

EXHIBIT A

(Note: double underlined is new text, ~~strike through~~ text are deletions)

AMENDMENT #1

3.13 FLOOD HAZARD REGULATIONS

1. Statement of Purpose

It is the purpose of this Section 3.13 to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- A. To protect human life and health;
- B. To minimize expenditure of public money and costly flood control projects;
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. To minimize prolonged business interruptions;
- E. To minimize damage to public facilities and utilities such as water and ~~gas mains~~, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
- F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. To ensure that potential buyers are notified that property is in an area of special flood hazard; and,
- H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

2. Methods of Reducing Flood Losses

The City of Burns has ~~over the years recognized the need for~~ made improvements to protect ~~and protection for~~ the community from the high water from snow melt that occasionally occurs. Here are some of the preventive measures that have been taken:

- (1) Dike construction along west of Silvies River, April 1938, (W. P. A.) Work Projects Administrator Project
- (2) Maintenance to raise the dike Silvies River, June 1942, United States Dept. of the Interior, Grazing Service.
- (3) Preliminary examination of Silvies River and tributaries by War Department, Office of the Chief of Engineers, December 1945.
- (4) Silvies River Flood Control Project, 1952, by Lankford Brothers, Nyssa, Oregon. Engineered dike improvements/ levee along west side of Silvies River.

- (5) Drainage Study for City of Burns, December 1957 by Clark & Groff Engineers, Salem, Oregon
- (6) Burns-Hines Flood Plain Study, Harney County, Oregon, December 1968, State Water Resources Board, Salem, OR
- (7) Operation and Maintenance Plan for slide gates, north Burns drainage, Burns, by Tourangeau NorWes, Inc. Beaverton, Oregon and Waterman industries, Inc. Exeter, CA
- (8) North Burns Drainage Ditch Project, Foley Drive to Silvie's River, City of Burns, August 1986. Prepared by: M. A. Palmer & Sons, Engineering and Surveying, Burns, OR
- (9) City of Burns, Emergency Operations Plan, September 2014, especially section "1A 4 Flood: which mentions: storm drains, bridge viaducts, main arterial routes, public rights-of-way, and dams. These involve existing infrastructure.
- (10) Levee System and Storm Water Structures Operations and Maintenance Manual, 2015
- (11) ODOT installed 4 36" culverts in April 2011 under highway 20/395 to help divert water away from town

3. Definitions

Unless specifically defined below, words or phrases used in Section 3.13 shall be interpreted so as to give them the meaning they have in common usage and to give this Section 3.13 its most reasonable application.

"APPEAL" means a request for a review of the interpretation of any provision of this ordinance or a request for a variance.

"AREA OF SHALLOW FLOODING" means a designated AO, or AH Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident. AO is characterized as sheet flow and AH indicates ponding.

"AREA OF SPECIAL FLOOD HAZARD" means the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

"BASE FLOOD" means the flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the "100-year flood." Designation on maps always includes the letters A or V.

"BASEMENT" means any area of the building having its floor subgrade (below ground level) on all sides.

"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.

"CRITICAL FACILITY" means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals police, fire and emergency response installations, installations which produce, use or store hazardous materials or hazardous waste.

"DEVELOPMENT" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.

"ELEVATED BUILDING" means for insurance purposes, a nonbasement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

"FLOOD" OR "FLOODING" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters and/or

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

"FLOOD INSURANCE RATE MAP (FIRM)" means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

"FLOOD INSURANCE STUDY" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood.

"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 one foot.

"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 this Section 3.13 found at Section 13.3(7)(B)(1)(ii).

"MANUFACTURED DWELLING" 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 dwelling" does not include a "recreational vehicle.

"MANUFACTURED DWELLING PARK OR SUBDIVISION" means a parcel (or contiguous parcels) of land divided into two or more manufactured dwelling lots for rent or sale.

"NEW CONSTRUCTION" means structures for which the "start of construction" commenced on or after the effective date of Ordinance No. _____ (the adopting ordinance).

"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.

"START OF CONSTRUCTION" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, 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 of the property or 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 a walled and roofed building including a gas or liquid storage tank that is principally above ground.

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

"SUBSTANTIAL IMPROVEMENT" means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- (a) Before the improvement or repair is started; or
- (b) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:

- (a) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or

(b) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

"VARIANCE" means a grant of relief from the requirements of this Section 3.13 which permits construction in a manner that would otherwise be prohibited by this Section 3.13.

"WATER DEPENDENT" means a structure for commerce or industry which cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.

4. General Provisions

A. Lands to which this Section 3.13 applies

This Section 3.13 shall apply to all areas of special flood hazards within the jurisdiction of the City of Burns.

B. Basis for Establishing the Areas of Special Flood Hazard

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for the City of Burns," dated November 3, 1989, and as amended, with accompanying Flood Insurance Maps, as amended, are hereby adopted by reference and declared to be a part of this Section 3.13. The Flood Insurance Study is on file at Burns City Hall. The best available information for flood hazard area identification as outlined in Section 3.13(6)(C)(2) shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under section 3.13(6)(C)(2).

C. Abrogation and Severability

This Section 3.13 is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Section 3.13 and another ordinance, code section, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

D. Interpretation

In the interpretation and application of this Section 3.13, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and,
- (3) Deemed neither to limit or repeal any other powers granted under State statutes.

5. Warning and Disclaimer of Liability

The degree of flood protection required by this Section 3.13 is considered reasonable for regulatory purposes and is based on scientific and engineering considerations not historic local data. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This Section 3.13 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 damages. This Section 3.13 shall not create liability on the part of the City, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this Section 3.13 or any administrative decision lawfully made hereunder.

6. Administration

A. Establishment of Development Permit

(1) Development Permit Required

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 13.3(4). The permit shall be for all structures including manufactured homes, as set forth in the "DEFINITIONS," and for all development including fill and other activities, also as set forth in the "DEFINITIONS.

(2) Application for Development Permit

Application for a development permit shall be made on forms furnished by the City and may include but not be limited to plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing.

Specifically, the following information is required:

- (i) Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
- (ii) Elevation in relation to mean sea level of floodproofing in any structure;
- (iii) Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section 13.3(7)(B)(2); and
- (iv) Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

B. Designation of the Local Administrator

The local administrator (as used herein the local administrator shall refer to the City Manager or his designee) is hereby appointed to administer and implement this Section 3.13 by granting or denying development permit applications in accordance with its provisions.

C. Duties and Responsibilities of the Local Administrator

Duties of the local administrator shall include, but not be limited to:

(1) Permit Review

(i) Review all development permits to determine that the permit requirements of this Section 3.13 have been satisfied.

(ii) Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required.

(iii) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 13.3(7)(D) are met.

(2) Use of Other Base Flood Data

When base flood elevation data has not been provided in accordance with Section 13.3(4)(B), BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the (local administrator) shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, in order to administer Sections 13.3(7)(B), SPECIFIC STANDARDS, and 7(D) FLOODWAYS.

(3) Information to be Obtained and Maintained

(i) Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 13.3(6)(C)(2), obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

(ii) For all new or substantially improved floodproofed structures where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 13.3(6)(C)(2):

1. Verify and record the actual elevation (in relation to mean sea level), and

2. Maintain the floodproofing certifications required in Section 13.3(6)(A)(2)(iii).

3. Maintain for public inspection all records pertaining to the provisions of this Section 3.13.

D. Alteration of Watercourses

(1) Notify adjacent communities and the Department of Land Conservation and Development and other appropriate state and federal agencies prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

(2) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

E. Requirement to Submit New Technical Data

(1) Notify FEMA within six months of project completion when an applicant had obtained a Conditional Letter of Map Revision (CLOMR) from FEMA, or when development altered a watercourse, modified floodplain boundaries, or modified Base Flood Elevations. This notification shall be provided as a Letter of Map Revision (LOMR).

(2) The property owner shall be responsible for preparing technical data to support the LOMR application and paying any processing or application fees to FEMA.

(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 code and all applicable State and Federal laws.

F. Interpretation of FIRM Boundaries

Make interpretations where needed, as to 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 person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 13.3(6).

6. Variance Procedure

A. Appeal Board

(1) The City Planning Commission as established by the City shall hear and decide appeals and requests for variances from the requirements of this Section 3.13.

(2) The Planning Commission shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the in the enforcement or administration of this Section 3.13.

(3) Those aggrieved by the decision of the Planning Commission, or any taxpayer, may appeal such decision to the City Council, as provided in the Zoning Ordinance.

(4) In passing upon such applications, the Planning Commission shall consider all technical evaluations, all relevant factors, standards specified in other subsections of this Section 3.13, and:

- (i) The danger that materials may float onto other lands and injure others;
- (ii) The danger to life and property due to flooding or erosion damage;
- (iii) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (iv) The importance of the services provided by the proposed facility to the community;
- (v) The necessity to the facility of a waterfront location, where applicable;
- (vi) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (vii) The compatibility of the proposed use with existing and anticipated development;
- (viii) The relationship of the proposed use to the comprehensive plan and flood plain management program for that area;
- (ix) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (x) The expected heights, velocity, and duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, of floods expected at the site; and,
- (xi) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(5) Upon consideration of the factors of Section 13.3(6)(A)(4) and the purposes of this Section 3.13, the Planning Commission may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Section 3.13.

(6) The local administrator shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.

B. Conditions for Variances

(1) Generally, the only condition under which a variance from the elevation standard may be issued is 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 level, providing items (I-xi) in Section 13.3(6)(A)(4) have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.

(2) Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this section.

(3) Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(5) Variances shall only be issued upon:

(i) A showing of good and sufficient cause;

(ii) A determination that failure to grant the variance would result in exceptional hardship to the applicant;

(iii) 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, or conflict with existing local laws or ordinances.

(6) Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece or property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

(7) Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except Section 13.3(6)(B)(1), and otherwise complies with Sections 13.3(7)(A)(1) through (3) of the GENERAL STANDARDS.

(8) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

7. Provisions for Flood Hazard Reduction

A. General Standards

In all areas of special flood hazards, the following standards are required:

(1) Anchoring

(i) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

(ii) All manufactured homes must likewise be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques).

(2). Construction Materials and Methods

(i) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(ii) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

(iii) Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(3). Utilities

(i) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(ii) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and,

(iii) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

(4). Subdivision Proposals

(i) All subdivision proposals shall be consistent with the need to minimize flood damage;

(ii) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

(iii) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and,

(iv) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

(5). Review of Building Permits

Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source (Section 13.3(6)(C)(2)), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

(6). AH Zone Drainage

Adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

B. Specific Standards

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 13.3(4)(B), BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD or Section 13.3(6)(C)(2), Use of Other Base Flood Data, the following provisions are required:

(1) Residential Construction

(i) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to a minimum of one foot above the base flood elevation.

(ii) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or 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 be either certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(A) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

(B) The bottom of all openings shall be no higher than one foot above grade.

(C) Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

(2) Nonresidential Construction

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated at or above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

(i) Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;

(ii) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(iii) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official;

(iv) Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in Section 13.3(7)(B)(1)(ii);

(v) Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one foot below.

(vi)

(3). Manufactured Dwellings

- (i) Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with Section 13.3(7)(A)(1)(ii) above;
- (ii) The bottom of the longitudinal chassis frame beam in A zones, shall be at or above BFE;
- (iii) The manufactured dwelling shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the top or frame ties to ground anchors. (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas guidebook for additional techniques), and;
- (iv) Electrical crossover connections shall be a minimum of 12 inches above BFE.

(4). Recreational Vehicles

Recreational vehicles placed on sites are required to:

- (i) Be on the site for fewer than 180 consecutive days, and
- (ii) Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- (iii) Meet the requirements of Section 13.3(7)(B)(3) above and the elevation and anchoring requirements for manufactured homes.
- (iiii) If property owners owns the recreational vehicle and it is parked on the property owners lot, this section does not apply

C. Before Regulatory Floodway

In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE 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 one foot at any point within the community.

D. Floodways

Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(2) If Section 13.3(7)(D)(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 13.3(7), PROVISIONS FOR FLOODHAZARD REDUCTION.

E. Standards for Shallow Flooding Areas (AO ZONES)

Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base flood depths in these zones range from 1 to 3 feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

(1) New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement) elevated above the highest grade adjacent to the building, a minimum of one foot or more above the depth number specified on the FIRM (at least two feet if no depth number is specified).

(2) New construction and substantial improvements of nonresidential structures within AO zones shall either:

(i) Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, one foot or more above the depth number specified on the FIRM (at least two feet if no depth number is specified); or

(ii) Together with attendant utility and sanitary facilities, be completely flood proofed to or above that level so that any space below that level 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. If this method is used, compliance shall be certified by a registered professional engineer or architect as in Section 13.3(7)(B)(2)(iii).

(3) Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

(4) Recreational vehicles placed on sites within AO Zones on the community's FIRM either:

- (i) Be on the site for fewer than 180 consecutive days,
- (ii) Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- (iii) Meet the requirements of Section 13.3(7)(E) and the elevation and anchoring requirements for manufactured homes.