

**PERTAINING TO THE AMENDMENTS OF THE CALVERT COUNTY ZONING
ORDINANCE SECTION 8-2.03 FLOODPLAIN AREA; SECTION 8-2.08 FINES,
PENALTIES AND MITIGATION; SECTION 11-1.01.D VARIANCES,
FLOODPLAIN; AND ARTICLE 12, DEFINITIONS**

WHEREAS, Title 4 of the *Land Use Article* of the Maryland Annotated Code, as amended, empowers the Board of County Commissioners of Calvert County, Maryland (the “Board of County Commissioners”) to enact a Zoning Ordinance to promote the health, safety and welfare of the citizens of Calvert County, and to provide for its administration, enforcement and amendment;

WHEREAS, by Ordinance 35-06, the Board of County Commissioners of Calvert County, Maryland has heretofore adopted the Calvert County Zoning Ordinance (the “CCZO”);

WHEREAS, after study and evaluation, the Calvert County Department of Community Planning & Building recommended to the Planning Commission and the Board of County Commissioners text amendments to the CCZO Section 8-2.03 Floodplain Area; Section 8-2.08 Fines, Penalties and Mitigation; Section 11-1.01.D Variances, Floodplain; and Article 12 Definitions;

WHEREAS, after due notice was published, the Board of County Commissioners and the Planning Commission of Calvert County, Maryland (hereinafter, the “Planning Commission”) conducted a joint public hearing on October 21, 2014, at which time the proposed amendments were discussed, staff’s recommendations were considered, and public comment was solicited;

WHEREAS, at the conclusion of said public hearing the Planning Commission voted to close the record and approve the amendments and conveyed its recommendation to the Board of County Commissioners by resolution; and

WHEREAS, after considering the evidence which had been presented at the public hearing regarding the proposed text amendments and the recommendation of the Planning Commission, and in furtherance of the public health, safety and welfare, the Board of County Commissioners of Calvert County, Maryland determined it is in the best interest of the citizens of the County to enact the text amendments to the Calvert County Zoning Ordinance as set forth in Exhibit A, attached hereto and made a part hereof.

NOW, THEREFORE, BE IT ORDAINED by the Board of County Commissioners of Calvert County, Maryland, that Section 8-2.03 Floodplain Area, Section 8-2.08 Fines, Penalties and Mitigation, Section 11-1.01.D Variances; Floodplain, and Article 12 Definitions of the CCZO **BE**, and hereby **IS**, amended by adopting the text amendments as shown in attached Exhibit A hereto and made a part hereof (Exhibit B depicts the amendments as they will actually appear in the Zoning Ordinance).

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that, in the event any portion of this Ordinance or the Calvert County Zoning Ordinance, are found to be unconstitutional, illegal, null or void, it is the intent of the Board of

County Commissioners to sever only the invalid portion or provision, and that the remainder of the Ordinance shall be enforceable and valid.

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that the foregoing recitals are adopted as if fully rewritten herein.

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that this amendatory Ordinance shall be effective upon recordation without publication of a fair summary, but not sooner than October 31, 2014 pursuant to *Land Use Article*, §4-203(b)(3).

APPROVED on the 21st day of October, 2014 by the Board of County Commissioners of Calvert County, Maryland.

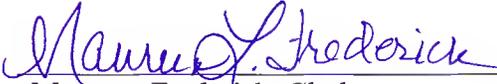
Aye: 5

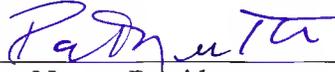
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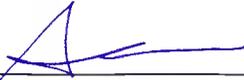
Absent/Abstain: 0

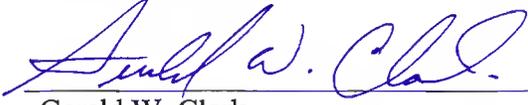
ATTEST:

**BOARD OF COUNTY COMMISSIONERS
OF CALVERT COUNTY, MARYLAND**

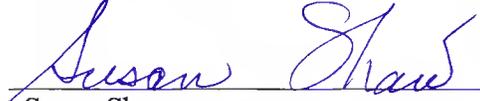

Maureen Frederick, Clerk


Pat Nutter, President

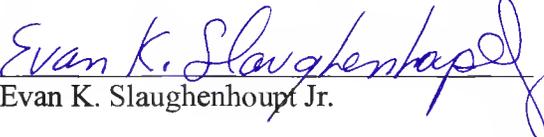

Steven R. Weems, Vice-President


Gerald W. Clark

Approved for form and legal
sufficiency by:


Susan Shaw


John B. Norris, III, County Attorney


Evan K. Slaughenhoupt Jr.

Recorded for Record... November 10, 2014
11:27 o'clock... #... M. Same day
Entered in Liber KPS No. 410
174 COUNTY COMMISSIONERS
RESOLUTION.



Exhibit A

8-2.03 Floodplain Area

A. Background

1. The Federal Emergency Management Agency has identified special flood hazard areas within the boundaries of Calvert County. Special flood hazard areas are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. Structures that are inadequately elevated, improperly floodproofed, or otherwise unprotected from flood damage also contribute to flood losses.
2. Calvert County, by resolution, agreed to meet the requirements of the National Flood Insurance Program and was accepted for participation in the program on September 28, 1984. As of that date or as of September 28, 1984 the initial effective date of the Calvert County *Flood Insurance Rate Map*, all *development* and *new construction* as defined herein, are to be compliant with these regulations.

B. Purpose

It is the purpose of these regulations to promote the public health, safety and general welfare, and to:

1. Protect human life, health and welfare,
2. Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future,
3. Minimize *flooding* of water supply and sanitary sewage disposal systems,
4. Maintain natural drainage,
5. Reduce financial burdens imposed on the *community*, its governmental units and its residents, by discouraging unwise design and construction of *development* in areas subject to *flooding*,
6. Minimize the need for rescue and relief efforts associated with *flooding* and generally undertaken at the expense of the general public,
7. Minimize prolonged business interruptions,
8. Minimize damage to public facilities and other utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges,
9. Reinforce that those who build in and occupy *special flood hazard areas* should assume responsibility for their actions,
10. Minimize the impact of *development* on adjacent properties within and near *flood-prone areas*,
11. Provide that the *flood storage* and conveyance functions of *floodplains* are maintained,

- 12 Minimize the impact of *development* on the natural and beneficial functions of *floodplains*,
- 13 Prevent *floodplain* uses that are either hazardous or environmentally incompatible; and
- 14 Meet community participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations (CFR) at 44 CFR Section 59.2422.

C. Boundaries

These regulations shall apply to all *special flood hazard areas* within the jurisdiction of the Calvert County, and identified below:

1. For the purposes of these regulations, the minimum basis for establishing *special flood hazard areas* and *base flood elevations* is the *Flood Insurance Study* for Calvert County, Maryland and Incorporated Areas dated December 16, 2011 and November 19, 2014, or the most recent revision thereof, and the accompanying *Flood Insurance Rate Maps* and all subsequent amendments and revisions to the *FIRMs*. The *FIS* and *FIRMs* are retained on file and available to the public at the Department of Planning and Zoning.
2. Where field surveyed topography or digital topography indicates that ground elevations are below the closest applicable *base flood elevation*, even in areas not delineated as a special flood hazard on the *FIRM*, the area shall be considered as *special flood hazard area*. Where map boundaries and elevations disagree, elevations prevail, with no approval from FEMA required.
3. To establish *base flood elevations* in *special flood hazard areas* that do not have such elevations shown on the *FIRM*, the Floodplain Administrator may provide the best available data for *base flood elevations*, may require the applicant to obtain available information from Federal, State or other sources, or may require the applicant to establish *special flood hazard areas* and *base flood elevations* as set forth in Section 8-2.03.H.3-5 of these regulations.
4. Land composed of alluvial soils (My soils) on United States Department of Agriculture (USDA) Soil Survey Maps for Calvert County.

D. Abrogation and Greater Restrictions

These regulations are not intended to repeal or abrogate any existing regulations and ordinances, including subdivision regulations, zoning ordinances, *building codes*, or any existing easements, covenants, or deed restrictions. In the event of a conflict between these regulations and any other ordinance or section of this ordinance, the more restrictive shall govern.

E. Interpretation

In the interpretation and application of these regulations, 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; where a provision of these regulations may be in conflict with a State or Federal law, such State or Federal law shall take precedence.

F. Warning and Disclaimer of Liability

1. The degree of *flood* protection required by these regulations is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur, and *flood* heights may be increased by man-made or natural causes. These regulations do not imply that land outside of the *special flood hazard areas* or uses that are permitted within such areas will be free from *flooding* or *flood* damage.
2. These regulations shall not create liability on the part of Calvert County, any officer or employee thereof, the Maryland Department of the Environment (MDE) or the Federal Emergency Management Agency (FEMA), for any *flood* damage that results from reliance on these regulations or any administrative decision lawfully made hereunder.

G. Severability

Should any section or provision of these regulations be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the regulations as a whole, or any part thereof other than the part so declared to be unconstitutional or invalid.

H. Administration

1. Designation of the Floodplain Administrator

The Director of the Department of Planning and Zoning shall appoint the Floodplain Administrator. The Floodplain Administrator may:

- a. Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.
- b. Enter into a written agreement or written contract with another Maryland *community* or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the *community* of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations ([CFR](#)) at 44 C.F.R. Section 59.22.

2. Duties and Responsibilities of the Floodplain Administrator

The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:

- a. Review applications for permits to determine whether proposed activities will be located in flood hazard areas.
- b. Interpret *floodplain* boundaries and provide available *base flood elevation* and *flood* hazard information.
- c. Review applications to determine whether proposed activities will be reasonably safe from *flooding* and require *new construction* and *substantial improvements* to meet the requirements of the floodplain regulations.

- d. Review applications to determine whether all necessary permits have been obtained from the Federal, State or local agencies from which prior or concurrent approval is required; in particular, permits from MDE for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, *structures*), any *alteration of a watercourse*, or any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency *floodplain* of free-flowing *nontidal waters of the State*.
- e. Verify that applicants proposing an *alteration of a watercourse* have notified adjacent communities and MDE (NFIP State Coordinator), and have submitted copies of such notifications to FEMA.
- f. Advise applicants for *new construction* or *substantial improvement of structures* that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that Federal flood insurance is not available on such *structures*; areas subject to this limitation are shown on *Flood Insurance Rate Maps* as Coastal Barrier Resource System Areas (CBRS) or Otherwise Protected Areas (OPA).
- g. Approve applications and issue permits to develop in *flood* hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met.
- h. Inspect or cause to be inspected, buildings, *structures*, and other *development* for which permits have been issued to determine compliance with these regulations or to determine if non-compliance has occurred or *violations* have been committed.
- i. Review *Elevation Certificates* and require incomplete or deficient certificates to be corrected.
- j. Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain *FIRMs*, including *hydrologic and hydraulic engineering analyses* prepared by or for Calvert County, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations or boundaries.
- k. Maintain and permanently keep records that are necessary for the administration of these regulations, including:
 - i. *Flood Insurance Studies, Flood Insurance Rate Maps* (including historic studies and maps and current effective studies and maps) and Letters of Map Change; and
 - ii. Documentation supporting issuance and denial of permits, *Elevation Certificates*, documentation of the elevation (in relation to the datum on the *FIRM*) to which *structures* have been *floodproofed*, other required design certifications, *variances*, and records of enforcement actions taken to correct *violations* of these regulations.
- l. Enforce the provisions of these regulations, investigate *violations*, issue notices of *violations* or stop work orders, and require permit holders to take corrective action.

- m. Advise the Calvert County Board of Appeals regarding the intent of these regulations and, for each application for a *variance*, prepare a staff report and recommendation.
- n. Administer the requirements related to proposed work on existing buildings:
 - i. Make determinations as to whether buildings and *structures* that are located in *flood* hazard areas and that are damaged by any cause have been *substantially damaged*.
 - ii. Make reasonable efforts to notify owners of *substantially damaged structures* of the need to obtain a permit to repair, rehabilitate, or reconstruct, and prohibit the non-compliant repair of *substantially damaged* buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or *structure* to prevent additional damage.
- o. Undertake, as determined appropriate by the Floodplain Administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged *structures*; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged *structures* information related to the proper repair of damaged *structures* in *special flood hazard areas*; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance (ICC) coverage under NFIP flood insurance policies.
- p. Notify the Federal Emergency Management Agency when the corporate boundaries of Calvert County have been modified and:
 - i. Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and
 - ii. If the *FIRM* for any annexed area includes *special flood hazard areas* that have *flood zones* that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the *FIRM* and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place within six months of the date of annexation and a copy of the amended regulations shall be provided to MDE (NFIP State Coordinator) and FEMA.
- q. Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the SFHA, number of permits issued for *development* in the SFHA, and number of *variances* issued for *development* in the SFHA.

3. Use and Interpretation of FIRMs

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of *special flood hazard areas*, *floodplain* boundaries, and *floodway* boundaries. The following shall apply to the use and interpretation of *FIRMs* and data:

- a. Where field surveyed topography indicates that ground elevations:
 - i. Are below the *base flood elevation*, even in areas not delineated as a *special flood hazard area* on a *FIRM*, the area shall be considered as *special flood hazard area* and subject to the requirements of these regulations;
 - ii. Are above the *base flood elevation*, the area shall be regulated as *special flood hazard area* unless the applicant obtains a *Letter of Map Change* that removes the area from the *special flood hazard area*.
- b. In FEMA-identified *special flood hazard areas* where *base flood elevation* and *floodway* data have not been identified and in areas where FEMA has not identified *special flood hazard areas*, any other flood hazard data available from a Federal, State, or other source shall be reviewed and reasonably used.
- c. *Base flood elevations* and designated *floodway* boundaries on *FIRMs* and in *FISs* shall take precedence over *base flood elevations* and *floodway* boundaries by any other sources if such sources show reduced *floodway* widths and/or lower *base flood elevations*.
- d. Other sources of data shall be reasonably used if such sources show increased *base flood elevations* and/or larger *floodway* areas than are shown on *FIRMs* and in *FISs*.
- e. If a *Preliminary Flood Insurance Rate Map* and/or a *Preliminary Flood Insurance Study* has been provided by FEMA:
 - i. Upon the issuance of a *Letter of Final Determination* by FEMA, if the preliminary flood hazard data is more restrictive than the effective data, it shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.
 - ii. Prior to the issuance of a *Letter of Final Determination* by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to Section 8-2.03.C.3 and used where no *base flood elevations* and/or *floodway* areas are provided on the effective *FIRM*.
 - iii. Prior to issuance of a *Letter of Final Determination* by FEMA, the use of preliminary flood hazard data is permitted where the preliminary *base flood elevations*, *floodplain or floodway boundaries or floodway areas* exceed the *base flood elevations* and/or designated *floodway* widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

4. Permits Required and Expiration

- a. It shall be unlawful for any *person* to begin any *development* or construction which is wholly within, partially within, or in contact with any flood hazard area established in Section 8-2.03.C, including but not limited to: filling; grading; construction of new *structures*; the *substantial improvement* of buildings or *structures*, including repair of *substantial damage*; placement or replacement of *manufactured homes*, including *substantial improvement* or repair of *substantial damage* of *manufactured homes*; erecting or installing a *temporary structure*, or *alteration of a watercourse*, until a permit is obtained from Calvert County. No such permit shall be issued until the requirements of these regulations have been met.
- b. In addition to the permits required in paragraph (A), applicants for permits in *nontidal waters of the State* are advised to contact MDE. Unless waived by MDE, pursuant to Code of Maryland Regulations 26.17.04, Construction on Nontidal Waters and Floodplains, MDE regulates the "100-year frequency floodplain of free-flowing waters," also referred to as *nontidal waters of the State*. To determine the 100-year frequency floodplain, hydrologic calculations are based on the ultimate *development* of the watershed, assuming existing zoning. The resulting flood hazard areas delineated using the results of such calculations may be different than the *special flood hazard areas* established in Section 8-2.03.C of these regulations. A permit from Calvert County is required in addition to any State requirements.
- c. A permit in the 100-yr floodplain is valid provided the actual start of work is within 180 days of the date of permit issuance. Requests for extensions shall be submitted in writing. The Floodplain Administrator may grant, in writing, one or more extensions of time, for periods not more than 180 days each.

5. Application Required

- a. At a minimum, applications shall include:
 - i. Site plans drawn to scale showing the nature, location, dimensions, and existing and proposed topography of the area in question, and the location of existing and proposed *structures*, excavation, filling, storage of materials, drainage facilities, and other proposed activities.
 - ii. Elevation of the existing natural ground where buildings or *structures* are proposed, referenced to the datum on the *FIRM*.
 - iii. Delineation of flood hazard areas, designated *floodway* boundaries, *flood zones*, *base flood elevations*, and *flood protection setbacks*. *Base flood elevations* shall be used to delineate the boundary of flood hazard areas and such delineations shall prevail over the boundary of SFHAs shown on *FIRMs*.
 - iv. Where floodways are not delineated or *base flood elevations* are not shown on the *FIRMs*, the Floodplain Administrator has the authority to require the applicant to use information provided by the Floodplain

- Administrator, information that is available from Federal, State, or other sources, or to determine such information using accepted engineering practices or methods approved by the Floodplain Administrator. [Note: See "Managing Floodplain Development in Approximate Zone A Areas: A Guide for Obtaining and Developing Base (100-Year) Flood Elevations" (FEMA 265).]
- v. Determination of the *base flood elevations*, for *development* proposals and subdivision proposals, each with at least 5 lots or at least 5 acres, whichever is the lesser, in *special flood hazard areas* where *base flood elevations* are not shown on the *FIRM*; if *hydrologic and hydraulic engineering analyses* are submitted, such analyses shall be performed in accordance with the requirements and specifications of MDE and FEMA.
 - vi. *Hydrologic and hydraulic engineering analyses* for proposals in *special flood hazard areas* where FEMA has provided *base flood elevations* but has not delineated a *floodway*; such analyses shall demonstrate that the cumulative effect of proposed *development*, when combined with all other existing and anticipated development will not increase the water surface elevation of the *base flood* by more than one foot or a lower increase if required by MDE.
 - vii. For encroachments in *floodways*, an evaluation of alternatives to such encroachments, including different uses of the site or portion of the site within the *floodway*, and minimization of such encroachment.
 - viii. If fill is proposed to be placed for a purpose other than to elevate *structures*, the applicant shall indicate the intended purpose for the fill.
 - ix. For proposed buildings and *structures*, including *substantial improvement* and repair of *substantial damage*, and placement and replacement of manufactured homes, including *substantial improvement* and repair of *substantial damage*:
 - (1) The proposed elevation of the *lowest floor*, including *basement*, referenced to the datum on the *FIRM* and a signed *Agreement to Submit an Elevation Certificate*.
 - (2) The signed *Declaration of Land Restriction (Nonconversion Agreement)* that shall be recorded on the property deed prior to issuance of the Certificate of Use and Occupancy, if the application includes an *enclosure below the lowest floor* or a crawl/underfloor space that is more than four (4) feet in height.
 - (3) A written evaluation of alternative methods considered to elevate *structures* and *manufactured homes*, if the location is in *nontidal waters of the State* and fill is proposed to achieve the elevation required in Section 8-2.03.J.4.a or J.5.a.
 - x. For *accessory structures* that are 300 square feet or larger in area (footprint) **and** that are below the *base flood elevation*, a **signed** *Declaration of Land Restriction (Nonconversion Agreement)* shall be

- recorded on the property deed prior to issuance of the Certificate of Use and Occupancy.
- xi. For *temporary structures* and temporary storage, specification of the duration of the temporary use.
 - xii. For proposed work on existing buildings, *structure*, and *manufactured homes*, including any improvement, addition, repairs, alterations, rehabilitation, or reconstruction, sufficient information to determine if the work constitutes *substantial improvement* or repair of *substantial damage*, including but not limited to:
 - (1) If the existing building or *structure* was constructed after September 28, 1984, evidence that the work will not alter any aspect of the building or *structure* that was required for compliance with the floodplain management requirements in effect at the time the building or *structure* was permitted.
 - (2) If the proposed work is a horizontal addition, a description of the addition and whether it will be independently supported or structurally connected to the *base building* and the nature of all other modifications to the *base building*, if any.
 - (3) Documentation of the *market value* of the building or *structure* before the improvement or, if the work is repair of damage, before the damage occurred.
 - (4) Documentation of the actual cash value of all proposed work, including the actual cash value of all work necessary to repair and restore damage to the before-damaged condition, regardless of the amount of work that will be performed. The value of work performed by the owner or volunteers shall be valued at market labor rates; the value of donated or discounted materials shall be valued at market rates.
 - xiii. Certifications and/or technical analyses prepared or conducted by a *licensed* professional engineer or *licensed* architect, as appropriate, including:
 - (1) The determination of the *base flood elevations* or *hydrologic and hydraulic engineering analyses* prepared by a *licensed* professional engineer that are required by the Floodplain Administrator or are required by these regulations in: Section 8-2.03.I.2 for certain subdivisions and *development*; Section 8-2.03.J.3.a for *development* in designated *floodways*; Section 8-2.03.J.3.c for *development* in flood hazard areas with *base flood elevations* but no designated *floodways*; and Section 8-2.03.J.3.e for deliberate alteration or relocation of *watercourses*.
 - (2) The *Floodproofing Certificate* for nonresidential *structures* that are *floodproofed* as required in Section 8-2.03.J.5.b.
 - (3) Certification that engineered *flood openings* are designed to meet the minimum requirements of Section 8-2.03.J.4.c.iii to automatically equalize hydrostatic flood forces.

- iii. MDE for construction on *nontidal waters of the State* pursuant to COMAR 26.17.04; and
- iv. MDE pursuant to COMAR 26.24 (Tidal Wetlands).
- d. Review applications for compliance with these regulations after all information required in Section 8-2.03.H.1 of these regulations or identified and required by the Floodplain Administrator has been received.
- e. If the Floodplain Administrator or designee finds that the permit application is not in compliance with the Zoning Ordinance, he/she shall provide a referral to the Clerk of the Board of Appeals and to the applicant indicating the section of the Zoning Ordinance that prohibits the proposed activity. The Floodplain Administrator or designee shall also provide a staff report regarding the request prior to the Board of Appeals hearing.

7. Inspections

The Floodplain Administrator, or designee, shall make periodic inspections of *development* permitted in *special flood hazard areas*, at appropriate times throughout the period of construction in order to monitor compliance. Such inspections may include:

- a. Stake-out inspection, to determine location on the site relative to the flood hazard area and designated *floodway*.
 - b. Foundation inspection, upon placement of the *lowest floor* and prior to further vertical construction, to collect information or certification of the elevation of the *lowest floor*.
 - c. Inspection of *enclosures below the lowest floor*, including crawl/underfloor spaces, to determine compliance with applicable provisions.
 - d. Utility inspection, upon installation of specified equipment and appliances, to determine appropriate location with respect to the *base flood elevation*.
 - e. Final inspection prior to issuance of the Certificate of Use and Occupancy.
- #### 8. Submissions Required Prior to Final Inspection

Pursuant to the *Agreement to Submit an Elevation Certificate* submitted with the application as required in Section 8-2.03.H.5.a.ix.(1), the permittee shall have an *Elevation Certificate* prepared and submitted prior to final inspection and issuance of a Certificate of Occupancy for elevated *structures* and *manufactured homes*, including new *structures* and *manufactured homes*, substantially-improved *structures* and *manufactured homes*, and additions to *structures* and *manufactured homes*. The Elevation Certificate shall be completed by a *licensed* professional land surveyor or a *licensed* professional engineer, as specified by the Floodplain Administrator. When used to document the height above grade of buildings in *special flood hazard areas* for which *base flood elevation* data are not available, the Elevation Certificate shall be completed in accordance with the instructions issued by FEMA. [Note: FEMA Form [81-34 086-0-33](#) and instructions are available online at <http://www.fema.gov/library/viewRecord.do?id=1383>.]

I. Requirements In All Flood Hazard Areas

1. Application of Requirements

The general requirements of this section apply to all *development* proposed within all *special flood hazard areas* identified in Section 8-2.03.C.

2. Subdivision Proposals and Development Proposals

a. In all *flood zones*:

- i. Subdivision proposals and *development* proposals shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations.
- ii. Subdivision proposals and *development* proposals shall have utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- iii. Subdivision proposals and *development* proposals shall have adequate drainage paths provided to reduce exposure to flood hazards and to guide floodwaters around and away from proposed *structures*.
- iv. Subdivision proposals and *development* proposals containing at least 5 lots or at least 5 acres, whichever is the lesser, that are wholly or partially in flood hazard areas where *base flood elevation* data are not provided by the Floodplain Administrator or available from other sources, shall be supported by determinations of *base flood elevations* as required in Section 8-2.03.H.5 of these regulations.
- v. Subdivision access roads shall have the driving surface at or above the *base flood elevation*.

b. In *special flood hazard areas* or *nontidal waters of the State*:

- i. Except for unavoidable road and driveway crossings and stormwater management, subdivision proposals shall be laid out such that proposed building pads and Building Restriction Lines are located outside of the *special flood hazard area* and any portion of platted lots that include land areas that are below the *base flood elevation* shall be used for other purposes, deed restricted, or otherwise protected to preserve it as open space. Natural vegetation shall be maintained or allowed to naturally regenerate in the special flood hazard area of a subdivision. The control of invasive species during natural regeneration is encouraged.
- ii. Subdivision access roads shall have the driving surface at or above the *base flood elevation*.

3. Protection of Water Supply and Sanitary Sewage Systems

- a. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems.

- b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters.
 - c. On-site waste disposal systems shall be located to avoid impairment to or contamination from them during conditions of *flooding*.
4. Buildings and Structures

New buildings and *structures* (including the placement and replacement of *manufactured homes*) and *substantial improvement* of existing *structures* (including *manufactured homes*) that are located, in whole or in part, in any *special flood hazard area* shall:

- a. Be designed (or modified) and constructed to safely support flood loads. The construction shall provide a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. *Structures* shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses, including hydrodynamic and hydrostatic loads and the effects of buoyancy, from *flooding* equal to the *flood protection elevation* or the elevation required by these regulations or the *building code*, whichever is higher.
- b. Be constructed by methods and practices that minimize flood damage.
- c. Use *flood damage-resistant materials* below the elevation of the *lowest floor* required in Section 8-2.03.J.4.a (for A Zones) or Section 8-2.03.K.3.b (for V Zones and *Coastal A Zones*).
- d. Have electrical systems, equipment and components, and mechanical, heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment located at or above the elevation of the *lowest floor* required in Section 8-2.03.J.4.a or J.5.a (A Zones) or Section 8-2.03.K.3.b (*V Zones and Coastal A Zones*). Electrical wiring systems are permitted to be located below elevation of the *lowest floor* provided they conform to the provisions of the electrical part of the *building code* for wet locations. If replaced as part of a *substantial improvement*, electrical systems, equipment and components, and heating, ventilation, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall meet the requirements of this section.
- e. As an alternative to paragraph (d), electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the elevation of the *lowest floor* provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to that elevation.
- f. Have the electric panelboard elevated at least ~~three~~ four (4) feet above the BFE.

- g. If located in flood hazard areas (A Zones) that are not identified as *Coastal A Zones* and *coastal high hazard areas* (V Zones), comply with the specific requirements of Section 8-2.03.J.
 - h. If located in the *Coastal A Zone*, comply with the specific requirements of:
 - i. Section 8-2.03.K (new construction and placement of new manufactured homes); or
 - ii. Section 8-2.03.J (*substantial improvements* (including repair of *substantial damage*) and replacement of *manufactured homes*).
 - i. If located in *coastal high hazard areas* (V Zones), comply with the specific requirements of Section 8-2.03.K.
 - j. Comply with the requirements of the most restrictive designation if located on a site that has more than one *flood zone* designation (A Zone, designated *floodway*, *Coastal A Zone*, V Zone).
5. Placement of Fill
- a. Disposal of fill, including but not limited to earthen soils, rock, rubble, construction debris, woody debris, and trash, shall not be permitted in *special flood hazard areas*.
 - b. Fill shall not be placed in *Coastal A Zones* or *coastal high hazard areas* (V Zones) except as provided in Section 8-2.03.K.2.
 - c. Fill proposed to be placed to elevate *structures* in flood hazard areas (A Zones) that are not *Coastal A Zones* or *coastal high hazard areas* (V Zones) shall comply with the floodways requirements in Section 8-2.03.J.3.a, Section 5.3(B), and Section 5.3(C) and the limitations of Section 8-2.03.J.4.b.
6. Historic Features
- Repair, alteration, addition, rehabilitation, or other improvement of *historic features* shall be subject to the requirements of these regulations if the proposed work is determined to be a *substantial improvement*, unless a determination is made that the proposed work will not preclude the *feature's* continued designation as a *historic feature*. The Floodplain Administrator may require documentation of a *structure's* continued eligibility and designation as a *historic feature*.
7. Manufactured Homes
- a. New *manufactured homes* shall not be placed or installed in *floodways* or *coastal high hazard areas* (V Zones).
 - b. For the purpose of these regulations, the *lowest floor* of a *manufactured home* is the bottom of the lowest horizontal supporting member (longitudinal chassis frame beam).
 - c. New *manufactured homes* located outside of *floodways* and *coastal high hazard areas* (V Zones), replacement *manufactured homes* in any flood hazard areas, and *substantial improvement* (including repair of *substantial damage*) of existing *manufactured homes* in all flood hazard area, shall:

- i. Be elevated on a permanent, reinforced foundation in accordance with Section 8-2.03.J or K, as applicable to the *flood zone*;
- ii. Be installed in accordance with the anchor and tie-down requirements of the *building code* or the manufacturer's written installation instructions and specifications; and
- iii. Have *enclosures below the lowest floor* of the elevated *manufactured home*, if any, including enclosures that are surrounded by rigid skirting or other material that is attached to the frame or foundation, that comply with the requirements of Section 8-2.03.J or K, as applicable to the *flood zone*.

[Note: See "Protecting Manufactured Homes from Floods and Other Hazards: A Multi-Hazard Foundation and Installation Guide" (FEMA P-85).]

8. Recreational Vehicles

Recreational vehicles shall:

- a. Meet the requirements for *manufactured homes* in Section 8-2.03.I.7; or
- b. Be fully licensed and ready for highway use; or
- c. Be on a site for less than 180 consecutive days.

9. Critical and Essential Facilities

Critical and essential facilities shall:

- a. Not be located in *coastal high hazard areas* (V Zones), Coastal A Zones or floodways.
- b. If located in flood hazard areas other than *coastal high hazard areas*, Coastal A Zones and floodways, be elevated to the higher of elevation required by these regulations plus one ~~(4)~~ foot (3 foot above the base flood elevation), the elevation required by the *building code*, or the elevation of the 0.2 percent chance (500-year) flood.

10. Temporary Structures and Temporary Storage

In addition to the application requirements of Section 8-2.03.H.5, applications for the placement or erection of *temporary structures* and the temporary storage of any goods, materials, and equipment, shall specify the duration of the temporary use. *Temporary structures* and temporary storage in *floodways* shall meet the limitations of Section 8-2.03.J.3.a of these regulations. In addition:

a. *Temporary structures* shall:

- i. Be designed and constructed to prevent flotation, collapse or lateral movement resulting from hydrodynamic loads and hydrostatic loads during conditions of the *base flood*;
- ii. Have electric service installed in compliance with the electric code; and
- iii. Comply with all other requirements of the applicable State and local permit authorities.

b. Temporary storage shall not include hazardous materials.

11. Gas or Liquid Storage Tanks

- a. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.
- b. Above-ground tanks in flood hazard areas shall be anchored to a supporting structure and elevated to or above the *base flood elevation*, or shall be anchored or otherwise designed and constructed to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.
- c. In flood hazard areas, tank inlets, fill openings, outlets and vents shall be:
 - i. At or above the *base flood elevation* or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the *base flood*; and
 - ii. Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.

12. Functionally Dependent Uses

Applications for *functionally dependent uses* that do not conform to the requirements of these regulations shall be approved only by *variances* issued pursuant to Section 8-2.03.L. If approved, *functionally dependent uses* shall be protected by methods that minimize flood damage during the *base flood*, including measures to allow floodwaters to enter and exit, use of *flood damage-resistant materials*, and elevation of electric service and equipment to the extent practical given the use of the building.

J. Requirements In Flood Hazard Areas (A Zones) That Are Not Coastal High Hazard Areas Or Coastal A Zones

1. General Requirements

In addition to the general requirements of Section 8-2.03.I, the requirements of this section shall:

- a. Apply in flood hazard areas that are not identified as *coastal high hazard areas* (V Zones) or *Coastal A Zones*. These flood hazard areas, referred to collectively as "A Zones," include *special flood hazard areas* along *nontidal waters of the State* landward *coastal high hazard areas* (V Zones), and landward of *Coastal A Zones* (if delineated).
- b. Apply to all development, new construction, substantial improvements (including repair of substantial damage), and placement, replacement, and substantial improvement (including repair of substantial damage) of manufactured homes.

2. Development that Affects Flood-Carrying Capacity of Nontidal Waters of the State

a. Development in Designated Floodways

For proposed *development* that will encroach into a designated *floodway*, Section 8-2.03.H.5.a.vii requires the applicant to submit an evaluation of alternatives to such encroachment, including different uses of the site or the portion of the site within the *floodway*, and minimization of such encroachment. This requirement does not apply to fences that do not block the flow of floodwaters or trap debris. Proposed *development* in a designated *floodway* may be permitted only if:

- i. The applicant has been issued a permit by MDE; and
- ii. The applicant has developed *hydrologic and hydraulic engineering analyses* and technical data prepared by a *licensed* professional engineer reflecting such changes, and the analyses, which shall be submitted to the Floodplain Administrator, demonstrate that the proposed activity will not result in any increase in the *base flood elevation*; or
- iii. The analyses demonstrate that the proposed activities will not result in an increase in the *base flood elevation*, and the applicant has obtained a Conditional Letter of Map Revision and a Letter of Map Revision from FEMA upon completion of the project indicating that the area in question is no longer in the floodway.
- iv. Submittal requirements and fees shall be the responsibility of the applicant.

b. Development that Includes the Placement of Fill in Nontidal Waters of the State

For proposed *development* that includes the placement of fill in *nontidal waters of the State*, other than *development* that is subject to paragraph (d), a hydraulically-equivalent volume of excavation is required. Such excavations shall be designed to drain freely.

c. Development in Areas with Base Flood Elevations but No Designated Floodways

For *development* in *special flood hazard areas* of *nontidal waters of the State* with *base flood elevations* but no designated *floodways*:

- i. The applicant shall develop *hydrologic and hydraulic engineering analyses* and technical data reflecting the proposed activity and shall submit such technical data to the Floodplain Administrator as required in Section 8-2.03.H.4.a. The analyses shall be prepared by a *licensed* professional engineer in a format required by FEMA for a Conditional Letter of Map Revision ~~or and a~~ Letter of Map Revision upon completion of the project. Submittal requirements and fees shall be the responsibility of the applicant.
- ii. The proposed *development* may be permitted if the applicant has received a permit by MDE and if the analyses demonstrate that the cumulative effect of the proposed *development*, when combined with

all other existing and potential flood hazard area encroachments will not increase the *base flood elevation* more than 1.0 foot at any point.

d. Construction of Roads, Bridges, Culverts, Dams and In-Stream Ponds

Construction of roads, bridges, culverts, dams, and in-stream ponds in *nontidal waters of the State* shall not be approved unless they comply with this section and the applicant has received a permit from MDE.

e. Alteration of a Watercourse

For any proposed *development* that involves *alteration of a watercourse* not subject to paragraph (c), unless waived by MDE, the applicant shall develop *hydrologic and hydraulic engineering analyses* and technical data reflecting such changes, including the *floodway* analysis required in Section 8-2.03.H.4.a, and submit such technical data to the Floodplain Administrator and to FEMA. The analyses shall be prepared by a *licensed* professional engineer in a format required by MDE and by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and fees shall be the responsibility of the applicant. *Alteration of a watercourse* may be permitted only upon submission, by the applicant, of the following:

- i. A description of the extent to which the *watercourse* will be altered or relocated;
- ii. A certification by a *licensed* professional engineer that the flood-carrying capacity of the *watercourse* will not be diminished;
- iii. Evidence that adjacent communities, the U.S. Army Corps of Engineers, and MDE have been notified of the proposal, and evidence that such notifications have been submitted to FEMA; and
- iv. Evidence that the applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of the *watercourse* so that the flood carrying capacity will not be diminished. The Floodplain Administrator may require the applicant to enter into an agreement with Calvert County specifying the maintenance responsibilities; if an agreement is required, the permit shall be conditioned to require that the agreement be recorded on the deed of the property which shall be binding on future owners.

3. Residential Structures and Residential Portions of Mixed Use Structures

New residential *structures* and residential portions of mixed use *structures*, and *substantial improvement* (including repair of *substantial damage*) of existing residential *structures* and residential portions of mixed use *structures* shall comply with the applicable requirements of Section 8-2.03.I and this section. See Section 8-2.03.J.6 for requirements for horizontal additions.

a. Elevation Requirements

- i. *Lowest floors* shall be elevated to or above the *flood protection elevation* (2 foot above the Base Flood Elevation).
- ii. In *areas of shallow flooding* (Zone AO), the *lowest floor* (including *basement*) shall be elevated at least as high above the *highest*

adjacent grade as the depth number specified in feet on the *FIRM* plus two (2) feet, or at least four (4) feet if a depth number is not specified. *Enclosures below the lowest floor* shall meet the requirements of paragraph (c).

b. Limitations on Use of Fill to Elevate Structures

Unless otherwise restricted by these regulations, especially by the limitations in Section 8-2.03.J.3.a, b, and c, fill placed for the purpose of raising the ground level to support a building or *structure* shall:

- i. Consist of earthen soil or rock materials only.
- ii. Extend laterally from the building footprint to provide for adequate access as a function of use; the Floodplain Administrator may seek advice from the State Fire Marshal's Office and/or the local fire services agency;
- iii. Comply with the requirements of the *building code* and be placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling;
- iv. Be sloped no steeper than one (1) vertical to two (2) horizontal, unless approved by the Floodplain Administrator;
- v. Be protected from erosion associated with expected velocities during the occurrence of the *base flood*; unless approved by the Floodplain Administrator, fill slopes shall be protected by vegetation if the expected velocity is less than five feet per second, and by other means if the expected velocity is five feet per second or more; and
- vi. Be designed with provisions for adequate drainage and no adverse effect on adjacent properties.

c. Enclosures Below the Lowest Floor

- i. *Enclosures below the lowest floor* shall be used solely for parking of vehicles, building access, crawl/underfloor spaces, or limited storage.
- ii. *Enclosures below the lowest floor* shall be constructed using *flood damage-resistant materials*.
- iii. *Enclosures below the lowest floor* shall be provided with *flood openings* which shall meet the following criteria: [Note: See NFIP Technical Bulletin #1, "Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings."]
 - (1) There shall be a minimum of two *flood openings* on different sides of each enclosed area; if a building has more than one *enclosure below the lowest floor*, each such enclosure shall have *flood openings* on exterior walls.
 - (2) The total net area of all *flood openings* shall be at least 1 square inch for each square foot of enclosed area (non-engineered *flood openings*), or the *flood openings* shall be engineered *flood openings* that are designed and certified by a

licensed professional engineer to automatically allow entry and exit of floodwaters; the certification requirement may be satisfied by an individual certification or an Evaluation Report issued by the ICC Evaluation Service, Inc.

- (3) The bottom of each *flood opening* shall be 1 foot or less above the higher of the interior floor or grade, or the exterior grade, immediately below the opening.
- (4) Any louvers, screens or other covers for the *flood openings* shall allow the automatic flow of floodwaters into and out of the enclosed area.
- (5) If installed in doors, *flood openings* that meet requirements of paragraphs (1) through (4), are acceptable; however, doors without installed *flood openings* do not meet the requirements of this section.

4. Nonresidential Structures and Nonresidential Portions of Mixed Use Structures

New nonresidential *structures* and nonresidential portions of mixed use *structures*, and *substantial improvement* (including repair of *substantial damage*) of existing nonresidential *structures* and nonresidential portions of mixed use *structures* shall comply with the applicable requirements of Section 8-2.03.I and the requirements of this section. See Section 8-2.03.J.6 for requirements for horizontal additions.

a. Elevation Requirements

Elevated *structures* shall:

- i. Have the *lowest floor* (including *basement*) elevated to or above the *flood protection elevation*; or
- ii. In *areas of shallow flooding* (Zone AO), have the *lowest floor* (including *basement*) elevated at least as high above the *highest adjacent grade* as the depth number specified in feet on the *FIRM* plus two (2) feet, or at least four (4) feet if a depth number is not specified; and
- iii. Have *enclosures below the lowest floor*, if any, that comply with the requirements of Section 8-2.03.J.4.c; or
- iv. If proposed to be elevated on fill, meet the limitations on fill in Section 8-2.03.J.4.b.

b. Floodproofing Requirements

- i. *Floodproofing* of new nonresidential buildings:
 - (1) Is not allowed in *nontidal waters of the State* (COMAR 26.17.04.11(B)(7)).
 - (2) Is not allowed in *Coastal A Zones*.
- ii. *Floodproofing* for *substantial improvement* of nonresidential buildings:

(1) Is allowed in *nontidal waters of the State*.

(2) Is allowed in *Coastal A Zones*.

iii. If *floodproofing* is proposed, *structures* shall:

(1) Be designed to be dry *floodproofed* such that the building or *structure* is watertight with walls and floors substantially impermeable to the passage of water to the level of the *flood protection elevation* plus 1.0 foot, or

(2) If located in an *area of shallow flooding* (Zone AO), be dry *floodproofed* at least as high above the *highest adjacent grade* as the depth number specified on the *FIRM* plus three (3) feet, or at least five (5) feet if a depth number is not specified; and

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

(4) Have *floodproofing* measures that are designed taking into consideration the nature of flood-related hazards; frequency, depth and duration of *flooding*; rate of rise and fall of floodwater; soil characteristics; flood-borne debris; at least 12 hours of flood warning time from a credible source; and time necessary to implement any measures that require human intervention;

(5) Have at least one door above the applicable flood elevation that allows human ingress and egress during conditions of *flooding*;

(6) Have an operations and maintenance plan that is filed with local emergency management officials and that specifies the owner/occupant's responsibilities to monitor flood potential; the location of any shields, doors, closures, tools, or other goods that are required for implementation; maintenance of such goods; methods of installation; and periodic inspection; and

(7) Be certified by a *licensed* professional engineer or *licensed* architect, through execution of a *Floodproofing Certificate* that states that the design and methods of construction meet the requirements of this section. The *Floodproofing Certificate* shall be submitted with the construction drawings as required in Section 8-2.03.H.5.a.xiii.

5. Horizontal Additions

a. A horizontal addition proposed for a building or *structure* that was constructed after the date specified in Section 8-2.03.A.2 shall comply with the applicable requirements of Section 8-2.03.I and this section.

b. In *nontidal waters of the State* that are subject to the regulatory authority of MDE, all horizontal additions shall comply with the applicable requirements of Section 8-2.03.I and this section and:

i. If the addition is structurally connected to the *base building*, the requirements of paragraph (c) apply.

- ii. If the addition has an independent foundation and is not structurally connected to the *base building* and the common wall with the *base building* is modified by no more than a doorway, the *base building* is not required to be brought into compliance.
 - c. For horizontal additions that are structurally connected to the *base building*:
 - i. If the addition combined with other proposed repairs, alterations, or modifications of the *base building* constitutes *substantial improvement*, the *base building* and the addition shall comply with the applicable requirements of Section 8-2.03.I and this section.
 - ii. If the addition constitutes *substantial improvement*, the *base building* and the addition shall comply with all of the applicable requirements of Section 8-2.03.I and this section.
 - d. For horizontal additions with independent foundations that are not structurally connected to the *base building* and the common wall with the *base building* is modified by no more than a doorway, the *base building* is not required to be brought into compliance.
 - e. A horizontal addition to a building or structure that is not substantial improvement, and is not located in nontidal waters of the State, is not required to comply with this section. Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]
6. Accessory Structures
- a. In the 100-yr floodplain, detached *accessory structures* shall be limited to no more than 300 square feet in total floor area and shall be used solely for parking of vehicles and limited storage.
 - b. In the 100-yr floodplain, garages attached to the primary structure shall be elevated to the greatest extent possible, but may be permitted as an exemption to the strict elevation requirement if it is no more than 600 square feet in area and meets the requirement of 8-2.03.J.6.c.
 - c. *Accessory structures* shall comply with the elevation requirements and other requirements of Section 8-2.03.J.4, the *floodproofing* requirements of Section 8-2.03.J.5.b, or shall:
 - i. Be useable only for parking of vehicles or limited storage;
 - ii. Be constructed with *flood damage-resistant materials* below the *base flood elevation*;
 - iii. Be constructed and placed to offer the minimum resistance to the flow of floodwaters;
 - iv. Be anchored to prevent flotation;
 - v. Have electrical service and mechanical equipment elevated to or above the *base flood elevation*; and
 - vi. Have *flood openings* that meet the requirements of Section 8-2.03.J.4.c.

K. Requirements in Coastal High Hazard Areas (V Zones) and Coastal A Zones

1. General Requirements

In addition to the general requirements of Section 8-2.03.I, the requirements of this section shall:

a. Apply in flood hazard areas that are identified as *coastal high hazard areas* (V Zones) and *Coastal A Zones* (if delineated).

b. Apply to all development, *new construction, substantial improvements* (including repair of *substantial damage*), and placement, replacement, and *substantial improvement* (including repair of *substantial damage*) of *manufactured homes*.

Exception: In *Coastal A Zones*, the requirements of Section 5.0 shall apply to *substantial improvements* (including repair of *substantial damage*), and *substantial improvement* of *manufactured homes* (including repair of *substantial damage*) and replacement *manufactured homes*. [Note: See Coastal Construction Manual (FEMA [P-55](#)).]

2. Location and Site Preparation

a. The placement of structural fill for the purpose of elevating buildings is prohibited.

b. Buildings shall be located landward of the reach of mean high tide.

c. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

d. Site preparations shall not alter sand dunes unless an engineering analysis demonstrates that the potential for flood damage is not increased.

3. Residential and Nonresidential Structures

New *structures* and *substantial improvement* (including repair of *substantial damage*) of existing *structures* shall comply with the applicable requirements of Section 8-2.03.I and the requirements of this section.

a. Foundations

i. *Structures* shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the *base flood*. Wind loading values shall be those required by applicable *building codes*. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling.

ii. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of *structures* and their foundations to prevent transfer of flood loads to the *structures* during conditions of *flooding*, scour, or erosion from wave-velocity flow

conditions, and shall be designed to minimize debris impacts to adjacent properties and public infrastructure.

b. Elevation Requirements

- i. The bottom of the lowest horizontal structural member that supports the *lowest floor* shall be located at or above the *flood protection elevation*.
- ii. *Basement* floors that are below grade on all sides are prohibited.

c. Certification of Design

As required in Section 8-2.03.H.5.a.xiii, the applicant shall include in the application a certification prepared by a *licensed* professional engineer or a *licensed* architect that the design and methods of construction to be used meet the requirements of paragraph (a), paragraph (b), paragraph (d), and the *building code*.

d. Enclosures Below the Lowest Floor

- i. *Enclosures below the lowest floor* shall be used solely for parking of vehicles, building access or limited storage.
- ii. *Enclosures below the lowest floor* shall be less than 299 square feet in area (exterior measurement).
- iii. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are designed to break away under flood loads and are not part of the structural support of the building or *structure*. [Note: See NFIP Technical Bulletin #9, "Design and Construction Guidance for Breakaway Walls."]
- iv. Electrical, mechanical, and plumbing system components shall not be mounted on or penetrate through walls that are designed to break away under flood loads.
- v. Walls intended to break away under flood loads shall be constructed with insect screening or open lattice, or shall be designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 pounds per square foot and no more than 20 pounds per square foot; or
- vi. Where wind loading values of the *building code* exceed 20 pounds per square foot, the applicant shall submit a certification prepared and sealed by a *licensed* professional engineer or *licensed* architect that:
 - (1) The walls and partitions below the *lowest floor* have been designed to collapse from a water load less than that which would occur during the *base flood*.
 - (2) The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building

components (structural and nonstructural). Water loading values used shall be those associated with the *base flood*; wind loading values used shall be those required by the *building code*.

- (3) In *Coastal A Zones*, in addition to the requirements of this section, walls below the *lowest floor* shall have *flood openings* that meet the requirements of Section 8-2.03.J. 4.c.iii.

4. Horizontal Additions to Structures

- a. A horizontal addition proposed for a building or *structure* that was constructed after the date specified in Section 8-2.03.A.2 shall comply with the applicable requirements of Section 8-2.03.I and this section.
- b. For horizontal additions, whether structurally connected or not structurally connected, to the *base building*:
 - i. If the addition combined with other proposed repairs, alterations, or modifications of the *base building* constitutes *substantial improvement*, the *base building* and the addition shall comply with the applicable requirements of Section 8-2.03.I and this section.
 - ii. If the addition constitutes *substantial improvement*, the *base building* and the addition shall comply with all of the applicable requirements of Section 8-2.03.I and this section. [Note: The *base building* is required to comply otherwise it is an obstruction that does not comply with the *free-of-obstruction* requirement that applies to the elevated addition, see Section 8-2.03.K.3.b.iii.]
- c. A horizontal addition to a building or structure that is not substantial improvement is not required to comply with this section.

5. Accessory Structures

- a. *Accessory structures* shall be limited to no more than 300 square feet in total floor area.
- b. *Accessory structures* shall comply with the elevation requirements and other requirements of Section 8-2.03.K.3 or, if not elevated, shall:
 - i. Be useable only for parking of vehicles or limited storage;
 - ii. Be constructed with *flood damage-resistant materials* below the *base flood elevation*;
 - iii. Be constructed and placed to offer the minimum resistance to the flow of floodwaters;
 - iv. Be anchored to prevent flotation;
 - vi. If larger than 100 square feet in size, have walls that meet the requirements of Section 8-2.03.K.3.d.iii through vi, as applicable for the *flood zone*; and if located in *Coastal A Zones*, walls shall have *flood openings* that meet the requirements of Section 8-2.03.J.4.c.iii.

6. Other Structures and Development

[Note: See NFIP Technical Bulletin #5, "Free-of-Obstruction Requirements."]

a. Decks and Patios

In addition to the requirements of the *building code* or the residential code, decks and patios shall be located, designed, and constructed in compliance with the following:

- i. A deck that is structurally attached to a building or *structure* shall have the bottom of the lowest horizontal structural member at or above the *flood protection elevation* and any supporting members that extend below the design flood elevation shall comply with the foundation requirements that apply to the building or *structure*, which shall be designed to accommodate any increased loads resulting from the attached deck.
- ii. A deck or patio that is located below the *flood protection elevation* shall be structurally independent from *structures* and their foundation systems, and shall be designed and constructed either to remain intact and in place during *base flood* conditions or to break apart into small pieces that will not cause structural damage to adjacent elevated *structures*.
- iii. A deck or patio that has a vertical thickness of more than 12 inches or that is constructed with more than the minimum amount of fill that is necessary for site drainage shall not be approved unless an analysis demonstrates no harmful diversion of floodwaters or wave run-up and wave reflection that would increase damage to adjacent elevated *structures*.
- iv. A deck or patio that has a vertical thickness of 12 inches or less and that is at natural grade or on fill material that is similar to and compatible with local soils and is the minimum amount necessary for site drainage may be approved without requiring analysis of the impact on diversion of floodwaters or wave run-up and wave reflection.

b. Other Development

Other *development* activities shall be permitted only if located outside the footprint of, and not structurally attached to, *structures*, and only if an analysis demonstrates no harmful diversion of floodwaters or wave run-up and wave reflection onto adjacent elevated *structures*. Other *development* includes but is not limited to:

- i. Bulkheads, seawalls, retaining walls, revetments, and similar erosion control structures;
- ii. Solid fences, privacy walls, and fences prone to trapping debris, unless designed and constructed to fail under *base flood* conditions; and
- iii. Mounded septic systems.

L. Variances

The Board of Appeals shall have the power to consider and authorize or deny *variances* from the strict application of the requirements of these regulations. A *variance* shall be approved only if it is determined to not be contrary to the public

interest and where, owing to special conditions of the lot or parcel, a literal enforcement of the provisions of these regulations, an unnecessary hardship would result. Administrative variances are not allowed for variances to floodplain criteria. See Section 11-1.01.D.

M. Enforcement

1. No building, *structure* or *development* shall hereafter be located, erected, constructed, reconstructed, improved, repaired, extended, converted, enlarged or altered without full compliance with the floodplain regulations (Section 8-2.03) and all other applicable regulations.
2. Failure to obtain a permit for development in the floodplain shall be a *violation* of these regulations and shall be subject to [a Notice of Violation, Stop Work Order and](#) penalties in accordance with Section 8-2.08 and Section 1-7 of the Zoning Ordinance.
3. Permits issued on the basis of plans and applications approved by the Floodplain Administrator authorize only the specific activities set forth in such approved plans and applications or amendments thereto. Use, arrangement, or construction of such specific activities in the floodplain that are contrary to that authorization shall be deemed a *violation* of these regulations.

N. All ordinances or parts of ordinances that are inconsistent with the provisions of Sections 8-2.03 and 11-1.01.D of the Zoning Ordinance are hereby repealed to the extent of such inconsistency. Sections 8-2.03, 11-1.01.D, and Article 12 of the Zoning Ordinance shall be amended as required by the Federal Emergency Management Agency, Title 44, Code of Federal Regulations. All subsequent amendments to Sections 8-2.03, 11-1.01.D, and definitions in Article 12, restricted to those definitions required by Title 44, Code of Federal Regulations, of the Zoning Ordinance are subject to the approval of the Federal Emergency Management Agency and the Maryland Department of the Environment.

8-2.08 Fines, Penalties and Mitigation

- A. In addition to the fines and penalties provided for in Section 1-7 of this Zoning Ordinance, the following shall apply to violations of Section 8-2:
1. Any person in violation of Section 8-2.04 (Slopes 25 Percent or Greater and Erodible Soils Adjoining Streams) shall pay a fine not to exceed \$1,000 for each violation and shall be required to replant trees to replace those that have been removed as prescribed in paragraph 'B' of this Section.
 2. Any person in violation of Section 8-2.05 (Wetlands) or 8-2.06 (Development Adjacent to Perennial and Intermittent Streams) shall pay a fine not to exceed \$1,000 for each violation and shall be required to mitigate as prescribed in paragraph 'B' of this Section for the area impacted, filled, cleared, graded, or cut in violation of these sections.
- B. Replanting to correct a violation shall be calculated at the rate of four square feet to one square foot (4:1) of the area cleared, graded, cut, impacted or filled in violation of the provisions of this Section. A mitigation plan shall be approved by the Department of Planning and Zoning and shall include canopy trees at a rate equal to one large tree per 400 square feet, and in the same 400 sq. ft. either two understory trees or three shrubs selected from the document entitled, "Calvert County Native Plant List", adopted by the Board of County Commissioners and available from the Department of Planning and Zoning. In cases where there is less area than needed to replant at 4:1, the remainder shall be mitigated with the payment of fees-in-lieu as set by the Board of County Commissioners.
- C. A person required to conduct replanting as part of a mitigation plan shall post a bond or other financial security to insure compliance with the mitigation plan.
1. Requirements
 - a. A financial security shall be furnished in the form of a surety bond, an irrevocable letter of credit, cash bond, certificate of guarantee, or other surety as authorized from time to time by the Board of County Commissioners and approved by the Office of the County Attorney. The surety shall:
 - i. Name the Board of County Commissioners as obligee;
 - ii. Assure that the mitigation replanting is conducted in accordance with the approved mitigation plan;
 - iii. Be in an amount equal to 1.0 times the cost as approved by the Department of Planning and Zoning of performing the mitigation plus an administrative fee as set by the County Commissioners to cover the costs of inspections and handling of the bond. This fee will be submitted with the bond and will not be reimbursed, but placed in the Planning and zoning Environmental Review Fund;
 - iv. Remain in force until all requirements of the mitigation plan have been fulfilled to the satisfaction of the Department of Planning and Zoning.
 - b. The surety may not be cancelled by the issuing entity unless both of the following requirements are fulfilled:

- i. The issuer notifies the Board of County Commissioners and the principal of its intention to cancel the surety, in writing, by registered mail, not less than 90 days before cancellation; and
 - ii. At least 45 days before the cancellation date indicated in the notice, the principal files a commitment from another entity to provide a substitute surety that will be effective on the cancellation date indicated in the notice.
- 2. Forfeiture of Surety
 - a. The surety shall be subject to forfeiture if the principal fails to comply with the mitigation plan.
 - b. Before forfeiture of the surety, the Board of County Commissioners shall notify the principal and the issuer, by certified mail, of the failure of the principal to comply with the mitigation plan and shall give the principal 30 days to come into compliance.
 - c. If a person fails to come into compliance within the 30-day period, the surety shall be forfeited and the County or its agents shall be allowed access to the property to accomplish the previously bonded planting.
- 3. Release of Surety.
 - a. If, after two growing seasons, the survival of plantings associated with the mitigation plan meets or exceeds the standards of the mitigation plan, the amount of the surety shall be released.
 - b. If, after two growing seasons, the survival of the plantings associated with the mitigation plan is less than the standards of the mitigation plan, the surety shall be reduced by a percentage equal to the percentage of plantings that have survived and that portion of the surety shall be released. An additional administrative fee as set by the County Commissioners will be submitted prior to partial release of the surety to cover the costs of additional inspections and handling of the remaining bond. This fee will not be reimbursed, but placed in the Planning and Zoning Environmental Review Fund.

D. Violation of the Floodplain Regulations (Section 8-2.03)

1. Notice of Violation and Stop Work Order

If the Floodplain Administrator determines that there has been a violation of any provision of these regulations, the Floodplain Administrator shall give notice of such violation to the owner, the owner's authorized agent, and the person responsible for such violation, and may issue a stop work order. The notice of violation or stop work order shall be in writing and shall:

- a. **Include a list of violations, referring to the section or sections of these regulations that have been violated;**
- b. **Order remedial action which, if taken, will effect compliance with the provisions of these regulations;**
- c. **Specify a reasonable period of time to correct the violation;**
- d. **Advise the recipients of the right to appeal; and**

- e. Be served in person; or
- f. Be posted in a conspicuous place in or on the property and sent by registered or certified mail to the last known mailing address, residence, or place of business of the recipients.

2. Violations and Penalties

Violations of the floodplain regulations (Section 8-2.03) or failure to comply with the requirements of these regulations or any conditions attached to a permit or *variance* shall constitute a misdemeanor. Any *person* responsible for a *violation* shall comply with the notice of *violation* or stop work order. Failure to comply shall require a fine of \$500 plus compliance must be achieved. Each day a *violation* continues shall be considered a separate offense. Nothing herein contained shall prevent Calvert County from taking such other lawful action as is necessary to prevent or remedy any *violation*.

Article 11, Section 11-1.01.D Variances; Floodplain.

D. Variances; Floodplain.

1.
 - a. The Board of Appeals shall have the power to consider and authorize or deny *variances* from the strict application of the requirements of Section 8-2.03. Administrative variances are not allowed for variances to floodplain criteria.
 - b. Upon consideration of the purposes of these regulations, the individual circumstances, and the considerations and limitations of this section, the Board of Appeals may attach such conditions to *variances* as it deems necessary to further the purposes of these regulations.
 - c. The Board of Appeals shall notify any applicant to whom a *variance* is granted to construct or substantially improve a building or *structure* with its *lowest floor* below the elevation required by these regulations that the *variance* is to the floodplain management requirements of these regulations only, and that the cost of Federal flood insurance will be commensurate with the increased risk, with rates up to \$25 per \$100 of insurance coverage.
 - d. A record of all *variance* actions, including justification for issuance shall be maintained pursuant to Section 8-2.03.H.2.k of these regulations.
2. Application for a Variance to the Floodplain Regulations (Section 8-2.03)
 - a. ~~The Department of Planning and Zoning shall develop procedures for applying for a variance in the Floodplain Regulations. The owner of the property, or the owner's authorized agent, for which a variance is sought shall submit an application for a Building Permit to the Office of Inspections and Permits. The Department of Community Planning and Building will review the permit and write a referral to the Board of Appeals for all required variances. The owner of the property, or the owner's authorized agent, for which a variance is sought shall submit an application for a variance to the Board of Appeals in accordance with the referral.~~
 - b. At a minimum, the application to the Board of Appeals shall contain the following information: name, address, and telephone number of the applicant and property owner; legal description of the property; parcel map; description of the existing use; description of the proposed use; site map showing the location of flood hazard areas, designated *floodway* boundaries, *flood zones*, and *base flood elevations*; description of the *variance* sought; and reason for the *variance* request. *Variance* applications shall specifically address each of the considerations in Section 3, below.
 - c. If the application is for a *variance* to allow the *lowest floor* (A Zones) or bottom of the lowest horizontal structural member (V Zones and *Coastal A Zones*) of a building or *structure* below the applicable minimum elevation required by these regulations, the application shall include a statement signed by the owner that, if granted, the conditions of the *variance* shall be recorded in the County land records.
 - d. If the application is for a *variance* for a *historic feature* pursuant to Section 8-2.03.1.6 of these regulations, the application shall contain documentation that the proposed work does not preclude the *structure's* continued eligibility and designation as a *historic feature*. The documentation shall be obtained from a source that is authorized to make such determinations (see definition of "Historic Feature").

3. Considerations for Variances

The Board of Appeals Administrator shall request comments on *variance* applications from MDE (NFIP State Coordinator) and County Floodplain Administrator and shall provide such comments to the Board of Appeals. In considering *variance* applications, the Board of Appeals shall consider and make findings of fact on all evaluations, all relevant factors, requirements specified in other sections of the Zoning Ordinance including Section 11-1.01.A and the following factors:

- a. The danger that materials may be swept onto other lands to the injury of others.
- b. The danger to life and property due to *flooding* or erosion damage.
- c. The susceptibility of the proposed *development* and its contents (if applicable) to flood damage and the effect of such damage on the individual owner.
- d. The availability of alternative locations for the proposed use which are not subject to, or are subject to less, *flooding* or erosion damage.
- e. The necessity to the facility of a waterfront location, where applicable, or if the facility is a *functionally dependent use*.
- f. The compatibility of the proposed use with existing and anticipated *development*.
- g. The relationship of the proposed use to the eComprehensive pPlan and Hazard Mitigation Plan for that area.
- h. The safety of access to the property in times of flood for passenger vehicles and emergency vehicles.
- i. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site.
- j. The costs of providing government 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.
- k. The comments provided by MDE (NFIP State Coordinator).

4. Limitations for Granting Variances

The Board of Appeals shall make an affirmative decision on a *variance* request only upon:

- a. A showing of good and sufficient cause. Good and sufficient cause deals solely with the physical characteristics of the property and cannot be based on the character of the improvement, the personal characteristics of the owner/inhabitants, or local provision that regulate standards other than health and public safety.
- b. A determination that failure to grant the *variance* would result in exceptional hardship due to the physical characteristics of the property. Increased cost or inconvenience of meeting the requirements of these regulations does not constitute an exceptional hardship to the applicant.
- c. A determination that the granting of a *variance* for *development* within any designated *floodway*, or flood hazard area with *base flood elevations* but no designated *floodway*, will not result in increased flood heights beyond that which is allowed in these regulations.

- d. A determination that the granting of a *variance* will not result in additional threats to public safety; extraordinary public expense, nuisances, fraud or victimization of the public, or conflict with existing local laws.
- e. A determination that the building, *structure* or other *development* is protected by methods to minimize flood damages.
- f. A determination that the *variance* is the minimum necessary to afford relief, considering the flood hazard.
- g. The approval of the variance is not contrary to the public interest.

Article 12, Definitions

Elevation Certificate (12/14/11)	FEMA Form 81-31 086-0-33, on which surveyed elevations and other data pertinent to a property and a building are identified and which shall be completed by a <i>licensed</i> professional land surveyor or a <i>licensed</i> professional engineer, as specified by the Floodplain Administrator. When used to document the height above grade of buildings in <i>special flood hazard areas</i> for which <i>base flood elevation</i> data are not available, the Elevation Certificate shall be completed in accordance with the instructions issued by FEMA. [Note: FEMA Form 81-31 086-0-33 and instructions are available online at http://www.fema.gov/library/viewRecord.do?id=1383 .]
Flood Opening (12/14/11)	A flood opening (non-engineered) is an opening that is used to meet the prescriptive requirement of 1 square inch of net open area for every square foot of enclosed area. An engineered flood opening is an opening that is designed and certified by a <i>licensed</i> professional engineer or <i>licensed</i> architect as meeting certain performance characteristics, including providing automatic entry and exit of floodwaters; the <u>this</u> certification requirement may be satisfied by an individual certification <u>for a specific structure</u> or issuance of an Evaluation Report by the ICC Evaluation Service, Inc. [Note: See NFIP Technical Bulletin #1, "Openings in Foundation Walls and Walls of Enclosures."]
Flood Zone (12/14/11)	<p>A designation for areas that are shown on <i>Flood Insurance Rate Maps</i>:</p> <ol style="list-style-type: none"> (1) Zone A: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i>; <i>base flood elevations</i> are not determined. (2) Zone AE and Zone A1-30: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i>; <i>base flood elevations</i> are determined; <i>floodways</i> may or may not be determined. In areas subject to tidal <i>flooding</i>, the Limit of Moderate Wave Action may or may not be delineated. (3) Zone AH and Zone AO: <i>Areas of shallow flooding</i>, with <i>flood</i> depths of 1 to 3 feet (usually areas of ponding or sheet flow on sloping terrain), with or without BFEs or designated <i>flood</i> depths. (4) Zone B and Zone X (shaded): Areas subject to inundation by the 0.2-percent annual chance (500-year) <i>flood</i>; areas subject to the 1-percent annual chance (100-year) <i>flood</i> with average depths of less than 1 foot or with contributing drainage area less than 1 square mile; and areas protected from the <i>base flood</i> by levees. (5) Zone C and Zone X (unshaded): Areas outside of Zones designated A, AE, A1-30, AO, VE, V1-30, B, and X (shaded). (6) <u>Zone VE and Zone V1-30: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i> and subject to high velocity wave action (also see <i>coastal high hazard area</i>).</u> <p>Zone VE and Zone V1-30: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i> and subject to high velocity wave action (also see <i>coastal high hazard area</i>).</p>
Floodproofing Certificate (12/14/11)	FEMA Form 81-65 086-0-34 that is to be completed, signed and sealed by a <i>licensed</i> professional engineer or <i>licensed</i> architect to certify that the design of <i>floodproofing</i> and proposed methods of construction are in accordance with the applicable requirements of Section 5.6(B) of these regulations. [Note: FEMA Form 81-65 086-0-34 is available online at http://www.fema.gov/library/viewRecord.do?id=1600 .]

Article 12, Definitions

<p>Historic Feature (9/22/09)(12/14/11)</p>	<p>An object or structure having a special historical, architectural, cultural or aesthetic value for a community that is:</p> <ol style="list-style-type: none"> (1) Individually listed in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listings 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 the Maryland Inventory of Historic Properties or Archeological Sites Inventory maintained by the Maryland Historical Trust; or (4) Individually listed on the inventory of historic places maintained by Calvert County whose historic preservation program has been certified by the Maryland Historical Trust, <u>National Park Service</u>, or the Secretary of the Interior.
<p>Letter of Map Change (LOMC) (12/14/11)</p>	<p>A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective <i>Flood Insurance Rate Map</i> or <i>Flood Insurance Study</i>. Letters of Map Change include:</p> <p>Letter of Map Amendment (LOMA): An amendment based on technical data showing that a property was incorrectly included in a designated <i>special flood hazard area</i>. A LOMA amends the current effective <i>Flood Insurance Rate Map</i> and establishes that a specific property or <i>structure</i> is not located in a <i>special flood hazard area</i>.</p> <p>Letter of Map Revision (LOMR): A revision based on technical data that may show changes to <i>flood zones</i>, <i>flood elevations</i>, <i>floodplain</i> and <i>floodway</i> delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a <i>structure</i> or parcel of land has been elevated by fill above the <i>base flood elevation</i> and is, therefore, no longer exposed to <i>flooding</i> associated with the <i>base flood</i>. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the <i>community's</i> floodplain management regulations.</p> <p>Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed <i>flood</i> protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of <i>special flood hazard areas</i>. <u>A Conditional Letter of Map Revision Based on Fill (CLOMR-F) is a determination that a parcel of land or proposed structure that will be elevated by fill would not be inundated by the base flood if fill is placed on the parcel as proposed or the structure is built as proposed.</u> A CLOMR does not revise the effective <i>Flood Insurance Rate Map</i> or <i>Flood Insurance Study</i>; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA, to revise the effective <i>FIRM</i>.</p>
<p><u>Limit of Moderate Wave Action (LiMWA)</u></p>	<p><u>Inland limit of the area affected by waves greater than 1.5 feet during the base flood. Base flood conditions between the VE Zone and the LiMWA will be similar to, but less severe than those in the VE Zone.</u></p>

Article 12, Definitions

<u>Mixed-Use Structure</u>	<u>Any structure that is used or intended for use for a mixture of nonresidential and residential uses in the same structure.</u>
Substantial Damage (12/14/11)	Damage of any origin sustained by a building or <i>structure</i> whereby the cost of restoring the building or <i>structure</i> to its before damaged condition would equal or exceed 50 percent of the <i>market value</i> of the building or <i>structure</i> before the damage occurred. Also used as "substantially damaged" structures. <u>[Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]</u>
Substantial Improvement (12/14/11)	Any reconstruction, rehabilitation, addition, or other improvement of a building or <i>structure</i> , the cost of which equals or exceeds 50 percent of the <i>market value</i> of the building or <i>structure</i> before the <i>start of construction</i> of the improvement. The term includes <i>structures</i> which have incurred <i>substantial damage</i> , regardless of the actual repair work performed. The term does not, however, include either: <ul style="list-style-type: none"> (1) Any project for improvement of a building or <i>structure</i> to correct existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official prior to submission of an application for a permit and which are the minimum necessary to assure safe living conditions; or (2) Any alteration of a <i>historic structure feature</i>, provided that the alteration will not preclude the <i>structure's</i> continued designation as a <i>historic structure feature</i>. <u>[Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]</u>

Exhibit B

8-2.03 Floodplain Area

A Background

1. The Federal Emergency Management Agency has identified special flood hazard areas within the boundaries of Calvert County. Special flood hazard areas are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. Structures that are inadequately elevated, improperly floodproofed, or otherwise unprotected from flood damage also contribute to flood losses.
2. Calvert County, by resolution, agreed to meet the requirements of the National Flood Insurance Program and was accepted for participation in the program on September 28, 1984. As of that date or as of September 28, 1984 the initial effective date of the Calvert County *Flood Insurance Rate Map*, all *development* and *new construction* as defined herein, are to be compliant with these regulations.

B Purpose

It is the purpose of these regulations to promote the public health, safety and general welfare, and to:

1. Protect human life, health and welfare,
2. Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future,
3. Minimize *flooding* of water supply and sanitary sewage disposal systems,
4. Maintain natural drainage,
5. Reduce financial burdens imposed on the *community*, its governmental units and its residents, by discouraging unwise design and construction of *development* in areas subject to *flooding*,
6. Minimize the need for rescue and relief efforts associated with *flooding* and generally undertaken at the expense of the general public,
7. Minimize prolonged business interruptions,
8. Minimize damage to public facilities and other utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges,
9. Reinforce that those who build in and occupy *special flood hazard areas* should assume responsibility for their actions,
10. Minimize the impact of *development* on adjacent properties within and near *flood-prone* areas,
11. Provide that the *flood* storage and conveyance functions of *floodplains* are maintained,

12. Minimize the impact of *development* on the natural and beneficial functions of *floodplains*,
13. Prevent *floodplain* uses that are either hazardous or environmentally incompatible; and
14. Meet community participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations (CFR) at 44 CFR Section 59.22.

C Boundaries

These regulations shall apply to all *special flood hazard areas* within the jurisdiction of the Calvert County, and identified below:

1. For the purposes of these regulations, the minimum basis for establishing *special flood hazard areas* and *base flood elevations* is the *Flood Insurance Study* for Calvert County, Maryland and Incorporated Areas dated December 16, 2011 and November 19, 2014, or the most recent revision thereof, and the accompanying *Flood Insurance Rate Maps* and all subsequent amendments and revisions to the *FIRMs*. The *FIS* and *FIRMs* are retained on file and available to the public at the Department of Planning and Zoning.
2. Where field surveyed topography or digital topography indicates that ground elevations are below the closest applicable *base flood elevation*, even in areas not delineated as a special flood hazard on the *FIRM*, the area shall be considered as *special flood hazard area*. Where map boundaries and elevations disagree, elevations prevail, with no approval from FEMA required.
3. To establish *base flood elevations* in *special flood hazard areas* that do not have such elevations shown on the *FIRM*, the Floodplain Administrator may provide the best available data for *base flood elevations*, may require the applicant to obtain available information from Federal, State or other sources, or may require the applicant to establish *special flood hazard areas* and *base flood elevations* as set forth in Section 8-2.03.H.3-5 of these regulations.
4. Land composed of alluvial soils (My soils) on United States Department of Agriculture (USDA) Soil Survey Maps for Calvert County.

D Abrogation and Greater Restrictions

These regulations are not intended to repeal or abrogate any existing regulations and ordinances, including subdivision regulations, zoning ordinances, *building codes*, or any existing easements, covenants, or deed restrictions. In the event of a conflict between these regulations and any other ordinance or section of this ordinance, the more restrictive shall govern.

E Interpretation

In the interpretation and application of these regulations, 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; where a provision of these regulations may be in conflict with a State or Federal law, such State or Federal law shall take precedence.

F Warning and Disclaimer of Liability

1. The degree of *flood* protection required by these regulations is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur, and *flood* heights may be increased by man-made or natural causes. These regulations do not imply that land outside of the *special flood hazard areas* or uses that are permitted within such areas will be free from *flooding* or *flood* damage.
2. These regulations shall not create liability on the part of Calvert County, any officer or employee thereof, the Maryland Department of the Environment (MDE) or the Federal Emergency Management Agency (FEMA), for any *flood* damage that results from reliance on these regulations or any administrative decision lawfully made hereunder.

G Severability

Should any section or provision of these regulations be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the regulations as a whole, or any part thereof other than the part so declared to be unconstitutional or invalid.

H Administration

1. Designation of the Floodplain Administrator
The Director of the Department of Planning and Zoning shall appoint the Floodplain Administrator. The Floodplain Administrator may:
 - a. Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.
 - b. Enter into a written agreement or written contract with another Maryland *community* or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the *community* of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations (CFR) at 44 CFR Section 59.22.
2. Duties and Responsibilities of the Floodplain Administrator
The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:
 - a. Review applications for permits to determine whether proposed activities will be located in flood hazard areas.

- b. Interpret *floodplain* boundaries and provide available *base flood elevation* and *flood* hazard information.
- c. Review applications to determine whether proposed activities will be reasonably safe from *flooding* and require *new construction* and *substantial improvements* to meet the requirements of the floodplain regulations.
- d. Review applications to determine whether all necessary permits have been obtained from the Federal, State or local agencies from which prior or concurrent approval is required; in particular, permits from MDE for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, *structures*), any *alteration of a watercourse*, or any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency *floodplain* of free-flowing *nontidal waters of the State*.
- e. Verify that applicants proposing an *alteration of a watercourse* have notified adjacent communities and MDE (NFIP State Coordinator), and have submitted copies of such notifications to FEMA.
- f. Advise applicants for *new construction* or *substantial improvement of structures* that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that Federal flood insurance is not available on such *structures*; areas subject to this limitation are shown on *Flood Insurance Rate Maps* as Coastal Barrier Resource System Areas (CBRS) or Otherwise Protected Areas (OPA).
- g. Approve applications and issue permits to develop in *flood* hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met.
- h. Inspect or cause to be inspected, buildings, *structures*, and other *development* for which permits have been issued to determine compliance with these regulations or to determine if non-compliance has occurred or *violations* have been committed.
- i. Review *Elevation Certificates* and require incomplete or deficient certificates to be corrected.
- j. Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain *FIRMs*, including *hydrologic and hydraulic engineering analyses* prepared by or for Calvert County, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations or boundaries.
- k. Maintain and permanently keep records that are necessary for the administration of these regulations, including:
 - i. *Flood Insurance Studies, Flood Insurance Rate Maps* (including historic studies and maps and current effective studies and maps) and Letters of Map Change; and
 - ii. Documentation supporting issuance and denial of permits, *Elevation Certificates*, documentation of the elevation (in relation to the datum on the *FIRM*) to which *structures* have been *floodproofed*, other

required design certifications, *variances*, and records of enforcement actions taken to correct *violations* of these regulations.

- l. Enforce the provisions of these regulations, investigate *violations*, issue notices of *violations* or stop work orders, and require permit holders to take corrective action.
- m. Advise the Calvert County Board of Appeals regarding the intent of these regulations and, for each application for a *variance*, prepare a staff report and recommendation.
- n. Administer the requirements related to proposed work on existing buildings:
 - i. Make determinations as to whether buildings and *structures* that are located in *flood* hazard areas and that are damaged by any cause have been *substantially damaged*.
 - ii. Make reasonable efforts to notify owners of *substantially damaged structures* of the need to obtain a permit to repair, rehabilitate, or reconstruct, and prohibit the non-compliant repair of *substantially damaged* buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or *structure* to prevent additional damage.
- o. Undertake, as determined appropriate by the Floodplain Administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged *structures*; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged *structures* information related to the proper repair of damaged *structures* in *special flood hazard areas*; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance (ICC) coverage under NFIP flood insurance policies.
- p. Notify the Federal Emergency Management Agency when the corporate boundaries of Calvert County have been modified and:
 - i. Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and
 - ii. If the *FIRM* for any annexed area includes *special flood hazard areas* that have *flood zones* that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the *FIRM* and appropriate requirements, and submit the amendments to the governing body for adoption; such adoption shall take place within six months of the date of annexation and a copy of the amended regulations shall be provided to MDE (NFIP State Coordinator) and FEMA.
- q. Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the SFHA, number of permits issued for

development in the SFHA, and number of *variances* issued for *development* in the SFHA.

3. Use and Interpretation of FIRMs

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of *special flood hazard areas*, *floodplain* boundaries, and *floodway* boundaries. The following shall apply to the use and interpretation of *FIRMs* and data:

- a. Where field surveyed topography indicates that ground elevations:
 - i. Are below the *base flood elevation*, even in areas not delineated as a *special flood hazard area* on a *FIRM*, the area shall be considered as *special flood hazard area* and subject to the requirements of these regulations;
 - ii. Are above the *base flood elevation*, the area shall be regulated as *special flood hazard area* unless the applicant obtains a *Letter of Map Change* that removes the area from the *special flood hazard area*.
- b. In FEMA-identified *special flood hazard areas* where *base flood elevation* and *floodway* data have not been identified and in areas where FEMA has not identified *special flood hazard areas*, any other flood hazard data available from a Federal, State, or other source shall be reviewed and reasonably used.
- c. *Base flood elevations* and designated *floodway* boundaries on *FIRMs* and in *FISs* shall take precedence over *base flood elevations* and *floodway* boundaries by any other sources if such sources show reduced *floodway* widths and/or lower *base flood elevations*.
- d. Other sources of data shall be reasonably used if such sources show increased *base flood elevations* and/or larger *floodway* areas than are shown on *FIRMs* and in *FISs*.
- e. If a Preliminary *Flood Insurance Rate Map* and/or a Preliminary *Flood Insurance Study* has been provided by FEMA:
 - i. Upon the issuance of a Letter of Final Determination by FEMA, if the preliminary flood hazard data is more restrictive than the effective data, it shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.
 - ii. Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to Section 8-2.03.C.3 and used where no *base flood elevations* and/or *floodway* areas are provided on the effective *FIRM*.
 - iii. Prior to issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary *base flood elevations*, *floodplain* or *floodway boundaries* exceed the *base flood elevations* and/or designated *floodway* widths in existing

flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

4. Permits Required and Expiration
 - a. It shall be unlawful for any *person* to begin any *development* or construction which is wholly within, partially within, or in contact with any flood hazard area established in Section 8-2.03.C, including but not limited to: filling; grading; construction of new *structures*; the *substantial improvement* of buildings or *structures*, including repair of *substantial damage*; placement or replacement of *manufactured homes*, including *substantial improvement* or repair of *substantial damage* of *manufactured homes*; erecting or installing a *temporary structure*, or *alteration of a watercourse*, until a permit is obtained from Calvert County. No such permit shall be issued until the requirements of these regulations have been met.
 - b. In addition to the permits required in paragraph (A), applicants for permits in *nontidal waters of the State* are advised to contact MDE. Unless waived by MDE, pursuant to Code of Maryland Regulations 26.17.04, Construction on Nontidal Waters and Floodplains, MDE regulates the "100-year frequency floodplain of free-flowing waters," also referred to as *nontidal waters of the State*. To determine the 100-year frequency floodplain, hydrologic calculations are based on the ultimate *development* of the watershed, assuming existing zoning. The resulting flood hazard areas delineated using the results of such calculations may be different than the *special flood hazard areas* established in Section 8-2.03.C of these regulations. A permit from Calvert County is required in addition to any State requirements.
 - c. A permit in the 100-yr floodplain is valid provided the actual start of work is within 180 days of the date of permit issuance. Requests for extensions shall be submitted in writing. The Floodplain Administrator may grant, in writing, one or more extensions of time, for periods not more than 180 days each.
5. Application Required
 - a. At a minimum, applications shall include:
 - i. Site plans drawn to scale showing the nature, location, dimensions, and existing and proposed topography of the area in question, and the location of existing and proposed *structures*, excavation, filling, storage of materials, drainage facilities, and other proposed activities.
 - ii. Elevation of the existing natural ground where buildings or *structures* are proposed, referenced to the datum on the *FIRM*.
 - iii. Delineation of flood hazard areas, designated *floodway* boundaries, *flood zones*, *base flood elevations*, and *flood protection setbacks*. *Base flood elevations* shall be used to delineate the boundary of flood hazard areas and such delineations shall prevail over the boundary of SFHAs shown on *FIRMs*.

- iv. Where floodways are not delineated or *base flood elevations* are not shown on the *FIRMs*, the Floodplain Administrator has the authority to require the applicant to use information provided by the Floodplain Administrator, information that is available from Federal, State, or other sources, or to determine such information using accepted engineering practices or methods approved by the Floodplain Administrator. [Note: See "Managing Floodplain Development in Approximate Zone A Areas: A Guide for Obtaining and Developing Base (100-Year) Flood Elevations" (FEMA 265).]
- v. Determination of the *base flood elevations*, for *development* proposals and subdivision proposals, each with at least 5 lots or at least 5 acres, whichever is the lesser, in *special flood hazard areas* where *base flood elevations* are not shown on the *FIRM*; if *hydrologic and hydraulic engineering analyses* are submitted, such analyses shall be performed in accordance with the requirements and specifications of MDE and FEMA.
- vi. *Hydrologic and hydraulic engineering analyses* for proposals in *special flood hazard areas* where FEMA has provided *base flood elevations* but has not delineated a *floodway*; such analyses shall demonstrate that the cumulative effect of proposed *development*, when combined with all other existing and anticipated development will not increase the water surface elevation of the *base flood* by more than one foot or a lower increase if required by MDE.
- vii. For encroachments in *floodways*, an evaluation of alternatives to such encroachments, including different uses of the site or portion of the site within the *floodway*, and minimization of such encroachment.
- viii. If fill is proposed to be placed for a purpose other than to elevate *structures*, the applicant shall indicate the intended purpose for the fill.
- ix. For proposed buildings and *structures*, including *substantial improvement* and repair of *substantial damage*, and placement and replacement of manufactured homes, including *substantial improvement* and repair of *substantial damage*:
 - (1) The proposed elevation of the *lowest floor*, including *basement*, referenced to the datum on the *FIRM* and a signed *Agreement to Submit an Elevation Certificate*.
 - (2) The signed *Declaration of Land Restriction (Nonconversion Agreement)* that shall be recorded on the property deed prior to issuance of the Certificate of Use and Occupancy, if the application includes an *enclosure below the lowest floor* or a crawl/underfloor space that is more than four (4) feet in height.
 - (3) A written evaluation of alternative methods considered to elevate *structures* and *manufactured homes*, if the location is in *nontidal waters of the State* and fill is proposed to achieve the elevation required in Section 8-2.03.J.4.a or J.5.a.

- x. For *accessory structures* that are 300 square feet or larger in area (footprint) and that are below the *base flood elevation*, a signed *Declaration of Land Restriction (Nonconversion Agreement)* shall be recorded on the property deed prior to issuance of the Certificate of Use and Occupancy.
- xi. For *temporary structures* and temporary storage, specification of the duration of the temporary use.
- xii. For proposed work on existing buildings, *structure*, and *manufactured homes*, including any improvement, addition, repairs, alterations, rehabilitation, or reconstruction, sufficient information to determine if the work constitutes *substantial improvement* or repair of *substantial damage*, including but not limited to:
 - (1) If the existing building or *structure* was constructed after September 28, 1984, evidence that the work will not alter any aspect of the building or *structure* that was required for compliance with the floodplain management requirements in effect at the time the building or *structure* was permitted.
 - (2) If the proposed work is a horizontal addition, a description of the addition and whether it will be independently supported or structurally connected to the *base building* and the nature of all other modifications to the *base building*, if any.
 - (3) Documentation of the *market value* of the building or *structure* before the improvement or, if the work is repair of damage, before the damage occurred.
 - (4) Documentation of the actual cash value of all proposed work, including the actual cash value of all work necessary to repair and restore damage to the before-damaged condition, regardless of the amount of work that will be performed. The value of work performed by the owner or volunteers shall be valued at market labor rates; the value of donated or discounted materials shall be valued at market rates.
- xiii. Certifications and/or technical analyses prepared or conducted by a *licensed professional engineer* or *licensed architect*, as appropriate, including:
 - (1) The determination of the *base flood elevations* or *hydrologic and hydraulic engineering analyses* prepared by a *licensed professional engineer* that are required by the Floodplain Administrator or are required by these regulations in: Section 8-2.03.I.2 for certain subdivisions and *development*; Section 8-2.03.J.3.a for *development* in designated *floodways*; Section 8-2.03.J.3.c for *development* in flood hazard areas with *base flood elevations* but no designated *floodways*; and Section 8-2.03.J.3.e for deliberate alteration or relocation of *watercourses*.
 - (2) The *Floodproofing Certificate* for nonresidential *structures* that are *floodproofed* as required in Section 8-2.03.J.5.b.

- ii. MDE pursuant to COMAR 26.23 (Nontidal Wetlands) and Section 401 of the Clean Water Act;
 - iii. MDE for construction on *nontidal waters of the State* pursuant to COMAR 26.17.04; and
 - iv. MDE pursuant to COMAR 26.24 (Tidal Wetlands).
- d. Review applications for compliance with these regulations after all information required in Section 8-2.03.H.1 of these regulations or identified and required by the Floodplain Administrator has been received.
 - e. If the Floodplain Administrator or designee finds that the permit application is not in compliance with the Zoning Ordinance, he/she shall provide a referral to the Clerk of the Board of Appeals and to the applicant indicating the section of the Zoning Ordinance that prohibits the proposed activity. The Floodplain Administrator or designee shall also provide a staff report regarding the request prior to the Board of Appeals hearing.

7. Inspections

The Floodplain Administrator, or designee, shall make periodic inspections of *development* permitted in *special flood hazard areas*, at appropriate times throughout the period of construction in order to monitor compliance. Such inspections may include:

- a. Stake-out inspection, to determine location on the site relative to the flood hazard area and designated *floodway*.
 - b. Foundation inspection, upon placement of the *lowest floor* and prior to further vertical construction, to collect information or certification of the elevation of the *lowest floor*.
 - c. Inspection of *enclosures below the lowest floor*, including crawl/underfloor spaces, to determine compliance with applicable provisions.
 - d. Utility inspection, upon installation of specified equipment and appliances, to determine appropriate location with respect to the *base flood elevation*.
 - e. Final inspection prior to issuance of the Certificate of Use and Occupancy.
- #### 8. Submissions Required Prior to Final Inspection

Pursuant to the *Agreement to Submit an Elevation Certificate* submitted with the application as required in Section 8-2.03.H.5.a.ix.(1), the permittee shall have an *Elevation Certificate* prepared and submitted prior to final inspection and issuance of a Certificate of Occupancy for elevated *structures* and *manufactured homes*, including new *structures* and *manufactured homes*, substantially-improved *structures* and *manufactured homes*, and additions to *structures* and *manufactured homes*. The Elevation Certificate shall be completed by a *licensed* professional land surveyor or a *licensed* professional engineer, as specified by the Floodplain Administrator. When used to document the height above grade of buildings in *special flood hazard areas* for which *base flood elevation* data are not available, the Elevation Certificate shall be completed in accordance with the instructions issued by FEMA. [Note: FEMA Form 086-0-33 and instructions are available online at <http://www.fema.gov/library/viewRecord.do?id=1383>.]

I. Requirements In All Flood Hazard Areas

1. Application of Requirements

The general requirements of this section apply to all *development* proposed within all *special flood hazard areas* identified in Section 8-2.03.C.

2. Subdivision Proposals and Development Proposals

a. In all *flood zones*:

- i. Subdivision proposals and *development* proposals shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations.
- ii. Subdivision proposals and *development* proposals shall have utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- iii. Subdivision proposals and *development* proposals shall have adequate drainage paths provided to reduce exposure to flood hazards and to guide floodwaters around and away from proposed *structures*.
- iv. Subdivision proposals and *development* proposals containing at least 5 lots or at least 5 acres, whichever is the lesser, that are wholly or partially in flood hazard areas where *base flood elevation* data are not provided by the Floodplain Administrator or available from other sources, shall be supported by determinations of *base flood elevations* as required in Section 8-2.03.H.5 of these regulations.
- v. Subdivision access roads shall have the driving surface at or above the *base flood elevation*.

b. In *special flood hazard areas* or *nontidal waters of the State*:

- i. Except for unavoidable road and driveway crossings and stormwater management, subdivision proposals shall be laid out such that proposed building pads and Building Restriction Lines are located outside of the *special flood hazard area* and any portion of platted lots that include land areas that are below the *base flood elevation* shall be used for other purposes, deed restricted, or otherwise protected to preserve it as open space. Natural vegetation shall be maintained or allowed to naturally regenerate in the special flood hazard area of a subdivision. The control of invasive species during natural regeneration is encouraged.
- ii. Subdivision access roads shall have the driving surface at or above the *base flood elevation*.

3. Protection of Water Supply and Sanitary Sewage Systems

- a. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems.

- b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters.
 - c. On-site waste disposal systems shall be located to avoid impairment to or contamination from them during conditions of *flooding*.
4. Buildings and Structures
- New buildings and *structures* (including the placement and replacement of *manufactured homes*) and *substantial improvement* of existing *structures* (including *manufactured homes*) that are located, in whole or in part, in any *special flood hazard area* shall:
- a. Be designed (or modified) and constructed to safely support flood loads. The construction shall provide a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. *Structures* shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses, including hydrodynamic and hydrostatic loads and the effects of buoyancy, from *flooding* equal to the *flood protection elevation* or the elevation required by these regulations or the *building code*, whichever is higher.
 - b. Be constructed by methods and practices that minimize flood damage.
 - c. Use *flood damage-resistant materials* below the elevation of the *lowest floor* required in Section 8-2.03.J.4.a (for A Zones) or Section 8-2.03.K.3.b (for V Zones and *Coastal A Zones*).
 - d. Have electrical systems, equipment and components, and mechanical, heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment located at or above the elevation of the *lowest floor* required in Section 8-2.03.J.4.a or J.5.a (A Zones) or Section 8-2.03.K.3.b (V Zones and *Coastal A Zones*). Electrical wiring systems are permitted to be located below elevation of the *lowest floor* provided they conform to the provisions of the electrical part of the *building code* for wet locations. If replaced as part of a *substantial improvement*, electrical systems, equipment and components, and heating, ventilation, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall meet the requirements of this section.
 - e. As an alternative to paragraph (d), electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the elevation of the *lowest floor* provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to that elevation.
 - f. Have the electric panelboard elevated at least four (4) feet above the BFE.

- g. If located in flood hazard areas (A Zones) that are not identified as *Coastal A Zones* and *coastal high hazard areas* (V Zones), comply with the specific requirements of Section 8-2.03.J.
 - h. If located in the *Coastal A Zone*, comply with the specific requirements of:
 - i. Section 8-2.03.K (new construction and placement of new manufactured homes); or
 - ii. Section 8-2.03.J (*substantial improvements* (including repair of *substantial damage*) and replacement of *manufactured homes*).
 - i. If located in *coastal high hazard areas* (V Zones), comply with the specific requirements of Section 8-2.03.K.
 - j. Comply with the requirements of the most restrictive designation if located on a site that has more than one *flood zone* designation (A Zone, designated *floodway*, *Coastal A Zone*, V Zone).
5. Placement of Fill
- a. Disposal of fill, including but not limited to earthen soils, rock, rubble, construction debris, woody debris, and trash, shall not be permitted in *special flood hazard areas*.
 - b. Fill shall not be placed in *Coastal A Zones* or *coastal high hazard areas* (V Zones) except as provided in Section 8-2.03.K.2.
 - c. Fill proposed to be placed to elevate *structures* in flood hazard areas (A Zones) that are not *Coastal A Zones* or *coastal high hazard areas* (V Zones) shall comply with the floodways requirements in Section 8-2.03.J.3.a, Section 5.3(B), and Section 5.3(C) and the limitations of Section 8-2.03.J.4.b.
6. Historic Features
- Repair, alteration, addition, rehabilitation, or other improvement of *historic features* shall be subject to the requirements of these regulations if the proposed work is determined to be a *substantial improvement*, unless a determination is made that the proposed work will not preclude the *feature's* continued designation as a *historic feature*. The Floodplain Administrator may require documentation of a *structure's* continued eligibility and designation as a *historic feature*.
7. Manufactured Homes
- a. New *manufactured homes* shall not be placed or installed in *floodways* or *coastal high hazard areas* (V Zones).
 - b. For the purpose of these regulations, the *lowest floor* of a *manufactured home* is the bottom of the lowest horizontal supporting member (longitudinal chassis frame beam).
 - c. New *manufactured homes* located outside of *floodways* and *coastal high hazard areas* (V Zones), replacement *manufactured homes* in any flood hazard areas, and *substantial improvement* (including repair of *substantial damage*) of existing *manufactured homes* in all flood hazard area, shall:

- i. Be elevated on a permanent, reinforced foundation in accordance with Section 8-2.03.J or K, as applicable to the *flood zone*;
- ii. Be installed in accordance with the anchor and tie-down requirements of the *building code* or the manufacturer's written installation instructions and specifications; and
- iii. Have *enclosures below the lowest floor* of the elevated *manufactured home*, if any, including enclosures that are surrounded by rigid skirting or other material that is attached to the frame or foundation, that comply with the requirements of Section 8-2.03.J or K, as applicable to the *flood zone*.

[Note: See "Protecting Manufactured Homes from Floods and Other Hazards: A Multi-Hazard Foundation and Installation Guide" (FEMA P-85).]

8. Recreational Vehicles

Recreational vehicles shall:

- a. Meet the requirements for *manufactured homes* in Section 8-2.03.I.7; or
- b. Be fully licensed and ready for highway use; or
- c. Be on a site for less than 180 consecutive days.

9. Critical and Essential Facilities

Critical and essential facilities shall:

- a. Not be located in *coastal high hazard areas* (V Zones), Coastal A Zones or floodways.
- b. If located in flood hazard areas other than *coastal high hazard areas*, Coastal A Zones and floodways, be elevated to the higher of elevation required by these regulations plus one foot (3 foot above the *base flood elevation*), the elevation required by the *building code*, or the elevation of the 0.2 percent chance (500-year) flood.

10. Temporary Structures and Temporary Storage

In addition to the application requirements of Section 8-2.03.H.5, applications for the placement or erection of *temporary structures* and the temporary storage of any goods, materials, and equipment, shall specify the duration of the temporary use. *Temporary structures* and temporary storage in *floodways* shall meet the limitations of Section 8-2.03.J.3.a of these regulations. In addition:

- a. *Temporary structures* shall:
 - i. Be designed and constructed to prevent flotation, collapse or lateral movement resulting from hydrodynamic loads and hydrostatic loads during conditions of the *base flood*;
 - ii. Have electric service installed in compliance with the electric code; and
 - iii. Comply with all other requirements of the applicable State and local permit authorities.
- b. Temporary storage shall not include hazardous materials.

11. Gas or Liquid Storage Tanks

- a. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.
- b. Above-ground tanks in flood hazard areas shall be anchored to a supporting structure and elevated to or above the *base flood elevation*, or shall be anchored or otherwise designed and constructed to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.
- c. In flood hazard areas, tank inlets, fill openings, outlets and vents shall be:
 - i. At or above the *base flood elevation* or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the *base flood*; and
 - ii. Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the *base flood*.

12. Functionally Dependent Uses

Applications for *functionally dependent uses* that do not conform to the requirements of these regulations shall be approved only by *variances* issued pursuant to Section 8-2.03.L. If approved, *functionally dependent uses* shall be protected by methods that minimize flood damage during the *base flood*, including measures to allow floodwaters to enter and exit, use of *flood damage-resistant materials*, and elevation of electric service and equipment to the extent practical given the use of the building.

J. Requirements In Flood Hazard Areas (A Zones) That Are Not Coastal High Hazard Areas Or Coastal A Zones

1. General Requirements

In addition to the general requirements of Section 8-2.03.I, the requirements of this section shall:

- a. Apply in flood hazard areas that are not identified as *coastal high hazard areas* (V Zones) or *Coastal A Zones*. These flood hazard areas, referred to collectively as "A Zones," include *special flood hazard areas* along *nontidal waters of the State* landward *coastal high hazard areas* (V Zones), and landward of *Coastal A Zones* (if delineated).
- b. Apply to all development, new construction, substantial improvements (including repair of substantial damage), and placement, replacement, and substantial improvement (including repair of substantial damage) of manufactured homes.

2. Development that Affects Flood-Carrying Capacity of Nontidal Waters of the State

a. Development in Designated Floodways

For proposed *development* that will encroach into a designated *floodway*, Section 8-2.03.H.5.a.vii requires the applicant to submit an evaluation of alternatives to such encroachment, including different uses of the site or the portion of the site within the *floodway*, and minimization of such encroachment. This requirement does not apply to fences that do not block the flow of floodwaters or trap debris. Proposed *development* in a designated *floodway* may be permitted only if:

- i. The applicant has been issued a permit by MDE; and
- ii. The applicant has developed *hydrologic and hydraulic engineering analyses* and technical data prepared by a *licensed* professional engineer reflecting such changes, and the analyses, which shall be submitted to the Floodplain Administrator, demonstrate that the proposed activity will not result in any increase in the *base flood elevation*; or
- iii. The analyses demonstrate that the proposed activities will not result in an increase in the *base flood elevation*, and the applicant has obtained a Conditional Letter of Map Revision and a Letter of Map Revision from FEMA upon completion of the project.
- iv. Submittal requirements and fees shall be the responsibility of the applicant.

b. Development that Includes the Placement of Fill in Nontidal Waters of the State

For proposed *development* that includes the placement of fill in *nontidal waters of the State*, other than *development* that is subject to paragraph (d), a hydraulically-equivalent volume of excavation is required. Such excavations shall be designed to drain freely.

c. Development in Areas with Base Flood Elevations but No Designated Floodways

For *development* in *special flood hazard areas of nontidal waters of the State* with *base flood elevations* but no designated *floodways*:

- i. The applicant shall develop *hydrologic and hydraulic engineering analyses* and technical data reflecting the proposed activity and shall submit such technical data to the Floodplain Administrator as required in Section 8-2.03.H.4.a. The analyses shall be prepared by a *licensed* professional engineer in a format required by FEMA for a Conditional Letter of Map Revision and a Letter of Map Revision upon completion of the project. Submittal requirements and fees shall be the responsibility of the applicant.
- ii. The proposed *development* may be permitted if the applicant has received a permit by MDE and if the analyses demonstrate that the cumulative effect of the proposed *development*, when combined with

all other existing and potential flood hazard area encroachments will not increase the *base flood elevation* more than 1.0 foot at any point.

d. Construction of Roads, Bridges, Culverts, Dams and In-Stream Ponds

Construction of roads, bridges, culverts, dams, and in-stream ponds in *nontidal waters of the State* shall not be approved unless they comply with this section and the applicant has received a permit from MDE.

e. Alteration of a Watercourse

For any proposed *development* that involves *alteration of a watercourse* not subject to paragraph (c), unless waived by MDE, the applicant shall develop *hydrologic and hydraulic engineering analyses* and technical data reflecting such changes, including the *floodway* analysis required in Section 8-2.03.H.4.a, and submit such technical data to the Floodplain Administrator and to FEMA. The analyses shall be prepared by a *licensed* professional engineer in a format required by MDE and by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and fees shall be the responsibility of the applicant.

Alteration of a watercourse may be permitted only upon submission, by the applicant, of the following:

- i. A description of the extent to which the *watercourse* will be altered or relocated;
- ii. A certification by a *licensed* professional engineer that the flood-carrying capacity of the *watercourse* will not be diminished;
- iii. Evidence that adjacent communities, the U.S. Army Corps of Engineers, and MDE have been notified of the proposal, and evidence that such notifications have been submitted to FEMA; and
- iv. Evidence that the applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of the *watercourse* so that the flood carrying capacity will not be diminished. The Floodplain Administrator may require the applicant to enter into an agreement with Calvert County specifying the maintenance responsibilities; if an agreement is required, the permit shall be conditioned to require that the agreement be recorded on the deed of the property which shall be binding on future owners.

3. Residential Structures and Residential Portions of Mixed Use Structures

New residential *structures* and residential portions of mixed use *structures*, and *substantial improvement* (including repair of *substantial damage*) of existing residential *structures* and residential portions of mixed use *structures* shall comply with the applicable requirements of Section 8-2.03.I and this section. See Section 8-2.03.J.6 for requirements for horizontal additions.

a. Elevation Requirements

- i. *Lowest floors* shall be elevated to or above the *flood protection elevation* (2 foot above the *Base Flood Elevation*).
- ii. In *areas of shallow flooding* (Zone AO), the *lowest floor* (including *basement*) shall be elevated at least as high above the *highest*

adjacent grade as the depth number specified in feet on the *FIRM* plus two (2) feet, or at least four (4) feet if a depth number is not specified. *Enclosures below the lowest floor* shall meet the requirements of paragraph (c).

b. Limitations on Use of Fill to Elevate Structures

Unless otherwise restricted by these regulations, especially by the limitations in Section 8-2.03.J.3.a, b, and c, fill placed for the purpose of raising the ground level to support a building or *structure* shall:

- i. Consist of earthen soil or rock materials only.
- ii. Extend laterally from the building footprint to provide for adequate access as a function of use; the Floodplain Administrator may seek advice from the State Fire Marshal's Office and/or the local fire services agency;
- iii. Comply with the requirements of the *building code* and be placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling;
- iv. Be sloped no steeper than one (1) vertical to two (2) horizontal, unless approved by the Floodplain Administrator;
- v. Be protected from erosion associated with expected velocities during the occurrence of the *base flood*; unless approved by the Floodplain Administrator, fill slopes shall be protected by vegetation if the expected velocity is less than five feet per second, and by other means if the expected velocity is five feet per second or more; and
- vi. Be designed with provisions for adequate drainage and no adverse effect on adjacent properties.

c. Enclosures Below the Lowest Floor

- i. *Enclosures below the lowest floor* shall be used solely for parking of vehicles, building access, crawl/underfloor spaces, or limited storage.
- ii. *Enclosures below the lowest floor* shall be constructed using *flood damage-resistant materials*.
- iii. *Enclosures below the lowest floor* shall be provided with *flood openings* which shall meet the following criteria: [Note: See NFIP Technical Bulletin #1, "Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings."]
 - (1) There shall be a minimum of two *flood openings* on different sides of each enclosed area; if a building has more than one *enclosure below the lowest floor*, each such enclosure shall have *flood openings* on exterior walls.
 - (2) The total net area of all *flood openings* shall be at least 1 square inch for each square foot of enclosed area (non-engineered *flood openings*), or the *flood openings* shall be engineered *flood openings* that are designed and certified by a

licensed professional engineer to automatically allow entry and exit of floodwaters; the certification requirement may be satisfied by an individual certification or an Evaluation Report issued by the ICC Evaluation Service, Inc.

- (3) The bottom of each *flood opening* shall be 1 foot or less above the higher of the interior floor or grade, or the exterior grade, immediately below the opening.
- (4) Any louvers, screens or other covers for the *flood openings* shall allow the automatic flow of floodwaters into and out of the enclosed area.
- (5) If installed in doors, *flood openings* that meet requirements of paragraphs (1) through (4), are acceptable; however, doors without installed *flood openings* do not meet the requirements of this section.

4. Nonresidential Structures and Nonresidential Portions of Mixed Use Structures

New nonresidential *structures* and nonresidential portions of mixed use *structures*, and *substantial improvement* (including repair of *substantial damage*) of existing nonresidential *structures* and nonresidential portions of mixed use *structures* shall comply with the applicable requirements of Section 8-2.03.I and the requirements of this section. See Section 8-2.03.J.6 for requirements for horizontal additions.

a. Elevation Requirements

Elevated *structures* shall:

- i. Have the *lowest floor* (including *basement*) elevated to or above the *flood protection elevation*; or
- ii. In *areas of shallow flooding* (Zone AO), have the *lowest floor* (including *basement*) elevated at least as high above the *highest adjacent grade* as the depth number specified in feet on the *FIRM* plus two (2) feet, or at least four (4) feet if a depth number is not specified; and
- iii. Have *enclosures below the lowest floor*, if any, that comply with the requirements of Section 8-2.03.J.4.c; or
- iv. If proposed to be elevated on fill, meet the limitations on fill in Section 8-2.03.J.4.b.

b. Floodproofing Requirements

- i. *Floodproofing* of new nonresidential buildings:
 - (1) Is not allowed in *nontidal waters of the State* (COMAR 26.17.04.11(B)(7)).
 - (2) Is not allowed in *Coastal A Zones*.
- ii. *Floodproofing* for *substantial improvement* of nonresidential buildings:
 - (1) Is allowed in *nontidal waters of the State*.

(2) Is allowed in *Coastal A Zones*.

iii. If *floodproofing* is proposed, *structures* shall:

- (1) Be designed to be dry *floodproofed* such that the building or *structure* is watertight with walls and floors substantially impermeable to the passage of water to the level of the *flood protection elevation* plus 1.0 foot, or
- (2) If located in an *area of shallow flooding (Zone AO)*, be dry *floodproofed* at least as high above the *highest adjacent grade* as the depth number specified on the *FIRM* plus three (3) feet, or at least five (5) feet if a depth number is not specified; and
- (3) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- (4) Have *floodproofing* measures that are designed taking into consideration the nature of flood-related hazards; frequency, depth and duration of *flooding*; rate of rise and fall of floodwater; soil characteristics; flood-borne debris; at least 12 hours of flood warning time from a credible source; and time necessary to implement any measures that require human intervention;
- (5) Have at least one door above the applicable flood elevation that allows human ingress and egress during conditions of *flooding*;
- (6) Have an operations and maintenance plan that is filed with local emergency management officials and that specifies the owner/occupant's responsibilities to monitor flood potential; the location of any shields, doors, closures, tools, or other goods that are required for implementation; maintenance of such goods; methods of installation; and periodic inspection; and
- (7) Be certified by a *licensed* professional engineer or *licensed* architect, through execution of a *Floodproofing Certificate* that states that the design and methods of construction meet the requirements of this section. The *Floodproofing Certificate* shall be submitted with the construction drawings as required in Section 8-2.03.H.5.a.xiii.

5. Horizontal Additions

- a. A horizontal addition proposed for a building or *structure* that was constructed after the date specified in Section 8-2.03.A.2 shall comply with the applicable requirements of Section 8-2.03.I and this section.
- b. In *nontidal waters of the State* that are subject to the regulatory authority of MDE, all horizontal additions shall comply with the applicable requirements of Section 8-2.03.I and this section and:
 - i. If the addition is structurally connected to the *base building*, the requirements of paragraph (c) apply.

- ii. If the addition has an independent foundation and is not structurally connected to the *base building* and the common wall with the *base building* is modified by no more than a doorway, the *base building* is not required to be brought into compliance.
 - c. For horizontal additions that are structurally connected to the *base building*:
 - i. If the addition combined with other proposed repairs, alterations, or modifications of the *base building* constitutes *substantial improvement*, the *base building* and the addition shall comply with the applicable requirements of Section 8-2.03.I and this section.
 - ii. If the addition constitutes *substantial improvement*, the *base building* and the addition shall comply with all of the applicable requirements of Section 8-2.03.I and this section.
 - d. For horizontal additions with independent foundations that are not structurally connected to the *base building* and the common wall with the *base building* is modified by no more than a doorway, the *base building* is not required to be brought into compliance.
 - e. A horizontal addition to a building or structure that is not substantial improvement, and is not located in nontidal waters of the State, is not required to comply with this section. Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]
- 6. Accessory Structures
 - a. In the 100-yr floodplain, detached *accessory structures* shall be limited to no more than 300 square feet in total floor area and shall be used solely for parking of vehicles and limited storage.
 - b. In the 100-yr floodplain, garages attached to the primary structure shall be elevated to the greatest extent possible, but may be permitted as an exemption to the strict elevation requirement if it is no more than 600 square feet in area and meets the requirement of 8-2.03.J.6.c.
 - c. *Accessory structures* shall comply with the elevation requirements and other requirements of Section 8-2.03.J.4, the *floodproofing* requirements of Section 8-2.03.J.5.b, or shall:
 - i. Be useable only for parking of vehicles or limited storage;
 - ii. Be constructed with *flood damage-resistant materials* below the *base flood elevation*;
 - iii. Be constructed and placed to offer the minimum resistance to the flow of floodwaters;
 - iv. Be anchored to prevent flotation;
 - v. Have electrical service and mechanical equipment elevated to or above the *base flood elevation*; and
 - vi. Have *flood openings* that meet the requirements of Section 8-2.03.J.4.c.

K Requirements in Coastal High Hazard Areas (V Zones) and Coastal A Zones

1. General Requirements

In addition to the general requirements of Section 8-2.03.I, the requirements of this section shall:

- a. Apply in flood hazard areas that are identified as *coastal high hazard areas* (V Zones) and *Coastal A Zones* (if delineated).
- b. Apply to all development, *new construction, substantial improvements* (including repair of *substantial damage*), and placement, replacement, and *substantial improvement* (including repair of *substantial damage*) of *manufactured homes*.

Exception: In *Coastal A Zones*, the requirements of Section 5.0 shall apply to *substantial improvements* (including repair of *substantial damage*), and *substantial improvement* of *manufactured homes* (including repair of *substantial damage*) and replacement *manufactured homes*. [Note: See Coastal Construction Manual (FEMA P-55).]

2. Location and Site Preparation

- a. The placement of structural fill for the purpose of elevating buildings is prohibited.
- b. Buildings shall be located landward of the reach of mean high tide.
- c. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.
- d. Site preparations shall not alter sand dunes unless an engineering analysis demonstrates that the potential for flood damage is not increased.

3. Residential and Nonresidential Structures

New *structures* and *substantial improvement* (including repair of *substantial damage*) of existing *structures* shall comply with the applicable requirements of Section 8-2.03.I and the requirements of this section.

a. Foundations

- i. *Structures* shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the *base flood*. Wind loading values shall be those required by applicable *building codes*. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling.
- ii. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of *structures* and their foundations to prevent transfer of flood loads to the *structures* during

conditions of *flooding*, scour, or erosion from wave-velocity flow conditions, and shall be designed to minimize debris impacts to adjacent properties and public infrastructure.

b. Elevation Requirements

- i. The bottom of the lowest horizontal structural member that supports the *lowest floor* shall be located at or above the *flood protection elevation*.
- ii. *Basement* floors that are below grade on all sides are prohibited.
- iii. The space below an elevated building shall either be *free-of-obstruction* or, if enclosed by walls, shall meet the requirements of paragraph (d). [Note: See NFIP Technical Bulletin #5, "Free-of-Obstruction Requirements."]

c. Certification of Design

As required in Section 8-2.03.H.5.a.xiii, the applicant shall include in the application a certification prepared by a *licensed* professional engineer or a *licensed* architect that the design and methods of construction to be used meet the requirements of paragraph (a), paragraph (b), paragraph (d), and the *building code*.

d. Enclosures Below the Lowest Floor

- i. *Enclosures below the lowest floor* shall be used solely for parking of vehicles, building access or limited storage.
- ii. *Enclosures below the lowest floor* shall be less than 299 square feet in area (exterior measurement).
- iii. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are designed to break away under flood loads and are not part of the structural support of the building or *structure*. [Note: See NFIP Technical Bulletin #9, "Design and Construction Guidance for Breakaway Walls."]
- iv. Electrical, mechanical, and plumbing system components shall not be mounted on or penetrate through walls that are designed to break away under flood loads.
- v. Walls intended to break away under flood loads shall be constructed with insect screening or open lattice, or shall be designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 pounds per square foot and no more than 20 pounds per square foot; or
- vi. Where wind loading values of the *building code* exceed 20 pounds per square foot, the applicant shall submit a certification prepared and sealed by a *licensed* professional engineer or *licensed* architect that:

- (1) The walls and partitions below the *lowest floor* have been designed to collapse from a water load less than that which would occur during the *base flood*.
 - (2) The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the *base flood*; wind loading values used shall be those required by the *building code*.
 - (3) In *Coastal A Zones*, in addition to the requirements of this section, walls below the *lowest floor* shall have *flood openings* that meet the requirements of Section 8-2.03.J. 4.c.iii.
4. Horizontal Additions to Structures
- a. A horizontal addition proposed for a building or *structure* that was constructed after the date specified in Section 8-2.03.A.2 shall comply with the applicable requirements of Section 8-2.03.I and this section.
 - b. For horizontal additions, whether structurally connected or not structurally connected, to the *base building*:
 - i. If the addition combined with other proposed repairs, alterations, or modifications of the *base building* constitutes *substantial improvement*, the *base building* and the addition shall comply with the applicable requirements of Section 8-2.03.I and this section.
 - ii. If the addition constitutes *substantial improvement*, the *base building* and the addition shall comply with all of the applicable requirements of Section 8-2.03.I and this section. [Note: The *base building* is required to comply otherwise it is an obstruction that does not comply with the *free-of-obstruction* requirement that applies to the elevated addition, see Section 8-2.03.K.3.b.iii.]
 - c. A horizontal addition to a building or structure that is not substantial improvement is not required to comply with this section.
5. Accessory Structures
- a. *Accessory structures* shall be limited to no more than 300 square feet in total floor area.
 - b. *Accessory structures* shall comply with the elevation requirements and other requirements of Section 8-2.03.K.3 or, if not elevated, shall:
 - i. Be useable only for parking of vehicles or limited storage;
 - ii. Be constructed with *flood damage-resistant materials* below the *base flood elevation*;
 - iii. Be constructed and placed to offer the minimum resistance to the flow of floodwaters;
 - iv. Be anchored to prevent flotation;

- v. Have electrical service and mechanical equipment elevated to 2' above the *base flood elevation*; and
 - vi. If larger than 100 square feet in size, have walls that meet the requirements of Section 8-2.03.K.3.d.iii through vi, as applicable for the *flood zone*; and if located in *Coastal A Zones*, walls shall have *flood openings* that meet the requirements of Section 8-2.03.J.4.c.iii.
6. Other Structures and Development

[Note: See NFIP Technical Bulletin #5, "Free-of-Obstruction Requirements."]

a. Decks and Patios

In addition to the requirements of the *building code* or the residential code, decks and patios shall be located, designed, and constructed in compliance with the following:

- i. A deck that is structurally attached to a building or *structure* shall have the bottom of the lowest horizontal structural member at or above the *flood protection elevation* and any supporting members that extend below the design flood elevation shall comply with the foundation requirements that apply to the building or *structure*, which shall be designed to accommodate any increased loads resulting from the attached deck.
- ii. A deck or patio that is located below the *flood protection elevation* shall be structurally independent from *structures* and their foundation systems, and shall be designed and constructed either to remain intact and in place during *base flood* conditions or to break apart into small pieces that will not cause structural damage to adjacent elevated *structures*.
- iii. A deck or patio that has a vertical thickness of more than 12 inches or that is constructed with more than the minimum amount of fill that is necessary for site drainage shall not be approved unless an analysis demonstrates no harmful diversion of floodwaters or wave run-up and wave reflection that would increase damage to adjacent elevated *structures*.
- iv. A deck or patio that has a vertical thickness of 12 inches or less and that is at natural grade or on fill material that is similar to and compatible with local soils and is the minimum amount necessary for site drainage may be approved without requiring analysis of the impact on diversion of floodwaters or wave run-up and wave reflection.

b. Other Development

Other *development* activities shall be permitted only if located outside the footprint of, and not structurally attached to, *structures*, and only if an analysis demonstrates no harmful diversion of floodwaters or wave run-up and wave reflection onto adjacent elevated *structures*. Other *development* includes but is not limited to:

- i. Bulkheads, seawalls, retaining walls, revetments, and similar erosion control structures;

- ii. Solid fences, privacy walls, and fences prone to trapping debris, unless designed and constructed to fail under *base flood* conditions; and
- iii. Mounded septic systems.

L Variances

The Board of Appeals shall have the power to consider and authorize or deny *variances* from the strict application of the requirements of these regulations. A *variance* shall be approved only if it is determined to not be contrary to the public interest and where, owing to special conditions of the lot or parcel, a literal enforcement of the provisions of these regulations, an unnecessary hardship would result. Administrative variances are not allowed for variances to floodplain criteria. See Section 11-1.01.D.

M Enforcement

1. No building, *structure* or *development* shall hereafter be located, erected, constructed, reconstructed, improved, repaired, extended, converted, enlarged or altered without full compliance with the floodplain regulations (Section 8-2.03) and all other applicable regulations.
2. Failure to obtain a permit for development in the floodplain shall be a *violation* of these regulations and shall be subject to a Notice of Violation, Stop Work Order and penalties in accordance with Section 8-2.08 and Section 1-7 of the Zoning Ordinance.
3. Permits issued on the basis of plans and applications approved by the Floodplain Administrator authorize only the specific activities set forth in such approved plans and applications or amendments thereto. Use, arrangement, or construction of such specific activities in the floodplain that are contrary to that authorization shall be deemed a *violation* of these regulations.

N All ordinances or parts of ordinances that are inconsistent with the provisions of Sections 8-2.03 and 11-1.01.D of the Zoning Ordinance are hereby repealed to the extent of such inconsistency. Sections 8-2.03, 11-1.01.D, and Article 12 of the Zoning Ordinance shall be amended as required by the Federal Emergency Management Agency, Title 44, Code of Federal Regulations. All subsequent amendments to Sections 8-2.03, 11-1.01.D, and definitions in Article 12, restricted to those definitions required by Title 44, Code of Federal Regulations, of the Zoning Ordinance are subject to the approval of the Federal Emergency Management Agency and the Maryland Department of the Environment.

8-2.08 Fines, Penalties and Mitigation

- A. In addition to the fines and penalties provided for in Section 1-7 of this Zoning Ordinance, the following shall apply to violations of Section 8-2:
1. Any person in violation of Section 8-2.04 (Slopes 25 Percent or Greater and Erodible Soils Adjoining Streams) shall pay a fine not to exceed \$1,000 for each violation and shall be required to replant trees to replace those that have been removed as prescribed in paragraph 'B' of this Section.
 2. Any person in violation of Section 8-2.05 (Wetlands) or 8-2.06 (Development Adjacent to Perennial and Intermittent Streams) shall pay a fine not to exceed \$1,000 for each violation and shall be required to mitigate as prescribed in paragraph 'B' of this Section for the area impacted, filled, cleared, graded, or cut in violation of these sections.
- B. Replanting to correct a violation shall be calculated at the rate of four square feet to one square foot (4:1) of the area cleared, graded, cut, impacted or filled in violation of the provisions of this Section. A mitigation plan shall be approved by the Department of Planning and Zoning and shall include canopy trees at a rate equal to one large tree per 400 square feet, and in the same 400 sq. ft. either two understory trees or three shrubs selected from the document entitled, "Calvert County Native Plant List", adopted by the Board of County Commissioners and available from the Department of Planning and Zoning. In cases where there is less area than needed to replant at 4:1, the remainder shall be mitigated with the payment of fees-in-lieu as set by the Board of County Commissioners.
- C. A person required to conduct replanting as part of a mitigation plan shall post a bond or other financial security to insure compliance with the mitigation plan.
1. Requirements
 - a. A financial security shall be furnished in the form of a surety bond, an irrevocable letter of credit, cash bond, certificate of guarantee, or other surety as authorized from time to time by the Board of County Commissioners and approved by the Office of the County Attorney. The surety shall:
 - i. Name the Board of County Commissioners as obligee;
 - ii. Assure that the mitigation replanting is conducted in accordance with the approved mitigation plan;
 - iii. Be in an amount equal to 1.0 times the cost as approved by the Department of Planning and Zoning of performing the mitigation plus an administrative fee as set by the County Commissioners to cover the costs of inspections and handling of the bond. This fee will be submitted with the bond and will not be reimbursed, but placed in the Planning and zoning Environmental Review Fund;
 - iv. Remain in force until all requirements of the mitigation plan have been fulfilled to the satisfaction of the Department of Planning and Zoning.
 - b. The surety may not be cancelled by the issuing entity unless both of the following requirements are fulfilled:

- i. The issuer notifies the Board of County Commissioners and the principal of its intention to cancel the surety, in writing, by registered mail, not less than 90 days before cancellation; and
- ii. At least 45 days before the cancellation date indicated in the notice, the principal files a commitment from another entity to provide a substitute surety that will be effective on the cancellation date indicated in the notice.

2. Forfeiture of Surety

- a. The surety shall be subject to forfeiture if the principal fails to comply with the mitigation plan.
- b. Before forfeiture of the surety, the Board of County Commissioners shall notify the principal and the issuer, by certified mail, of the failure of the principal to comply with the mitigation plan and shall give the principal 30 days to come into compliance.
- c. If a person fails to come into compliance within the 30-day period, the surety shall be forfeited and the County or its agents shall be allowed access to the property to accomplish the previously bonded planting.

3. Release of Surety.

- a. If, after two growing seasons, the survival of plantings associated with the mitigation plan meets or exceeds the standards of the mitigation plan, the amount of the surety shall be released.
- b. If, after two growing seasons, the survival of the plantings associated with the mitigation plan is less than the standards of the mitigation plan, the surety shall be reduced by a percentage equal to the percentage of plantings that have survived and that portion of the surety shall be released. An additional administrative fee as set by the County Commissioners will be submitted prior to partial release of the surety to cover the costs of additional inspections and handling of the remaining bond. This fee will not be reimbursed, but placed in the Planning and Zoning Environmental Review Fund.

D. Violation of the Floodplain Regulations (Section 8-2.03)

1. Notice of Violation and Stop Work Order

If the Floodplain Administrator determines that there has been a violation of any provision of these regulations, the Floodplain Administrator shall give notice of such violation to the owner, the owner's authorized agent, and the person responsible for such violation, and may issue a stop work order. The notice of violation or stop work order shall be in writing and shall:

- a. Include a list of violations, referring to the section or sections of these regulations that have been violated;
- b. Order remedial action which, if taken, will effect compliance with the provisions of these regulations;
- c. Specify a reasonable period of time to correct the violation;
- d. Advise the recipients of the right to appeal; and

- e. Be served in person; or
- f. Be posted in a conspicuous place in or on the property and sent by registered or certified mail to the last known mailing address, residence, or place of business of the recipients.

1. Violations and Penalties

Violations of the floodplain regulations (Section 8-2.03) or failure to comply with the requirements of these regulations or any conditions attached to a permit or *variance* shall constitute a misdemeanor. Any *person* responsible for a *violation* shall comply with the notice of *violation* or stop work order. Failure to comply shall require a fine of \$500 plus compliance must be achieved. Each day a *violation* continues shall be considered a separate offense. Nothing herein contained shall prevent Calvert County from taking such other lawful action as is necessary to prevent or remedy any *violation*.

Article 11, Section 11-1.01.D Variances; Floodplain.

D. Variances; Floodplain.

1.
 - a. The Board of Appeals shall have the power to consider and authorize or deny *variances* from the strict application of the requirements of Section 8-2.03. Administrative variances are not allowed for variances to floodplain criteria.
 - b. Upon consideration of the purposes of these regulations, the individual circumstances, and the considerations and limitations of this section, the Board of Appeals may attach such conditions to *variances* as it deems necessary to further the purposes of these regulations.
 - c. The Board of Appeals shall notify any applicant to whom a *variance* is granted to construct or substantially improve a building or *structure* with its *lowest floor* below the elevation required by these regulations that the *variance* is to the floodplain management requirements of these regulations only, and that the cost of Federal flood insurance will be commensurate with the increased risk, with rates up to \$25 per \$100 of insurance coverage.
 - d. A record of all *variance* actions, including justification for issuance shall be maintained pursuant to Section 8-2.03.H.2.k of these regulations.
2. Application for a Variance to the Floodplain Regulations (Section 8-2.03)
 - a. The owner of the property, or the owner's authorized agent, for which a variance is sought shall submit an application for a Building Permit to the Office of Inspections and Permits. The Department of Community Planning and Building will review the permit and write a referral to the Board of Appeals for all required variances. The owner of the property, or the owner's authorized agent, for which a variance is sought shall submit an application for a variance to the Board of Appeals in accordance with the referral.
 - b. At a minimum, the application to the Board of Appeals shall contain the following information: name, address, and telephone number of the applicant and property owner; legal description of the property; parcel map; description of the existing use; description of the proposed use; site map showing the location of flood hazard areas, designated *floodway* boundaries, *flood zones*, and *base flood elevations*; description of the *variance* sought; and reason for the *variance* request. *Variance* applications shall specifically address each of the considerations in Section 3, below.
 - c. If the application is for a *variance* to allow the *lowest floor* (A Zones) or bottom of the lowest horizontal structural member (V Zones and *Coastal A Zones*) of a building or *structure* below the applicable minimum elevation required by these regulations, the application shall include a statement signed by the owner that, if granted, the conditions of the *variance* shall be recorded in the County land records.
 - d. If the application is for a *variance* for a *historic feature* pursuant to Section 8-2.03.1.6 of these regulations, the application shall contain documentation that the proposed work does not preclude the *structure's* continued eligibility and designation as a *historic feature*. The documentation shall be obtained from a source that is authorized to make such determinations (see definition of "Historic Feature").

3. Considerations for Variances

The Board of Appeals Administrator shall request comments on *variance* applications from MDE (NFIP State Coordinator) and County Floodplain Administrator and shall provide such comments to the Board of Appeals. In considering *variance* applications, the Board of Appeals shall consider and make findings of fact on all evaluations, all relevant factors, requirements specified in other sections of the Zoning Ordinance including Section 11-1.01.A and the following factors:

- a. The danger that materials may be swept onto other lands to the injury of others.
- b. The danger to life and property due to *flooding* or erosion damage.
- c. The susceptibility of the proposed *development* and its contents (if applicable) to flood damage and the effect of such damage on the individual owner.
- d. The availability of alternative locations for the proposed use which are not subject to, or are subject to less, *flooding* or erosion damage.
- e. The necessity to the facility of a waterfront location, where applicable, or if the facility is a *functionally dependent use*.
- f. The compatibility of the proposed use with existing and anticipated *development*.
- g. The relationship of the proposed use to the Comprehensive Plan and Hazard Mitigation Plan for that area.
- h. The safety of access to the property in times of flood for passenger vehicles and emergency vehicles.
- i. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site.
- j. The costs of providing government 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.
- k. The comments provided by MDE (NFIP State Coordinator).

4. Limitations for Granting Variances

The Board of Appeals shall make an affirmative decision on a *variance* request only upon:

- a. A showing of good and sufficient cause. Good and sufficient cause deals solely with the physical characteristics of the property and cannot be based on the character of the improvement, the personal characteristics of the owner/inhabitants, or local provision that regulate standards other than health and public safety.
- b. A determination that failure to grant the *variance* would result in exceptional hardship due to the physical characteristics of the property. Increased cost or inconvenience of meeting the requirements of these regulations does not constitute an exceptional hardship to the applicant.
- c. A determination that the granting of a *variance for development* within any designated *floodway*, or flood hazard area with *base flood elevations* but no designated *floodway*, will not result in increased flood heights beyond that which is allowed in these regulations.

- d. A determination that the granting of a *variance* will not result in additional threats to public safety; extraordinary public expense, nuisances, fraud or victimization of the public, or conflict with existing local laws.
- e. A determination that the building, *structure* or other *development* is protected by methods to minimize flood damages.
- f. A determination that the *variance* is the minimum necessary to afford relief, considering the flood hazard.
- g. The approval of the variance is not contrary to the public interest.

Article 12, Definitions

Elevation Certificate (12/14/11)	FEMA Form 086-0-33, on which surveyed elevations and other data pertinent to a property and a building are identified and which shall be completed by a <i>licensed</i> professional land surveyor or a <i>licensed</i> professional engineer, as specified by the Floodplain Administrator. When used to document the height above grade of buildings in <i>special flood hazard areas</i> for which <i>base flood elevation</i> data are not available, the Elevation Certificate shall be completed in accordance with the instructions issued by FEMA. [Note: FEMA Form 086-0-33 and instructions are available online at http://www.fema.gov/library/viewRecord.do?id=1383 .]
Flood Opening (12/14/11)	A flood opening (non-engineered) is an opening that is used to meet the prescriptive requirement of 1 square inch of net open area for every square foot of enclosed area. An engineered flood opening is an opening that is designed and certified by a <i>licensed</i> professional engineer or <i>licensed</i> architect as meeting certain performance characteristics, including providing automatic entry and exit of floodwaters; this certification requirement may be satisfied by an individual certification for a specific structure or issuance of an Evaluation Report by the ICC Evaluation Service, Inc. [Note: See NFIP Technical Bulletin #1, "Openings in Foundation Walls and Walls of Enclosures."]
Flood Zone (12/14/11)	A designation for areas that are shown on <i>Flood Insurance Rate Maps</i> : <ul style="list-style-type: none"> (1) Zone A: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i>; <i>base flood elevations</i> are not determined. (2) Zone AE and Zone A1-30: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i>; <i>base flood elevations</i> are determined; <i>floodways</i> may or may not be determined. In areas subject to <i>tidal flooding</i>, the Limit of Moderate Wave Action may or may not be delineated. (3) Zone AH and Zone AO: <i>Areas of shallow flooding</i>, with <i>flood depths</i> of 1 to 3 feet (usually areas of ponding or sheet flow on sloping terrain), with or without BFEs or designated <i>flood depths</i>. (4) Zone B and Zone X (shaded): Areas subject to inundation by the 0.2-percent annual chance (500-year) <i>flood</i>; areas subject to the 1-percent annual chance (100-year) <i>flood</i> with average depths of less than 1 foot or with contributing drainage area less than 1 square mile; and areas protected from the <i>base flood</i> by levees. (5) Zone C and Zone X (unshaded): Areas outside of Zones designated A, AE, A1-30, AO, VE, V1-30, B, and X (shaded). (6) Zone VE and Zone V1-30: <i>Special flood hazard areas</i> subject to inundation by the 1-percent annual chance (100-year) <i>flood</i> and subject to high velocity wave action (also see <i>coastal high hazard area</i>).
Floodproofing Certificate (12/14/11)	FEMA Form 086-0-34 that is to be completed, signed and sealed by a <i>licensed</i> professional engineer or <i>licensed</i> architect to certify that the design of <i>floodproofing</i> and proposed methods of construction are in accordance with the applicable requirements of Section 5.6(B) of these regulations. [Note: FEMA Form 086-0-34 is available online at http://www.fema.gov/library/viewRecord.do?id=1600 .]

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<p>Historic Feature (9/22/09)(12/14/11)</p>	<p>An object or structure having a special historical, architectural, cultural or aesthetic value for a community that is:</p> <ol style="list-style-type: none"> (1) Individually listed in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listings 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 the Maryland Inventory of Historic Properties or Archeological Sites Inventory maintained by the Maryland Historical Trust; or (4) Individually listed on the inventory of historic places maintained by Calvert County whose historic preservation program has been certified by the Maryland Historical Trust, National Park Service, or the Secretary of the Interior.
<p>Letter of Map Change (LOMC) (12/14/11)</p>	<p>A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective <i>Flood Insurance Rate Map</i> or <i>Flood Insurance Study</i>. Letters of Map Change include:</p> <p>Letter of Map Amendment (LOMA): An amendment based on technical data showing that a property was incorrectly included in a designated <i>special flood hazard area</i>. A LOMA amends the current effective <i>Flood Insurance Rate Map</i> and establishes that a specific property or <i>structure</i> is not located in a <i>special flood hazard area</i>.</p> <p>Letter of Map Revision (LOMR): A revision based on technical data that may show changes to <i>flood zones</i>, <i>flood elevations</i>, <i>floodplain</i> and <i>floodway</i> delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a <i>structure</i> or parcel of land has been elevated by fill above the <i>base flood elevation</i> and is, therefore, no longer exposed to <i>flooding</i> associated with the <i>base flood</i>. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the <i>community's</i> floodplain management regulations.</p> <p>Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed <i>flood</i> protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of <i>special flood hazard areas</i>. A Conditional Letter of Map Revision Based on Fill (CLOMR-F) is a determination that a parcel of land or proposed structure that will be elevated by fill would not be inundated by the base flood if fill is placed on the parcel as proposed or the structure is built as proposed. A CLOMR does not revise the effective <i>Flood Insurance Rate Map</i> or <i>Flood Insurance Study</i>; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA, to revise the effective <i>FIRM</i>.</p>
<p>Limit of Moderate Wave Action (LiMWA)</p>	<p>Inland limit of the area affected by waves greater than 1.5 feet during the base flood. Base flood conditions between the VE Zone and the LiMWA will be similar to, but less severe than those in the VE Zone.</p>

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Mixed-Use Structure	Any <i>structure</i> that is used or intended for use for a mixture of nonresidential and residential uses in the same structure.
Substantial Damage (12/14/11)	Damage of any origin sustained by a building or <i>structure</i> whereby the cost of restoring the building or <i>structure</i> to its before damaged condition would equal or exceed 50 percent of the <i>market value</i> of the building or <i>structure</i> before the damage occurred. Also used as "substantially damaged" structures. [Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]
Substantial Improvement (12/14/11)	<p>Any reconstruction, rehabilitation, addition, or other improvement of a building or <i>structure</i>, the cost of which equals or exceeds 50 percent of the <i>market value</i> of the building or <i>structure</i> before the <i>start of construction</i> of the improvement. The term includes <i>structures</i> which have incurred <i>substantial damage</i>, regardless of the actual repair work performed. The term does not, however, include either:</p> <ol style="list-style-type: none"> (1) Any project for improvement of a building or <i>structure</i> to correct existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official prior to submission of an application for a permit and which are the minimum necessary to assure safe living conditions; or (2) Any alteration of a <i>historic structure feature</i>, provided that the alteration will not preclude the <i>structure's</i> continued designation as a <i>historic structure feature</i>. <p>[Note: See "Substantial Improvement/Substantial Damage Desk Reference" (FEMA P-758).]</p>