

ARTICLE I - GENERAL PROVISIONS

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Section 1.1 – Floodplain Development Standards for state-owned properties [44 CFR § 60.12; VA Code§ 10.1-603]

- A. The Code of Virginia **§ 10.1-603** requires the establishment and enforcement of floodplain management standards which, at a minimum, satisfy the criteria set forth by the National Flood Insurance Program (NFIP).
 - 1. The Commonwealth of Virginia shall comply with the minimum floodplain management criteria set forth in 44 CFR §§ 60.3, 60.4, and 60.5.
 - 2. The procedures by which a state government adopts and administers floodplain management regulations satisfying the criteria set forth in 44 CFR §§ 60.3, 60.4 and 60.5 may vary from procedures by which local governments satisfy this criterion.
- B. If any State-owned property is located in a non-participating local community, then the State shall comply with the requirements of the Virginia Floodplain Development Standards (the Standard).
- C. No state-owned buildings, or buildings constructed on state-owned property, shall be constructed, reconstructed, purchased, or acquired by the Commonwealth within state-managed floodplains in any community unless a variance permit is granted by the Department of Conservation and Recreation (DCR), as outlined in these Standards.

Section 1.2 - Statutory Authorities [44 CFR § 59.22(a)(2); VA Code § 10.1-658]

The purpose of these Standards is to prevent: the loss of life, health, or property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and to increase resilience of the tax base by:

- A. Regulating uses, activities, and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies;
- B. Restricting or prohibiting certain uses, activities, and development from locating within the state-managed floodplains;
- C. Requiring all those uses, activities, and developments that do occur in the floodplain and identified flood-risk areas (1% flood zones, 0.2% flood zones and sea level rise inundation areas) to be protected and/or floodproofed against flooding and flood damage; and,
- D. Protecting state agencies from acquiring or their employees from dwelling within land and buildings which are unsuited for intended purposes because of flood hazards.

Section 1.3 – Applicability

- A. These Standards shall apply to all state-owned or leased property, including those lands underlying the secondary state highway system, within the Commonwealth of Virginia and identified as floodplain by DCR.

- B. These state-level Standards replace floodplain management standards for state-owned properties in special flood hazard areas as represented in Executive Order 45 (2019) and [44 CFR 60.12A(1)].

Section 1.4 - Compliance and Liability

- A. No land shall hereafter be developed, and no building shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of these Standards.
- B. The degree of flood protection sought by the provisions of these Standards are considered reasonable and compliant for regulatory purposes and is based on acceptable engineering methods of study but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. These Standards do not imply that lands outside the floodplain or land uses permitted within the floodplain will be free from flooding or flood damages.
- C. These Standards shall not create liability on the part of the Commonwealth or any officer or employee thereof for any flood damages that result from reliance on the Standards, or any administrative decision lawfully made thereunder.

Section 1.5 – Records [44 CFR § 59.22(a)(9)(iii)]

Records of actions associated with administering these Standards shall be kept on file and maintained by or under the direction of the National Flood Insurance Program (NFIP) State Coordinator in perpetuity.

Section 1.6 - Abrogation and Greater Restrictions [44 CFR § 60.1(b)]

In the event of a conflict between these Standards and any other statutory or regulatory requirements of the Commonwealth, the more restrictive standard or regulatory requirement shall govern.

ARTICLE II - ADMINISTRATION

Section 2.1 - Designation of the Floodplain Administrator [44 CFR § 59.22(b)]

The DCR NFIP State Coordinator is hereby appointed to administer and implement these Standards and is referred to herein as the Floodplain Administrator. The Floodplain Administrator may:

- A. Administer the provisions of these Standards. In the absence of a designated Floodplain Administrator, the duties are conducted by the Director of the Department of General Services (DGS), or Director of DCR.
- B. Delegate duties and responsibilities set forth in these Standards to qualified technical personnel, plan examiners, inspectors, and other employees.

- C. Enter into a written agreement or written contract with another community, state agency 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 NFIP as set forth in 44 CFR § 59.22.

Section 2.2 - Duties and Responsibilities of the Floodplain Administrator [44 CFR § 60.3]

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

- A. Review applications for variance permits to determine whether proposed activities will be conducted in the floodplain. The Floodplain Administrator shall provide written rulings on variance permit requests to the applicant, the Director of DGS and the local floodplain Administrator.
- B. Interpret floodplain boundaries and provide available base flood elevation, flood hazard information, applicable freeboard, and minimum design flood elevation.
- 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 these Standards.
- 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 state agencies 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 floodplain of free-flowing non-tidal waters of the State.
- E. Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, DCR, and other appropriate agencies (VADEQ, USACE), and have submitted copies of such notifications to FEMA.
- F. Advise applicants for new construction or substantial improvement of building or structures that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act; as shown on the Virginia Flood Risk Information System (VFRIS) as Coastal Barrier Resource System Areas (CBRS) or Otherwise Protected Areas (OPA).
- G. Approve applications and issue variance permits to develop in the floodplain if the provisions of these Standards have been met or disapprove applications if the provisions of these Standards have not been met.
- H. Inspect or cause to be inspected, buildings, structures, and other development for which variance permits have been issued to determine compliance with these Standards or to determine if non-compliance has occurred or violations have been committed.
- I. Review elevation documentation signed and sealed by a registered design professional (Professional Engineer, Licensed Land Surveyor, or Licensed Landscape Architect) and require incomplete or deficient documentation to be corrected by the original author.
- J. Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations.

- K. Maintain and permanently keep records that are necessary for the administration of these Standards, including:
 - a. Flood Insurance Studies, Flood Insurance Rate Maps (including historic studies and maps and current effective studies and maps), Letters of Map Change, and other flood risk data; and
 - b. Documentation supporting issuance and denial of variance permits, Elevation Certificates, documentation of the elevation (in relation to the datum on the FIRM) to which buildings have been floodproofed, inspection records, other required design certifications, variance permits, and records of enforcement actions taken to correct violations of these regulations.
- L. Administer the requirements related to proposed work on existing buildings:
 - a. Make determinations as to whether buildings that are in the floodplain and that are damaged by any cause have been substantially damaged.
 - b. Notify owners of substantially damaged buildings of the requirement to obtain permission pursuant to these Standards to repair, rehabilitate, or reconstruct.
 - c. 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.
- M. It is the duty of the Floodplain Administrator to take into account flood, mudslide, mudflow and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land management and use throughout the entire jurisdictional area of the Community, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

Section 2.3 - Interpretation of Floodplain Boundaries

Initial interpretations of the boundaries of the floodplains shall be made by the Floodplain Administrator. Should a dispute arise concerning the boundaries of the floodplain, the Chief Resilience Officer shall make the necessary determination. The agency questioning or contesting the location of the floodplain boundary shall be given a reasonable opportunity to present their case to the Chief Resilience Officer and to submit relevant technical evidence if desired.

Section 2.4 - Use and Interpretation of FIRMs [44 CFR § 60.3]

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

- A. Where field surveyed topography indicates that adjacent ground elevations:
 - 1. Are below the base flood elevation in the riverine floodplain, or below the 1% storm surge elevation in the coastal high hazard area, even in areas not delineated as a special flood hazard area on a FIRM, the area shall be considered as the (state-managed) floodplain and subject to the requirements of these Standards;
 - 2. Are above the base flood elevation and the area is labelled as the floodplain on the FIRM, the area shall be regulated as the floodplain unless the applicant obtains a Letter of Map Change that removes the area from the floodplain. Local freeboard requirements would apply in lieu of these Standards.
- B. In the floodplain 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. Design flood elevations and designated boundaries in the floodplain 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:
 - 1. Prior to and upon the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data for the purpose of administering these Standards and used where no base flood elevations and/or floodway areas are provided on the effective FIRM.
 - 2. Prior to issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary data exceeds the currently effective data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

Section 2.5 - Floodplain Boundary Changes

- A. The delineation of the floodplain may be revised by the Commonwealth of Virginia where natural or man-made changes have occurred or where more detailed studies have been conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agency, or a state agency documents the need for such change.
- B. When development in the FEMA designated special flood hazard area (SFHA) will cause or causes an increase in the *base flood elevation*, the state, or state agency proposing the change, will notify FEMA by applying for a Conditional Letter of Map Revision (CLOMR) and a LOMR within six months of finished construction.
- C. As soon as practicable, but not later than six months after the date such information becomes available, the state, or state agency proposing the change, shall notify the Federal Emergency Management Agency of the flood risk data discrepancies by submitting technical or scientific data.

The state, or state agency proposing the change, may submit data via a LOMC. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon the most current data.

ARTICLE III – Variance Permits and Exemptions [44 CFR 60.6; VA Code §10.1-603]

Section 3.1 – Variance Permits and Exemptions

- A. Variance permits shall be issued only after the Floodplain Administrator has determined that the variance will be the minimum required to provide relief. Variance permit requests

will be reviewed and a final determination will be provided, upon receipt of completed variance permit request with all required materials.

- B. A variance permit does not waive the requirement to comply with the requirements outlined by the NFIP upon which these Standards are based, or any other applicable state or federal rules or regulations.
- C. Technical justification will be required for issuing a variance permit. Variance permit reviews will be in conformance with the provisions of this Section and consider the following additional factors:
 - 1. Development will occur on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing buildings or structures constructed below the base flood level.
 - 2. It has been demonstrated that granting of a variance permit will not result in unacceptable or prohibited increases in flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or in the case of NFIP participating communities, conflicts with their existing local floodplain ordinances, and
 - 3. The proposed design of the building complies with the freeboard and floodproofing standards adopted in these Standards, and
 - 4. Building or structures are demonstrated to be a functionally dependent use, such as water treatment facilities, boat houses, boat docks, boat ramps, fishing piers, sewage treatment facilities, walking trails, fish hatcheries, and other similar uses, or
 - 5. Building or structure are historic and require repair or rehabilitation and it has been demonstrated that the proposed repair or rehabilitation will not preclude the continued historic designation and the variance permit request is the minimum necessary to preserve the historic character and design of the structure, or
 - 6. Building or structure are demonstrated to be necessary to protect public health, safety, and welfare.
- D. A variance permit is required for routine maintenance of *existing* structures within the floodplain if they are structural in nature and result in a change to the footprint, functional use, or flooding characteristics of a structural property. Routine maintenance exemptions are outlined in Section 3.2 of these Standards.
- E. All structural repairs to existing buildings within the floodplain that are performed because of damage incurred from flooding or any other source must receive a variance permit.
- F. Variance permits may be issued for new construction, substantial improvements, and development necessary for the conduct of a functionally dependent use provided that the planning and design criteria outlined below shall be met.
 - 1. The building or development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.
 - 2. Proposed use, development, or activity within any floodway will not cause any increase in the one percent (1%) chance flood elevation.
 - 3. Materials or equipment that may be swept away or on to other lands or downstream to the injury of others will not be stored in the floodplain or floodway. An Emergency Action Plan which includes the removal or anchoring

of storage materials and equipment must be included for linear transportation development activities in the VFRMA.

4. Proposed water supply and sanitation systems have the ability to prevent disease, contamination, and unsanitary conditions.
5. The importance of the services provided by the proposed facility to the community are clearly defined.
6. The requirements of the facility for a waterfront location are clearly defined.
7. The availability of alternative locations not subject to flooding for the proposed use is provided.
8. Ensure the proposed use and development plan is consistent with existing local and regional planning requirements.
9. The safety of access by ordinary and emergency vehicles to the property in time of flood is unrestricted.
10. Through quantitative analysis demonstrate, the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters at the site remains unchanged.
11. Ensure the repair or rehabilitation of historic buildings will not preclude the continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design.
12. Other factors which are relevant to the purposes of these Standards may also be considered.

G. Appeal process for Variance Permits: All applicants will have 30 days to appeal the variance permit decision in writing to the Floodplain Administrator and Chief Resilience Officer.

H. The Floodplain Administrator shall notify the applicant of a variance permit, Director of DGS and Director of DCR, in writing that the issuance of a variance to construct a building with the lowest floor elevated below the one percent (1%) chance flood height increases the risks to life and property.

I. Variance permits that are issued shall be noted in the annual report for flood resilience.

J. Upon receipt of approval of variance permit applications from the Floodplain Administrator, the Department of General Services shall satisfy all remaining relevant factors and procedures specified in other sections of the Virginia building codes and other applicable zoning provisions.

3.2 Activities Exempted from State Floodplain Standards Variance Permitting

Projects that have been determined to have an insignificant effect on flooding characteristics and water conveyance may be exempt from the variance permitting requirement. Agencies are required to document and submit a memorandum identifying the exempted activities which have occurred in the past year. The following list outlines projects that may qualify for exemption from variance permitting requirements:

Note: Projects that constitute a substantial improvement are not eligible for an exemption. Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the start of construction of the improvement. This term includes buildings

which have incurred substantial damage, regardless of the actual repair work performed or damage origin.

- A. **Routine Maintenance:** Activities that constitute routine repairs, maintenance or upgrades that are non-structural in nature and do not result in a change to the footprint, functional use, or flooding characteristics of a structure, building, or property. Please note this does not apply to repairs of existing buildings that are performed as a result of damage incurred from flooding and/or other natural disasters/accidents. Examples of routine maintenance include, but are not limited to:
1. Painting
 2. Re-roofing
 3. Replacement of originally specified mechanicals, fixtures, and hardware
 4. Debris or trash removal
 5. Tree or brush overgrowth trimming
 6. Tree removal with stump intact and under ½ acre
 7. Pothole repair where repair will not extend beyond existing footprint and dimensions
 8. Repaving operations (e.g., mill and overlay of pavement, complete pavement section replacement) where existing pavement is removed and new pavement will not extend beyond existing footprint, dimensions, and design
 9. Ditch clean outs where clean out will not expand beyond existing footprint, dimensions, and design
- B. **Small Projects:** Small Projects are those which will not present a new obstruction to flood flows or alter drainage. Such projects include:
1. Single-post projects: Such as mailboxes, flagpoles, signposts, and telephone poles.
 2. Minor soil disturbing projects: Such as landscaping, gardening, and farming that does not involve filling, grading, or excavating.
 3. Deck railing repair
 4. Guard rail repair or replacement
 5. Trail repair where repair will not extend beyond existing footprint and dimensions.
 6. Concrete patching for piers and abutments where repair will not expand beyond existing footprint and dimensions.
 7. Geotechnical investigations (e.g., drilling and boring)
- C. **Recreational Vehicles:** Projects involving the temporary placement of recreational vehicles are prohibited in the floodplains and require a variance permit (as defined in 44 CFR § 59.1).
- D. **Emergency Actions Necessary to Protect Public Health, Safety, and Welfare:** Emergency actions are those taken in response to an immediate and serious hazard with the goal of protecting public health, safety, welfare and property. Emergency actions are temporary in nature, and thus do not result in a permanent alteration to the floodplain. Examples of emergency actions include:
1. The placement of sandbags and other temporary flood protection materials
 2. The placement of traffic barriers to cordon off hazardous routes
 3. Emergency stabilization of buildings or structures damaged by flooding and/or other natural hazards
 4. Staging of temporary emergency operations centers
 5. Clearing and stabilization of emergency access roads

- E. Placement of Buildings, Structures or Accessory Structures** For floodplain management purposes, structures include buildings, gas or liquid storage tank that is principally above ground, manufactured and modular homes. Other examples may include but are not limited to:
1. Dormitories, cabins, yurts, and other lodging facilities.
 2. Office spaces, and other professional facilities.
 3. Museums, interpretive centers, libraries, and other public access facilities.
 4. Ticket/toll booths.
 5. Critical care or medical staging facilities.
 6. Restrooms, kitchens, cafeterias or other similar guest facilities.
 7. Gas or liquid storage tanks.
 8. An accessory structure is a structure which is on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure. Some examples may include:
 - a. Open-sided accessory structures such as pavilions, gazebos, pagodas, and carports.
 - b. Enclosed accessory structures such as storage sheds, pump houses, well houses, solar panels, etc.
- F. Maintenance, Repair, or Rehabilitation of Historic Structures** Variance permits for repair or rehabilitation of historic building may be granted upon a determination that the proposed development, repair, or rehabilitation will not preclude the building's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design. "Historic structures" refers to any structure or building that is:
1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or,
 4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior; or,
 - b. Directly by the Secretary of the Interior in states without approved programs.

D. Improvements with Location-Specific Functionally Dependent Uses

Improvements with functionally dependent uses are those which cannot perform their intended purpose unless located or carried out in or near close proximity to water. Some examples of development with functionally dependent uses may include:

1. Docking and port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.
2. Piers, marinas, boat ramps and boathouses.
3. Fish hatcheries.
4. Water and wastewater treatment facilities.
5. Utilities necessary for the delivery of vital services, for which alternate siting would be infeasible or unreasonable, such as power transmission, potable water lines, sanitary and storm sewers

6. Bridges, bridge approaches, tunnels, low water crossings, railroads, and roadways.
7. Structural flood control methods such as dams, weirs, levees, and floodwalls.

E. Ground Disturbing Activities

Ground disturbance is defined as any activity that compacts or disturbs the ground within a project area. The project area is defined as all areas where project activities will occur, including the actual construction activities, permanent easements, temporary construction easements, staging areas for supplies and equipment, and borrow pits. Some examples of ground disturbing activities may include:

1. Erosion and sediment control projects, including shoreline and embankment stabilization;
2. Water conveyance projects, including culverts, road ditches, and canals;
3. Clearing, grading, filling, drilling, and mining activities;
4. Paving, hardening, or the conversion of ground cover to a non-permeable surface;
5. Excavation, to include the construction of detention and retention basins, and ponds;
6. Erection of fencing;
7. Stream bank stabilization;
8. Reconstruction and stabilization of roadway embankments;
9. Bridge scour repairs and associated fill;
10. Bridge deck replacements;
11. Substructure repairs that may involve additional concrete or steel to reinforce the structure;
12. Bridge and structural maintenance and repair or replacement.

ARTICLE IV – VIRGINIA FLOODPLAIN DEVELOPMENT CONSTRUCTION STANDARDS

Section 4.1 – Procedure

As part of the standard Floodplain Administrator permitting process, applicants will be required to submit the following to allow review for compliance with this Standard:

- A. Agency name and agency number,
- B. Community name and community identification number where the project will take place,
- C. Address of project,
- D. Latitude/Longitude of project,
- E. Total cost of project,
- F. Project description/scope of work,
- G. Endangered Species Act (ESA) compliance documentation,
- H. USGS, FIRMS or other relevant maps of proposed project area,
- I. Hydrologic and hydraulic studies and models (quantitative or qualitative) for the impacted areas. Conditional Letter of Map Revision or Letter of Map Revision provided should studies show impact to the flood hazard area,
- J. Engineering design and specifications with elevation, freeboard and other specific flood protection measures identified:

1. The elevation of the Base Flood at the site.
 2. For buildings to be elevated, the elevation of the lowest floor (including basement) or, in V zones, the lowest horizontal structural member.
 3. For buildings to be floodproofed (non-residential only), the elevation to which the building will be floodproofed.
 4. Topographic information showing existing and proposed ground elevations.
- K. Signed/sealed elevation data by licensed professional,
- L. Copies of any State, Local or Federal permits issued for the project at the time of variance permit application,
- M. Copies of notification to localities of proposed projects if applicable, and
- N. Where the variance permit is for historic buildings, Department of Interior and State Historic Preservation approvals must be included.

State agencies will submit variance permit application data to the Floodplain Administrator, unless an alternative process has been established pursuant to §10.1-603 of the Code of Virginia. An electronic system has been developed and will be made available to all state agencies. Upon receipt of a completed variance permit application.

The Floodplain Administrator will review and provide written approval within 30 days of receipt to both the applicant state agency and DGS. Incomplete applications or applications that do not meet the requirements of this standard will be returned for revisions within 30 days of receipt. A “Revisions Needed” comment letter will be provided to the applicant state agency and DGS to communicate corrections needed from the applicant.

Section 4.2 – Variance Permit and Application Requirements

All development occurring within the floodplain, shall be undertaken only upon approval by the Floodplain Administrator. Such development shall be undertaken only in strict compliance with the provisions of these Standards and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform Statewide Building Code (VA USBC). Prior to the issuance of any such variance permit, the Floodplain Administrator shall require all applications to include compliance with all applicable State and Federal laws and shall review all sites to assure they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

Section 4.3 – General Floodplain Development Standards

The following provisions shall apply to all development in a floodplain:

- A. Construction and substantial improvements shall be built according to these standards and the VA USBC, and anchored to prevent flotation, collapse, or lateral movement of the building or structure.
- B. New construction and substantial improvements shall be constructed with materials and

- utility equipment resistant to flood damage.
- C. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
 - D. Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
 - E. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
 - F. New and replacement sewage collection or treatment systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.
 - G. On-site sewage disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

In addition to provisions A through H above, in the floodplain, the additional provisions shall apply: [Does not apply to the Shaded X Zone]

- H. Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U. S. Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, DCR, other required agencies, and the Federal Emergency Management Agency.
- I. The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

Section 4.4 – Freeboard Standards for Newly Constructed State-Owned Buildings in Floodplains

A. Riverine Areas

1. All new state-owned buildings located in the floodplain shall be constructed so that the top of the lowest floor, including all equipment, is no less than three (3) feet above the Base Flood Elevation (or Flood Depth if an AO Zone), based on the effective FIRM and FIS.
2. All new state-owned buildings located in the Shaded X Zone shall be constructed so that the top of the lowest floor, including all equipment, is no less than three (3) feet above the Water Surface Elevation or the Base Flood Elevation, whichever is less, based on the effective FIS.

B. Sea Level Rise Inundation Areas

The freeboard standards outlined in these Standards is to account for future flood conditions and the Sea Level Rise Planning Standards identified below.

1. All new state-owned buildings located in a Sea Level Rise Inundation Area and the coastal floodplain, seaward of the Limit of Moderate Wave Action line, shall be constructed so that the bottom of the lowest horizontal structural member of the lowest floor, including all equipment, is no less than eight (8) feet above the Base Flood Elevation (or Flood Depth if an AO Zone), based on the effective FIRM and FIS for that area.
 2. All new state-owned buildings located in a Sea Level Rise Inundation Area and the flooding is characterized as riverine, sheet flow, or ponding, shall be constructed so that the top of the lowest floor, including all equipment, is no less than five (5) feet above the Base Flood Elevation (or Flood Depth if an AO Zone), based on the effective FIRM and FIS for that area.
 3. All new state-owned buildings located in a Sea Level Rise Inundation Area and the Shaded X Zone shall be constructed so that the bottom of the lowest horizontal structural member of the lowest floor, including all equipment, is no less than five (5) feet above the Water Surface Elevation or the Base Flood Elevation of the adjacent floodplain, whichever is less, based on the effective FIRM and FIS for that area. Wave action must be accounted for in the Water Surface Elevation in coastal areas.
 4. All new state-owned buildings located in a Sea Level Rise Inundation Area but not in the floodplain nor Shaded X Zone shall be constructed so that the bottom of the lowest horizontal structural member of the lowest floor, including all equipment, is no less than three (3) feet above the mean sea level to account for future flood conditions. This freeboard standard is based on the Sea Level Rise Planning Standards identified below.
- C. If a Base Flood Elevation or Water Surface Elevation is not available, the state agency constructing the new state-owned building or structure shall have this elevation determined and certified by a professional engineer in accordance with current hydrologic and hydraulic engineering analyses.
- D. To reduce flood damages and allow for future adaptation opportunities, all new state-owned buildings located in the floodplain shall be built using NFIP compliant designs below the lowest floor.
- E. The freeboard standards identified in this section shall apply to all new state-owned buildings receiving funding authorization on or after January 1, 2021.

Sea Level Rise Planning Standards

- A. Based on recommendations from the Virginia Institute of Marine Science and the Commonwealth Center for Recurrent Flooding Resilience, the Commonwealth shall use the National Oceanographic and Atmospheric Administration (NOAA) Intermediate-High scenario curve for 2100 or best available data, as the state standard for predicting sea level rise.
- B. When scoping, designing, siting, and constructing state-owned buildings, a 50- year mid-life estimate for building longevity shall be used, which, under the NOAA Intermediate-

High scenario curve, last updated in 2022, equates to nearly four (4) feet of sea level rise by 2100. This standard has been incorporated into the freeboard standards above, with an additional one (1) foot added to account for high tide.

- C. The sea level rise planning standards identified in subsections A and B of this section shall apply to all new state-owned buildings receiving funding authorization on or after January 1, 2021.
- D. Additional studies and periodic updates of these planning standards shall be at the discretion of the Chief Resilience Officer.

4.5 Space Below the Lowest Floor

Fully enclosed areas of new construction, substantial improvement, or accessory structures in the floodplain which are constructed at an elevation below the regulatory flood protection elevation shall:

- A. Not be designed or used for human habitation, but shall be used solely for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).
- B. Be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
- C. Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:
 - a. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.
 - b. The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.
 - c. If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
 - d. The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.
 - e. Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
 - f. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.
- D. Standards for Manufactured Homes and Recreational Vehicles
 - 1. In the floodplain, all manufactured homes placed, or substantially improved, on individual lots or parcels, must meet all the requirements for new construction, including the elevation and anchoring requirements in these Standards.
 - 2. All recreational vehicles placed on sites must either:
 - a. Be on the site for fewer than 180 consecutive days, be fully licensed and ready for

- highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions); or
- b. Meet all the requirements for manufactured homes.

Section 4.6 – Existing Buildings and Structures in the Floodplain

Any building or use of a building, accessory structure or premises must be brought into conformity with these provisions when it is changed, repaired, or improved unless one of the following exceptions is established before the change is made:

- A. The Floodplain Administrator has determined that:
 - a. Change is not a substantial repair or substantial improvement; AND
 - b. No new square footage is being built in the floodplain that is not complaint; AND
 - c. No new square footage is being built in the floodway; AND
 - d. The change complies with these standards and the VA USBC.
- B. The changes are required to comply with a citation for a health or safety violation. This includes changes necessary to comply with a citation for an accessibility violation.
- C. The building is a historic structure and the change required would not preclude the continued designation as a historic structure.

Section 4.7 - Description of the Flood Zones [44 CFR §§ 59.1, 60.3]

Basis of Floodplain

The basis for the delineation of the floodplain shall be the FIS, FIRMs for the Commonwealth of Virginia prepared by the Federal Emergency Management Agency, Federal Insurance Administration, with the effective date of the community's Flood Insurance Rate Map, the Sea Level Rise Inundation area prepared by VIMS, and any subsequent revisions or amendments thereto.

The Commonwealth of Virginia may identify and regulate flood hazard or ponding areas using best available topographic data and locally derived information such as flood of record, historic high water marks, approximate study methodologies, or from quantitative engineering analysis through a hydrologic and hydraulic study.

A Zones, The A Zone shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a one percent annual chance floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the FIS. For these areas, the base flood elevations and floodway information from Federal, State, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the U. S. Army Corps of Engineers Floodplain Information Reports, U. S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this base flood elevation. For development proposed in the approximate floodplain the

applicant must use technical methods that correctly reflect currently accepted practices, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.

AE and AH Zones, AE or AH zones shall be those areas for which 1% annual chance flood elevations have been provided and the floodway has **not** been delineated. The following provisions shall apply within an AE or AH zone where base flood elevation is provided:

1. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the floodplain, shown as AE and AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the Commonwealth of Virginia.
2. Development activities in AE and AH on the FIRM which increases the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the NFIP Coordinator’s endorsement – for a Conditional Letter of Map Revision and receives the approval of the Federal Emergency Management Agency.

AO Zones, AO zones on the FIRM accompanying the FIS shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply:

1. All new construction and substantial improvements of residential buildings shall have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than three feet above the highest adjacent grade.
2. All new construction and substantial improvements of non-residential buildings shall:
 - a. Have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM plus three feet. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least three feet above the highest adjacent grade plus three feet; or,
 - b. Together with attendant utility and sanitary facilities be completely floodproofed to the specified flood level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
3. Adequate drainage paths around buildings or structures on slopes shall be provided to guide floodwaters around and away from proposed development.

Regulatory Floodway, The following provisions shall apply to the regulatory floodway within the AE zone [44 CFR 60§ F60.3(d)]:

1. Within any floodway area, no encroachments, including fill, new construction,

- substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator.
2. Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the Commonwealth of Virginia’s endorsement – for a Conditional Letter of Map Revision (CLOMR), and receives the approval of the Federal Emergency Management Agency.
 3. The placement of manufactured homes (mobile homes) is prohibited in the floodway, except in an existing manufactured home (mobile home) park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring, elevation, and encroachment standards are met.

Coastal A Zones, The Coastal A Zone is shown as AE on the FIRM; it is those areas that are seaward of the limit of moderate wave action (LiMWA) line. As defined by the VA USBC, these areas are subject to wave heights between 1.5 feet and 3 feet. For these areas, V Zone state-standards apply.

V Zones, The VE or V Zones shown on FIRMs accompanying the FIS shall be those areas that are known as Coastal High Hazard areas, extending from offshore to the inland limit of a primary frontal dune along an open coast or other areas subject to high velocity waves. For these areas, the following provisions shall apply [44 CFR § 60.3(e)]:

1. All new construction and substantial improvements in Zones V and VE, shall be elevated on pilings or columns so that:
 - a. the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level plus three feet if the lowest horizontal structural member is parallel to the direction of wave approach or elevated at least three feet above the base flood level if the lowest horizontal structural member is perpendicular to the direction of wave approach; and,
 - b. The pile or column foundation and building attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (one-percent annual chance).
2. A licensed professional engineer or architect shall develop or review the structural design, specifications, and plans for the construction, and shall certify that the design

and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of these Standards.

3. All new construction shall be located landward of the reach of mean high tide.
4. All new construction and substantial improvements shall have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood-lattice work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.
5. For the purpose of this Section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - a. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 - b. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year.
6. The enclosed space below the lowest floor shall be used solely for parking of vehicles, building access, or storage. Such space shall not be partitioned into multiple rooms, temperature-controlled, or used for human habitation.
7. The use of fill for structural support of buildings is prohibited. When non-structural fill is proposed in a coastal high hazard area, appropriate engineering analyses shall be conducted to evaluate the impacts of the fill prior to issuance of a permit.
8. The man-made alteration of sand dunes, which would increase potential flood damage, is prohibited.
9. The Sea Level Rise Inundation Area presented in the Virginia Flood Risk Information System (VFRIS) and referenced in these standards shall be mapped based on the National Oceanic and Atmospheric Administration Intermediate-High scenario curve for 2100 or best available data and is intended to denote the maximum inland boundary of anticipated sea level rise.
10. The mapped floodplain includes all of the above regions in addition to and also the Shaded X Zone (i.e., the area designated as having a 0.2 percent annual chance of flooding as shown on the FIRM or FIS).
11. In any area designated as a flood risk zone no emergency service, medical service, or governmental records storage shall be allowed except by special exception using the variance process.

ARTICLE IV - GLOSSARY [44 CFR § 59.1]

- A. Appurtenant or accessory structure - A non-residential building or structure which is on the same parcel of property as the principal building and the use of which is incidental to the use of the principal building. Accessory structures are not to exceed *600 square feet*.
- B. Base flood - The flood having a one percent chance of being equaled or exceeded in any given year.
- C. Base flood elevation - The water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year. The water surface elevation of the base flood in relation to the datum specified on the community's Flood Insurance Rate Map. For the purposes of this standard, the base flood is the 1% annual chance flood.
- D. Basement - Any area of the building having its floor sub-grade (below ground level) on all sides.
- E. Building - A structure with 2 or more outside rigid walls and a fully secured roof, that is affixed to a permanent site for the use or occupancy by persons or property.
- F. Coastal A Zone - Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet.
- G. CFR – Means Code of Federal Regulations.
- H. Department or DCR – Means the Department of Conservation and Recreation.
- I. Design Flood Elevation or DFE - The elevation to be used for determining the elevation of building elements in new construction
- J. Development - Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.
- K. Elevated building - A non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).

- L. Enclosure - That portion of an elevated building below the lowest elevated floor that is either partially or fully shut in by rigid walls.
- M. Encroachment - The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.
- N. Existing construction - For the purposes of the insurance program, structures for which the “start of construction” commenced before the effective date of these Standards. “Existing construction” may also be referred to as “existing structures” and “pre-FIRM.”
- O. Fill – ASCE 24-05 (Flood Resistant Design and Construction) defines *fill* and *structural fill* as:
1. **Fill:** material such as soil, gravel, or crushed stone that is placed in an area to increase ground elevation.
 2. **Structural Fill:** Fill compacted to a specified density to provide structural support or protection to a structure.
- P. Flood or flooding -
1. A general or temporary condition of partial or complete inundation of normally dry land areas from:
 - a. The overflow of inland or tidal waters; or,
 - b. The unusual and rapid accumulation or runoff of surface waters from any source.
 - c. Mudflows which are proximately caused by flooding as defined in paragraph (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
 2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph 1 (a) of this definition.
- Q. Flood Fringe is the portion of the floodplain outside of the floodway.
1. Usually contains slow-moving or standing water
 2. Occasionally referred to as "floodway fringe"
 3. Development in the flood fringe typically does not interfere with the flow of water.
 4. Floodplain regulations for these areas often allow development to occur; however, elevation and flood proofing is required.

- R. Flood Insurance Rate Map (FIRM) - an official map of a community, on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).
- S. Flood Insurance Study (FIS) - a report by FEMA that examines, evaluates and determines flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudflow and/or flood-related erosion hazards.
- T. Floodplain District – Any designated area where natural or man-made changes have occurred and the Floodplain Administrator caused more detailed studies to be conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agencies; or changes that are the result of other qualified studies.
- U. Floodplain or flood-prone area - Any land area susceptible inundation by water from any source. For the purpose of these Standards shall include all FEMA identified A,V, and Shaded-X zones, and Sea Level Rise Inundation Areas found on VFRIS.
- V. Floodproofing - Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.
- W. Floodway - The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot at any point within the community.
- X. Freeboard - A factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization in the watershed.
- Y. Functionally dependent use - A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. This term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.
- Z. Highest adjacent grade - the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

- AA. Historic structure - Any structure that is:
1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
 2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 3. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or,
 4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior; or,
 - b. Directly by the Secretary of the Interior in states without approved programs.
- BB. Hydrologic and Hydraulic Engineering Analysis - Analyses performed by a licensed professional engineer, in accordance with standard engineering practices that are accepted by the Floodplain Administrator and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.
- CC. Letters of Map Change (LOMC) - A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

Letter of Map Amendment (LOMA) - An amendment based on technical data showing that a property was incorrectly included in a designated special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a land as defined by meets and bounds or structure is not located in a special flood hazard area.

Letter of Map Revision (LOMR) - A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.

Conditional Letter of Map Revision (CLOMR) - A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard

areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study.

- DD. Lowest adjacent grade - the lowest natural elevation of the ground surface next to the walls of a structure.
- EE. Lowest floor - The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44CFR §60.3.
- FF. Lowest Horizontal Structural Member – for elevated structures located in coastal areas, freeboard shall be measured to the lowest horizontal structural member that supports the weight of the building or structure above
- GG. Manufactured home - A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days.
- HH. Manufactured home park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
- II. Mean Sea Level – for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or the North American Vertical Datum (NAVD) of 1988 to which base flood elevations shown on a community's FIRM are referenced.
- JJ. New construction - For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after _____ {insert the effective date of the community's initial Flood Insurance Rate Map} [*or* “after December 31, 1974”, *choose whichever is later*], and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
- KK. Permit (Application) – Application submitted to the Floodplain Administrator seeking a variance to develop in flood hazard areas in accordance with the provisions of these standards.

- LL. Post-FIRM structures - A structure for which construction or substantial improvement occurred on or after the effective date of these Standards.
- MM. Pre-FIRM structures - A structure for which construction or substantial improvement occurred before the effective date of these Standards.
- NN. Primary frontal dune - a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms.
- OO. Recreational vehicle - A vehicle which is:
1. Built on a single chassis;
 2. 400 square feet or less when measured at the largest horizontal projection;
 3. Designed to be self-propelled or permanently towable by a light duty truck; and,
 4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.
- PP. Repetitive Loss Structure - A building covered by a contract for flood insurance that has incurred flood-related damages on two occasions in a 10-year period, in which the cost of the repair, on the average, equalled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.
- QQ. Severe repetitive loss structure - a structure that: (a) Is covered under a contract for flood insurance made available under the NFIP; and (b) Has incurred flood related damage - (i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.
- RR. Shallow flooding area - A special flood hazard area with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
- SS. Special flood hazard area - The land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year as determined in Article 3, Section 3.1 of this standard.

- TT. Start of construction - For other than new construction and substantial improvement, under the Coastal Barriers Resource Act (P.L. – 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.
- UU. State agency - Means all agencies and departments of the Commonwealth. Entities include the executive branch, agencies, offices, authorities, commissions, departments, and all institutions of higher education
- VV. State-owned property – Means any real property leased, owned, operated or maintained, or that will be leased, owned, operated or maintained after the completion of development, by any entity in the executive branch, including agencies, offices, authorities, commissions, departments, and all institutions of higher education. State-owned property includes those lands underlying the secondary state highway system.
- WW. Structure - for floodplain management purposes, an assembly of materials forming a construction for non-occupancy use.
- XX. Subgrade Crawlspace - A crawlspace foundation where the subgrade under-floor area is no more than 5 feet below the top of the next-higher floor and no more than 2 feet below the lowest adjacent grade on all sides
- YY. Substantial damage - Damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
- ZZ. Substantial improvement - Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. The term does

not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by a local official and which are the minimum necessary to assure safe living conditions, or
2. Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.
3. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all requirements that do not preclude the structure's continued designation as a historic structure. Documentation that compliance with this standard will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from requirements will be the minimum necessary to preserve the historic character and design of the structure.

AAA. Variance Permit – A permit issued by the Floodplain Administrator to comply with the terms of the State Floodplain Management Standards as specifically outlined in Section 2.8 – Variance Permits and Exemptions [44 CFR § 60.6] of this standard.

BBB. Violation - the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this standard is presumed to be in violation until such time as that documentation is provided.

CCC. Watercourse - A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

DDD. Water Surface Elevation – The height in relation to mean sea level of floods in various magnitudes and frequencies within the floodplains.

ARTICLE V – ENACTMENT (to be determined)