facility means a facility or building where even a slight chance of flooding is too great a threat. Typical critical facilities include hospitals, fire stations, police stations, schools, storage of critical records, assisted living and similar facilities.

Deed Restriction refers to a clause in a deed that limits the future use of the property in some respect. Deed restrictions may impose a vast variety of limitations and conditions. For example, they may limit the density of buildings, dictate the types of structures that can be erected, or prevent buildings from being used for specific purposes or from being used at all.

Detached Garage is a building that is used solely for storage of materials or vehicle parking for up to four housing occupants. If a detached garage is designed or used for habitation or conducting business, or has multiple stories, then the building is not considered a detached garage under the NFIP.

Development means any human-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, demolition, excavation or drilling operations, or storage either temporary or permanent of equipment or materials.

Elevated Building is a non-basement building built, in the case of a building in Zone A1-30, AE, A, A99, AR, AO, AH, B, C, X and D, to have the top of the elevated floor above the ground level by means of pilings, columns (post and piers), or shear walls parallel to the flow of the water and adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of a building in Zone A1-30, AE, A, A99, AR, AO, AH, B, C, X and D, an "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters.

Enclosure refers to an enclosed walled-in area below the lowest floor of an elevated building. Enclosures below the BFE may only be used for building access, vehicle parking, and storage.

Erosion means the process of the gradual wearing away of land masses by wind, water, or other natural agents.

Existing Construction refers to structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. It may also be referred to as ***Existing Structures***.

Existing Manufactured Home Park or Subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

Existing Structures—see ***Existing Construction***.

Expansion to an Existing Manufactured Home Park or Subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

FEMA means the Federal Emergency Management Agency.

Fill refers to the placement of materials, such as dirt, sand, or rock to elevate a structure, property, or portion of a property above the natural elevation of the site, regardless of where the material was obtained from. The common practice of removing unsuitable material and replacing with engineered material is not considered fill if the elevations are returned to the existing conditions. Any fill placed or used prior to the area being mapped as a flood hazard area is not deemed as fill.

Flood or Flooding means:

1. A general and temporary condition of partial or complete inundation of normally dry land areas from:
    a. The overflow of inland or tidal waters.
    b. The unusual and rapid accumulation or runoff of surface waters from any source.
2. Mudslides (i.e., mudflows) that are proximately caused by flooding as defined in this chapter and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
3. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly

caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in this chapter.

Flood Insurance Rate Map (FIRM) means an official map of a community, on which the Administrator has delineated both the SFHAs and the risk premium zones applicable to the community.

Flood Insurance Study (FIS) or Flood elevation study means an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

Floodplain Development Permit is a community issued permit or document that is used for any development that occurs within an SFHA identified by FEMA or the community. It is used to address the proposed development to ensure compliance with the Lehi City Code.

Floodplain or Flood-Prone Area means any land area susceptible to being inundated by water from any source whether or not identified by FEMA (see definition of ***Flooding***).

Floodplain Management means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, mitigation plans, and floodplain management regulations.

Floodplain Management Regulations means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for flood damage prevention and reduction.

Flood Opening refers to an opening in the wall of an enclosed structure that allows floodwaters to automatically enter and exit the enclosure. Refer to FEMA Technical Bulletin 1.

Flood Protection System means those physical structural 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 within a community subject to an SFHA and to reduce the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized, flood modifying works are those constructed in conformance with sound engineering standards. FEMA only accredits levees, both private and public, that have been certified by a professional engineer or firm in which the certification shows that the levees have met and continue to meet the minimum regulatory standards cited in Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10).

Floodproofing means any combination of structural and non-structural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents. Floodproofing can either be accomplished in the form of dry floodproofing in which the structure is watertight below the levels that need flood protection, or wet floodproofing in permanent or contingent measures applied to a structure that prevent or provide resistance to damage from flooding, while allowing floodwaters to enter the structure or area.

Floodway—see ***Regulatory Floodway***.

Floodway encroachment lines mean the lines marking the limits of floodways on federal, state, and local flood plain maps.

Freeboard means a factor of safety usually expressed in feet above a flood level for purposes of flood plain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

Functionally Dependent Use means a development that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and

ship building and repair facilities. It does not include long-term storage or related manufacturing facilities.

Highest Adjacent Grade (HAG) means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. In AO Zones, the highest adjacent grade is utilized by comparing the lowest floor elevation to that of the highest adjacent grade and the depth of the AO Zone. Reference: **Section 12-D.050 D. Standards for Areas of Shallow Flooding (AO/AH Zones).**

Historic Structure means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
3. Individually listed on a state inventory of historic places in states with historic reservation programs that have been approved by the Secretary of the Interior; or
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
    a. By an approved state program as determined by the Secretary of the Interior, or
    b. Directly by the Secretary of the Interior in states without approved programs.

Letter of Map Amendment (LOMA) means an official amendment, by letter, to an effective FIRM. A LOMA establishes a property's location in relation to the SFHA. It is usually issued because a property or structure has been inadvertently mapped as being in the floodplain, when the property or structure is actually on natural high ground above the BFE.

Letter of Map Revision (LOMR) means FEMA's modification or revision to an entire or portion of the effective FIRM, or Flood Boundary and Floodway Map, or both. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA.

Letter of Map Revision Based on Fill (LOMR-F) means FEMA's amendment, by letter, to an effective FIRM where fill was brought in or used to elevate a property, portion of property or structure above the BFE.

Levee means a man-made 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.

Levee System means a flood protection system that consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

Limit of Moderate Wave Action (LiMWA) means the boundary line given by FEMA on coastal map studies marking the extents of Coastal A Zones (CAZ).

Lowest Adjacent Grade (LAG) means the lowest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. For an existing structure, it means the lowest point where the structure and ground touch, including but not limited to attached garages, decks, stairs, and basement windows.

Lowest Floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Section 60.3.

Manufactured Home means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle"; however, a manufactured home may be used for both residential and non-residential use.

Manufactured Home Park or Subdivision means a parcel (or contiguous parcels) of land divided

into two or more manufactured home lots for rent or sale.

Map means the FHBM or the FIRM for a community issued by FEMA.

Mean Sea Level means, for purposes of the NFIP, the National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, or other datum, to which BFEs shown on a community's FIRM are referenced.

Mixed Use Structures are structures with both a business and a residential component, but where the area used for business is less than 50 percent of the total floor area of the structure.

New Construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures. For the purposes of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures.

New Manufactured Home Park or Subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

No-Rise Certifications are formal certifications signed and stamped by a professional engineer licensed to practice in the state, demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that a proposed development will not result in any increase (0.00 feet) in flood levels within the community during the occurrence of a base flood event.

Otherwise Protected Area (OPA) see "Coastal Barrier Resources System (CBRS)".

Physical Map Revision (PMR) is FEMA's action whereby one or more map panels are physically revised and republished.

Primary Frontal Dune (PFD) means 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. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Recreational Vehicle means a vehicle which is:
(a) Built on a single chassis;
(b) 400 square feet or less when measured at the largest horizontal projection;
(c) Designed to be self-propelled or permanently towable by a light duty truck; and
(d) Designed primarily, not for use as a permanent dwelling but, as temporary living quarters for recreational, camping, travel, or seasonal use.

Regulatory Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

Riverine means relating to, formed by, or resembling a river (including tributaries), stream, brook, creek, etcetera, which can be intermittent or perennial.

Section 1316 refers to the section of the National Flood Insurance Act of 1968, as amended, which provides for the denial of flood insurance coverage for any property that the Administrator finds has been declared by a duly constituted State or local authority to be in violation of State or local floodplain management regulations. Section 1316 is issued for a property, not a property owner, and remains with the property even after a change of ownership.

Special Flood Hazard Area—see ***Area of Special Flood Hazard***.

Start of Construction (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)) includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings,

the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure means, for floodplain management purposes, a walled and roofed building, culvert, bridge, dam, or a gas or liquid storage tank that is principally above ground, as well as a manufactured home. ***Structure*****,** for insurance purposes, means:

1. A building with two or more outside rigid walls and a fully secured roof, which is affixed to a permanent site;
2. A manufactured home ("a manufactured home," also known as a mobile home, is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation); or
3. A travel trailer without wheels built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.

For insurance purposes, "structure" does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank.

Substantial Damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Substantial Improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.

The term does not, however, include:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official and are the minimum necessary to assure safe living conditions; or
2. Any alteration of a "historic structure", if the alteration will not preclude the structure's continued designation as a "historic structure."

Variance means a grant of relief by a community from the terms of a flood plain management regulation. Reference: **Section 12-D.040 E. Variance Procedures.**

Violation means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Sections 44 CFR 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

Water surface elevation means the height, in relation to the North American Vertical Datum (NAVD) of 1988, (or other datum, where specified) of floods of various magnitudes and frequencies, such as the 1-percent-annual-chance flood event, in the flood plains of coastal or riverine areas.

Watercourse means the channel and banks of an identifiable water in a creek, brook, stream, river, ditch or other similar feature.

Section 12-D.030 General Provisions

A. Lands to Which This Section Applies. This chapter shall apply to all areas of special flood hazard identified by FEMA within the jurisdiction of Lehi City.

B. Basis for Establishing the Areas of Special Flood Hazard. The areas of special flood hazard identified by the Federal Emergency Management Agency June 23rd 2026 Flood Insurance Rate Maps and Flood Boundary-Floodway Maps (FIRM and

FBFM) or Digital Flood Insurance Rate Maps (DFIRM), and other supporting data, are adopted by reference and declared a part of this chapter, and any revisions thereto are hereby adopted by reference and declared to be a part of this chapter.

C. Establishment of Development Permit. A Floodplain Development Permit shall be required to ensure conformance with the provisions of this chapter.

D. Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. Considered as minimum requirements;
2. Liberally construed in favor of the governing body; and
3. Deemed neither to limit nor repeal any other powers granted under state statutes.

F. Warning and Disclaimer or Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions, greater floods can and will occur and flood heights may be increased by human-made or natural causes.

This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damage. This chapter shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this chapter, or any administrative decision lawfully made thereunder.

G. Severability. If any section, provision, or portion of this chapter is adjudged unconstitutional or invalid by a court, the remainder of the chapter shall not be affected.

H. Compliance. No structures or developments including buildings, recreation vehicles, or manufactured homes or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this chapter and other applicable regulations. Nothing herein shall prevent the Lehi City Council from taking such lawful action as is necessary to prevent or remedy any violations.

I. Stop Work Order

1. Authority. Whenever the floodplain administrator or other community official discovers any work or activity regulated by this chapter being performed in a manner contrary to the provision of this chapter, the floodplain administrator is authorized to issue a stop work order.
2. Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.
3. Unlawful continuance. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by local or state law including but not limited to the penalties outlined in **Section 12-D.030 J. Penalties for Noncompliance.**

J. Penalties for Noncompliance. In accordance with Section 59.2(b) of CFR 44, Chapter 1, of the NFIP regulation, to qualify for the sale of federally subsidized flood insurance, a community must adopt floodplain management regulations that meet or exceed the minimum standards of Section 60. "These regulations must include effective enforcement provisions." In accordance with Section 60.1(b) of CFR 44, Chapter 1, of the NFIP regulations, "These regulations must be legally enforceable, applied uniformly throughout the community to all privately and publicly owned land within flood-prone (i.e. mudflow) or flood-related erosion areas, and the community must provide that the regulations take precedence over less restrictive conflicting local laws, ordinances, or codes."

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a

misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall be guilty of a Class B Misdemeanor and shall upon conviction thereof be fined not more than $1000.00 or imprisoned for not more than 180 days, or both, for each violation assessed daily, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent Lehi City from taking such other lawful action as is necessary to prevent or remedy any violation.

Section 12-D.040 Administration

A. Designation of the Floodplain Administrator. The Stormwater Engineer is hereby appointed the Floodplain Administrator to administer and implement the provisions of this chapter and other appropriate sections of the NFIP Regulations and 44 CFR pertaining to floodplain management.

B. Duties and Responsibilities of the Floodplain Administrator. Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

1. Uphold the goals of the community and the NFIP to reduce risk when possible and increase the community's resistance to future disasters.
2. Maintain and hold open for public inspection all records pertaining to the provisions of this chapter, including the actual elevation of the lowest floor (including basement or crawlspace) of all new or substantially improved structures and any floodproofing certificates, including the data supporting such certificates.
3. Maintain and hold open for public inspection maps that identify and locate the boundaries of the SFHAs to which this chapter applies, including, but not limited to, the FIRM.
4. Review development proposals to determine whether a proposed building site, including sites designed for the placement of manufactured homes, will be reasonably safe from flooding.
5. Review, approve, or deny all applications for development permits required by adoption of this chapter.
6. Ensure that all necessary permits have been obtained from those federal, state, or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 and the Endangered Species Act of 1973) from which prior approval is required.
7. Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.
8. Notify, in riverine situations, adjacent communities and the State Coordinating Agency, which is the Utah Division of Emergency Management, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to FEMA.
9. Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Floodplain Administrator shall make the necessary interpretation.
10. When BFE data has not been provided by FEMA, the Floodplain Administrator shall obtain, review, and reasonably utilize any BFE data and floodway data available from a federal, state, or other source including data provided by the applicant, in order to administer the provisions of this chapter.
11. When a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30, AE, and AH on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than 1.00* feet at any point within the community unless the community has adopted higher standard options.
12. Under the provisions of 44 CFR Chapter 1, Section 65.12 of the NFIP Regulations, a community may approve certain development in Zones A1-30, AE, and AH on the community's FIRM, which increases the water surface elevation of the base flood by more than 1.00 foot, provided that the community first meets the requirements of Section 65.12 for a conditional FIRM revision through FEMA's CLOMR process.

C. Requirement to Submit New Technical Data

1. The property owner or developer shall notify FEMA by submittal of a LOMR within 6 months of project completion when an applicant has obtained a CLOMR from FEMA or when development altered a watercourse, modified floodplain boundaries, or modified BFE.
2. The property owner or developer shall be responsible for preparing technical data to support the CLOMR or LOMR application and paying any processing or application fees to FEMA. The property owner or developer is responsible for submitting the CLOMR and LOMR to FEMA and shall provide all necessary data to FEMA if requested during the review process to ensure the CLOMR or LOMR is issued.
3. The Floodplain Administrator shall be under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this chapter and all applicable state, federal, and local laws.

D. Permit Procedures. Application for a Development Permit shall be presented to the Floodplain Administrator on forms furnished by him/her and may include, but not be limited to:

1. Duplicated plans drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations.
2. Duplicated plans drawn to scale showing the location, dimensions, and elevation of existing and proposed structures, including the placement of manufactured homes.
3. Location of the foregoing in relation to SFHAs.
4. Elevation (in relation to mean sea level), of the lowest floor (including basement and crawlspace) of all new and substantially improved structures, if applicable;
5. Elevation (in relation to mean sea level), to which any nonresidential structure (if applicable) shall be floodproofed.
6. A certificate from a registered professional engineer or architect that the nonresidential floodproofed structure (if applicable) shall meet the floodproofing criteria of this chapter and the NFIP Regulations.
7. Description of the extent to which any watercourse or natural drainage will be altered or relocated because of proposed development, if applicable.
8. At the community's discretion, the community may charge a fee for issuance of floodplain development permits.
9. Copies of all floodplain development permits and the associated documents shall become property of the community and a permanent record.

Approval or denial of a Development Permit by the Floodplain Administrator shall be based on all of the provisions of this chapter and the following relevant factors:

1. The danger to life and property due to flooding or erosion damage.
2. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
3. The danger that materials may be swept onto other lands to the injury of others.
4. The compatibility of the proposed use with existing and anticipated development.
5. The safety of access to the property in times of flood for ordinary and emergency vehicles.
6. The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical, and water systems.
7. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site.
8. The necessity to the facility of a waterfront location, where applicable.
9. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use.
10. The relationship of the proposed use to the comprehensive plan for that area.

E. Variance Procedures. The Appeal Board or Variance Board, as established by the community, shall hear and render judgment on requests for variances from the requirements of this chapter after a floodplain development permit has been denied.

1. Any person or persons aggrieved by the decision of the Appeal Board may appeal such decision in the courts of competent jurisdiction.
2. The Appeal Board, as established by the community, shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement of administration of this chapter.
3. The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to FEMA and the State Coordinating Agency upon issuing a variance.
4. Variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood elevation, providing the relevant factors in **Section 12-D.040 Administration E. Variance Procedures** have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.
5. Upon consideration of the factors noted above and the intent of this chapter, the Appeal Board may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this chapter.
6. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
7. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. The term ‘‘substantial improvement’ does not include any alteration of a structure or facility listed on the National Register of Historic Places or a State Inventory of Historic Places.

Prerequisites for granting variances:

1. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief. Variances shall only be issued upon:
   a. Showing a good and sufficient cause.
   b. A determination that failure to grant the variance would result in exceptional hardship to the applicant.
   c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, conflict with existing local laws or ordinances, considers the need of ingress and egress during times of floods, and does not jeopardize first responders’ health and welfare.
2. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the BFE, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
3. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that:
   a. The criteria outlined in **Section 12-D.040 E. Variance Procedures** are met; and
   b. The structure or other development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

Section 12-D.050 Provisions for Flood Hazard Reduction

A. General Standards. In all areas of special flood hazards, the following provisions are required for all new construction and substantial improvements:

1. All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from

hydrodynamic and hydrostatic loads, including the effects of buoyancy.

2. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
3. All new construction or substantial improvements shall be constructed with materials resistant to flood damage.
4. All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
5. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
6. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters.
7. On-site waste disposal systems shall be designed or located to avoid impairment to them or contamination from them during flooding.

A.1. Substantial Improvement. Any combination of repair, reconstruction, rehabilitation, addition, or improvement of a building or structure, if the cumulative cost of the entire project equals or exceeds 50 percent, of the market value of the structure only (not of the structure and land value combined) before the improvement or repair is started then the work shall be considered as substantial improvement. If the structure has sustained substantial damage, any repairs are considered substantial improvements regardless of the actual repair work performed. For Substantial Damage, refer to **Section 12-D.050 A.2. Substantial Damage**. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions.
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

A.2. Substantial Damage. Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure only, before the damage occurred. This term also applies to structures which have incurred any damage that equals or exceeds 50 percent of the structure's market value regardless of the actual repair work performed. When a structure or building has been determined as substantially damaged, any work or repair on said structure or building will be considered as substantial improvement and will be required to meet the development requirements set forth within this chapter for substantial improvement.

A.3. Substantial Improvement and Substantial Damage Determination. For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the applicable community officials and staff, shall:

1. Estimate the market value or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure only, not of land and building, before the start of construction of the proposed work. In the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made.
2. Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure.
3. Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; the determination requires evaluation of previous permits issued for improvements and repairs as specified in **Section 12-D.050 A.1. Substantial Improvement;** and if elected

4. Utilize FEMA's Substantial Improvement/Substantial Desk Reference when making any determination on Substantial Improvement and/or Substantial Damage.
5. The substantial improvement regulations apply to all of the work that is proposed as the improvement, even if multiple permits are issued. Therefore, the determination of the cost of the improvement should consider all costs of all phases of the work before issuance of the first permit.
6. Notify the applicant that if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood, this chapter is required.

B. Specific Standards. In all SFHAs, the following provisions are required:

B.1. Residential Construction for Zones A1-30, A, AE. New construction and substantial improvement of any residential structure shall have the lowest floor (including basement) elevated to one foot above the BFE. If a freeboard option is noted, new construction and substantial improvement shall have the lowest floor (including basement) elevated to the freeboard elevation. A registered professional engineer, architect, or land surveyor shall submit certified elevations to the Floodplain Administrator that the standards of this chapter are satisfied.

B.2. Nonresidential Construction for Zones A1-30, A, and AE. New construction and substantial improvements of any commercial, industrial, or other nonresidential structure shall either have the lowest floor (including basement) elevated to one foot above the base flood elevation or together with attendant utility and sanitary facilities, be designed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification that includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator. If the use or occupancy of the building changes in the future to residential, then the dry floodproofing of the structure cannot be used when determining compliance of the structure to the residential construction of this chapter, **Section 12-D.050 B.1. Residential Construction**. As such, the building will not be grandfathered into compliance and will be required to be brought into compliance with the residential construction requirements of this chapter.

B.3. Enclosures for Zones A1-30, A, and AE. New construction and substantial improvements, with fully enclosed areas below the lowest floor that are to be used solely for parking of vehicles, building access, or storage in an area other than a basement, and are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or must meet or exceed the following minimum criteria:

1. A minimum of two openings having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding shall be provided.
2. The bottom of all openings shall be no higher than 1 foot above grade.
3. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

The development and construction of the structure must conform with the provision in FEMA/Federal Insurance Administration (FIA)-Technical Bulletins 1 and 2. Certification and documentation from a professional, licensed engineer or architect is required if the structure's lowest floor is built below the BFE.

B.4. Crawlspace for Zones A1-30, A, and AE. New construction and substantial improvements built on a crawlspace or sub-grade (below grade) crawlspace may be permitted if the development is designed and meets or exceeds the standards found in FEMA's Technical Bulletins 1, 2, and 11, which include but are not limited to the following:

1. The structure must be affixed to a permanent foundation, designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Because of

hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than 5 feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer.

2. The crawlspace is an enclosed area below the BFE and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than 1 foot above the LAG.
3. The crawlspace enclosure must have proper openings that allow equalization of hydrostatic pressure by allowing automatic entry and exit of floodwaters. To achieve this, a minimum of 1 square inch of flood opening is required per 1 square foot of the enclosed area subject to flooding.
4. Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, piers, or other materials that extend below the BFE. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters.
5. Any building utility systems within the crawlspace must be elevated above the BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions.
6. The interior grade of a crawlspace below the BFE must not be more than 2 feet below the LAG.
7. The height of the below-grade crawlspace, measured from the lowest interior grade of the crawlspace floor to the bottom of the floor joist of the next higher floor cannot exceed 4 feet at any point.
8. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event.
9. Buildings with below-grade crawlspaces will have higher flood insurance premiums than buildings that have the preferred crawlspace construction, with the interior elevation at or above the LAG.

B.5. Manufactured Homes.

1. Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices that minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.
2. Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, AE, V and VE on the community's FIRM on sites
   a. outside of a manufactured home park or subdivision;
   b. in a new manufactured home park or subdivision;
   c. in an expansion to an existing manufactured home park or subdivision;
   d. or in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to one foot above the BFE, and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
3. In A-1-30, AH, AO, AE, V and VE Zones, require that manufactured homes to be placed or substantially improved in an existing manufactured home park to be elevated so that.
   a. the lowest floor at one foot above the BFE;
   b. or the chassis is supported by reinforced piers no less than 36 inches in height above grade and securely anchored.

B.6. Recreational Vehicles. Recreational Vehicle Standards

In A-1-30, AH, AO, AE, V and VE Zones, Recreational Vehicles, must either:

1. Be on the site for fewer than 180 consecutive days;
2. Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached structures or addition, or
3. The recreational vehicle must meet all the requirements for ARTICLE IV, SECTION D PERMIT PROCEDURES, including the anchoring and elevation requirements of "manufactured homes" of this chapter.

C. Standards for Subdivision Proposals. All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Development Permit requirements of this chapter to minimize flood damage.

1. All subdivision preliminary plats/development plans shall include the mapped flood hazard zones from the effective FIRM.
2. BFE data shall be generated for subdivision proposals and other proposed development, including the placement of manufactured home parks and subdivisions, which is greater than 50 lots or 5 acres, or whichever is lesser.
3. All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
4. All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

D. Standards for Areas of Shallow Flooding (Zone AO/AH)

Located within the SFHAs established in **Section 12-D.030 A. Lands to Which this Section Applies**, are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of 1 to 3 feet, where a clearly defined channel does not exist and where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

1. All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified). If a BFE is given rather than a depth number, the lowest floor (including basement) shall be elevated above the BFE specified on the community's FIRM.
2. All new construction and substantial improvements of non-residential structures:
   a. Have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified). If a BFE is given rather than a depth number, the lowest floor (including basement) shall be elevated above the BFE specified on the community's FIRM; or
   b. Together with attendant utility and sanitary facilities be designed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.
3. A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this chapter are satisfied.
4. Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

E. Floodways (Zone AE) Floodways located within SFHAs are extremely hazardous areas due to the velocity of flood waters that carry debris, potential projectiles, and erosion potential, the following provisions shall apply:

1. Designate a regulatory floodway that will not increase the base flood elevation more than 1 foot.

2. Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway *unless* it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase greater than 0.00 feet, unless higher standard option selected, in flood levels within the community during the occurrence of the base flood discharge.
3. All new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Article V in this chapter.
4. Under the provisions of 44 CFR Chapter 1, Section 65.12, of the NFIP Regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in BFEs, provided that the community first applies for a conditional FIRM and floodway revision through FEMA.

F. Coastal High Hazard Area (Zone V and/or VE)
Coastal High Hazard Areas are SFHA established in **Section 12-D.030 General Provisions A. Lands to Which This Section Applies**, are areas that have special flood hazards associated with high velocity waters from storm surges or seismic activity and, therefore, all new construction and substantial improvements shall meet the following provisions in addition to the all provisions of Article V, Sections A, B and C:

1. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures, and whether or not such structures contain a basement, and maintain a record of all such information.
2. Provide that all new construction and substantial improvements within Zones V1–30, VE, and V on the community's FIRM is located landward of the reach of mean high tide;
3. All new construction and substantial improvements shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings or columns) is elevated to one foot above the base flood elevation. Floodproofing shall not be utilized on any structures in Coastal High Hazard Areas to satisfy the regulatory flood protection elevation requirements. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Article V Section F.
4. All new construction and substantial improvements shall have the space below the bottom of the lowest horizontal structural member of the lowest floor either be free of obstruction or constructed with breakaway walls, open wood latticework or insect screening, provided they are not part of the structural support of the building and are designed so as to breakaway, under abnormally high tides or wave action without causing damage to the elevated portion of the building or supporting foundation system or otherwise jeopardizing the structural integrity of the building. The following design specifications shall be met:
   a. Breakaway walls shall meet the following design specifications:
      i. Design safe loading resistance shall be not less than 10 nor more than 20 pounds per square foot; or
      ii. Breakaway walls that exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by State or local codes) shall be certified by a registered professional engineer or architect that the breakaway wall will collapse from a water load less than that which would occur during the base flood event, and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). The water loading values used shall be those

associated with the base flood. The wind loading values used shall be those required by the Utah State Building Code.

b. All new construction and substantial improvements shall be securely anchored to pile or column foundations. All pilings and columns and the structure attached thereto shall be anchored to resist flotation, collapse, and lateral movement due to the effect of wind and water loads acting simultaneously on all building components. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Article V Section F.
   i. Water loading values used shall be those associated with the base flood plus one foot of freeboard.
   ii. Wind loading values used shall be those required by the current edition of the Utah State Building Code.

5. Prohibit the use of fill for structural support of buildings within Zones V1–30, VE, and V on the community's FIRM
6. Prohibit man-made alteration of sand dunes and mangrove stands within Zones V1–30, VE, and V on the community's FIRM which would increase potential flood damage.

F.1. Elevated Buildings. Fully enclosed areas, of new construction and substantially improved structures, which are below the lowest floor or below the lowest horizontal structural member in V/VE zones shall meet all Article V Section: B.3 and:

1. Shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
2. Shall be constructed entirely of flood resistant materials at least to the Regulatory Base Flood Elevation. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood opening as outlined above.