

Policy Committee Government Center Complex Large Conference Room, Building A

Feb. 12, 2015 - 4 p.m.

1. Roll Call

2. Minutes

a. January 15, 2015

3. Old Business

4. New Business

a. FY 2016 Capital Improvements Program (CIP) Review

5. Adjournment

RESOLUTION

INITIATION OF CONSIDERATION OF AMENDMENTS TO THE ZONING ORDINANCE

DIVISION 3. FLOODPLAIN AREA REGULATIONS


WHEREAS, Virginia Code § 15.2-2286 and County Code § 24-13 permit the Planning Commission of James City County, Virginia (the "Commission") to prepare and recommend to the Board of Supervisors various land development plans and ordinances, specifically including a Zoning Ordinance and necessary revisions thereto as the Commission finds to be prudent; and

WHEREAS, the Federal Emergency Management Agency (FEMA) conducted a coastal analysis and mapping study for communities along the mid-Atlantic coast and updated the coastal flood maps for James City County; and

WHEREAS, once the FEMA maps are finalized (anticipated date of June 16, 2015), James City County will have six months to amend the Zoning Ordinance to reflect the new study and maps to comply with the National Flood Insurance Program; and

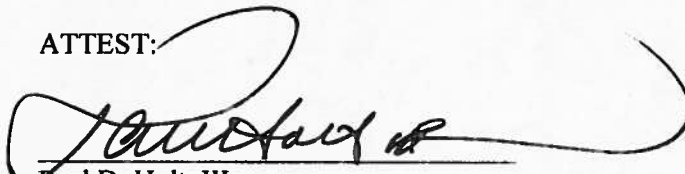
WHEREAS, the Commission is of the opinion that the public necessity, convenience, general welfare, or good zoning practice warrant the consideration of amendments to the Zoning Ordinance.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of James City County, Virginia, does hereby, by motion pursuant to Virginia Code § 15.2-2286(7), initiate review of the Zoning Ordinance to amend Article 1. In General, Section 24-2 Definitions, and Article VI. Overlay Districts, Division 3, Floodplain Area Regulations to incorporate the new Federal Emergency Management Agency Flood Insurance Rate Maps and Study and to ensure compliance with the National Flood Insurance Program. The Planning Commission shall hold at least one public hearing on the consideration of amendments of said Ordinance and shall forward its recommendation thereon to the Board of Supervisors in accordance with law.



Robin Bledsoe
Chair, Planning Commission

ATTEST:



Paul D. Holt, III
Secretary

Adopted by the Planning Commission of James City County, Virginia, this 1st day of
April 2015.



Federal Emergency Management Agency

Washington, D.C. 20472

RECEIVED

JUN 25 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO: COUNTY ADMINISTRATION
115-I

June 16, 2015

Mr. Bryan Hill
Administrator, James City County
P.O. Box 8784
Williamsburg, Virginia 23187

Community: James City County,
Virginia
(Unincorporated Areas)
Community No.: 510201
Map Panels Affected: See enclosed Listing of
Communities Table

Dear Mr. Hill:

On September 24, 2014, you were notified of proposed modified flood elevation determinations affecting the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for James City County, Virginia and Incorporated Areas. You were also notified of the proposed addition of and/or modifications to Base Flood Elevations, base flood depths, Special Flood Hazard Areas (SFHAs), zone designations, and regulatory floodways. SFHAs are the areas subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). The Department of Homeland Security's Federal Emergency Management Agency (FEMA) published a notification of the proposed flood hazard determinations for your community in *The Virginia Gazette* on October 1, 2014, and October 8, 2014. The statutory 90-day appeal period that was initiated on October 8, 2014, has elapsed.

FEMA did not receive any appeals of the proposed flood hazard determinations. Therefore, the determination (copy enclosed) of the Agency as to the flood hazard information for your community is considered final. FEMA will publish a notice of final flood hazard determinations in the *Federal Register* as soon as possible. The FIRM for your community will become effective as of December 16, 2015, and will revise the FIRM and FIS report that were in effect prior to that date. For insurance rating purposes, the community number and new suffix code for the panels being revised are indicated above and on the maps and must be used for all new policies and renewals. Final printed copies of the report and maps will be mailed to you before the effective date.

The modifications are pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Because of the modifications to the FIRM and FIS report for your community made by this map revision, certain additional requirements must be met under Section 1361 of the 1968 Act, as amended, within 6 months from the date of this letter. Prior to December 16, 2015, your community is required, as a condition of continued eligibility in the National Flood Insurance Program (NFIP), to adopt or show evidence of adoption of floodplain management regulations that meet the standards of Paragraph 60.3(d) and (e) of the NFIP regulations. These standards are the minimum requirements and do not supersede any State or local requirements of a more stringent nature.

It must be emphasized that all the standards specified in Paragraph 60.3(d) and (e) of the NFIP regulations must be enacted in a legally enforceable document. This includes the adoption of the effective FIRM and FIS report to which the regulations apply and the modifications made by this map revision. Some of the

standards should already have been enacted by your community. Any additional requirements can be met by taking one of the following actions:

1. Amending existing regulations to incorporate any additional requirements of Paragraph 60.3(d) and (e);
2. Adopting all the standards of Paragraph 60.3(d) and (e) into one new, comprehensive set of regulations; or
3. Showing evidence that regulations have previously been adopted that meet or exceed the minimum requirements of Paragraph 60.3(d) and (e).

Communities that fail to enact the necessary floodplain management regulations will be suspended from participation in the NFIP and subject to the prohibitions contained in Section 202(a) of the 1973 Act as amended.

A Consultation Coordination Officer (CCO) has been designated to assist your community with any difficulties you may be encountering in enacting the floodplain management regulations. The CCO will be the primary liaison between your community and FEMA. For information about your CCO, please contact:

Mr. Eugene Gruber, P.E.
Director, Federal Insurance and Mitigation Division
FEMA, Region III
One Independence Mall, 6th Floor
615 Chestnut Street
Philadelphia, Pennsylvania 19106-4404
(215) 931-5512

To assist your community in maintaining the FIRM, we have enclosed a Summary of Map Actions (SOMA) to document previous Letters of Map Change (LOMCs) (i.e., Letters of Map Amendment [LOMAs], Letters of Map Revision [LOMRs]) that will be superseded when the revised FIRM panels become effective. Information on LOMCs is presented in four categories: (1) LOMCs that have been included on the revised FIRM panels; (2) LOMCs that have not been shown on the revised FIRM panels because of scale limitations or because the LOMC that was issued had determined that the lots or structures involved were outside the SFHA shown on the FIRM; (3) LOMCs that have not been included on the revised FIRM panels because they are being superseded by new detailed flood hazard data; and (4) LOMCs that will be re-determined. The LOMCs in Category 2 of this form are revalidated through a single letter that reaffirms the validity of a previously issued LOMC. LOMCs issued for multiple lots or structures where the determination for one or more of the lots or structures have changed (Category 4) cannot be revalidated through this administrative process. However, we will review the data which were previously submitted as part of the original LOMA or LOMR request and issue a new determination for the subject properties after the FIRM effective date.

The FIRM panels have been computer-generated. Once the FIRM and FIS report are printed and distributed, the digital files containing the flood hazard data for the entire county can be provided to your community for use in a computer mapping system. These files can be used in conjunction with other thematic data for floodplain management purposes, insurance purchase and rating requirements, and many other planning applications. Copies of the digital files or paper copies of the FIRM panels may be

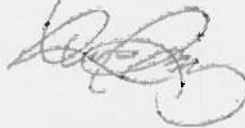
obtained by calling our FEMA Map Information eXchange (FMIX), toll free, at (877) 336-2627 (877-FEMA MAP). In addition, your community may be eligible for additional credits under our Community Rating System if you implement your activities using digital mapping files.

Please submit your existing or draft ordinance to the Office of the State NFIP Coordinator within one month to the attention of Mr. Charley Banks, CFM. Mr. Banks will review the ordinance, work with your community to develop a compliant ordinance, and submit the compliant ordinance to FEMA Region III for approval. Once you have received feedback and adopt the ordinance, you should also mail a complete, signed official copy of the adopted ordinance to the office before the effective date. Email submissions are preferred, though full contact information follows:

Mr. Charley Banks, CFM
Virginia Department of Conservation and Recreation
Division of Dam Safety and Floodplain Management
600 East Main Street, 24th Floor
Richmond, Virginia 23219
Phone: (804) 371-6135
Fax: (804) 371-2630
charley.banks@dcr.virginia.gov

The FEMA Region III staff is also available to assist you with your floodplain management measures and may be contacted by telephone at (215) 931-5512. If you have any questions concerning mapping issues in general, please call our FMIX at the toll free number provided above. Additional information and resources your community may find helpful regarding the NFIP and floodplain management, such as *The National Flood Insurance Program Code of Federal Regulations*, *Answers to Questions About the National Flood Insurance Program*, *Frequently Asked Questions Regarding the Effect that Revised Flood Hazards have on Existing Structures*, *Use of Flood Insurance Study (FIS) Data as Available Data*, and *National Flood Insurance Program Elevation Certificate and Instructions*, can be found on our website at <https://www.fema.gov/letter-final-determination>. Paper copies of these documents may also be obtained by calling our FMIX.

Sincerely,



Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Enclosures:
Final SOMA
Final Flood Hazard Determinations
Listing of Communities Table

cc: Community Map Repository
Ms. Christy Parrish, Proffer Administrator, James City County

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

To assist your community in maintaining the Flood Insurance Rate Map (FIRM), we have summarized below the previously issued Letter of Map Change (LOMC) actions (i.e., Letters of Map Revision (LOMRs) and Letters of Map Amendment (LOMAs)) that will be affected when the revised FIRM becomes effective on December 16, 2015.

1. LOMCs Incorporated

The modifications effected by the LOMCs listed below will be reflected on the revised FIRM. In addition, these LOMCs will remain in effect until the revised FIRM becomes effective.

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMR	12-03-2459P	03/06/2014	POWHATAN CREEK	51095C0110C 51095C0120C 51095C0130C 51095C0140C 51095C0185C	51095C0108D 51095C0109D 51095C0116D 51095C0117D 51095C0118D 51095C0119D 51095C0128D 51095C0136D 51095C0181D 51095C0182D

2. LOMCs Not Incorporated

The modifications effected by the LOMCs listed below will not be reflected on the revised FIRM panels because of scale limitations or because the LOMC issued had determined that the lot(s) or structure(s) involved were outside the Special Flood Hazard Area, as shown on the FIRM. These LOMCs will remain in effect until the revised FIRM becomes effective. These LOMCs will be revalidated free of charge 1 day after the revised FIRM becomes effective through a single revalidation letter that reaffirms the validity of the previous LOMCs.

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMA	199103922FIA	04/20/1988	3062 NORTH RIVERSIDE DRIVE	5102010015A	51095C0085D
LOMA	199103928FIA	08/30/1988	7281 OSPREY DRIVE	5102010015A	51095C0082D
LOMA	199103937FIA	06/07/1989	7242 OTEY DRIVE	5102010015A	51095C0082D
LOMA	93-52	05/03/1993	112 FOUR MILE TREE ROAD	5102010015B	51095C0068D
LOMA	96-03-506A	07/10/1996	LOT 32, SECTION 1, POWHATAN SHORES	5102010045B	51095C0182D
LOMA	98-03-622A	03/27/1998	LOT 13, HARBOR AT TWO RIVERS - 1556 HARBOR ROAD	5102010030B	51095C0176D

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMA	99-03-242A	03/24/1999	LOT 15, RIVER OAKS NORTH	5102010030B	51095C0177D
LOMA	00-03-0380A	03/21/2000	109 CONIES RUN	5102010045B	51095C0202D
LOMR-F	02-03-0240A	01/11/2002	LOT 2, COUNTRY CLUB VILLAS – 1404 KATHERINE SHAYE LANE	5102010030B	51095C0176D
LOMR-F	02-03-0822A	02/22/2002	LOT 5, BARRET'S POINTE, THE GOVERNOR'S LAND AT TWO RIVERS – 2921 BARRET'S POINTE	5102010030B	51095C0176D
LOMA	02-03-1998A	10/09/2002	LOT 1, FAMILY SUBDIVISION OF PROPERTY OF MADELINE HOGGE – 2873 JOLLY POND ROAD	5102010030B	51095C0112D
LOMA	02-03-2190A	10/16/2002	LOT 88, PHASE 4, LANDFALL AT JAMESTOWN –4412 LANDFALL DRIVE	5102010045B	51095C0182D
LOMR-F	03-03-0390A	01/30/2003	LOTS 2-4 AND 7-9, BARRET'S POINTE, THE GOVERNOR'S LAND AT TWO RIVERS	5102010030B	51095C0176D
LOMA	03-03-0694A	02/13/2003	LOT 29, PAGE LANDING AT JAMESTOWN – 4783 CAPTAIN JOHN SMITH ROAD	5102010045B	51095C0176D
LOMR-F	03-03-0692A	02/27/2003	LOT 1, CLUB VILLAS, THE GOVERNOR'S LAND AT TWO RIVERS – 1400 KATHERINE SHAYE LANE	5102010030B	51095C0176D
LOMR-F	04-03-1412A	06/07/2004	LOT 10, BARRET'S POINTE – 2941 BARRET'S POINTE ROAD	5102010030B	51095C0176D
LOMA	05-03-0972A	10/11/2005	LOT 32, SECTION 5, WINDSOR FOREST – 302 HEMPSTEAD ROAD	5102010035B	51095C0117D
LOMR-F	06-03-B198A	03/28/2006	LOT 139, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG – 109 DYKE	5102010035B	51095C0017D
LOMA	06-03-B348A	05/23/2006	LOT 4, CLUB VILLAS – 1412 KATHERINE SHAYE LANE	5102010030B	51095C0176D
LOMA	07-03-1225A	08/23/2007	LOT 38, SECTION 1, SEASONS TRACE – 38 SPRING EAST	5102010035B	51095C0109D
LOMA	08-03-0485A	02/07/2008	LOT 189, SECTION 11, FORD'S COLONY AT WILLIAMSBURG – 100 MONTROSE	51095C0120C	51095C0116D
LOMA	08-03-0443A	02/12/2008	LOT 74, PHASE 111, THE MEWS AT WILLIAMSBURG – 4913 FALKIRK MEWS	51095C0140C	51095C0136D
LOMA	08-03-0457A	02/14/2008	LOT 71, PHASE III, THE MEWS AT WILLIAMSBURG – 4807 FALKIRK MEWS	51095C0140C	51095C0136D
LOMA	08-03-0346A	02/19/2008	LOT 35, SECTION 1, SEASONS TRACE – 35 SPRING EAST	51095C0110C	51095C0109D

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMA	08-03-0294A	03/04/2008	LOT 36, SECTION 1, SEASONS TRACE - 36 SPRING EAST	51095C0110C	51095C0109D
LOMA	08-03-0689A	03/06/2008	LOT 16, SECTION XI, SEASON'S TRACE - 129 MATTAPONI TRAIL	51095C0110C	51095C0109D
LOMA	08-03-0496A	03/11/2008	LOT 24, SECTION 12, SEASONS TRACE - 141 PINTAIL TRACE	51095C0110C	51095C0106D
LOMA	08-03-0566A	03/11/2008	LOT 76, PHASE, 3, THE MEWS AT WILLIAMSBURG - 4916 FALKIRK MEWS	51095C0140C	51095C0136D
LOMA	08-03-0643A	03/11/2008	LOT 75, PHASE, 3, THE MEWS AT WILLIAMSBURG - 4915 FALKIRK MEWS	51095C0140C	51095C0136D
LOMA	08-03-0731A	03/25/2008	LOT 97, SHELLBANK WOODS - 121 GREENBRIER COURT	51095C0180C	51095C0177D
LOMA	08-03-0719A	04/03/2008	LOT 54, CHANCO'S GRANT SECTION II, PHASES ONE AND TWO - 2911 FRANCIS CHAPMAN WEST	51095C0185C	51095C0182D
LOMA	08-03-1030A	05/20/2008	PARCEL 2B, GILLEY PROPERTY - 2128 LAKE POWELL ROAD	51095C0205C	51095C0201D
LOMR-F	08-03-0924A	06/05/2008	LOT 100, PHASE 4, LANDFALL AT JAMESTOWN - 4393 LANDFALL DRIVE	51095C0185C	51095C0182D
LOMA	08-03-1284A	07/02/2008	LOT 7, CLUB VILLAS - 1415 KATHERINE SHAYE LANE	51095C0180C	51095C0176D
LOMA	08-03-1270A	07/07/2008	LOT 81, PHASE FOUR, LANDFALL AT JAMESTOWN SUBDIVISION - 4384 LANDFALL DRIVE	51095C0185C	51095C0182D
LOMA	08-03-1322A	08/12/2008	LOT 13, THE GOVERNORS LAND AT TWO RIVERS, NATHANIEL'S GREEN - 3048 NATHANIEL'S GREEN	51095C0180C	51095C0176D
LOMA	08-03-1536A	09/23/2008	LOT 26, SECTION 1, SEASONS TRACE - 26 SPRING EAST	51095C0110C	51095C0109D
LOMA	08-03-1752A	11/04/2008	LOT 35, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG - 100 GREAT GLEN	51095C0120C	51095C0117D
LOMR-F	08-03-1845A	11/20/2008	LOT 99, PHASE 4, LANDFALL AT JAMESTOWN - 4397 LANDFALL DRIVE	51095C0185C	51095C0182D
LOMA	09-03-0410A	12/23/2008	LOT 12, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG - 141 GREAT GLEN	51095C0140C	51095C0136D
LOMA	09-03-0133A	01/13/2009	LOT 21, PAGE LANDING AT JAMESTOWN - 4761 CAPTAIN JOHN SMITH ROAD	51095C0185C	51095C0184D
LOMA	09-03-0395A	02/05/2009	LOT 14, GOVERNOR'S LAND AT TWO RIVERS, NATHANIEL'S GREEN - 3044 NATHANIEL'S GREEN	51095C0180C	51095C0176D

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMR-FW	09-03-0261A	02/17/2009	LOT 145, SECTION 3, LONGHILL STATION - 4063 MILL DAM COURT	51095C0110C	51095C0109D
LOMA	09-03-1211A	07/07/2009	THE MEWS AT WILLIAMSBURG, PHASE III, UNIT 77 - 4814 FALKIRK MEWS	51095C0140C	51095C0136D
LOMR-F	09-03-1359A	07/07/2009	LOT 23, THE HARBOR AT TWO RIVERS, THE GOVERNOR'S LAND AT TWO RIVERS - 1586 HARBOR ROAD	51095C0180C	51095C0176D
LOMA	09-03-1804A	09/29/2009	LOT 4, THE HARBOR AT TWO RIVERS, THE GOVERNOR'S LAND AT TWO RIVERS - 1541 HARBOR ROAD	51095C0180C	51095C0176D
LOMA	09-03-1962A	10/15/2009	LOT 72, PHASE III, THE MEWS - 4809 FALKIRK MEWS	51095C0140C	51095C0136D
LOMA	09-03-2067A	11/05/2009	LOT 20, THE HARBOR AT TWO RIVERS - 1584 HARBOR ROAD	51095C0180C	51095C0176D
LOMA	10-03-0197A	11/05/2009	LOT 15, SECTION 1, HERITAGE LANDING SUBDIVISION - 3041 HERITAGE LANDING ROAD	51095C0120C	51095C0118D
LOMR-F	10-03-0219A	03/04/2010	LOT 1, THE HARBOR AT TWO RIVERS, THE GOVERNOR'S LAND AT TWO RIVERS - 1573 HARBOR ROAD	51095C0180C	51095C0176D
LOMA	10-03-1909A	09/16/2010	LOT 13, SECTION XII, SEASON'S TRACE - 144 TEAL WAY	51095C0110C	51095C0109D
LOMA	11-03-0757A	02/08/2011	PARCEL C, NECK-O-LAND FARM - 223 GATE HOUSE BOULEVARD	51095C0205C	51095C0201D
LOMA	11-03-1721A	06/02/2011	LOT 31, SECTION 1, POWHATAN SHORES - 109 GODSPEED LANE	51095C0185C	51095C0182D
LOMA	11-03-1474A	07/21/2011	LOT 15, SECTION 2, WESTMORELAND - 5528 GENTRY LANE	51095C0110C	51095C0109D
LOMA	12-03-0270A	11/29/2011	LOT 138, SECTION 11-A, FORD'S COLONY - 107 DYKE	51095C0120C	51095C0117D
LOMA	12-03-0580A	01/30/2012	LOT 6, SECTION 1, SEASON'S TRACE SUBDIVISION - 6 SPRING WEST	51095C0110C	51095C0109D
LOMA	12-03-0964A	02/29/2012	LOT 4, SECTION 1, SEASON'S TRACE SUBDIVISION - 4 SPRING WEST	51095C0110C	51095C0109D
LOMA	12-03-0745A	03/13/2012	324 NECK-O-LAND ROAD	51095C0185C 51095C0205C	51095C0201D
LOMA	12-03-0892A	03/15/2012	LOT 80, SECTION 11-A - 107 ABERDEEN	51095C0120C	51095C0117D
LOMA	12-03-2199A	08/16/2012	LOT 84, SECTION 5, PELEG'S POINT SUBDIVISION - 2148 BENOMI DRIVE	51095C0185C	51095C0182D

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMA	13-03-0262A	12/04/2012	LOT 11, BLOCK B, WHITTAKER ISLAND - 2937 EAST ISLAND ROAD	51095C0180C	51095C0177D
LOMA	13-03-0238A	12/11/2012	LOT 12, SECTION 12, SEASONS TRACE - 148 TEAL WAY	51095C0110C	51095C0109D
LOMA	13-03-0663A	01/03/2013	LOT 85, SECTION 5, PELEG'S POINT SUBDIVISION - 2162 BENOMI DRIVE	51095C0185C	51095C0182D
LOMA	13-03-0664A	01/09/2013	LOT 88, SECTION 5, PELEG'S POINT SUBDIVISION - 2166 BENOMI DRIVE	51095C0185C	51095C0182D
LOMA	13-03-0765A	02/07/2013	LOT 6, ARLENES VIEW - 704 ARLINGTON ISLAND ROAD	51095C0020C	51095C0019D
LOMA	14-03-1475A	02/26/2013	LOT 147, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG SUBDIVISION - 118 HEATHERY	51095C0120C	51095C0082D
LOMA	13-03-1380A	04/09/2013	LOT 15, SECTION 2, POWHATAN SHORES SUBDIVISION - 127 BRANSCOME BOULEVARD	51095C0185C	51095C0182D
LOMA	13-03-1331A	05/14/2013	LOT 18, SECTION 1, HERITAGE LANDING - 3055 HERITAGE LANDING ROAD	51095C0120C	51095C0118D
LOMA	13-03-1850A	06/10/2013	LOT 129, SECTION II, FORD'S COLONY AT WILLIAMSBURG SUBDIVISION - 111 LANDSDOWN	51095C0120C	51095C0117D
LOMA	13-03-1895A	07/09/2013	7617 CYPRESS DRIVE	51095C0020C	51095C0019D
LOMA	13-03-2419A	08/23/2013	LOT 24, SECTION VIII-B, SEASON'S TRACE SUBDIVISION - 117 SOUTHEAST TRACE	51095C0110C	51095C0117D
LOMA	13-03-2774A	10/04/2013	LOT 145, SECTION XI-A, FORDS COLONY SUBDIVISION - 113 HEATHERY	51095C0120C	51095C0109D
LOMA	13-03-2772A	10/31/2013	LOT 6, SECTION 1, CHICKAHOMINY HAVEN - 3118 NORTH RIVERSIDE DRIVE	51095C0085C	51095C0117D
LOMA	14-03-0799A	01/23/2014	LOT 130, SECTION 11A, FORD'S COLONY - 114 MORAY FIRTH	51095C0120C	51095C0117D
LOMA	14-03-2396A	07/08/2014	LOT 1B, SECTION 9, WINDSOR FOREST - 124 HEMPSTEAD ROAD	51095C0120C	51095C0117D
LOMA	14-03-2720A	08/14/2014	LOT 7, SECTION 4, FIELDCREST - 3226 DEERFIELD COURT	51095C0120C	51095C0118D
LOMA	14-03-3419A	10/28/2014	LOT 5, SECTION 4, FIELDCREST - 3218 DEERFIELD COURT	51095C0120C	51095C0118D
LOMA	14-03-3344A	01/02/2015	LOT 11, BLOCK 4, FIELDCREST - 3242 DEERFIELD COURT	51095C0185C	51095C0118D

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
LOMA	15-03-0540A	01/27/2015	LOT 4, SECTION 4, FIELDCREST – 3214 DEERFIELD COURT	51095C0120C	51095C0118D
LOMA	15-03-1458A	05/07/2015	LOT 10, LANDFALL VILLAGE – 2561 WILLIAM TANKARD DRIVE	51095C0185C	51095C0182D

3. LOMCs Superseded

The modifications effected by the LOMCs listed below have not been reflected on the Final revised FIRM panels because they are being superseded by new detailed flood hazard information or the information available was not sufficient to make a determination. The reason each is being superseded is noted below. These LOMCs will no longer be in effect when the revised FIRM becomes effective.

LOMC	Case No.	Date Issued	Project Identifier	Reason Determination Will be Superseded
LOMA	97-03-430A	05/21/1997	LOT 161, SECT. II, FORD'S COLONY AT WILLIAMSBURG – 115 MACHRIE	4
LOMA	08-03-0344A	12/26/2007	LOT 5, SECTION 30, WINDSOR FOREST – 214 HEMPSTEAD ROAD	4
LOMA	08-03-0354A	01/17/2008	LOT 126, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG – 118 MORAY FIRTH	4
LOMA	08-03-0317A	01/22/2008	LOT 60, SECTION XI-A, FORD'S COLONY AT WILLIAMSBURG – 117 GLASGOW	4
LOMA	08-03-0358A	01/29/2008	LOT 139, SECTION II, FORD'S COLONY – 115 ROSEMOUNT	4
LOMA	08-03-0574A	02/26/2008	LOT 17, SECTION 8-B, SEASON'S TRACE – 8 SEASONS COURT	4
LOMR-F	08-03-1003A	05/22/2008	LOT 075, SECTION II, FORD'S COLONY AT WILLIAMSBURG – 113 LINKS OF LEITH	4
LOMA	09-03-0941A	04/09/2009	LOT 125, SECTION XI-A, FORD'S COLONY – 117 MORAY FIRTH	4
LOMA	10-03-1003A	04/26/2010	LOT 145, FORDS COLONY - 114 ROSEMOUNT	4
LOMA	10-03-2014A	09/30/2010	LOT 140, SECTION XI-A, FORD'S COLONY – 108 DYKE	4
LOMA	11-03-2006A	08/18/2011	LOT 134, SECTION 11, FORD'S COLONY AT WILLIAMSBURG – 114 LANDSDOWN	4
LOMA	10-03-0592A	01/23/2014	LOT 8, BLOCK 8A, SEASON'S TRACE SUBDIVISION – 112 NORHT TRACE	4

FINAL SUMMARY OF MAP ACTIONS

Community: JAMES CITY COUNTY

Community No: 510201

1. Insufficient information available to make a determination.
2. Lowest Adjacent Grade and Lowest Finished Floor are below the proposed Base Flood Elevation.
3. Lowest Ground Elevation is below the proposed Base Flood Elevation.
4. Revised hydrologic and hydraulic analyses per LOMR 12-03-2459P, effective 03/06/2014.
5. Revised topographic information.

4. LOMCs To Be Redetermined

The LOMCs in Category 2 above will be revalidated through a single revalidation letter that reaffirms the validity of the determination in the previously issued LOMC. For LOMCs issued for multiple lots or structures where the determination for one or more of the lots or structures has changed, the LOMC cannot be revalidated through this administrative process. Therefore, we will review the data previously submitted for the LOMC requests listed below and issue a new determination for the affected properties after the effective date of the revised FIRM.

LOMC	Case No.	Date Issued	Project Identifier	Old Panel	New Panel
			NO CASES RECORDED		

James City County, Virginia and Incorporated Areas
Docket No.: FEMA-B-1431

Community	Community Map Repository Address
City of Williamsburg (Independent City)	Planning Department 401 Lafayette Street Williamsburg, VA 23185
Unincorporated Areas of James City County	James City County Development Management 101-A Mounts Bay Road Williamsburg, VA 23185

The table that follows is provided for your community's use in determining the FIRM panels affecting your community. Note, when referencing the FIRM panels in your floodplain management ordinances, the complete FIRM panel number should be referenced. For example, the first FIRM panel for Williamsburg will read 51095C0136D and the first panel entry for James City County will read 51095C0009D. The countywide prefix 51095C and suffix D are common to all communities.

<u>LISTING OF COMMUNITIES</u>					
COMMUNITY NAME	COMMUNITY NUMBER	LOCATED ON PANELS	INITIAL NFIP MAP DATE	INITIAL FIRM DATE	MOST RECENT FIRM PANEL DATE
JAMES CITY COUNTY (UNINCORPORATED AREAS)	510201	0009, 0017, 0019, 0028, 0029 ¹ , 0033, 0034, 0036, 0037 ¹ , 0038, 0039, 0041, 0042, 0043, 0044 ¹ , 0053, 0054 ¹ , 0061, 0062, 0063, 0064, 0066 ¹ , 0068, 0081, 0082, 0084 ¹ , 0092, 0094, 0101, 0102, 0103, 0104, 0106, 0107 ¹ , 0108, 0109, 0111, 0112, 0113, 0114, 0116, 0117, 0118, 0119, 0126, 0127, 0128, 0131, 0136, 0138, 0143, 0157 ¹ , 0176, 0177, 0181, 0182, 0183, 0184, 0192 ¹ , 0201, 0202, 0203, 0204, 0206, 0207, 0208 ¹ , 0209, 0211 ¹ , 0217 ¹ , 0219 ¹ , 0226 ¹ , 0228, 0229, 0236, 0237 0136, 0137, 0138, 0139, 0141, 0143, 0201, 0202, 0206	July 18, 1975	February 6, 1991	December 16, 2015
WILLIAMSBURG, CITY OF (INDEPENDENT CITY)	510294		March 28, 1975	November 20, 1981	December 16, 2015

¹PANEL NOT PRINTED

What is FEMA's Process for Revalidating Existing LOMAs and LOMRs?

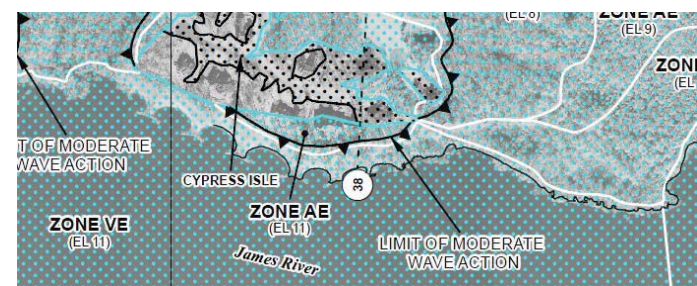
To revalidate map changes, FEMA conducts a detailed comparison of the BFEs shown on FEMA's new FIRM and the lowest adjacent grade or lowest lot elevation of previously issued map changes. Those structures or properties that are above the BFE or are located in areas of the community that are not affected by updated flood hazard information are revalidated through a formal determination letter that is issued to the community's Chief Executive Officer when the new FIRM becomes effective. The revalidation letter is also mailed to each community's map repository to be kept on file and is available for public reference. Map changes that have been issued for multiple lots or structures where the determination for one or more of the lots or structures have changed cannot be automatically revalidated through the administrative process described above. To request that FEMA review such map changes (i.e., those that are not included in the revalidation letter), please submit the following to FEMA:

- A letter requesting the re-issuance (provide the case number of the LOMA to be reissued); and
- A copy of the LOMA to be reissued, if available.

FEMA will review the case file and issue a new letter reflecting its new determination.

How can I purchase flood insurance?

A policy may be purchased from most licensed property insurance agents or brokers who are in good standing in the State in which the agent is licensed or through any agent representing a Write Your Own (WYO) company. Call 1-800-720-1093 or visit floodsmart.gov to find a flood insurance agent near you.



What Factors Determine Flood Insurance Premiums?

A number of factors are used to determine flood insurance premiums, including the amount of coverage purchased, the deductible, location, age, occupancy, and type of building. For newer buildings in floodplains, the elevation of the lowest adjacent grade (the lowest ground touching the structure), or lowest floor relative to the BFE will also be used to rate the policy.

For Further Information

For any questions concerning flood hazard mapping or LOMAs, please contact the FEMA Map Information eXchange's (FMIX) toll-free information line at 1-877-FEMA MAP (1-877-336-2627).

More information is available online at: http://www.fema.gov/plan/prevent/fhm/fq_genhm.shtm

The FMIX has flood hazard mapping information and products that may be reviewed online and downloaded at <http://msc.fema.gov>. For map orders and questions call 1-877-FEMA MAP (1-877-336-2627).

For information about floodplain management, ordinances, or map adoption policies, communities can contact their State NFIP Coordinator.

For questions specifically concerning insurance, please call 1-800-427-4661 or visit <http://www.floodsmart.gov>.



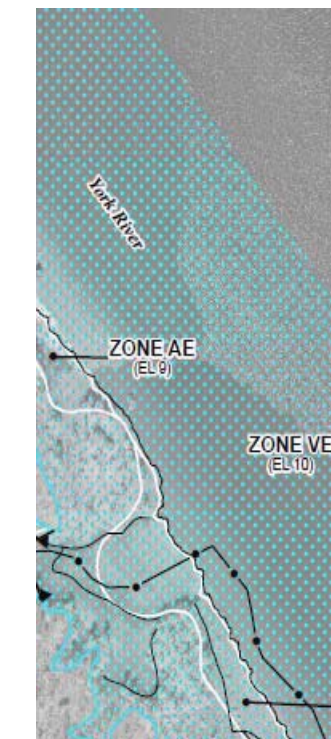
March 28, 2014

Flood Hazard Mapping Fact Sheet

James City County and Incorporated Areas, Virginia

What is the NFIP? What is Risk MAP?

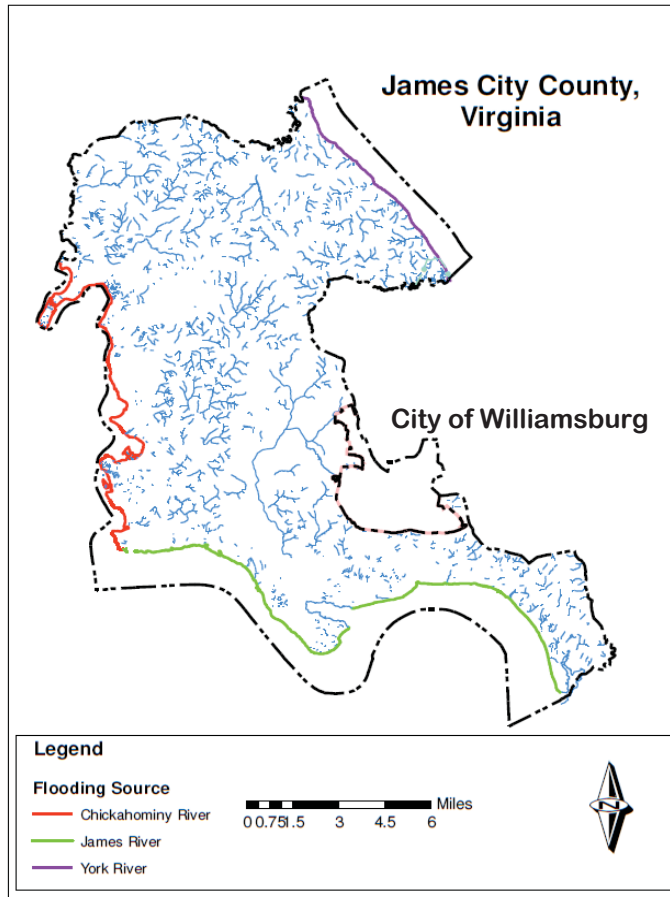
Congress established the NFIP due to escalating costs to taxpayers for flood disaster relief. If a community participates in sound floodplain management, the Federal Government will make flood insurance available to residents in that community. FIRMs show the Special Flood Hazard Area (SFHA). Development may take place within the SFHA provided that it complies with local floodplain ordinances that meet NFIP criteria. Risk MAP is a FEMA program that provides communities with additional risk assessment tools and outreach support. Through collaboration with States and local entities, FEMA will deliver quality data that increase public awareness and strengthen local ability to make informed decisions about reducing risk to life and property.



What is a FIRM?

When FEMA maps flood hazards in a community or county, two products are produced – a Flood Insurance Study (FIS) report and a FIRM. An FIS contains prior flooding information, descriptions of the flooding sources, information on flood protection measures, and a description of the hydrologic and hydraulic methods used in the study. A FIRM illustrates the extent of flood hazards in a community by depicting flood risk zones and the SFHA and is used with the FIS to determine the floodplain development regulations that apply in each flood risk zone and who must buy flood insurance. FIRMs also depict Base (1% annual chance) Flood Elevations (BFEs) or flood depths, floodways, and common physical features such as roads.

This Fact Sheet provides background information on the National Flood Insurance Program (NFIP) and Risk Mapping, Assessment, and Planning (Risk MAP) program, which are administered by the Federal Emergency Management Agency (FEMA), as well as an overview of the flood hazard assessment and mapping process underway in James City County and Incorporated Areas, Virginia. FEMA is revising the county's Flood Insurance Rate Maps (FIRMs) and creating non-regulatory flood risk assessment products, using the latest technologies and the most current data, so that residents, homeowners, business owners, and community officials may understand their local flood risk and take action to keep people and property safe from floods.



and Flood Profiles have been revised in the FIS Report. The coastal flood hazard areas within the county were also revised. In addition, identifying and mapping the 1.5-foot wave height line, referred to as the Limit of Moderate Wave Action (LiMWA) was completed. The digital files will be available when these maps become effective.

What Else Has Changed?

The preliminary FIRM panels have updated orthophotos for the base map as part of this PMR. The orthophotos were prepared by the Commonwealth of Virginia as part of the Virginia Base Map Program.

How do I Find Out if a Structure or Property is Located in the Special Flood Hazard Area?

You can locate a building or a lot by consulting the FIRM, or by contacting the floodplain administrator for your community. For help interpreting a FIRM, telephone the FMIX at 1-877-FEMA MAP (1-877-336-2627).

What is an Appeal?

Some flood studies result in new or revised flood hazard information. During the 90-day appeal period, community officials and others may object to the accuracy of this flood hazard information, which may include new or revised BFEs, base flood depths, SFHA boundaries or zone designations, or regulatory floodways. All appeals must be based on data that show the new or revised flood hazard information is scientifically or technically incorrect. Communities should coordinate with the FEMA Philadelphia office before submitting an appeal.

What is a Comment?

Challenges received during the appeal period that do not involve proposed flood hazard information are called “comments”; these generally involve concerns with updated corporate limits, jurisdictional boundaries, road names, and other base map errors or omissions; or requests that a Letter of Map Amendment (LOMA) Letter of Map Revision Based on Fill (LOMR-F), or LOMR be incorporated.

What Happens After the Appeal Period?

FEMA will issue a Letter of Final Determination and then provide the community with six months to adopt up-to-date floodplain management ordinances. If the floodplain ordinances in effect are satisfactory, they

Why Are the Maps Being Updated?

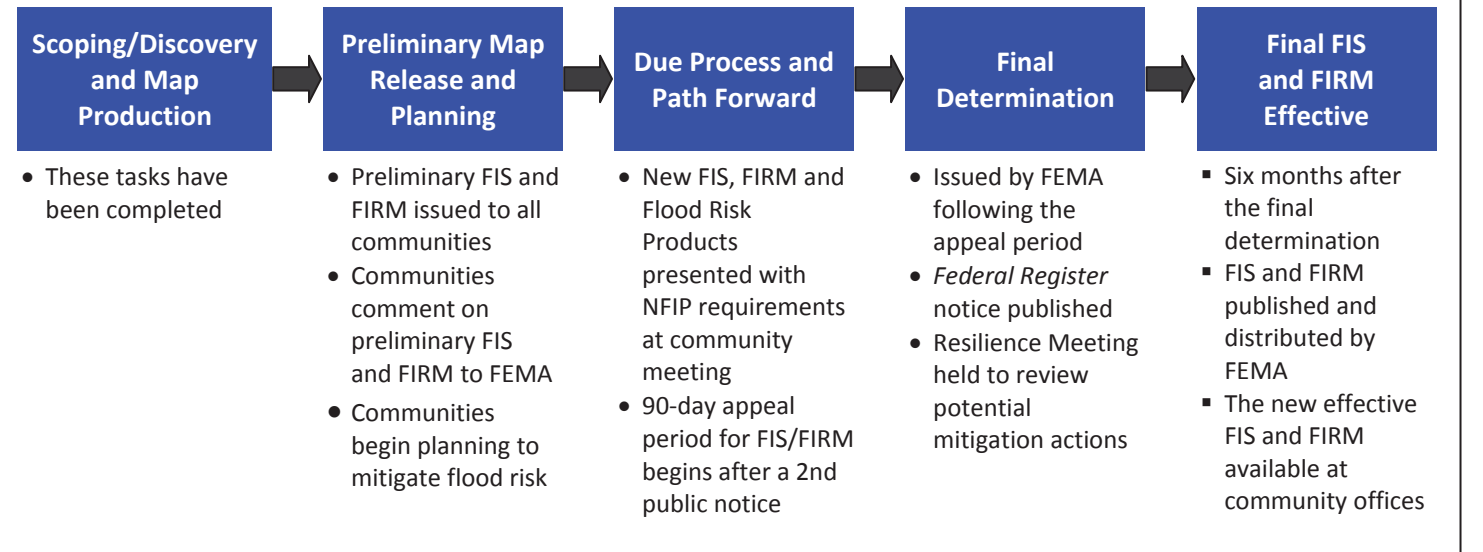
The FIRMs for James City County and Incorporated Areas, Virginia are being updated with coastal flood hazard information for the Chesapeake Bay and its tributaries. Existing coastal flood hazard areas reflect information that was available at the time the county’s maps were created, and may not reflect the effects of development or changes in the shoreline, topography and vegetation. Incorporating recent data into the new modeling and mapping technologies will provide more detailed and reliable information about the region’s coastal flood risks from tropical and extra-tropical storms.

This Physical Map Revision (PMR) has been issued for James City County and Incorporated Areas, Virginia in order to incorporate new detailed coastal flood hazard analyses of storm surges and wave heights for the Chickahominy River, the James River, and the York River.

With this update, the flood hazard zones for the revised rivers have been changed from Zone A to Zone AE and Zone VE. BFEs have been added to the updated areas,

The Mapping Process

The key steps in the Risk MAP mapping and product development process are outlined below. Additionally, the points at which community officials and property owners may provide comments and express concerns with the information in the FIS report and FIRM are identified.



can be submitted in their current form. If ordinances need to be updated, communities should seek assistance from their State NFIP Coordinator or the FEMA office in Philadelphia. After the six-month compliance period, the new FIS and FIRM will become effective.

What if a Structure is Shown in a Different Flood Zone on the New Map?

The new map will not affect continuing insurance policies for a structure built in compliance with local floodplain management regulations and the flood map in effect at the time of construction. However, should the structure be substantially improved or substantially damaged (where damages or improvements reach 50% or more of the predamage market value) the entire structure will have to be brought into compliance with the floodplain requirements and the BFE in effect at the time any repairs take place.

Is There any Recourse if I Do Not Agree with the New Map?

Although FEMA uses the most accurate flood hazard information available, limitations of scale or topographic definition of the source maps used to prepare the FIRM may cause small areas that are at or above the BFE to be inadvertently shown within

SFHA boundaries. Such situations may exist in James City County and Incorporated Areas. For these situations, FEMA established the LOMA process to remove such structures from the SFHA.

How Can I Request a LOMA?

To obtain a LOMA, the requester must complete a LOMA application form that is downloadable from: http://www.fema.gov/plan/prevent/fhm/dl_mt-ez.shtm. For a LOMA to be issued removing a structure from the SFHA, federal regulations require that lowest adjacent grade be at or above the BFE. There is no fee for FEMA’s review of the LOMA request, but the requester of a LOMA must provide all of the information needed for a review. Elevation information certified by a licensed surveyor is often required if an elevation certificate is not available.

Will LOMAs Issued under the Old Map be Valid under the New Map?

When a new FIRM becomes effective, it automatically supersedes previously issued LOMAs, LOMRs, and other map changes that have been issued for structures and properties on the revised FIRM panels. Recognizing that some map changes may still be valid even though the flood hazard information on the FIRM has been updated, FEMA has established a process for revalidating such map changes.

Guidance for Local Floodplain Ordinances in VA

**VA Department of Conservation and Recreation
Dam Safety and Floodplain Program
February, 2014**

VA Department of Conservation & Recreation DDSFPM October 2011
Guidance for Local Floodplain Ordinances in VA

Preface

Purpose of this guidance

In developing their floodplain management ordinances, participating communities must meet at least the minimum regulatory standards that are found in 44 CFR and administered by the Federal Emergency Management Agency (FEMA). The purpose of this document is to clearly articulate to community officials the minimum regulatory standards required in a fully compliant floodplain ordinance and to outline the minimum documentation needed for a complete ordinance review submission. The National Flood Insurance Program (NFIP) standards and policies are reviewed periodically and revised whenever appropriate. When these administrative changes occur, or when flood insurance rate maps (FIRMs) are updated, community flood plain management ordinances must also be revised and updated accordingly.

Community participation in the NFIP is voluntary. When a community joins the NFIP, a community must ensure that their adopted floodplain management ordinance and enforcement procedures meet NFIP requirements. The NFIP requires that the local community ordinance be legally enforceable and applied uniformly throughout the community.

The NFIP is a federal program that is implemented on a local level. Localities have the authority and responsibility to properly manage development in the floodplain.

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I. The National Flood Insurance Program

The National Flood Insurance Act of 1968 was enacted by title XIII of the Housing and Urban Development Act of 1968 (Pub. L. 90-448, August 1, 1968) to provide previously unavailable flood insurance protection to property owners in flood-prone areas. The Flood Disaster Protection Act of 1973 requires the purchase of flood insurance on and after March 2, 1974, as a condition of receiving any form of Federal or federally-related financial assistance for acquisition or construction purposes with respect to insurable buildings and mobile homes within an identified Special Flood Hazard Area (SFHA) that is located within any community participating in the Program. The Act also requires that on and after July 1, 1975, or one year after a community has been formally notified by the Administrator of its identification as a community containing one or more SFHAs, that no such Federal financial assistance shall be provided within such an area unless the community in which the area is located is then participating in the Program, subject to certain exceptions.

II. Flood Insurance

Standard property insurance does not cover flood damage. If a structure, with a federally-backed or insured mortgage, is located in a SFHA on a FIRM, there will be a mandatory requirement to purchase flood insurance.

The NFIP allows property owners to buy federally-backed flood insurance within participating communities. In return for this protection, communities enact measures to reduce flood risks to new development. Federally backed flood insurance is available for all buildings in participating communities, whether the buildings are in a regulated floodplain or not. Flood insurance covers direct losses caused by surface flooding.

Flood insurance and federal assistance such as mortgage loans and grants are only available in communities that participate in the National Flood Insurance Program and have a floodplain ordinance that meets federal standards.

III. Flood Insurance Rate Maps (FIRMs)

The United States Code authorizes FEMA to identify and publish information with respect to all areas within the United States having flood hazards. FEMA works closely with state and local officials to identify flood hazard areas and flood risks. FEMA's Federal Insurance and Mitigation Administration (FIMA) maintains and updates the FIRMs.

The statistical probability of flood events of various sizes are modeled. Probability is a statistical term having to do with the size of a flood and the odds of that size of flood occurring in any year. These models help to depict not only where flood waters will be, but how fast and deep they would be during these various sized flood events.

In order to have common standards, the NFIP uses a baseline probability called the base flood. The base flood is the one-percent annual chance flood. The one-percent annual chance flood is the flood that has a one-percent (one out of 100) chance of occurring in any given year. The base flood, which is also informally referred to as the 100-year flood, is the national standard used by the NFIP and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development.

The Special Flood Hazard Areas (SFHAs) that are identified on the FIRMs include the following zone designations:

- Zone A- designated SFHAs on a community's FIRM that have no base flood elevation (BFE) data, a floodway, or coastal high hazard area.
- Zone AE- designated SFHAs on a community's FIRM that have BFE data, but not a floodway, or coastal high hazard area.
- Zone AE with floodway- designated SFHAs on a community's FIRM that have BFE data and a designated floodway, but no coastal high hazard area.
- Zone VE- designated SFHAs on a community's FIRM that have BFE data and a Coastal High Hazard Area.
- Zone AO- designated SFHAs on a community's FIRM that have flood depths (on average from 1 to 3 feet) where a clearly defined channel does not exist and is characterized by ponding, sheet or shallow flow.
- Zone AH- designated SFHAs on a community's FIRM that have BFE data and is characterized by shallow flow.

In addition to the SFHA, the FIRMs may include the 0.2% annual chance of flooding area, commonly known as the 500-year floodplain, for planning purposes. Unlike in the 1% annual chance floodplain, flood insurance on mortgaged structures is not required in the 0.2% area, but still recommended.

IV. Letters of Map Change

Sections of the FIRMs can be changed without re-drawing the whole map. The process is known as Letters of Map Change (LOMC). The different types of LOMCs are listed in the table below.

TYPE	DESCRIPTION
CLOMA	A Conditional Letter of Map Amendment (CLOMA) is FEMA's comment on whether a proposed project would be excluded from the Special Flood Hazard Area (SFHA) shown on the effective NFIP map. The letter becomes effective on the date sent. This letter does not revise an effective NFIP map, but indicates whether the project, if built as proposed, would or would not be removed from the SFHA by FEMA if later submitted as a request for a Letter of Map Amendment (LOMA).
CLOMR	A Conditional Letter of Map Revision (CLOMR) is FEMA's comment on a proposed project that would affect the hydrologic and/or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway or effective Base Flood Elevations (BFE). There is no appeal period. The letter becomes effective on the date sent. This letter does not revise an effective NFIP map, it indicates whether the project, if built as proposed, would or would not be removed from the Special Flood Hazard Area (SFHA) by FEMA if later submitted as a request for a Letter of Map Revision (LOMR).
CLOMR-F	A Conditional Letter of Map Revision Based on Fill (CLOMR-F) is FEMA's comment on whether a proposed project involving the placement of fill would exclude an area from the SFHA shown on the NFIP map. The letter becomes effective on the date sent. This letter does not revise an effective NFIP map, but indicates whether the project, if built as proposed, would or would not be removed from the SFHA by FEMA if later submitted as

	a request for a Letter of Map Revision Based on Fill (LOMR-F).
LOMA	A Letter of Map Amendment (LOMA) is an official amendment, by letter, to an effective NFIP map. A LOMA establishes a property's location in relation to the SFHA. The letter becomes effective on the date sent.
LOMR	A Letter of Map Revision (LOMR) is an official revision, by letter, to an effective NFIP map. A LOMR may change flood insurance risk zones, floodplain and/or floodway boundary delineations, planimetric features, and/or BFE. The letter becomes effective on the date sent.
LOMR-F	A Letter of Map Revision Based on Fill (LOMR-F) is an official revision, by letter, to an effective NFIP map. A LOMR-F provides FEMA's determination concerning whether a structure or parcel has been elevated on fill above the BFE and excluded from the SFHA. The letter becomes effective on the date sent.

V. Floodplain Management and Applicable Ordinances

When a community chooses to join the NFIP, it must adopt and enforce minimum floodplain management standards for participation. In return, the Federal Government makes flood insurance available for almost every building and its contents within the community. The floodplain management requirements within the SFHA are designed to prevent new development from increasing the flood threat and to protect new and existing buildings from anticipated flood events. The floodplain districts that are described in the ordinance must include all the different SFHAs that are on the community's FIRM, and the corresponding requirements from 44 CFR:

- un-mapped (60.3a),
- floodplain boundaries only (60.3b),
- floodplain boundaries with elevations (60.3c),
- floodplain boundaries with elevations and delineated floodways (60.3d), and
- floodplain boundaries with elevations and coastal high hazard areas (60.3e).

In developing their floodplain management ordinances, participating communities must meet or exceed the regulatory standards issued by FEMA. The purpose of this document is to clearly articulate to community officials the minimum regulatory standards required in a fully compliant NFIP floodplain ordinance and to outline the minimum documentation needed for a complete ordinance review submission. NFIP standards and policies are reviewed periodically and revised whenever appropriate. When these administrative changes occur, or when FIRMs are updated, community flood plain management ordinances must also be revised and updated accordingly.

Types of LOCAL Ordinances

In Virginia, local floodplain regulations are found in one of two types of regulations: “stand alone” ordinances or as part of a zoning ordinance. Each is explained below.

“Stand alone” ordinance

Some communities in Virginia that have joined the NFIP have enacted a separate, “stand alone” ordinance that includes all the NFIP regulatory requirements, usually based on a FEMA or state model ordinance. The statutory authority for this type of ordinance is § 10.1-600; this must be referred to in the ordinance.

The advantage of doing this is that one ordinance contains all of the floodplain development standards. Developers can easily see what is required of them, and FEMA and the state staff can easily see if the community has adopted the latest requirements. This is an acceptable method for a community to ensure full compliance with the NFIP requirements, especially for small communities that do not have numerous other enacted codes already established.

The disadvantage to a separate ordinance is that it may not be coordinated with other building, zoning or subdivision regulations. Some communities have found that by adopting a stand alone ordinance, they may adopt standards that are additional to, inconsistent with, or even contrary to the floodplain standards in the other regulations.

If a community has a stand alone ordinance, it should review its provisions with all other departments and ordinances that regulate land development and building construction. to make sure that all involved know the floodplain regulations and that there are no internal inconsistencies. For example, a floodplain ordinance that is administered by the city engineer may not be coordinated with the permit process that is conducted by the building and/or planning departments.

Part of the zoning ordinance

In VA, land use authority is delegated to incorporated localities by VA Code § 15.2-2280:

“Any locality may, by ordinance, classify the territory under its jurisdiction or any substantial portion thereof into districts of such number, shape and size as it may deem best suited to carry out the purposes of this article, and in each district it may regulate, restrict, permit, prohibit, and determine the following:

1. The use of land, buildings, structures and other premises for agricultural, business, industrial, residential, flood plain and other specific uses; ...
...zoning ordinances shall be for the general purpose of promoting the health, safety or general welfare of the public and of further accomplishing the objectives of... and safety from fire, flood, impounding structure failure, crime and other dangers...”

A zoning ordinance regulates development by dividing the community into zones or districts and setting development criteria for each district. Two approaches address development in floodprone areas: separate districts and overlay zoning.

In a separate district, the floodplain can be designated as one or more separate zoning districts that only allow development that is not susceptible to damage by flooding. Appropriate districts include public use, conservation, agriculture, and cluster or planned unit developments that keep buildings out of the floodplain, wetlands and other areas that are not appropriate for intensive development.

Overlay zoning adds special requirements in areas subject to flooding. The areas can be developed in accordance with the underlying zone, provided the flood protection requirements are met.

SUBDIVISION REGULATIONS

Subdivision regulations govern how land will be divided into lots. They set construction and location standards for the infrastructure that the developer will provide, including roads, sidewalks, utility lines, storm sewers and drainage ways. Subdivision regulations offer an opportunity to keep buildings out of the floodplain entirely with cluster developments. They can also require that every lot have a buildable area above the BFE, include dry land access and meet other standards that provide more flood protection than a building code can.

STATE REGULATIONS

UNIFIED STATEWIDE BUILDING CODE

The USBC is a state regulation promulgated by the Virginia Board of Housing and Community Development for the purpose of establishing minimum regulations to govern the construction and maintenance of buildings and structures. Codes and regulations are adopted by the Board of Housing and Community Development and periodic amendments are utilized to update codes and incorporate new reference standards. Enforcement of the USBC is mandatory for all localities in Virginia, and local jurisdictions may not modify or amend the USBC.

VA NOTIFICATION LAW

On July 1, 2007, a new law became effective that affects Virginia communities that receive updated FIRMs from FEMA. The law adds Section 15.2.976, which requires notifications to landowners when changes occur to a FEMA Special Flood Hazard Area (SFHA) map.

The new law states:

“Any locality receiving notification from the US FEMA that a change in the FEMA special flood hazard area map concerns or relates to real property within such locality shall provide to each owner of such property (i) written notification that such change has occurred within that locality and (ii) written notification of the website, address, and telephone number for the National Flood Insurance Program to aid the property owner in determining if there has been a change to the flood risk of the property. Notice sent by bulk or first class mail to the last known address of such owner as shown in the current real estate tax assessment books or current real estate tax assessment records shall be deemed adequate compliance with this requirement.”

What this means to Virginia communities:

1. When FEMA issues new maps, the affected locality should send a written notice to any property owners with land in the identified floodplain.

2. The community must be prepared to show landowners the maps and answer questions about the NFIP and insurance requirements.

VA STORMWATER REGULATIONS

Stormwater runoff is water flowing either overland into surface waters or into natural or man-made conveyance systems during and after rainfall or snowmelt. Unmanaged stormwater can cause erosion and flooding. It can also carry excess nutrients, sediment and other contaminants into our waters. Properly managed stormwater protects our lands from erosion, properties from flooding, waters from pollutants, and ensures our general health, safety and welfare.

The Virginia Stormwater Act and the VSMP regulations provide the ability to manage the quantity and quality of stormwater runoff on a construction site as well as on a regional or watershed basis.

VA EROSION AND SEDIMENT CONTROL REGULATION

The VA Department of Conservation and Recreation implements the state Erosion and Sediment Control Program according to the *Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations* (VESCL&R). The law is codified at Title 10.1, Chapter 5, Article 4 of the Code of Virginia, regulations are found at Section 4VAC30-50, and certification regulations are found at Section 4VAC50-50 of the Virginia Administrative Code. The ESC Program's goal is to control soil erosion, sedimentation, and nonagricultural runoff from regulated "land-disturbing activities" to prevent degradation of property and natural resources. The regulations specify "Minimum Standards," which include criteria, techniques and policies that must be followed on all regulated activities. These statutes delineate the rights and responsibilities of governments that administer an ESC program and those of property owners who must comply.

During construction, a permit may be required for erosion and sediment control. These land disturbance permits are issued by localities as part of their erosion and sediment control program

CHESAPEAKE BAY REGULATION AND LOCAL ORDINANCES

The lands that make up Chesapeake Bay Preservation Areas are those that have the potential to impact water quality most directly. Generally, there are two types of land features: those that protect and benefit water quality (Resource Protection Areas, or RPAs) and those that, without proper management, have the potential to damage water quality (Resource Management Areas, or RMAs).

In 84 localities in Virginia, there are local ordinances that determine Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) to help protect and improve the water quality of the Chesapeake Bay and its tributaries. These local ordinances and comprehensive plans incorporate water quality protection measures consistent with the Bay Act Regulations. The Regulations address non-point source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas. The Regulations use a resource-based approach that recognizes differences between various land forms and treats them differently. By carefully managing land uses within these areas, local governments help reduce the water quality impacts of non-point source pollution and improve the health of the Chesapeake Bay.

FEDERAL REGULATIONS

ENDANGERED SPECIES ACT

The Endangered Species Act of 1973 (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq., ESA) is one of the dozens of United States environmental laws passed in the 1970s. It was designed to protect critically imperiled species from extinction as a "consequence of economic growth and development untempered by adequate concern and conservation." The Act is administered by two federal agencies, the United States Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA).

The Act requires confirmation that a development project will not adversely affect a listed species.

CLEAN WATER ACT

Wetlands are found from the tundra to the tropics, and on every continent except Antarctica. For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

Wetlands are recognized as important features in the landscape that provide numerous beneficial services for people and for fish and wildlife. Some of these services, or functions, include protecting and improving water quality, providing fish and wildlife habitats, storing floodwaters, and maintaining surface water flow during dry periods. These beneficial services, considered valuable to societies worldwide, are the result of the inherent and unique natural characteristics of wetlands.

Wetlands function as natural sponges that trap and slowly release surface water, rain, snowmelt, groundwater and flood waters. Trees, root mats, and other wetland vegetation also slow the speed of flood waters and distribute them more slowly over the floodplain. This combined water storage and braking action lowers flood heights and reduces erosion.

Executive Order 11988

An order given by President Carter in 1977 to avoid the adverse impacts associated with the occupancy and modification of floodplains by federal agencies or projects funded fully or partially with federal dollars.

VI. The Virginia Unified Statewide Building Code (USBC) and Construction in Flood-prone Areas

The USBC is part of the Virginia Administrative Code (VAC), the official compilation of state regulations published under the authority and guidance of the Virginia Code Commission. The USBC is a state regulation promulgated by the Virginia Board of Housing and Community Development for the purpose of establishing minimum regulations to govern the construction and maintenance of buildings and structures. The provisions of the USBC are based on nationally recognized model building and fire codes published by the International Code Council, Inc (the I-Codes). These model codes are made part of the USBC through a regulatory process known as incorporation by reference. The USBC also contains administrative provisions establishing requirements for the enforcement of the code by the local building departments and other code enforcement agencies. The I-Codes are consistent with all NFIP requirements related to the construction of flood resistant buildings, as presented in the book Reducing Flood Losses Through the International Codes: Meeting the Requirements of the National Flood Insurance Program (3rd Edition, 2008).

From Virginia Code § [36-98](#). :

“The Board is hereby directed and empowered to adopt and promulgate a Uniform Statewide Building Code. Such building code shall supersede the building codes and regulations of the counties, municipalities and other political subdivisions and state agencies.

However, such Code shall not supersede the regulations of other state agencies which require and govern the functional design and operation of building related activities not covered by the Uniform Statewide Building Code including but not limited to (i) public water supply systems, (ii) waste water treatment and disposal systems, and (iii) solid waste facilities. Nor shall state agencies be prevented from requiring, pursuant to other state law, that buildings and equipment be maintained in accordance with provisions of the Uniform Statewide Building Code.

Such Code also shall supersede the provisions of local ordinances applicable to single-family residential construction that (a) regulate dwelling foundations or crawl spaces, (b) require the use of specific building materials or finishes in construction, or (c) require minimum surface area or numbers of windows; however, **such Code shall not supersede** proffered conditions accepted as a part of a rezoning application, conditions imposed upon the grant of special exceptions, special or conditional use permits or variances, conditions imposed upon a clustering of single-family homes and preservation of open space development through standards, conditions, and criteria established by a locality pursuant to subdivision 8 of § [15.2-2242](#) or § [15.2-2286.1](#), or land use requirements in airport or highway overlay districts, or historic districts created pursuant to § [15.2-2306](#), or **local flood plain regulations adopted as a condition of participation in the National Flood Insurance Program.**”

Because the VA USBC does not supersede the floodplain regulations that are adopted by the community, the community is allowed to adopt higher standards which are more restrictive than the VA USBC in order to gain points for the Community Rating System through FEMA.

The Virginia USBC contains the building requirements that apply to constructing a new building, structure, or an addition to an existing building. They must also be adhered to when maintaining or repairing an existing building, or renovating or changing the use of a building or structure.

Passages from the USBC that apply to flood-prone areas

101.2 Incorporation by reference. Chapters 2–35 of the 2009 International Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the USBC. The term “IBC” means the 2009 International Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference. In addition, any provisions of the appendices of the IBC specifically identified to be part of the USBC are also considered to be part of the incorporation by reference.

Note 1: The IBC references the whole family of International Codes including the following major codes:

2009 International Plumbing Code
2009 International Mechanical Code
2008 NFPA 70
2009 International Fuel Gas Code
2009 International Energy Conservation Code
2009 International Residential Code

Note 2: The International Residential Code is applicable to the construction of detached one- and two-family dwellings and townhouses as set out in Section 310.

EXEMPT from this code:

6. Farm buildings and structures, except for a building or a portion of a building located on a farm that is operated as a restaurant as defined in Section 35.1-1 of the Code of Virginia and licensed as such by the Virginia Board of Health pursuant to Chapter 2 (Section 35.1-11 et seq.) of Title 35.1 of the Code of Virginia. **However, farm buildings and structures lying within a flood plain or in a mudslide-prone area shall be subject to flood-proofing regulations or mudslide regulations, as applicable.**

7. Federally owned buildings and structures unless federal law specifically requires a permit from the locality. Underground storage tank installations, modifications and removals shall comply with this code in accordance with federal law.

103.4 Additions. Additions to buildings and structures shall comply with the requirements of this code for new construction and an existing building or structure plus additions shall comply with the height and area provisions of Chapter 5. Further, this code shall not require changes to the design or construction of any portions of the building or structure not altered or affected by an addition, unless the addition has the effect of lowering the current level of safety.

Exception: This section shall not be construed to permit noncompliance with any applicable flood load or floodresistant construction requirements of this code.

103.5 Reconstruction, alteration or repair. The following criteria is applicable to reconstruction, alteration or repair of buildings or structures:

1. Any reconstruction, alteration or repair shall not adversely affect the performance of the building or structure, or cause the building or structure to become unsafe or lower existing levels of health and safety.
2. Parts of the building or structure not being reconstructed, altered or repaired shall not be required to comply with the requirements of this code applicable to newly constructed buildings or structures.
3. The installation of material or equipment, or both, that is neither required nor prohibited shall only be required to comply with the provisions of this code relating to the safe installation of such material or equipment.
4. Material or equipment, or both, may be replaced in the same location with material or equipment of a similar kind or capacity.

Exceptions:

1. This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

2. Reconstructed decks, balconies, porches and similar structures located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections and structural attachment. This requirement excludes the configuration and height of handrails and guardrails.

103.10 Use of certain provisions of referenced codes. The following provisions of the IBC and of other indicated codes or standards are to be considered valid provisions of this code. Where any such provisions have been modified by the state amendments to the IBC, then the modified provisions apply.

1. Special inspection requirements in Chapters 2–35.

2. Chapter 34, Existing Structures, except that Section 3412, Compliance Alternatives, shall not be used to comply with the retrofit requirements identified in Section 103.7 and shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

3. Testing requirements and requirements for the submittal of construction documents in any of the ICC codes referenced in Chapter 35 and in the IRC.

4. Section R301.2 of the International Residential Code authorizing localities to determine climatic and geographic design criteria.

5. Flood load or flood-resistant construction requirements in the IBC or the International Residential Code, including, but not limited to, any such provisions pertaining to flood elevation certificates that are located in Chapter 1 of those codes. Any required flood elevation certificate pursuant to such provisions shall be prepared by a land surveyor licensed in Virginia or an RDP.

6. Section R101.2 of the IRC.

104.1 Scope of enforcement. This section establishes the requirements for enforcement of the USBC in accordance with Section 36-105 of the Code of Virginia. Enforcement of the provisions of the USBC for construction and rehabilitation shall be the responsibility of the local building department. Whenever a county or municipality does not have such a building department, the local governing body shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such enforcement. For the purposes of this section, towns with a population of less than 3,500 may elect to administer and enforce the USBC; however, where the town does not elect to administer and enforce the code, the county in which the town is situated shall administer and enforce the code for the town. In the event such town is situated in two or more counties, those counties shall administer and enforce the USBC for that portion of the town situated within their respective boundaries.

105.4 Records. The local building department shall retain a record of applications received, permits, certificates, notices and orders issued, fees collected and reports of inspection in accordance with The Library of Virginia's General Schedule Number Six.

109.2 Site plan. When determined necessary by the building official, a site plan shall be submitted with the application for a permit. The site plan shall show to scale the size and location of all proposed construction, including any associated wells, septic tanks or drain fields. The site plan shall also show to scale the size and location of all existing structures on the site, the distances from lot lines to all proposed construction, the established street grades and the proposed finished grades.

When determined necessary by the building official, the site plan shall contain the elevation of the lowest floor of any proposed buildings. The site plan shall also be drawn in accordance with

an accurate boundary line survey. When the application for a permit is for demolition, the site plan shall show all construction to be demolished and the location and size of all existing structures that are to remain on the site.

109.4 Examination of documents. The building official shall examine or cause to be examined all construction documents or site plans, or both, within a reasonable time after filing. If such documents or plans do not comply with the provisions of this code, the permit applicant shall be notified in writing of the reasons, which shall include any adverse construction document review comments or determinations that additional information or engineering details need to be submitted. The review of construction documents for new one- and two-family dwellings for determining compliance with the technical provisions of this code not relating to the site, location or soil conditions associated with the dwellings shall not be required when identical construction documents for identical dwellings have been previously approved in the same locality under the same edition of the code and such construction documents are on file with the local building department.

115.1 Violation a misdemeanor; civil penalty. In accordance with Section 36-106 of the Code of Virginia, it shall be unlawful for any owner or any other person, firm or corporation, on or after the effective date of any code provisions, to violate any such provisions. Any locality may adopt an ordinance that establishes a uniform schedule of civil penalties for violations of specified provisions of the code that are not abated or remedied promptly after receipt of a notice of violation from the local enforcement officer.

Note: See the full text of Section 36-106 of the Code of Virginia for additional requirements and criteria pertaining to legal action relative to violations of the code.

115.2 Notice of violation. The building official shall issue a written notice of violation to the responsible party if any violations of this code or any directives or orders of the building official have not been corrected or complied with in a reasonable time. The notice shall reference the code section upon which the notice is based and direct the discontinuance and abatement of the violation or the compliance with such directive or order. The notice shall be issued by either delivering a copy to the responsible party by mail to the last known address or delivering the notice in person or by leaving it in the possession of any person in charge of the premises, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the owner of the building or structure, or the permit holder for the construction in question, or the tenants of such building or structure, are not the responsible party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the such owner, permit holder or tenants.

115.4 Penalties and abatement. Penalties for violations of the USBC shall be as set out in Section 36-106 of the Code of Virginia. The successful prosecution of a violation of the USBC shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

1612.1.1 Elevation of manufactured homes. New or replacement manufactured homes to be located in any flood hazard zone shall be placed in accordance with the applicable elevation requirements of this code.

Exception: Manufactured homes installed on sites in an existing manufactured home park or subdivision shall be permitted to be placed so that the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches (914 mm) above grade in lieu of being elevated at or above the base flood elevation **provided no manufactured home at the same site has sustained flood damage exceeding 50% of the market value of the home before the damage occurred.**

VII. The International Building Code Requirements for Flood-protection:

From the 2009 IBC:

110.3.3 Lowest floor elevation. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the **elevation certification** required in Section 1612.5 shall be submitted to the *building official*.

801.5 Applicability. For buildings in flood hazard areas as established in Section 1612.3, *interior finishes, trim and decorative materials* below the design flood elevation shall be flood-damage-resistant materials.

SECTION 1203 VENTILATION

For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.

EXTERIOR WALLS

1403.5 Flood resistance. For buildings in flood hazard areas as established in Section 1612.3, *exterior walls* extending below the design flood elevation shall be resistant to water damage. Wood shall be pressure-preservative treated in accordance with AWPA U1 for the species, product and end use using a preservative *listed* in Section 4 of AWPAU1 or decay-resistant heartwood of redwood, black locust or cedar.

1403.6 Flood resistance for high-velocity wave action areas.

For buildings in flood hazard areas subject to high-velocity wave action as established in Section 1612.3, electrical, mechanical and plumbing system components shall not be mounted on or penetrate through exterior walls that are designed to break away under flood loads.

STRUCTURAL DESIGN

1603.1.7 Flood design data. For buildings located in whole or in part in *flood hazard areas* as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum on the community's Flood Insurance Rate Map (FIRM), shall be shown, regardless of whether flood loads govern the design of the building:

1. In *flood hazard areas* not subject to high-velocity wave action, the elevation of the proposed lowest floor, including the basement.
2. In *flood hazard areas* not subject to high-velocity wave action, the elevation to which any nonresidential building will be dry floodproofed.

3. In *flood hazard areas* subject to high-velocity wave action, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including the basement.

1612.1 General. Within *flood hazard areas* as established in Section 1612.3, all new construction of buildings, structures and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads. For buildings that are located in more than one *flood hazard area*, the provisions associated with the most restrictive *flood hazard area* shall apply.

1612.3 Establishment of flood hazard areas. To establish *flood hazard areas*, the applicable governing authority shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled “The Flood Insurance Study for [INSERT NAME OF JURISDICTION],” dated [INSERT DATE OF ISSUANCE], as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.

1612.3.1 Design flood elevations. Where design flood elevations are not included in the *flood hazard areas* established in Section 1612.3, or where floodways are not designated, the *building official* is authorized to require the applicant to:

1. Obtain and reasonably utilize any design flood elevation and floodway data available from a federal, state or other source; or
2. Determine the design flood elevation and/or floodway in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a *registered design professional* who shall document that the technical methods used reflect currently accepted engineering practice.

1612.3.2 Determination of impacts. In riverine *flood hazard areas* where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed work will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority.

1612.4 Design and construction. The design and construction of buildings and structures located in *flood hazard areas*, including flood hazard areas subject to high-velocity wave action, shall be in accordance with Chapter 5 of ASCE 7 and with ASCE 24.

1612.5 Flood hazard documentation. The following documentation shall be prepared and sealed by a *registered design professional* and submitted to the *building official*:

1. For construction in *flood hazard areas* not subject to high-velocity wave action:
 - 1.1. The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in Section 110.3.3.
 - 1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.2.1 of ASCE 24,

construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2 of ASCE 24.

1.3. For dry floodproofed nonresidential buildings, *construction documents* shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.

2. For construction in flood hazard areas subject to high-velocity wave action:

2.1. The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 110.3.3.

2.2. *Construction documents* shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.

2.3. For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m²) or more than 20 psf (0.96 kN/m²), *construction documents* shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

FILL

1804.4 Grading and fill in flood hazard areas. In *flood hazard areas* established in Section 1612.3, grading and/or fill shall not be *approved*:

1. Unless such fill is placed, compacted and sloped to minimize shifting, slumping and erosion during the rise and fall of flood water and, as applicable, wave action.

2. In floodways, unless it has been demonstrated through hydrologic and hydraulic analyses performed by a *registered design professional* in accordance with standard engineering practice that the proposed grading or fill, or both, will not result in any increase in flood levels during the occurrence of the *design flood*.

3. In flood hazard areas subject to high-velocity wave action, unless such fill is conducted and/or placed to avoid diversion of water and waves toward any building or structure.

4. Where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated that the cumulative effect of the proposed *flood hazard area* encroachment, when combined with all other existing and anticipated *flood hazard area* encroachment, will not increase the design flood elevation more than 1 foot (305 mm) at any point.

DAMP-PROOFING

1805.1.2.1 Flood hazard areas. For buildings and structures in flood hazard areas as established in Section 1612.3, the finished ground level of an under-floor space such as a crawl space shall be equal to or higher than the outside finished ground level on at least one side.

Exception: Under-floor spaces of Group R-3 buildings that meet the requirements of FEMA/FIA-TB-11.

EXISTING STRUCTURES

ADDITIONS

3403.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any *addition* that constitutes substantial improvement of the *existing structure*, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

ALTERATIONS

3404.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any *alteration* that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

VIII. The International Residential Code Requirements for Flood-protection:

From the 2009 IRC:

R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas. For applications for reconstruction, rehabilitation, *addition* or other improvement of existing buildings or structures located in an area prone to flooding as established by Table R301.2(1), the *building official* shall examine or cause to be examined the *construction documents* and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its pre-damaged condition. If the *building official* finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the board of appeals for a determination of substantial improvement or substantial damage. Applications determined by the board of appeals to constitute substantial improvement or substantial damage shall require all existing portions of the entire building or structure to meet the requirements of Section R322.

R106.1.3 Information for construction in flood hazard areas. For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), *construction documents* shall include:

1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate;
2. The elevation of the proposed lowest floor, including *basement*; in areas of shallow flooding (AO Zones), the height of the proposed lowest floor, including *basement*, above the highest adjacent *grade*;
3. The elevation of the bottom of the lowest horizontal structural member in coastal high hazard areas (V Zone); and
4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the *building official* and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.

R109.1.3 Floodplain inspections. For construction in areas prone to flooding as established by Table R301.2(1), upon placement of the lowest floor, including *basement*, and prior to further vertical construction, the *building official* shall require submission of documentation, prepared and sealed by a registered *design professional*, of the elevation of the lowest floor, including *basement*, required in Section R322.

R112.2.1 Determination of substantial improvement in areas prone to flooding. When the *building official* provides a finding required in Section R105.3.1.1, the board of appeals shall determine whether the value of the proposed work constitutes a substantial improvement. A substantial improvement means any repair, reconstruction, rehabilitation, *addition* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. If the building or structure has sustained substantial damage, all repairs are considered substantial improvement regardless of the actual repair work performed. The term does not include:

1. Improvements of a building or structure required to correct existing health, sanitary or safety code violations identified by the *building official* and which are the minimum necessary to assure safe living conditions; or
2. Any alteration of an historic building or structure, provided that the alteration will not preclude the continued designation as an historic building or structure. For the purpose of this exclusion, an historic building is:
 - 2.1. *Listed* or preliminarily determined to be eligible for *listing* in the National Register of Historic Places; or
 - 2.2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
 - 2.3. Designated as historic under a state or local historic preservation program that is *approved* by the Department of Interior.

R112.2.2 Criteria for issuance of a variance for areas prone to flooding. A variance shall be issued only upon:

1. A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards in Section R322 inappropriate.
2. A determination that failure to grant the variance would result in exceptional hardship by rendering the *lot* undevelopable.
3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
4. A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.
5. Submission to the applicant of written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the design flood elevation increases risks to life and property.

SECTION R322

FLOOD-RESISTANT CONSTRUCTION

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with the provisions contained in this section.

Exception: Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1.1 Alternative provisions. As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

R322.1.2 Structural systems. All structural systems of all buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.

R322.1.3 Flood-resistant construction. All buildings and structures erected in areas prone to flooding shall be constructed by methods and practices that minimize flood damage.

R322.1.4 Establishing the design flood elevation. The design flood elevation shall be used to define areas prone to flooding. At a minimum, the design flood elevation is the higher of:

1. The base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year, or
2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated.

R322.1.4.1 Determination of design flood elevations.

If design flood elevations are not specified, the *building official* is authorized to require the applicant to:

1. Obtain and reasonably use data available from a federal, state or other source; or
2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered *design professional* who shall document that the technical methods used reflect currently accepted engineering practice. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

R322.1.4.2 Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with all other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

R322.1.5 Lowest floor. The lowest floor shall be the floor of the lowest enclosed area, including *basement*, but excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

R322.1.6 Protection of mechanical and electrical systems.

Electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall be located at or above the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones). If replaced as part of a substantial improvement, electrical systems, *equipment* and components; heating, ventilating, air conditioning and plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* shall meet the requirements of this section. Systems, fixtures, and *equipment* and components shall not be mounted on or penetrate through walls intended to break away under flood loads.

Exception: Locating electrical systems, *equipment* and components; heating, ventilating, air conditioning; plumbing *appliances* and plumbing fixtures; *duct systems*; and other service *equipment* is permitted below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) provided that 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 the design flood elevation in accordance with ASCE 24. Electrical wiring systems are permitted to be located below the required elevation provided they conform to the provisions of the electrical part of this code for wet locations.

R322.1.7 Protection of water supply and sanitary sewage systems. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into

the systems in accordance with the plumbing provisions of this code. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this code and Chapter 3 of the *International Private Sewage Disposal Code*.

R322.1.8 Flood-resistant materials. Building materials used below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high hazard areas including V Zones) shall comply with the following:

1. All wood, including floor sheathing, shall be pressure- preservative-treated in accordance with AWWA U1 for the species, product, preservative and end use or be the decay-resistant heartwood of redwood, black locust or cedars. Preservatives shall be listed in Section 4 of AWWA U1.
2. Materials and installation methods used for flooring and interior and *exterior walls* and wall coverings shall conform to the provisions of FEMA/FIA-TB-2.

R322.1.9 Manufactured homes. New or replacement *manufactured homes* shall be elevated in accordance with Section R322.2 or Section R322.3 in coastal high-hazard areas (V Zones). The anchor and tie-down requirements of Sections AE604 and AE605 of Appendix E shall apply. The foundation and anchorage of *manufactured homes* to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1.10 As-built elevation documentation. A registered *design professional* shall prepare and seal documentation of the elevations specified in Section R322.2 or R322.3.

R322.2 Flood hazard areas (including A Zones). All areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. **Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet (457 mm) and 3 feet (914 mm) shall be designated as Coastal A Zones.** All building and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.
3. In areas of shallow flooding (AO Zones), buildings and structures shall 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, or at least 2 feet (610 mm) if a depth number is not specified.
4. Basement floors that are below *grade* on all sides shall be elevated to or above the design flood elevation.

Exception: Enclosed areas below the design flood elevation, including *basements* whose floors are not below *grade* on all sides, shall meet the requirements of Section R322.2.2.

R322.2.2 Enclosed area below design flood elevation.

Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria:
 - 2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
 - 2.2. The total net area of all openings shall be at least 1 square inch (645 mm²) for each square foot (0.093 m²) of enclosed area, or the openings shall be designed and the

construction documents shall include a statement by a registered *design professional* that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.

2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.

2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.

2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.

2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

R322.2.3 Foundation design and construction. Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4.

Exception: Unless designed in accordance with Section R404:

1. The unsupported height of 6-inch (152 mm) plain masonry walls shall be no more than 3 feet (914mm).

2. The unsupported height of 8-inch (203 mm) plain masonry walls shall be no more than 4 feet (1219 mm).

3. The unsupported height of 8-inch (203 mm) reinforced masonry walls shall be no more than 8 feet (2438 mm).

For the purpose of this exception, unsupported height is the distance from the finished *grade* of the under-floor space and the top of the wall.

R322.3 Coastal high-hazard areas (including V Zones).

Areas that have been determined to be subject to wave heights in excess of 3 feet (914 mm) or subject to high-velocity wave action or wave-induced erosion shall be designated as coastal high-hazard areas. Buildings and structures constructed in whole or in part in coastal high-hazard areas shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation.

1. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1, shall be located landward of the reach of mean high tide.

2. For any alteration of sand dunes and mangrove stands the *building official* shall require submission of an engineering analysis which demonstrates that the proposed *alteration* will not increase the potential for flood damage.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:

1.1. Located at or above the design flood elevation, if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees (0.35 rad) from the direction of approach, or

1.2. Located at the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular, shall mean greater than 20 degrees (0.35 rad) from the direction of approach.

2. Basement floors that are below *grade* on all sides are prohibited.

3. The use of fill for structural support is prohibited.
4. 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.

Exception: Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to those 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 design flood. Wind loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundation are designed to resist the additional flood load.

R322.3.4 Walls below design flood elevation. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical, and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are 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 (479 Pa) and no more than 20 pounds per square foot (958 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), the *construction documents* shall include documentation prepared and sealed by a registered *design professional* that:

- 4.1. The walls and partitions below the design flood elevation have been designed to collapse from a water load less than that which would occur during the design flood.
- 4.2. 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 design flood. Wind loading values shall be those required by this code.

R322.3.5 Enclosed areas below design flood elevation.

Enclosed areas below the design flood elevation shall be used solely for parking of vehicles, building access or storage.

R322.3.6 Construction documents. The *construction documents* shall include documentation that is prepared and sealed by a registered *design professional* that the design and methods of construction to be used meet the applicable criteria of this section.

R408.7 Flood resistance. For buildings located in areas prone to flooding as established in Table R301.2(1):

1. Walls enclosing the under-floor space shall be provided with flood openings in accordance with Section R322.2.2.
2. The finished ground level of the under-floor space shall be equal to or higher than the outside finished ground level on at least one side.

Exception: Under-floor spaces that meet the requirements of FEMA/FIA TB 11-1.

IX. Participation in the NFIP

Before NFIP flood insurance can be available in a community, that community must comply with Section 59.22 of the 44 CFR:

§ 59.22 Prerequisites for the sale of flood insurance.

(a) To qualify for flood insurance availability a community shall apply for the entire area within its jurisdiction, and shall submit:

- (1) Copies of legislative and executive actions indicating a local need for flood insurance and an explicit desire to participate in the National Flood Insurance Program;
- (2) Citations to State and local statutes and ordinances authorizing actions regulating land use and copies of the local laws and regulations cited;
- (3) A copy of the flood plain management regulations the community has adopted to meet the requirements of § 60.3, 60.4 and/or § 60.5 of this subchapter. This submission shall include copies of any zoning, building, and subdivision regulations, health codes, special purpose ordinances (such as a flood plain ordinance, grading ordinance, or flood-related erosion control ordinance), and any other corrective and preventive measures enacted to reduce or prevent flood, mudslide (i.e., mudflow) or flood-related erosion damage;
- (4) A list of the incorporated communities within the applicant's boundaries;
- (5) Estimates relating to the community as a whole and to the flood, mudslide (i.e., mudflow) and flood-related erosion prone areas concerning: (i) Population; (ii) Number of one to four family residences; (iii) Number of small businesses; and (iv) Number of all other structures.
- (6) Address of a local repository, such as a municipal building, where the Flood Hazard Boundary Maps (FHBM's) and Flood Insurance Rate Maps (FIRM's) will be made available for public inspection;
- (7) A summary of any State or Federal activities with respect to floodplain, mudslide (i.e., mudflow) or flood-related erosion area management within the community, such as federally funded flood control projects and State-administered flood plain management regulations;
- (8) A commitment to recognize and duly evaluate flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards in all official actions in the areas having special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazards and to take such other official action reasonably necessary to carry out the objectives of the program; and
- (9) A commitment to: (i) Assist the Administrator at his/her request, in his/her delineation of the limits of the areas having special flood, mudslide (i.e., mudflow) or flood related erosion hazards; (ii) Provide such information concerning present uses and occupancy of the floodplain, mudslide (i.e., mudflow) or flood-related erosion areas as the Administrator may request; (iii) Maintain for public inspection and furnish upon request, for the determination of applicable flood insurance risk premium rates within all areas having special flood hazards identified on a FHBM or FIRM, any certificates of floodproofing, and information on the elevation (in relation to mean sea level) of the level of the lowest floor (including basement) of all new or substantially improved structures, and include whether or not such structures contain a basement, and if the structure has been floodproofed, the elevation (in relation to mean sea level) to which the structure was floodproofed; (iv) Cooperate with Federal, State, and local agencies and private firms which undertake to study, survey, map, and identify floodplain, mudslide (i.e., mudflow) or flood-related erosion areas, and cooperate with neighboring communities with respect to the management of adjoining floodplain, mudslide (i.e., mudflow) and/or flood-related erosion areas in order to prevent aggravation of existing hazards; (v) Upon occurrence, notify the Administrator in writing whenever the boundaries of the community have been modified by

annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area. In order that all FHBM's and FIRMs accurately represent the community's boundaries, include within such notification a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished flood plain management regulatory authority.

(b) An applicant shall legislatively:

(1) Appoint or designate the agency or official with the responsibility, authority, and means to implement the commitments made in paragraph (a) of this section, and

(2) Designate the official responsible to submit a report to the Administrator concerning the community participation in the Program, including, but not limited to the development and implementation of floodplain management regulations. This report shall be submitted annually or biennially as determined by the Administrator.

(c) The documents required by paragraph (a) of this section and evidence of the actions required by paragraph (b) of this section shall be submitted to the Federal Emergency Management Agency, Washington DC 20472.

When a community has joined the NFIP, any activity that occurs in the mapped SFHA that falls under the definition of development must comply with the community's floodplain management regulation, including utilities, agricultural activities, and state-owned properties (specified in 44 CFR 60.12). **There are no automatic exemptions for any development activities in the mapped SFHA.**

X. Ordinance Components

The following are expected to be components of the floodplain management ordinance:

1. Citation of Statutory Authorization (44 CFR 59.22(a)(2)):
Cite the appropriate authorizing legislation for the National Flood Insurance Program, the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.), and the state code that authorize the community to regulate development in the special flood hazard area. In Virginia, Code Section 15.2 – 2280 applies to a floodplain ordinance that is part of a zoning ordinance, and Section 10.1 – 600 et seq. applies to a stand-alone ordinance.
2. Purpose (44 CFR 59.2(a)):
This section of the ordinance identifies health, safety and welfare as the reasons for which the community adopts and enforces their floodplain ordinance.
3. Reference to all subsequent revisions and amendments:
Note this is expected even if you do not allow automatic adoption
4. Abrogation and Greater Restriction section (60.1(b)):
This is a legal provision that specifies that the ordinance take precedence over less restrictive requirements.
5. Disclaimer of Liability:
Ordinance administrators fear they could be sued if a person gets flooded or if a building that they permit is damaged by a flood. Liability is based on negligence; a community is well defended by a properly administered program. Government agencies are generally not liable for flood damage unless the flood was caused by a government action.
6. Severability section:
This is a statement that the individual provisions are separable and if any one is ruled invalid, it does not affect the rest of the ordinance.
7. Framework for administering the ordinance (59.22(b)(1)):
This section should outline the process the community has chosen to administer its ordinance, including but not limited to outlining the permit system, identifying the office for administration, system of recordkeeping, etc.
8. Community official signature and certification for adopted ordinance:
The ordinance submitted to the State and FEMA for review must be a complete copy of the signed official floodplain ordinance.
9. Variance section with evaluation criteria and insurance notice (60.6(a)):
The regulations need to provide a way for people to appeal or request a variance when they feel that the construction standards are overly harsh or inappropriate. This process should be handled by a separate body, such as a board of appeals or planning commission; it should not be left up to the decision of a single person, such as the administrator.
10. Definitions (59.1):
The ordinance must clearly define the terms necessary for the ordinance to be understood.

XI. Minimum Requirements, according to 44 CFR 60.3

Sec. 60.3 Flood plain management criteria for flood-prone areas.

The Administrator will provide the data upon which flood plain management regulations shall be based. If the Administrator has not provided sufficient data to furnish a basis for these regulations in a particular community, the community shall obtain, review and reasonably utilize data available from other Federal, State or other sources pending receipt of data from the Administrator. However, when special flood hazard area designations and water surface elevations have been furnished by the Administrator, they shall apply. The symbols defining such special flood hazard designations are set forth in Sec. 64.3 of this subchapter. In all cases the minimum requirements governing the adequacy of the flood plain management regulations for flood-prone areas adopted by a particular community depend on the amount of technical data formally provided to the community by the Administrator. Minimum standards for communities are as follows:

(a) When the Administrator has not defined the special flood hazard areas within a community, has not provided water surface elevation data, and has not provided sufficient data to identify the floodway or coastal high hazard area, but the community has indicated the presence of such hazards by submitting an application to participate in the Program, the community shall:

(1) Require permits for all proposed construction or other development in the community, including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas;

(2) Review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;

(3) Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a flood-prone area, all new construction and substantial improvements shall (i) be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, (ii) be constructed with materials resistant to flood damage, (iii) be constructed by methods and practices that minimize flood damages, and (iv) be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(4) Review subdivision proposals and other proposed new development, including manufactured home parks or subdivisions, to determine whether such proposals will be reasonably safe from flooding. If a subdivision proposal or other proposed new development is in a flood-prone area, any such proposals shall be reviewed to assure that (i) all such proposals are consistent with the need to minimize flood damage within the flood-prone area, (ii) all public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and (iii) adequate drainage is provided to reduce exposure to flood hazards;

(5) Require within flood-prone areas new and replacement water supply systems to be designed to minimize or eliminate infiltration of flood waters into the systems; and

(6) Require within flood-prone areas

(i) new and replacement sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and

(ii) onsite waste disposal systems to be located to avoid impairment to them or contamination from them during flooding.

(b) When the Administrator has designated areas of special flood hazards (A zones) by the publication of a community's FHBM or FIRM, but has neither produced water surface elevation data nor identified a floodway or coastal high hazard area, the community shall:

(1) Require permits for all proposed construction and other developments including the placement of manufactured homes, within Zone A on the community's FHBM or FIRM;

(2) Require the application of the standards in paragraphs (a) (2), (3), (4), (5) and (6) of this section to development within Zone A on the community's FHBM or FIRM;

(3) Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals base flood elevation data;

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(4) Obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source, including data developed pursuant to paragraph (b)(3) of this section, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the community's FHBM or FIRM meet the standards in paragraphs (c)(2), (c)(3), (c)(5), (c)(6), (c)(12), (c)(14), (d)(2) and (d)(3) of this section;

(5) Where base flood elevation data are utilized, within Zone A on the community's FHBM or FIRM:

(i) Obtain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures, and

(ii) Obtain, if the structure has been floodproofed in accordance with paragraph (c)(3)(ii) of this section, the elevation (in relation to mean sea level) to which the structure was floodproofed, and

(iii) Maintain a record of all such information with the official designated by the community under Sec. 59.22 (a)(9)(iii);

(6) Notify, in riverine situations, adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse, and submit copies of such notifications to the Administrator;

(7) Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained;

(8) Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

(c) When the Administrator has provided a notice of final flood elevations for one or more special flood hazard areas on the community's FIRM and, if appropriate, has designated other special flood hazard areas without base flood elevations on the community's FIRM, but has not identified a regulatory floodway or coastal high hazard area, the community shall:

(1) Require the standards of paragraph (b) of this section within all A1-30 zones, AE zones, A zones, AH zones, and AO zones, on the community's FIRM;

(2) Require that all new construction and substantial improvements of residential structures within Zones A1-30, AE and AH zones on the community's FIRM have the lowest floor (including basement) elevated to or above the base flood level, unless the community is granted an exception by the Administrator for the allowance of basements in accordance with Sec. 60.6 (b) or (c);

(3) Require that all new construction and substantial improvements of non-residential structures within Zones A1-30, AE and AH zones on the community's firm (i) have the lowest floor (including basement) elevated to or above the base flood level or, (ii) together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(4) Provide that where a non-residential structure is intended to be made watertight below the base flood level,

(i) a registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of paragraph (c)(3)(ii) or (c)(8)(ii) of this section, and

(ii) a record of such certificates which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained with the official designated by the community under Sec. 59.22(a)(9)(iii);

(5) Require, for all new construction and substantial improvements, that fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:

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

(6) Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites

(i) Outside of a manufactured home park or subdivision,

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- (ii) In a new manufactured home park or subdivision,
- (iii) In an expansion to an existing manufactured home park or subdivision, or
- (iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist floatation collapse and lateral movement.

(7) Require within any AO zone on the community's FIRM that all new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified);

(8) Require within any AO zone on the community's FIRM that all new construction and substantial improvements of nonresidential structures

(i) have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified),

or

(ii) together with attendant utility and sanitary facilities be completely floodproofed to that level to meet the floodproofing standard specified in Sec. 60.3(c)(3)(ii);

(9) Require within any A99 zones on a community's FIRM the standards of paragraphs (a)(1) through (a)(4)(i) and (b)(5) through (b)(9) of this section;

(10) Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(11) Require within Zones AH and AO, adequate drainage paths around structures on slopes, to guide floodwaters around and away from proposed structures.

(12) Require that manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A-1-30, AH, and AE on the community's FIRM that are not subject to the provisions of paragraph (c)(6) of this section be elevated so that either

(i) The lowest floor of the manufactured home is at or above the base flood elevation, or

(ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement.

(13) Notwithstanding any other provisions of Sec. 60.3, a community may approve certain development in Zones A1-30, AE, and AH, on the community's FIRM which increase the water surface elevation of the base flood by more than one foot, provided that the community first applies for a conditional FIRM revision, fulfills the requirements for such a revision as established under the provisions of Sec. 65.12, and receives the approval of the Administrator.

(14) Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM

(i) Be on the site for fewer than 180 consecutive days, and

(ii) Be fully licensed and ready for highway use, or

(iii) Meet the permit requirements of paragraph (b)(1) of this

section and the elevation and anchoring requirements for "manufactured homes" in paragraph (c)(6) of this section. (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.)

(d) When the Administrator has provided a notice of final base flood elevations within Zones A1-30 and/or AE on the community's FIRM and, if appropriate, has designated AO zones, AH zones, A99 zones, and A zones on the community's FIRM, and has provided data from which the community shall designate its regulatory floodway, the community shall:

(1) Meet the requirements of paragraphs (c) (1) through (14) of this section;

(2) Select and adopt a regulatory floodway based on the principle that the area chosen for the regulatory floodway must be designed to carry the waters of the base flood, without increasing the water surface elevation of that flood more than one foot at any point;

(3) Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses

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performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge;

(4) Notwithstanding any other provisions of Sec. 60.3, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first applies for a conditional FIRM and floodway revision, fulfills the requirements for such revisions as established under the provisions of Sec. 65.12, and receives the approval of the Administrator.

(e) When the Administrator has provided a notice of final base flood elevations within Zones A1-30 and/or AE on the community's FIRM and, if appropriate, has designated AH zones, AO zones, A99 zones, and A zones on the community's FIRM, and has identified on the community's FIRM coastal high hazard areas by designating Zones V1-30, VE, and/or V, the community shall:

- (1) Meet the requirements of paragraphs (c)(1) through (14) of this section;
- (2) Within Zones V1-30, VE, and V on a community's FIRM, (i) obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures, and whether or not such structures contain a basement, and (ii) maintain a record of all such information with the official designated by the community under Sec. 59.22(a)(9)(iii);
- (3) Provide that all new construction within Zones V1-30, VE, and V on the community's FIRM is located landward of the reach of mean high tide;
- (4) Provide that all new construction and substantial improvements in Zones V1-30 and VE, and also Zone V if base flood elevation data is available, on the community's FIRM, are elevated on pilings and columns so that
 - (i) 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; and
 - (ii) the pile or column foundation and structure 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. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of paragraphs (e)(4) (i) and (ii) of this section.
- (5) Provide that all new construction and substantial improvements within Zones V1-30, VE, and V on the community's FIRM 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. For the purposes 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 or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - (i) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and,
 - (ii) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. Such enclosed space shall be useable solely for parking of vehicles, building access, or storage.
- (6) Prohibit the use of fill for structural support of buildings within Zones V1-30, VE, and V on the community's FIRM;
- (7) Prohibit man-made alteration of sand dunes and mangrove stands within Zones V1-30, VE, and V on the community's FIRM which would increase potential flood damage.
- (8) Require that manufactured homes placed or substantially improved within Zones V1-30, V, and VE on the community's FIRM on sites
 - (i) Outside of a manufactured home park or subdivision,
 - (ii) In a new manufactured home park or subdivision,
 - (iii) In an expansion to an existing manufactured home park or subdivision, or
 - (iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, meet the standards of paragraphs (e)(2) through (7) of this section and

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that manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones VI-30, V, and VE on the community's FIRM meet the requirements of paragraph (c)(12) of this section.

(9) Require that recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM

(i) Be on the site for fewer than 180 consecutive days, and

(ii) Be fully licensed and ready for highway use, or

(iii) Meet the requirements in paragraphs (b)(1) and (e) (2) through (7) of this section. (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.)

XII. Higher Standards

The NFIP encourages states and communities to implement floodplain management programs that go beyond NFIP minimum requirements.

44 CFR 60.1(d) *The criteria set forth in this subpart are minimum standards for the adoption of flood plain management regulations by flood-prone... communities. Any community may exceed the minimum criteria under this Part by adopting more comprehensive flood plain management regulations utilizing the standards such as contained in Subpart C of this part. In some instances, community officials may have access to information or knowledge of conditions that require, particularly for human safety, higher standards than the minimum criteria set forth in Subpart A of this part. Therefore, any floodplain management regulation adopted by a State or a community which is more restrictive than the criteria set forth in this part is encouraged and shall take precedence.*

The NFIP regulatory standards are minimums. They may not be all of the necessary measures to protect health, safety and welfare in your community. Therefore, states and communities are encouraged to enact more restrictive requirements where needed to better protect people and properties from the local flood hazard. Many of these more restrictive requirements are eligible for credit under the Community Rating System (CRS), a program which provides insurance premium discounts to policyholders in communities with more restrictive floodplain management programs.

The NFIP requires communities to at least consider additional measures which are found in 44 CFR 60.22, Planning Considerations for Floodprone Areas:

- (a) The floodplain management regulations adopted by a community for floodprone areas should:
 - (1) Permit only that development of floodprone areas which
 - (i) is appropriate in light of the probability of flood damage
 - (ii) is an acceptable social and economic use of the land in relation to the hazards involved
 - (iii) does not increase the danger to human life
 - (2) Prohibit nonessential or improper installation of public utilities and public facilities.

- (b) In formulating community development goals after a flood, each community shall consider:
 - (1) Preservation of the floodprone areas for open space purposes
 - (2) Relocation of occupants away from floodprone areas
 - (3) Acquisition of land or land development rights for public purposes
 - (4) Acquisition of frequently flood-damaged structures

- (c) In formulating community development goals and in adopting floodplain management regulations, each community shall consider at least the following factors:
 - (1) Human safety
 - (2) Diversion of development to areas safe from flooding
 - (3) Full disclosure to all prospective and interested parties
 - (4) Adverse effects of floodplain development on existing development
 - (5) Encouragement of floodproofing to reduce flood damage
 - (6) Flood warning and emergency preparedness plans
 - (7) Provision for alternative vehicular access and escape routes
 - (8) Minimum retrofitting requirements for critical facilities

- (9) Improvement of local drainage to control increased runoff
- (10) Coordination of plans with neighboring community's floodplain management programs
- (11) Requirements for new construction in areas subject to subsidence
- (12) Requiring subdividers to furnish delineations for floodways
- (13) Prohibition of any alteration or relocation of a watercourse
- (14) Requirement of setbacks for new construction within V Zones
- (15) Freeboard requirements
- (16) Requirement of consistency between state, regional and local comprehensive plans
- (17) Requirement of pilings or columns rather than fill to maintain storage capacity
- (18) Prohibition of manufacturing plants or facilities with hazardous substances
- (19) Requirements for evacuation plans

Higher Standards for High Hazard Areas

Prohibiting development makes sense in high hazard areas, where people are exposed to a life-threatening situation even though buildings could be protected from flood damage. For example, it would be appropriate to prohibit development at the apex of an alluvial fan or along a narrow floodplain in a stream valley that is susceptible to flash flooding.

Specific prohibition language can be inserted into the appropriate Section Article IV in the model ordinance or into an additional Section in Article III or IV.

Sample Language:

“In zones A, AE, AH, and AO, the development and/or use of the land shall be permitted in accordance with the regulations of the underlying zoning district provided that no placement of fill is proposed for any use except utilities, public facilities, and improvements, such as railroads, streets, bridges, transmission lines, pipelines, water and sewage treatment plants, stormwater management structures, shoreline protection measures and water dependent uses located within or adjacent to tidal water bodies where there would be no increase in the one hundred-year flood elevations, and other similar or related uses.

Activities and/or development shall be undertaken in strict compliance with the flood-proofing, related provisions contained in the Virginia Uniform Statewide Building Code and all other applicable codes and ordinances.”

BFE Determinations for A Zones

Approximate zones are zones that have not been studied in detail; there are no BFEs. In many cases, the floodplain was determined decades ago using topographic lines that are now considered inaccurate and out-of-date.

According to 44 CFR 60.3(b), a BFE has to be determined for a site before development can proceed. Simplified methods of doing this are presented in the model ordinance under Article III. One of the easiest and most reliable methods is to find the nearest VDOT bridge and make use of the hydraulic and hydrologic study that was conducted prior to construction. Once the developer or community obtains the BFE at the bridge, they can work backwards using the most recent topographic layer to determine the BFE at the building location.

Another solution is to conduct a hydraulic and hydrologic study at the building location. Currently, the NFIP regulations only require a study of this kind for all developments of 50 lots or 5 acres or greater. Requiring this study for all new development makes sense for communities that are trying to eliminate or reduce new development in the floodplain or provide a higher level of protection for its citizens.

Specific language can be added to Article III, Section 3.1 A 3 of the model ordinance.

Sample Language:

“All applications for new and substantially improved structures in the approximate A zone shall include a detailed hydrologic and hydraulic study comparable to those contained in the Flood Insurance Study.”

Floodway Determinations for A Zones

According to 44 CFR 60.3(b)(4), development in any SFHA must not cause an increase of the water surface elevation of the base flood of more than one foot at any point. The amount of rise in flood waters due to development is extremely difficult to determine when the floodplain hasn't been studied in detail, when there is no BFE or floodway. One of the best ways to properly manage development in an A Zone and to avoid more than a one foot rise is to have a detailed hydrologic and hydraulic study of the stream or river conducted prior to any new development.

Specific language can be added to Article III, Section 3.1 A 3 of the model ordinance.

Sample Language:

“Prior to any new development in an approximate A zone, the floodway must be determined through a hydrologic and hydraulic study by a certified engineer using currently accepted methods. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the Floodplain Administrator”

Repetitive Loss

Occasionally a property is damaged during flooding events but is not damaged enough each time to reach the Substantial Damage threshold, which means that the property does not qualify for Increased Cost of Compliance (ICC) funds to help pay for an elevation project.

One solution is to add Repetitive Loss to the community's floodplain ordinance. When a property is declared by the community as a repetitive loss property, it is eligible for the ICC funds. The following definition can be added to the floodplain ordinance definition section of the ordinance to create the higher standard:

A repetitive loss means any flood-related damages sustained by a structure on at least two separate occasions during a 10-year period for which the total cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

Higher Standards and Subdivision Design

Undeveloped land, still in large tracts, offers the best opportunity to limit where certain types of development will be located. When a developer wants to subdivide the land, communities have many tools to arrange the development so that buildings are kept out of the floodplain or at least the building sites are located in the least hazardous areas of the floodplain. This has two advantages over simply requiring the buildings to be protected from flooding:

- ◆ Buildings aren't isolated by floodwaters during flood events, putting a strain on local emergency services to guard them or evacuate or rescue their occupants, and
- ◆ The neighborhood will have waterfront open space and recreation areas – a valuable amenity in most communities.

A housing development can be clustered so the developer can sell the same number of home sites as a conventional subdivision.

Specific language addressing subdivisions in a mapped floodplain can be inserted into Article IV Section 4.4 in the model ordinance.

Subdivision and planning regulations also can mandate that a certain portion of a development be set aside as open space for recreation or stormwater management purposes. Developers find that it is cheaper to put the open space in the floodplain than to put buildings there that have to incorporate the more expensive floodplain requirements. Linear parks and greenways that connect the open space areas through a community are becoming more and more popular and help sell new developments.

The Community Rating System credits land development criteria that discourage development in floodplains under Activity 430LD in the *CRS Coordinator's Manual* and the *CRS Application*.

Sample Language:

“When a developer holds property both within and outside the Special Flood Hazard Area, all subdivisions of 5 lots or greater shall be condensed exclusively to land outside the Special Flood Hazard Area when possible and the area within the Special Flood Hazard Area shall be held as open space by a conservation easement.”

Higher Standards and Low-density Zoning

When a community prepares its land use plan and zoning ordinance, it should consider what uses and densities are appropriate for floodplains. If buildings are not prohibited entirely, the community should zone its floodplains for agricultural or other low-density use to reduce the number of new structures.

The Community Rating System provides substantial credit for zoning floodplains with low-density uses under Activity 430LZ Low Density Zoning in the *CRS Coordinator's Manual* and the *CRS Application*.

Higher Standards and Setbacks

Setbacks may be used to keep development out of harm's way. Setback standards establish minimum distances that structures must be positioned - set back - from waterways. Setbacks can be defined by vertical heights or horizontal distances.

While floodplain boundaries are defined by vertical measures, horizontal setbacks also provide protection from flood damage, especially in coastal areas where the effects of waves decrease further inland.

For coastal shorelines, setback distances act as buffer zones against beach erosion. In riverine situations, setbacks prevent disruption to the channel banks and protect riparian habitat. Such setbacks are frequently created to protect water quality, and stream and wetland resources.

Setbacks from watercourses have been used to minimize the effect of non-point sources of pollution caused by land development activities, timber harvesting and agricultural activities. Solid waste landfills and on-site sewage disposal systems often are restricted within certain distances of a body of water.

The Community Rating System credits setbacks that prevent disruption to shorelines, stream channels and their banks under Activity 430, Section 431.g.2 in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Sample Language:

For Tidally-Influenced Flood Zones:

“No new/substantially improved development shall be constructed within ____ feet from Mean High Tide.”

For Non-Tidal, Riverine Flood Zones:

“No new/substantially improved development shall be constructed within ____ feet from a floodway.”

Higher Standards and Manufactured Homes

Some communities have adopted provisions that prohibit the placement of manufactured (mobile) homes in the floodway or in the entire SFHA. Specific language addressing manufactured homes in a mapped floodplain can be inserted into the ordinance in Article III in the section for the appropriate zone and Article IV.

Sample Language:

“No new or substantially improved manufactured homes shall be built in the Special Flood Hazard Area.”

Higher Standards and Natural Areas

The natural functions and values of floodplains coupled with their hazardous nature have led communities to promote and guide the less intensive use and development of floodplains. More

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and more municipalities are requiring that important natural attributes such as wetlands, drainage ways and floodplain areas be set aside as open space as a condition to approving subdivision proposals.

The Community Rating System provides substantial credit for preserving floodplain areas as open space. If buildings and the placement of fill are prohibited, credit is found under Activity 420 Open Space Preservation, Section 421.a in the *CRS Coordinator's Manual* and the *CRS Application*. If the area has been kept in or restored to its natural state, more credit is provided under Section 421.c.

Higher Standards and Freeboard

Freeboard is an additional height requirement above the base flood elevation (BFE) that provides a margin of safety against extraordinary or unknown risks. This reduces the damage from flooding and makes the structure eligible for a lower flood insurance rate.

While not required by the NFIP, your community is encouraged to adopt at least a one-foot freeboard to account for the one-foot rise built into the concept of designating a regulatory floodway and the encroachment requirements where floodways are not identified.

Other reasons for considering a freeboard include:

- ◆ Accounts for future increases in flood stages if additional development occurs in the floodplain.
- ◆ Accounts for future flood increases due to upstream watershed development.
- ◆ Acts as a hedge against backwater conditions caused by ice jams and debris dams.
- ◆ Reflects uncertainties inherent in flood hazard modeling, topography, mapping limitations and floodplain encroachments.
- ◆ Provides an added measure of safety against flooding.
- ◆ Results in significantly lower flood insurance rates due to lower flood risk.
- ◆ Accounts for future flood increases due to land subsidence in tidally influenced floodplains.
- ◆ Accounts for increases in water level and variability in storm magnitude due to climate change.

Freeboard safety factors are common in the design of flood control projects and floodplain development. Many communities have incorporated freeboard requirements into the elevation and floodproofing requirements stipulated by the NFIP. Freeboard requirements adopted by communities range from six inches to four feet.

Specific language addressing freeboard can be inserted into Article III Section 3.1 A or Article IV Section 4.3 in the model ordinance.

When constructing a new elevated building, the additional cost of raising the lowest floor another foot or two is usually negligible. Additionally, any extra costs are made back in the insurance savings, as elevated buildings above the base flood elevation have reduced flood insurance costs for current and future owners.

The Community Rating System credits freeboard under Activity 430, Section 431.a in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Higher Standards and Building Foundations

Without a safe and sound foundation, an elevated building can suffer damage from a flood due to erosion, scour or settling. The NFIP regulations provide both performance standards for anchoring new buildings and foundations and placement standards for fill for floodproofed buildings and V Zones.

However, the NFIP performance standards do not specify how a building foundation is to be constructed. Specific foundation construction standards would help protect buildings from flood damage, especially in areas where an engineer's certificate is not required by the NFIP regulations. An alternative is to require a specific construction standard, such as requiring the V Zone standard for new structures in coastal AE and AH Zones. Coastal AE Zones are of particular concern, since they are subject to wave action of up to three feet in height and the NFIP A Zone construction standards do not address this hazard.

Specific language addressing building foundations can be inserted into the appropriate section in Article III and Article IV of the model ordinance.

The Community Rating System credits foundation protection under Activity 430, Section 431.b in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Higher Standards and Critical Facilities

According to Executive Order 11988, federal agencies must meet rigorous alternative site evaluations and design standards before funding, leasing or building critical facilities in the 500-year floodplain. For some activities and facilities, even a slight chance of flooding poses too great a threat. These should be given special consideration when formulating regulatory alternatives and floodplain management plans.

The following are examples of the types of critical facilities that should be given special attention:

- ◆ Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water-reactive materials.
- ◆ Hospitals, nursing homes and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood.
- ◆ Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during and after a flood.
- ◆ Public and private utility facilities that are vital to maintaining or restoring normal services to flooded areas before, during and after a flood.

A critical facility should not be located in a floodplain. Communities can prohibit critical or hazardous facilities or uses from the floodway, the V Zone, or the entire floodplain. While a building may be considered protected from the base flood, a higher flood or an error on the builder's or operator's part could result in a greater risk than the community is willing to accept.

If a critical facility must be located in a floodplain, then it should be designed to higher protection standards and have flood evacuation plans. The more common higher standards -

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freeboard, elevation above the 500-year floodplain and elevated access ramps - should be required.

Specific prohibition language can be inserted into Article III in the appropriate zone or in Article IV of the model ordinance.

The Community Rating System provides credits for prohibiting critical facilities from the 500-year floodplain or requiring them to be protected from damage by the 500-year flood in Activity 430. See the *CRS Coordinator's Manual* and the *CRS Application*. See *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Sample Language:

“The following structures shall not be located within the (SFHA or 500-year) floodplain:

- ◆ Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water-reactive materials.
- ◆ Hospitals, nursing homes and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood.
- ◆ Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during and after a flood.
- ◆ Public and private utility facilities that are vital to maintaining or restoring normal services to flooded areas before, during and after a flood.”

Higher Standards and Hazardous Materials

While prohibiting or protecting hazardous materials from the floodplain makes sense, it would be wise to have specific standards in your ordinance. The following lists were taken from the Army Corps of Engineers' Flood Proofing Regulations. The first is of items that are extremely hazardous or vulnerable to flood conditions so they should be prohibited from the SFHA or even the 500-year floodplain:

Acetone, Ammonia, Benzene, Calcium carbide, Carbon disulfide, Celluloid, Chlorine, Hydrochloric acid, Magnesium, Nitric acid, Oxides of nitrogen, Phosphorus, Potassium, Prussic acid, Sodium, Sulfur

The following items are sufficiently hazardous that larger quantities they should be prohibited in any space below the base flood elevation:

Acetylene gas containers, Storage tanks, Lumber/buoyant items, Gasoline, Charcoal/coal dust, Petroleum products

Specific prohibition language can be inserted into Article III and/or IV in the model ordinance.

Sample Language:

“The storage of Acetone, Ammonia, Benzene, Calcium carbide, Carbon disulfide, Celluloid, Chlorine, Hydrochloric acid, Magnesium, Nitric acid, Oxides of nitrogen, Phosphorus,

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Potassium, Prussic acid, Sodium, and Sulfur for any time period longer than 30 days shall be prohibited in the 500-year floodplain.

The storage of Acetylene gas containers, Storage tanks, Lumber/buoyant items, Gasoline, Charcoal/coal dust, and Petroleum products for any time period longer than 30 days shall be prohibited in the 100-year floodplain.”

Encroachment Standards

Some states and communities are not comfortable with allowing development in the SFHA to increase flood heights by up to a foot. A one-foot increase in flood heights will increase the potential for flood damage to floodprone buildings and affect properties that were otherwise not threatened by the base flood. This is especially true in flat areas where a one-foot increase can extend the floodplain boundary by blocks.

The Community Rating System credits more restrictive floodway mapping standards under Activity 410 Additional Flood Data, Section 411.c in the *CRS Coordinator’s Manual* and the *CRS Application*.

Specific language can be inserted into Article III and/or IV in the model ordinance.

Sample Language:

“In zones A, AE, AH, and AO, the development and/or use of the land shall be permitted in accordance with the regulations of the underlying zoning district provided that no placement of fill is permitted for any use that will increase the base flood elevation more than 6 inches at any point.”

Fences in the Floodway and SFHA

Some communities see problems arise that are associated with fences that have been installed between properties when the fences cross through a SFHA and particularly when the fence crosses through a floodway. A sturdy fence will catch debris and act as a small dam until the pressure of the water on the debris-covered fence causes the fence material and/or the posts to give way. Since a fence falls under the definition of development in the floodway/SFHA, a community would be justified to require a detailed hydrologic and hydraulic study of the stream or river prior to allowing a fence to be installed across the floodway/SFHA.

Sample Language:

“All applications for fences that cross the floodway/SFHA shall include a detailed hydrologic and hydraulic study comparable to those contained in the Flood Insurance Study.”

Alternatively, a community can specify that the fences that cross the floodway/SFHA be designed to be “breakaway” fences that will give way on one end under a specified amount of pressure in order to swing parallel to the flow and minimize the resistance to the flowing floodwaters.

Flood Storage Capacity

The NFIP floodway standard in 44 CFR 60.3(d) restricts new development from obstructing the flow of water and increasing flood heights. However, this provision does not address the need to maintain flood storage. Especially in flat areas, the floodplain provides a valuable function by storing floodwaters. When fill or buildings are placed in the flood fringe, the flood storage areas are lost and flood heights will go up because there is less room for the floodwaters. This is particularly important in smaller watersheds that respond sooner to changes in the topography.

For this reason, some communities adopt more restrictive standards that regulate the amount of fill or buildings that can displace floodwater in the flood fringe. One simple approach is to prohibit filling and building on fill - all new buildings must be elevated on columns or enclosures.

Another approach is to require compensatory storage to offset any loss of flood storage capacity. The developer is required to offset new fill put in the floodplain by excavating an additional floodable area to replace the lost flood storage area. This should be done at “hydraulically equivalent” sites - fill put in below the 10-year flood elevation should be compensated by removal of soil elsewhere in the floodplain.

The Community Rating System credits prohibition of fill and compensatory storage under Activity 430, Section 431.f in the *CRS Coordinator’s Manual* and the *CRS Application*. See *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Specific language can be inserted into Article III and/or IV in the model ordinance.

Sample Language:

“In all A, AE, AO, and AH zones, there shall be no new or substantially improved structured built on a fill foundation. Columns or vented enclosure may be used to meet the elevation requirements.”

Stormwater Management

A floodplain management program in an urbanizing or suburbanizing area must confront the increase in flood flows caused by development within the watershed. As forests, fields and farms are covered by impermeable surfaces like streets, rooftops and parking lots, more rain runs off at a faster rate. In an urbanized area, the rate of runoff can increase fivefold or more.

Changes in the surface drainage system compound this problem. Stormwater runoff travels faster on streets and in storm drains than it did under pre-development conditions. As a result, flooding is more frequent and more severe. Efforts to reduce the impact of increased runoff that results from new development in a watershed are known as stormwater management.

The Community Rating System credits both water quantity and water quality stormwater management regulations and plans under Activity 450 in the *CRS Coordinator’s Manual* and the *CRS Application*. See also *CRS Credit for Stormwater Management* for example regulatory language.

NFIP Minimum Requirements v. “Higher Standards” of the 2009 I-Codes and ASCE 24

NFIP	2009 I-Codes/ASCE 24-05 “Higher Standards/More Specific”
<p>60.3: If special flood hazard areas and water surface elevations have been furnished by the Administrator, they shall be used, unless otherwise approved.</p>	<p>Design Flood Elevation. IBC, IRC and ASCE 24 define Design Flood/Design Flood Elevation. Definitions allows community that has more current or more extensive flood hazard mapping to adopt it, provided it shows areas that include at least the SFHAs shown on FIRMs</p>
<p>60.3: Requires buildings to be elevated to or above the BFE, as function of flood zone; reference level is lowest floor [A Zones, 60.3(c)(2)], height of floodproofing [A Zones, 60.3(c)(3)], or bottom of lowest horizontal structural member of the lowest floor [V Zones, 60,3(e)2].</p>	<p>Elevation requirements. For elevation of buildings and structures, ASCE 24 requires the elevation of appropriate lowest element, as a function of flood hazard area and structure category, to be elevated is specified in tables. Minimum elevation is DFE; freeboard of +1 ft, +2 ft, or +3 ft in selected instances (see table below for summary of ASCE 24 elevation requirements).</p> <p>Elevation requirement (V Zone). IRC requires homes in coastal high hazard areas to be elevated as a function of the orientation of the lowest horizontal structural member relative to the direction of wave approach: at or above the DFE if parallel or at or above the BFE plus 1 ft or DFE whichever is higher, if perpendicular [IRC 322.3.2].</p> <p>Elevation requirement (CAZ). IRC requires homes in CAZ to be at or above the BFE + 1’ or the DFE, whichever is higher [IRC 322.2.1].</p>
<p>60.3(a)(3)(i): Requires review to determine that all new construction and substantial improvements are “designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.”</p>	<p>ASCE 24 as referenced standard. IBC refers to ASCE 24 for details [IBC 1612.4].</p> <p>IRC requires homes in floodways to be designed per IBC/ASCE 24 [IRC 301.2.4, IRC 322.1].</p> <p>IRC allows use of ASCE 24 as alternative in coastal high hazard areas (V Zones) [IRC 301.2.4.1, IRC 322.1.1].</p> <p>Foundation Requirements. ASCE 24 requires design to prevent flotation, collapse, or permanent movement under load combinations, which are specified in ASCE 7 [Sec. 1.5.3].</p> <p>Geotechnical characteristics. ASCE 24 requires foundation designs to be based on geotechnical characteristics of the soils and strata below the structure [Sec. 1.5.3.1].</p> <p>Flood loads. ASCE 24 refers to ASCE 7 for flood loads (including hydrostatic loads, hydrodynamic loads, debris impact loads, wave loads) and load combinations [Sec. 1.6].</p> <p>Stability of fill. Requires fill to be designed to be stable under conditions of flooding [Sec. 1.5.4]. Requires side slopes of structural fill to be no steeper than 1:1.5 and protected from scour and erosion; specifies lift thickness and compaction requirements for structural fill [Sec. 2.4].</p> <p>Anchorage and Connections. ASCE 24 provides some specific requirements for anchorage and connections [Sec. 1.5.5].</p>
<p>60.3(a)(3)(i): Requires review to determine that all new construction</p>	<p>Residential foundation wall height limitations. Unless designed according to IRC Chapter 4, foundation wall heights</p>

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<p>and substantial improvements are “designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.”</p>	<p>are limited as a function of type (plain or reinforced masonry) and wall thickness (6” and 8”) Tanks. ASCE 24 requires tanks to be elevated or installed to resist flood loads, and have fill openings and vents elevated. Designs shall assume 1.5 times the potential buoyant and other flood forces acting on an empty tank [Sec. 7.4.1]. Pools. ASCE 24 requires pools in coastal high hazard areas and Coastal A Zones to be elevated, designed to breakaway, or to remain in the ground without obstructing flow [Sec. 9.5].</p>
<p>60.3(a)(3)(iii): Broad statement that all new construction and substantial improvements shall be constructed with materials resistant to flood damage.</p>	<p>Flood damage-resistant materials. ASCE 24 clearly specifies the elevations below which flood damage resistant materials shall be used [ASCE 24-05 Table 5-1, see below]. IRC specifies pressure-preservative treated wood, lists specific allowable wood species, and cites a third-party standard for wood preservatives [IRC 322.1.8]. Materials and third-party standards. ASCE 24 references third-party standards for certain materials, including metal connectors and fasteners, structural steel, concrete, masonry, wood and timber, and finishes</p>
<p>60.3(a)(3)(iii) and (4): Require construction with methods and practices that minimize flood damages and determination that proposed development will be reasonably safe from flooding.</p>	<p>Underground plumbing system elements. ASCE 24 specifies that if installed under-ground, piping and plumbing systems shall be buried to a depth sufficient to prevent movement, separation or loss due to flooding and erosion [Sec. 7.3.1].</p>
<p>60.3(a)(3)(iv): The only provision specific to utilities requires new construction and substantial improvements to “be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.”</p>	<p>Platforms for utility equipment. ASCE 24 requires that exterior elevated platforms be supported on piles or columns, or cantilevered from or knee braced to the structure; if piles or columns are used, they shall be adequately embedded to account for erosion and local scour [Sec. 7.1]. Utilities and breakaway walls. ASCE 24, IMC, IPC, and IRC specify that utilities and attendant equipment shall not be mounted on or pass through breakaway walls [Sec. 7.1; M301.13.1, P309.3; IRC 322.3.4]. Electric components required to meet life safety requirements. ASCE 24 has specifications for exposed conduits and cables, electric meters, disconnect switches and circuit breakers, and other electric elements below the minimum elevations, including a statement that electric elements required to meet life safety provisions may be permitted within certain limitations [Sec. 7.2]. Duct systems. ASCE 24, IMC, and IRC specifically require ductwork/duct systems to be above the required elevations [Sec. 7.4; M602.4, M603.13; IRC 322.1.6; IRC1601.4.9]. Elevators. ASCE 24 has specifications for elevators that require use of flood damage resistant materials. For hydraulic elevators, electric control panels and hydraulic pumps and tanks shall be elevated. For traction elevators, machine rooms shall be elevated. In certain circumstances, controls shall prevent elevator cabs from descending into floodwaters [Sec. 7.5].</p>
<p>60.3(a)(3)(iv): The provision specific to utilities requires new construction and substantial improvements to “be</p>	<p>Fuel supply lines. ASCE 24, IMC, and IRC specify that fuel supply lines below the required elevation shall be equipped with a float-operated automatic control valve [Sec. 7.4; M1305.2.1;</p>

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<p>constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.”</p>	<p>G2404.7].</p>
<p>60.3(a)(6): Requires new and replacement sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters in the systems and discharges from the systems, and onsite waste disposal systems are required to be located to avoid impairment.</p>	<p>Underground plumbing system elements. ASCE 24 specifies that if installed under-ground, piping and plumbing systems shall be buried to a depth sufficient to prevent movement, separation or loss due to flooding and erosion [Sec. 7.3.1].</p>
<p>60.3(b): Communities are required to regulate only flood hazard areas delineated by FEMA, unless other maps are approved for use. The NFIP currently delineates and maps flood hazard areas along riverine and coastal areas. The only “high risk” areas mapped are the floodway, coastal high hazard areas (V zones), and alluvial fan flood hazard areas.</p>	<p>High Risk Flood Hazard Areas. ASCE 24 defines High Risk Flood Hazard Area to include flood hazard areas where one or more of the following occur: alluvial fan flooding, flash flooding, mudslides, ice jams, high velocity flows (greater than 10 ft/sec), high velocity wave action (V zones), Coastal A Zones, or erosion.</p>
<p>60.3(b)(3): Requires all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, to include within such proposals base flood elevation data.</p>	<p>Subdivisions. IBC Appendix G requires residential building lots to be provided with buildable area outside of the floodway [IBC G301.2(3)].</p>
<p>60.3(b)(5): Requires communities to obtain the elevation to which the lowest floor (or bottom of the lowest horizontal structural member of the lowest floor) is elevated, without specifying when such information is to be obtained.</p>	<p>Inspections. IBC and IRC call for inspections “upon placement of the lowest floor, including basement, and prior to further vertical construction,” at which time elevation documentation shall be submitted.</p>
<p>60.3(b)(8): Specify elevation and anchoring to adequately anchored foundation systems to resist flood loads.</p>	<p>Manufactured homes. IRC requires all manufactured homes to meet the elevation requirements, regardless of location or loss history [IRC 322.1.9</p>
<p>60.3(c)(3)(ii) and 60.3(c)(4): Has a single statement regarding acceptable performance of floodproofing measures, without listing factors to be considered in the design of such measures. Requires designed to be developed or reviewed by a registered professional, and the design, specifications and plans are to be</p>	<p>Dry floodproofing. ASCE 24 lists several elements that are to be accounted for in the design of dry floodproofing measures. Some of these elements bear on the practicality of certain types of floodproofing measures, notably those that require action by the occupants [Sec. 6.2]. ASCE 24 specifies the minimum height of dry floodproofing, which is at least BFE + 1 ft or the DFE, whichever is higher</p>

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<p>certified as being in accordance with accepted standards of practice. Requires floodproofing to or above the BFE.</p>	
<p>Does not use the term “wet floodproofing;” such measures are allowed for enclosures below elevated buildings (and, by policy, certain accessory structures that meet the use limitations).</p>	<p>Wet floodproofing. ASCE 24 includes specifications for wet floodproofing and limits its use to certain structures</p>
<p>60.3(c)(5): Requires flood openings that do not meet certain minimum criteria be certified by a registered professional.</p>	<p>Engineered openings. ASCE 24 provides specific design guidance for engineered openings in enclosures, to allow inflow/outflow of floodwaters [Sec. 2.6.2.2].</p>
<p>60.3(c)(6): Specify elevation and anchoring to adequately anchored foundation systems to resist flood loads. 60.3(c)(12): Allows replacement units or substantially improved units in existing manufactured home parks and subdivisions to be no less than 36 inches above grade and anchored to adequately anchored foundation systems.</p>	<p>Manufactured homes. IRC requires all manufactured homes to meet the elevation requirements, regardless of location or loss history [IRC 322.1.9].</p>
<p>60.3(c)(14): Has no limitations on location.</p>	<p>Recreational vehicles. IBC Appendix G prohibits placement of recreational vehicles in flood hazard areas subject to high velocity wave action (V zones) and in floodways [G601.1].</p>
<p>60.3(e): No specific requirement to evaluate or include the potential for erosion in foundation design, although certification is required that “the foundation is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.”</p>	<p>Erosion and scour in V Zones and CAZs. ASCE 24 requires consideration of erosion and scour in coastal high hazard areas and Coastal A Zones</p>
<p>60.3(e)(4) and (5): In coastal high hazard areas, the regulations specify that new construction and substantial improvements be elevated on pilings and columns, and there is a requirement that the space below elevated buildings be “free of obstruction” or be enclosed by breakaway walls.</p>	<p>Foundations in V Zones and CAZs. ASCE 24 allows buildings in coastal high hazard areas and Coastal A Zones to be supported on piles, columns, or walls serving as shear walls [Sec. 4.5.1]. ASCE 24 foundation requirements include: . Geotechnical considerations – account for instability and decreased structural capacity associated with erosion, scour, shoreline movement [Sec. 4.5.2]; . Foundation depth – sufficient to account for erosion, scour, and predicated shoreline movement [Sec. 4.5.3]; . Use of fill – minor amounts for minimal site grading, landscaping, and drainage; dune construction/reconstruction [Sec. 4.5.4]; . Pile foundations – penetration depth, attachments, pile caps, wood piles, steel piles, concrete piles [Sec. 4.5.5]; . Pile design – lateral resistance, capacity of supporting soils, minimum penetration, spacing, caps, connections, splicing</p>

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	<p>[Sec. 4.5.6];</p> <ul style="list-style-type: none"> . Posts, piers and columns – minimum spacing, minimum penetration [Sec. 4.5.7]; . Footings, mats, rafts, and slabs-on-grade – at or below grade, reinforced [Sec. 4.5.8]; . Grade beams – at or below grade; independent of decks, patios, concrete pads [Sec. 4.5.9]; . Bracing – limitations based on orientation to primary direction of waves [Sec. 4.5.10]; and . Shear walls – orientation to direction of wave approach
<p>65.10: If engineering documentation is approved, areas protected levee systems may have the flood hazard area designation removed, thus such protected areas are no longer subject to regulation as flood hazard area.</p>	<p>High Risk Flood Hazard Areas. ASCE 24 prohibits construction of structures in certain high risk areas unless “protective works” have been determined to provide protection during the design flood; high risk areas include (alluvial fans, flash flood areas, mudslide areas, erosion-prone areas, high velocity flow areas, ice jam and debris areas</p>
<p>NFIP regulations do not have provisions for Coastal A Zones.</p> <p>FEMA Region 3 has begun (2011) revising coastal community FIRMs to show the Limit of Moderate Wave Action (LiMWA), which delineates the landward limit of the CAZ.</p>	<p>Coastal A Zones. ASCE 24 defines the Coastal A Zone and specifies that such areas are treated as coastal high hazard areas (V Zones). IRC R322.2 defines the Coastal A Zone for an elevation requirement of the finished floor.</p> <p>Decks, concrete pads, and patios (V Zone). ASCE 24 includes specifications for decks, concrete pads, and patios that are beneath or adjacent to structures in coastal high hazard areas and Coastal A Zones, including specific requirements for concrete pads that reinforcing shall not be used and limiting pad thickness [Sec. 4.8].</p> <p>IRC requires slabs, pools, pool decks and walkways to be structurally independent of buildings, unless building foundation are designed to resist the additional flood load</p>
<p>No specific provisions for fences; however, fences are development and subject to the general performance requirements.</p>	<p>Fences. IBC Appendix G requires fences in floodways that may block the passage of floodwaters, such as stockade fences and wire mesh fences, to meet the requirements for floodway encroachments in G103.5 [IBC G801.2].</p>

XIII. Allowable Variances, according to 44 CFR 60.6

Sec. 60.6 Variances and exceptions.

(a) The Administrator does not set forth absolute criteria for granting variances from the criteria set forth in Secs. 60.3, 60.4, and 60.5. The issuance of a variance is for flood plain management purposes only. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a variance. The community, after examining the applicant's hardships, shall approve or disapprove a request. While the granting of variances generally is limited to a lot size less than one-half acre (as set forth in paragraph (a)(2) of this section), deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. The Administrator may review a community's findings justifying the granting of variances, and if that review indicates a pattern inconsistent with the objectives of sound flood plain management, the Administrator may take appropriate action under Sec. 59.24(b) of this subchapter. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. Procedures for the granting of variances by a community are as follows:

(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;

(2) Variances may be issued by a community for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the procedures of paragraphs (a) (3), (4), (5) and (6) of this section;

(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;

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

(5) A community shall notify the applicant in writing over the signature of a community official that:

(i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and
(ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section; and

(6) A community shall

(i) maintain a record of all variance actions, including justification for their issuance, and
(ii) report such variances issued in its annual or biennial report submitted to the Administrator.

(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the

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conduct of a functionally dependent use provided that

- (i) the criteria of paragraphs (a)(1) through (a)(4) of this section are met, and
- (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(b)(1) The requirement that each flood-prone, mudslide (i.e., mudflow)-prone, and flood-related erosion prone community must adopt and submit adequate flood plain management regulations as a condition of initial and continued flood insurance eligibility is statutory and cannot be waived, and such regulations shall be adopted by a community within the time periods specified in Secs. 60.3, 60.4 or Sec. 60.5. However, certain exceptions from the standards contained in this subpart may be permitted where the Administrator recognizes that, because of extraordinary circumstances, local conditions may render the application of certain standards the cause for severe hardship and gross inequity for a particular community. Consequently, a community proposing the adoption of flood plain management regulations which vary from the standards set forth in Secs. 60.3, 60.4, or Sec. 60.5, shall explain in writing to the Administrator the nature and extent of and the reasons for the exception request and shall include sufficient supporting economic, environmental, topographic, hydrologic, and other scientific and technical data, and data with respect to the impact on public safety and the environment.

(2) The Administrator shall prepare a Special Environmental Clearance to determine whether the proposal for an exception under paragraph (b)(1) of this section will have significant impact on the human environment. The decision whether an Environmental Impact Statement or other environmental document will be prepared, will be made in accordance with the procedures set out in 44 CFR part 10. Ninety or more days may be required for an environmental quality clearance if the proposed exception will have significant impact on the human environment thereby requiring an EIS.

(c) A community may propose flood plain management measures which adopt standards for floodproofed residential basements below the base flood level in zones A1-30, AH, AO, and AE which are not subject to tidal flooding. Notwithstanding the requirements of paragraph (b) of this section the Administrator may approve the proposal provided that:

(1) The community has demonstrated that areas of special flood hazard in which basements will be permitted are subject to shallow and low velocity flooding and that there is adequate flood warning time to ensure that all residents are notified of impending floods. For the purposes of this paragraph flood characteristics must include:

(i) Flood depths that are five feet or less for developable lots that are contiguous to land above the base flood level and three feet or less for other lots;

(ii) Flood velocities that are five feet per second or less; and

(iii) Flood warning times that are 12 hours or greater. Flood warning times of two hours or greater may be approved if the community demonstrates that it has a flood warning system and emergency plan in operation that is adequate to ensure safe evacuation of flood plain residents.

(2) The community has adopted flood plain management measures that require that new construction and substantial improvements of residential structures with basements in zones A1-30, AH, AO, and AE shall:

(i) Be designed and built so that any basement area, together with attendant utilities and sanitary facilities below the floodproofed design level, is watertight with walls that are impermeable to the

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passage of water without human intervention. Basement walls shall be built with the capacity to resist hydrostatic and hydrodynamic loads and the effects of buoyancy resulting from flooding to the floodproofed design level, and shall be designed so that minimal damage will occur from floods that exceed that level. The floodproofed design level shall be an elevation one foot above the level of the base flood where the difference between the base flood and the 500-year flood is three feet or less and two feet above the level of the base flood where the difference is greater than three feet.

(ii) Have the top of the floor of any basement area no lower than five feet below the elevation of the base flood;

(iii) Have the area surrounding the structure on all sides filled to or above the elevation of the base flood. Fill must be compacted with slopes protected by vegetative cover;

(iv) Have a registered professional engineer or architect develop or review the building's structural design, specifications, and plans, including consideration of the depth, velocity, and duration of flooding and type and permeability of soils at the building site, and certify that the basement design and methods of construction proposed are in accordance with accepted standards of practice for meeting the provisions of this paragraph;

(v) Be inspected by the building inspector or other authorized representative of the community to verify that the structure is built according to its design and those provisions of this section which are verifiable.

XIV. GLOSSARY

From the 2009 IBC & IRC and Pertaining to the VA USBC:

BASE FLOOD. The flood having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION. The elevation of the *base flood*, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM).

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides. This definition of “Basement” is limited in application to the provisions of Section 1612 (see “Basement” in Section 502.1).

COASTAL A ZONE. Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet.

COASTAL HIGH-HAZARD AREA. Areas that have been determined to be subject to wave heights in excess of 3 feet or subject to high-velocity wave action or wave-induced erosion

DESIGN FLOOD. The flood associated with the greater of the following two areas:

1. Area with a flood plain subject to a 1-percent or greater chance of flooding in any year; or
2. Area designated as a *flood hazard area* on a community’s flood hazard map, or otherwise legally designated.

DESIGN FLOOD ELEVATION. The elevation of the “*design flood*,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation shall be the elevation of the highest existing grade of the building’s perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

DRY FLOODPROOFING. A combination of design modifications that results in a building or structure, including the attendant utility and sanitary facilities, being water tight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist loads as identified in ASCE 7.

EXISTING CONSTRUCTION. Any buildings and structures for which the “start of construction” commenced before the effective date of the community’s first flood plain management code, ordinance or standard. “Existing construction” is also referred to as “existing structures.”

EXISTING STRUCTURE. See “Existing construction.”

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD DAMAGE-RESISTANT MATERIALS. Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a *flood hazard area* on a community’s flood hazard map, or otherwise legally designated.

FLOOD HAZARD AREA SUBJECT TO HIGH-VELOCITY WAVE ACTION. Area within the *flood hazard area* that is subject to high-velocity wave action, and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as Zone V, VO, VE or V1-30.

FLOOD INSURANCE RATE MAP (FIRM). An official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY. The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map (FIRM), the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the *base flood* and supporting technical data.

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

LOWEST FLOOR. The floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of this section.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30.

START OF CONSTRUCTION. The date of issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, *addition*, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns. Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as *dwelling units* or not part of the main building. For a substantial improvement, the actual “start of construction” means the first *alteration* of any wall, ceiling, floor or other structural part of a building, whether or not that *alteration* affects the external dimensions of the building.

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

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, *addition* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

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

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Act means the statutes authorizing the National Flood Insurance Program that are incorporated in 42 U.S.C. 4001-4128.

Actuarial rates--see risk premium rates.

Administrator means the Federal Insurance Administrator.

Agency means the Federal Emergency Management Agency, Washington DC.

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

Apex means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

Applicant means a community which indicates a desire to participate in the Program.

Appurtenant structure means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

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

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

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

Area of special mudslide (i.e., mudflow) hazard is the land within a community most likely to be subject to severe mudslides (i.e., mudflows). The area may be designated as Zone M on the FHBM. After the detailed evaluation of the special mudslide (i.e., mudflow) hazard area in preparation for publication of the FIRM, Zone M may be further refined.

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

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

Breakaway wall means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

Building--see structure.

Chargeable rates mean the rates established by the Administrator pursuant to section 1308 of the Act for first layer limits of flood insurance on existing structures.

Chief Executive Officer of the community (CEO) means the official of the community who is charged with the authority to implement and administer laws, ordinances and regulations for that community.

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Coastal high hazard area means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

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

Contents coverage is the insurance on personal property within an enclosed structure, including the cost of debris removal, and the reasonable cost of removal of contents to minimize damage. Personal property may be household goods usual or incidental to residential occupancy, or merchandise, furniture, fixtures, machinery, equipment and supplies usual to other than residential occupancies.

Criteria means the comprehensive criteria for land management and use for flood-prone areas developed under 42 U.S.C. 4102 for the purposes set forth in part 60 of this subchapter.

Critical feature means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

Curvilinear Line means the border on either a FHBM or FIRM that delineates the special flood, mudslide (i.e., mudflow) and/or flood-related erosion hazard areas and consists of a curved or contour line that follows the topography.

Deductible means the fixed amount or percentage of any loss covered by insurance which is borne by the insured prior to the insurer's liability.

Developed area means an area of a community that is:

- (a) A primarily urbanized, built-up area that is a minimum of 20 contiguous acres, has basic urban infrastructure, including roads, utilities, communications, and public facilities, to sustain industrial, residential, and commercial activities, and
 - (1) Within which 75 percent or more of the parcels, tracts, or lots contain commercial, industrial, or residential structures or uses; or
 - (2) Is a single parcel, tract, or lot in which 75 percent of the area contains existing commercial or industrial structures or uses; or
 - (3) Is a subdivision developed at a density of at least two residential structures per acre within which 75 percent or more of the lots contain existing residential structures at the time the designation is adopted.
- (b) Undeveloped parcels, tracts, or lots, the combination of which is less than 20 acres and contiguous on at least 3 sides to areas meeting the criteria of paragraph (a) at the time the designation is adopted.
- (c) A subdivision that is a minimum of 20 contiguous acres that has obtained all necessary government approvals, provided that the actual ``start of construction'' of structures has occurred on at least 10 percent of the lots or remaining lots of a subdivision or 10 percent of the maximum building coverage or remaining building coverage allowed for a single lot subdivision at the time the designation is adopted and construction of structures is underway. Residential subdivisions must meet the density criteria in paragraph (a) (3).

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

Director means the Director of the Federal Emergency Management Agency.

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- Eligible community or participating community means a community for which the Administrator has authorized the sale of flood insurance under the National Flood Insurance Program.
- Elevated building means, for insurance purposes, a nonbasement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.
- Emergency Flood Insurance Program or emergency program means the Program as implemented on an emergency basis in accordance with section 1336 of the Act. It is intended as a program to provide a first layer amount of insurance on all insurable structures before the effective date of the initial FIRM.
- Erosion means the process of the gradual wearing away of land masses. This peril is not per se covered under the Program.
- Exception means a waiver from the provisions of part 60 of this subchapter directed to a community which relieves it from the requirements of a rule, regulation, order or other determination made or issued pursuant to the Act.
- Existing construction, means for the purposes of determining rates, structures for which the ``start of construction'' commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. ``Existing construction'' may also be referred to as ``existing structures.''
- Existing manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.
- Existing structures see existing construction.
- Expansion to an existing manufactured home park or subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).
- Federal agency means any department, agency, corporation, or other entity or instrumentality of the executive branch of the Federal Government, and includes the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation.
- Federal instrumentality responsible for the supervision, approval, regulation, or insuring of banks, savings and loan associations, or similar institutions means the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, the Federal Home Loan Bank Board, the Federal Savings and Loan Insurance Corporation, and the National Credit Union Administration.
- Financial assistance means any form of loan, grant, guaranty, insurance, payment, rebate, subsidy, disaster assistance loan or grant, or any other form of direct or indirect Federal assistance, other than general or special revenue sharing or formula grants made to States.
- Financial assistance for acquisition or construction purposes means any form of financial assistance which is intended in whole or in part for the acquisition, construction, reconstruction, repair, or improvement of any publicly or privately owned building or mobile home, and for any machinery, equipment, fixtures, and furnishings contained or to be contained therein, and shall include the purchase or subsidization of mortgages or mortgage loans but shall exclude assistance pursuant to the Disaster Relief Act of 1974 other than assistance under such Act in

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connection with a flood. It includes only financial assistance insurable under the Standard Flood Insurance Policy.

First-layer coverage is the maximum amount of structural and contents insurance coverage available under the Emergency Program.

Flood or Flooding means:

(a) A general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters.

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

(3) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in paragraph (a) (2) 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.

(b) 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 (a) (1) of this definition.

Flood elevation determination means a determination by the Administrator of 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.

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

Flood Hazard Boundary Map (FHBM) means an official map of a community, issued by the Administrator, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas having special hazards have been designated as Zones A, M, and/or E.

Flood insurance means the insurance coverage provided under the Program.

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

Flood Insurance Study see flood elevation study.

Flood plain or flood-prone area means any land area susceptible to being inundated by water from any source (see definition of ``flooding``).

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

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

Flood protection system means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to a ``special flood hazard`` and the extent of the depths of associated flooding. Such a

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system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

Flood proofing means 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.

Flood-related erosion means the collapse or subsidence of land along the shore of a lake or other body of water as a result of 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 a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

Flood-related erosion area or flood-related erosion prone area means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

Flood-related erosion area management means the operation of an overall program of corrective and preventive measures for reducing flood-related erosion damage, including but not limited to emergency preparedness plans, flood-related erosion control works, and flood plain management regulations.

Floodway-- see regulatory floodway.

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

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

Functionally dependent use means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

General Counsel means the General Counsel of the Federal Emergency Management Agency.

Highest adjacent grade means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure means any structure that is:

- (a) 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;
- (b) 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;
- (c) 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
- (d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

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(1) By an approved state program as determined by the Secretary of the Interior or

(2) Directly by the Secretary of the Interior in states without approved programs.

Independent scientific body means a non-Federal technical or scientific organization involved in the study of land use planning, flood plain management, hydrology, geology, geography, or any other related field of study concerned with flooding.

Insurance adjustment organization means any organization or person engaged in the business of adjusting loss claims arising under the Standard Flood Insurance Policy.

Insurance company or insurer means any person or organization authorized to engage in the insurance business under the laws of any State.

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

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

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

Mangrove stand means an assemblage of mangrove trees which are mostly low trees noted for a copious development of interlacing adventitious roots above the ground and which contain one or more of the following species: Black mangrove (*Avicennia Nitida*); red mangrove (*Rhizophora Mangle*); white mangrove (*Languncularia Racemosa*); and buttonwood (*Conocarpus Erecta*).

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

Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Map means the Flood Hazard Boundary Map (FHBM) or the Flood Insurance Rate Map (FIRM) for a community issued by the Agency.

Mean sea level means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

Mudslide (i.e., mudflow) describes a condition where there is a river, flow or inundation of liquid mud down a hillside usually as a result of a dual condition of loss of brush cover, and the subsequent accumulation of water on the ground preceded by a period of unusually heavy or sustained rain. A mudslide (i.e., mudflow) may occur as a distinct phenomenon while a landslide is in progress, and will be recognized as such by the Administrator only if the mudflow, and not the landslide, is the proximate cause of damage that occurs.

Mudslide (i.e., mudflow) area management means the operation of an overall program of corrective and preventive measures for reducing

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mudslide (i.e., mudflow) damage, including but not limited to emergency preparedness plans, mudslide control works, and flood plain management regulations.

Mudslide (i.e., mudflow) prone area means an area with land surfaces and slopes of unconsolidated material where the history, geology and climate indicate a potential for mudflow.

New construction means, for the purposes of determining insurance rates, structures for which the ``start of construction'' commenced on or after *the effective date of an initial FIRM or after December 31, 1974, whichever is later*, and includes any subsequent improvements to such structures. 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.

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

100-year flood see base flood.

Participating community, also known as an eligible community, means a community in which the Administrator has authorized the sale of flood insurance.

Person includes any individual or group of individuals, corporation, partnership, association, or any other entity, including State and local governments and agencies.

Policy means the Standard Flood Insurance Policy.

Premium means the total premium payable by the insured for the coverage or coverages provided under the policy. The calculation of the premium may be based upon either chargeable rates or risk premium rates, or a combination of both.

Primary frontal dune means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Principally above ground means that at least 51 percent of the actual cash value of the structure, less land value, is above ground.

Program means the National Flood Insurance Program authorized by 42 U.S.C. 4001 through 4128.

Program deficiency means a defect in a community's flood plain management regulations or administrative procedures that impairs effective implementation of those flood plain management regulations or of the standards in Secs. 60.3, 60.4, 60.5, or 60.6.

Project cost means the total financial cost of a flood protection system (including design, land acquisition, construction, fees, overhead, and profits), unless the Federal Insurance Administrator determines a given ``cost'' not to be a part of such project cost.

Recreational vehicle means a vehicle which is:

- (a) Built on a single chassis;
- (b) 400 square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by a light duty truck; and

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- (d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Reference feature is the receding edge of a bluff or eroding frontal dune, or if such a feature is not present, the normal high-water line or the seaward line of permanent vegetation if a high-water line cannot be identified.

Regular Program means the Program authorized by the Act under which risk premium rates are required for the first half of available coverage (also known as ``first layer'' coverage) for all new construction and substantial improvements started on or after the effective date of the FIRM, or after December 31, 1974, for FIRM's effective on or before that date. All buildings, the construction of which started before the effective date of the FIRM, or before January 1, 1975, for FIRMs effective before that date, are eligible for first layer coverage at either subsidized rates or risk premium rates, whichever are lower. Regardless of date of construction, risk premium rates are always required for the second layer coverage and such coverage is offered only after the Administrator has completed a risk study for the community.

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

Remedy a violation means to bring the structure or other development into compliance with State or local flood plain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

Risk premium rates mean those rates established by the Administrator pursuant to individual community studies and investigations which are undertaken to provide flood insurance in accordance with section 1307 of the Act and the accepted actuarial principles. ``Risk premium rates'' include provisions for operating costs and allowances.

Riverine means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Sand dunes mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

Scientifically incorrect. The methodology(ies) and/or assumptions which have been utilized are inappropriate for the physical processes being evaluated or are otherwise erroneous.

Second layer coverage means an additional limit of coverage equal to the amounts made available under the Emergency Program, and made available under the Regular Program.

Servicing company means a corporation, partnership, association, or any other organized entity which contracts with the Federal Insurance Administration to service insurance policies under the National Flood Insurance Program for a particular area.

Sheet flow area-- see area of shallow flooding.

60-year setback means a distance equal to 60 times the average annual long term recession rate at a site, measured from the reference feature.

Special flood hazard area-- see ``area of special flood hazard''.

Special hazard area means an area having special flood, mudslide (i.e., mudflow), or flood-related erosion hazards, and shown on an FHBM

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or FIRM as Zone A, AO, A1-30, AE, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, A99, AH, VO, V1-30, VE, V, M, or E.

Standard Flood Insurance Policy means the flood insurance policy issued by the Federal Insurance Administrator, or an insurer pursuant to an arrangement with the Administrator pursuant to Federal statutes and regulations.

Start of Construction (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)), includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

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

State coordinating agency means the agency of the state government, or other office designated by the Governor of the state or by state statute at the request of the Administrator to assist in the implementation of the National Flood Insurance Program in that state.

Storm cellar means a space below grade used to accommodate occupants of the structure and emergency supplies as a means of temporary shelter against severe tornado or similar wind storm activity.

Structure means, for flood plain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. ``Structure'' for insurance coverage purposes, means a walled and roofed building, other than a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a manufactured home on a permanent foundation. For the latter purpose, the term includes a building while in the course of construction, alteration or repair, but does not include building materials or supplies intended for use in such construction, alteration or repair, unless such materials or supplies are within an enclosed building on the premises.

Subsidized rates mean the rates established by the Administrator involving in the aggregate a subsidization by the Federal Government.

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

Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the ``start of construction'' of the improvement. This term includes structures which

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have incurred ``substantial damage'', regardless of the actual repair work performed. 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 the local code enforcement 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''.

30-year setback means a distance equal to 30 times the average annual long term recession rate at a site, measured from the reference feature.

Technically incorrect. The methodology(ies) utilized has been erroneously applied due to mathematical or measurement error, changed physical conditions, or insufficient quantity or quality of input data.

V Zone--see ``coastal high hazard area.''

Variance means a grant of relief by a community from the terms of a flood plain management regulation.

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

Water surface elevation means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, (or other datum, where specified) of floods of various magnitudes and frequencies in the flood plains of coastal or riverine areas.

Zone of imminent collapse means an area subject to erosion adjacent to the shoreline of an ocean, bay, or lake and within a distance equal to 10 feet plus 5 times the average annual long-term erosion rate for the site, measured from the reference feature.

XV. Example Floodplain Management Ordinance

These suggested provisions have been prepared for use by municipalities that have to comply with the requirements of the National Flood Insurance Program regulations. Your municipal attorney and engineer should be consulted in preparing the necessary ordinance or ordinances.

In using these provisions, certain things must be understood and kept in mind:

- These provisions cannot be adopted verbatim. Every municipality making use of these provisions will have to make some choices and modifications, depending upon the kinds of flood hazard districts and information contained in its Flood Insurance Study, and the community's own particular circumstances and objectives or policy.
- These provisions are not classical "model" floodplain management regulations. With few exceptions, they have been prepared only with the intention of meeting the **minimum** requirements of the National Flood Insurance Program and the VA USBC.

More stringent local requirements (higher standards) are encouraged, and would be supported by the Federal Emergency Management Agency and the Division of Dam Safety and Floodplain Management, Department of Conservation and Recreation. The more restrictive local regulations would be recognized as taking precedence over the federal minimum guidelines. The needs, circumstances, and objectives are so diverse that the development of a single ordinance or set of provisions for use by all is literally impossible.

If there are any questions concerning these suggested provisions or concerning the National Flood Insurance Program, the Division of Dam Safety and Floodplain Management (Department of Conservation and Recreation) (804) 371-6095 or the FEMA Region 3 Office (215) 931-5500 should be contacted without hesitation.

CONTENTS

- General provisions
- Administration
- Establishment of Zoning Districts
- District Provisions
- Existing Structures in Floodplain Areas
- Variances
- Glossary
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ORDINANCE NO. _____

AN ORDINANCE AMENDING ORDINANCE NO.____, THE ZONING ORDINANCE OF {community} VIRGINIA, BY ESTABLISHING FLOODPLAIN DISTRICTS, BY REQUIRING THE ISSUANCE OF PERMITS FOR DEVELOPMENT, AND BY PROVIDING FACTORS AND CONDITIONS FOR VARIANCES TO THE TERMS OF THE ORDINANCES.

BE IT ENACTED AND ORDAINED BY THE {community}, Virginia, as follows:

ARTICLE I - GENERAL PROVISIONS

Section 1.1 – Statutory Authorization and Purpose [44 CFR 59.22(a)(2)]

This ordinance is adopted pursuant to the authority granted to localities by Va. Code § 15.2 - 2280. *(applies to an ordinance that is part of the zoning ordinance. If it is a stand-alone ordinance, the citation is § 10.1 – 600 et. seq.)*

The purpose of these provisions is to prevent: the loss of life and 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 the impairment 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 districts subject to flooding;
- C. requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or flood-proofed against flooding and flood damage; and,
- D. protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards.

Section 1.2 - Applicability

These provisions shall apply to all privately and publicly owned lands within the jurisdiction of {community} and identified as areas of special flood hazard according to the flood insurance rate map (FIRM) that is provided to the {community} by FEMA.

Section 1.3 - Compliance and Liability

- A. No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of this ordinance and any other applicable ordinances and regulations which apply to uses within the jurisdiction of this ordinance.
- B. The degree of flood protection sought by the provisions of this ordinance is considered reasonable 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. This ordinance does not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.

- C. This ordinance shall not create liability on the part of {community} or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

Section 1.4 – Records [44 CFR 59.22(a)(9)(iii)]

Records of actions associated with administering this ordinance shall be kept on file and maintained by the Floodplain Administrator.

Section 1.5 - Abrogation and Greater Restrictions [44 CFR 60.1(b)]

This ordinance supersedes any ordinance currently in effect in flood-prone districts. Any ordinance, however, shall remain in full force and effect to the extent that its provisions are more restrictive.

Section 1.6 - Severability

If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance shall be declared invalid for any reason whatever, such decision shall not affect the remaining portions of this ordinance. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this ordinance are hereby declared to be severable.

Section 1.7 - Penalty for Violations [44 CFR 60.2(e)]

Any person who fails to comply with any of the requirements or provisions of this article or directions of the director of planning or any authorized employee of the [community] shall be guilty of the appropriate violation and subject to the penalties therefore.

The VA USBC addresses building code violations and the associated penalties in Section 104 and Section 115. Violations and associated penalties of the Zoning Ordinance of {community} are addressed in Section ____ of the Zoning Ordinance.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations within a reasonable time. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this article may be declared by the [community] to be a public nuisance and abatable as such. Flood insurance may be withheld from structures constructed in violation of this article.

ARTICLE II - ADMINISTRATION

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

The (*particular title for the Floodplain Administrator*) is hereby appointed to administer and implement these regulations and is referred to herein as the Floodplain Administrator. The Floodplain Administrator may:

(A) Do the work themselves. In the absence of a designated Floodplain Administrator, the duties are conducted by the {community} chief executive officer.

(B) Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.

(C) Enter into a written agreement or written contract with another 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 at 44 C.F.R. Section 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 permits to determine whether proposed activities will be located in the Special Flood Hazard Area (SFHA).

(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 these 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 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 100-year frequency floodplain of free-flowing non-tidal waters of the State.

(E) Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), 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 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 the (community), 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 regulations, including:

(1) Flood Insurance Studies, Flood Insurance Rate Maps (including historic studies and maps and current effective studies and maps) and Letters of Map Change; and

(2) 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 Board of Zoning 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:

1) 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.

(2) 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 coverage under NFIP flood insurance policies.

(P) Notify the Federal Emergency Management Agency when the corporate boundaries of the (community) have been modified and:

(1) 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

(2) 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 at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) 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.

(R) It is the duty of the Community Floodplain Administrator to take into account flood, mudslide 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 - Use and Interpretation of FIRMs [44 CFR 60.3]

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 adjacent ground elevations:

(1) 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;

(2) 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 SFHA.

(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 SFHAs, 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:

(1) Upon the issuance of a Letter of Final Determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.

(2) 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 3.1.A.3. and used where no base flood elevations and/or floodway areas are provided on the effective FIRM.

(3) 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 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.

Section 2.4 - Jurisdictional Boundary Changes [44 CFR 59.22, 65.3]

The County floodplain ordinance in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas until the municipality adopts and enforces an ordinance which meets the requirements for participation in the National Flood Insurance Program. Municipalities with existing floodplain ordinances shall pass a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. 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 at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.

In accordance with the Code of Federal Regulations, Title 44 Subpart (B) Section 59.22 (a) (9) (v) all NFIP participating communities must notify the Federal Insurance Administration and optionally the State Coordinating Office in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

In order that all Flood Insurance Rate Maps accurately represent the community's boundaries, a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority must be included with the notification.

Section 2.5 - District Boundary Changes

The delineation of any of the Floodplain Districts may be revised by the {community} where natural or man-made changes have occurred and/or where more detailed studies have been conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any such change, approval must be obtained from the Federal Emergency Management Agency.

Section 2.6 - Interpretation of District Boundaries

Initial interpretations of the boundaries of the Floodplain Districts shall be made by the Zoning Officer. Should a dispute arise concerning the boundaries of any of the Districts, the Board of Zoning Appeals shall make the necessary determination. The person questioning or contesting the location of the District boundary shall be given a reasonable opportunity to present his case to the Board and to submit his own technical evidence if he so desires.

Section 2.7 – Submitting Technical Data [44 CFR 65.3]

A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Emergency Management Agency of the changes by submitting technical or scientific data. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

Section 2.8 – Letters of Map Revision

When development in the floodplain will cause or causes a change in the base flood elevation, the applicant, including state agencies, must notify FEMA by applying for a Conditional Letter of Map Revision and then a Letter of Map Revision.

Example cases:

- Any development that causes a rise in the base flood elevations within the floodway.
- Any development occurring in Zones A1-30 and AE without a designated floodway, which will cause a rise of more than one foot in the base flood elevation.
- Alteration or relocation of a stream (including but not limited to installing culverts and bridges) *44 Code of Federal Regulations §65.3 and §65.6(a)(12)*

ARTICLE III - ESTABLISHMENT OF ZONING DISTRICTS

Section 3.1 - Description of Special Flood Hazard Districts [44 CFR 59.1, 60.3]

A. Basis of Districts

The various special flood hazard districts shall include the SFHAs. The basis for the delineation of these districts shall be the FIS and the FIRM for {community} prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated _____, and any subsequent revisions or amendments thereto.

The (Community) may identify and regulate local flood hazard or ponding areas that are not delineated on the FIRM. These areas may be delineated on a “Local Flood Hazard Map” using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies.

The boundaries of the SFHA Districts are established as shown on the FIRM which is declared to be a part of this ordinance and which shall be kept on file at the {community} offices.

1. The **Floodway District** is in an **AE Zone** and is delineated, for purposes of this ordinance, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one (1) foot at any point. The areas included in this District are specifically defined in Table ____ of the above-referenced FIS and shown on the accompanying FIRM.

The following provisions shall apply within the Floodway District of an AE zone [44 CFR 60.3(d)]:

- a. 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.

Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the {community’s} endorsement – for a Conditional Letter of Map Revision (CLOMR), and receives the approval of the Federal Emergency Management Agency.

If Article III Section 3.1 A 1 a is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Article 4.

- b. The placement of manufactured homes (mobile homes) is prohibited, 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.

2. The **AE, or AH Zones** on the FIRM accompanying the FIS shall be those areas for which one-percent 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 [44 CFR 60.3(c)]*:

Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones A1-30 and AE or 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 {community}.

Development activities in Zones A1-30 and AE or AH, on the {community's} FIRM which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the {community's} endorsement – for a Conditional Letter of Map Revision, and receives the approval of the Federal Emergency Management Agency.

* The requirement in 63.3(c)(10) only applies along rivers, streams, and other watercourses where FEMA has provided base flood elevations. The requirement does not apply along lakes, bays and estuaries, and the ocean coast.

3. The **A Zone** on the FIRM accompanying the FIS shall be those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. For these areas, the following provisions shall apply [44 CFR 60.3(b)]:

The Approximated Floodplain District shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a one hundred (100)-year 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 non-detailed technical concepts, 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.

The Floodplain Administrator reserves the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated to or above the base flood level (**recommend \geq one foot**).

During the permitting process, the Floodplain Administrator shall obtain:

- 1) The elevation of the lowest floor (including the basement) of all new and substantially improved structures; and,
- 2) if the structure has been flood-proofed in accordance with the requirements of this article, the elevation (in relation to mean sea level) to which the structure has been flood-proofed.

Base flood elevation data shall be obtained from other sources or developed using detailed methodologies comparable to those contained in a FIS for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser.

4. The **AO Zone** 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 [44 CFR 60.3(c)]:
 - a. All new construction and substantial improvements of residential structures 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 two feet above the highest adjacent grade.
 - b. All new construction and substantial improvements of non-residential structures shall
 - 1) 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 at least two feet above the highest adjacent grade; or,
 - 2) together with attendant utility and sanitary facilities be completely flood-proofed 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.
 - c. Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.
5. The **Coastal A Zone** shall be those areas, as defined by the VA USBC, that are subject to wave heights between 1.5 feet and 3 feet, and identified on the FIRM as areas of **Limits of Moderate Wave Action (LimWA)**. For these areas, the following provisions shall apply:

Buildings and structures within this zone shall have the lowest floor elevated to or above the base flood elevation plus one foot of freeboard, and must comply with the provisions in Article III, Section 3.1 A 2 and Article IV, Sections 4.2 and 4.3.

6. The **VE or V Zones** 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. For these areas, the following provisions shall apply [44 CFR 60.3(e)]:
 - a. All new construction and substantial improvements in Zones V and VE (V if base flood elevation is available) shall be elevated on pilings or columns so that:
 - 1) 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 (**recommend \geq one foot**) if the lowest horizontal structural member is parallel to the direction of wave approach or elevated at least one foot above the base flood level if the lowest horizontal structural member is perpendicular to the direction of wave approach; and,
 - 2) The pile or column foundation and structure 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).
 - b. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Article III, Section A 6 a.
 - c. The Floodplain Administrator shall obtain the elevation (in relation to mean sea level) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V and VE. The Floodplain Management Administrator shall maintain a record of all such information.
 - d. All new construction shall be located landward of the reach of mean high tide.
 - e. 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. 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:

- 1) Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and
 - 2) 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 give year.
- f. 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.
- g. 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 development permit.
- h. The man-made alteration of sand dunes, which would increase potential flood damage, is prohibited.

Section 3.2 - Overlay Concept

The Floodplain Districts described above shall be overlays to the existing underlying districts as shown on the Official Zoning Ordinance Map, and as such, the provisions for the floodplain districts shall serve as a supplement to the underlying district provisions.

If there is any conflict between the provisions or requirements of the Floodplain Districts and those of any underlying district, the more restrictive provisions and/or those pertaining to the floodplain districts shall apply.

In the event any provision concerning a Floodplain District is declared inapplicable as a result of any legislative or administrative actions or judicial decision, the basic underlying provisions shall remain applicable.

ARTICLE IV - DISTRICT PROVISIONS [44 CFR 59.22, 60.2, 60.3]

Section 4.1 – Permit and Application Requirements

A. Permit Requirement

All uses, activities, and development occurring within any floodplain district, including placement of manufactured homes, shall be undertaken only upon the issuance of a zoning permit. Such development shall be undertaken only in strict compliance with the provisions of this Ordinance and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform Statewide Building Code (VA USBC) and the {community} Subdivision Regulations. Prior to the issuance of any such 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.

B. Site Plans and Permit Applications

All applications for development within any floodplain district and all building permits issued for the floodplain shall incorporate the following information:

1. The elevation of the Base Flood at the site.
2. The elevation of the lowest floor (including basement) or, in V zones, the lowest horizontal structural member.
3. For structures to be flood-proofed (non-residential only), the elevation to which the structure will be flood-proofed.
4. Topographic information showing existing and proposed ground elevations.

Section 4.2 - General Standards

The following provisions shall apply to all permits:

- A. New construction and substantial improvements shall be according to Section 3.1 of this ordinance and the VA USBC, and anchored to prevent flotation, collapse or lateral movement of the structure.
- B. Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces.
- C. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- D. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
- E. 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.
- F. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- G. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.
- H. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

In addition to provisions A – H above, in all special flood hazard areas, the additional provisions shall apply:

- I. 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, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), other required agencies, and the Federal Emergency Management Agency.
- J. The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

Section 4.3 - Elevation and Construction Standards [44 CFR 60.3]

In all identified flood hazard areas where base flood elevations have been provided in the FIS or generated by a certified professional in accordance with Section 3.1 A 3, the following provisions shall apply:

A. Residential Construction

New construction or substantial improvement of any residential structure (including manufactured homes) in Zones A1-30, AE, AH and A with detailed base flood elevations shall have the lowest floor, including basement, elevated to or above (**recommend \geq one foot**) the base flood level. See Section 3.1.5 and Section 3.1.6 for requirements in the Coastal A and VE zones.

B. Non-Residential Construction

New construction or substantial improvement of any commercial, industrial, or non-residential building (or manufactured home) shall have the lowest floor, including basement, elevated to or above the base flood level (**recommend \geq one foot**). See Section 3.1.5 and Section 3.1.6 for requirements in the Coastal A and VE zones. Non-residential buildings located in all A1-30, AE, and AH zones may be flood-proofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the BFE plus one foot are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by (title of community administrator).

C. Space Below the Lowest Floor

In zones A, AE, AH, AO, and A1-A30, fully enclosed areas, of new construction or substantially improved structures, which are below the regulatory flood protection elevation shall:

1. not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).
2. be constructed entirely of flood resistant materials below the regulatory flood protection elevation;
3. 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. 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 Article 4, section 4.2 and section 4.3.
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 in Article 4.3(D)(1).

Section 4.4 - Standards for Subdivision Proposals

- A. All subdivision proposals shall be consistent with the need to minimize flood damage;
- B. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;
- C. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and
- D. Base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis, comparable to those contained in a Flood Insurance Study for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser.

ARTICLE V – EXISTING STRUCTURES IN FLOODPLAIN AREAS

A structure or use of a structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued subject to the following conditions:

- A. Existing structures in the Floodway Area shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.
- B. Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any floodplain areas to an extent or amount of less than fifty (50) percent of its market value shall conform to the VA USBC and the appropriate provisions of this ordinance.
- C. The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location in a floodplain area to an extent or amount of fifty (50) percent or more of its market value shall be undertaken only in full compliance with this ordinance and shall require the entire structure to conform to the VA USBC.

ARTICLE VI - VARIANCES: FACTORS TO BE CONSIDERED [44 CFR 60.6]

Variations shall be issued only upon (i) a showing of good and sufficient cause, (ii) after the Board of Zoning Appeals has determined that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) after the Board of Zoning Appeals has determined that the granting of such variance will not result in (a) unacceptable or prohibited increases in flood heights,

(b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

While the granting of variances generally is limited to a lot size less than one-half acre, deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. Variances may be issued by the Board of Zoning Appeals for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of this section.

Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of this section are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

In passing upon applications for variances, the Board of Zoning Appeals shall satisfy all relevant factors and procedures specified in other sections of the zoning ordinance and consider the following additional factors:

- A. The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development, or activity within any Floodway District that will cause any increase in the one percent (1%) chance flood elevation.
- B. The danger that materials may be swept on to other lands or downstream to the injury of others.
- C. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
- D. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
- E. The importance of the services provided by the proposed facility to the community.
- F. The requirements of the facility for a waterfront location.
- G. The availability of alternative locations not subject to flooding for the proposed use.
- H. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
- I. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
- J. The safety of access by ordinary and emergency vehicles to the property in time of flood.
- K. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site.

- L. The historic nature of a structure. Variances for repair or rehabilitation of historic structures may be granted upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- M. Such other factors which are relevant to the purposes of this ordinance.

The Board of Zoning Appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for flood protection and other related matters.

Variances shall be issued only after the Board of Zoning Appeals has determined that the granting of such will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

Variances shall be issued only after the Board of Zoning Appeals has determined that the variance will be the minimum required to provide relief.

The Board of Zoning Appeals shall notify the applicant for a variance, in writing that the issuance of a variance to construct a structure below the one percent (1%) chance flood elevation (a) increases the risks to life and property and (b) will result in increased premium rates for flood insurance.

A record shall be maintained of the above notification as well as all variance actions, including justification for the issuance of the variances. Any variances that are issued shall be noted in the annual or biennial report submitted to the Federal Insurance Administrator.

GLOSSARY [44 CFR 59.1]

- A. Appurtenant or accessory structure - Accessory structures not to exceed 200 sq. ft.
- 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 ordinance, 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. Board of Zoning Appeals - The board appointed to review appeals made by individuals with regard to decisions of the Zoning Administrator in the interpretation of this ordinance.
- F. Coastal A Zone - Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet.
- G. 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.
- H. 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).
- I. 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.
- J. Existing construction - structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975 for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures."
- K. 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.

- L. 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).
- M. 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.
- N. Floodplain or flood-prone area - Any land area susceptible to being inundated by water from any source.
- O. Flood proofing - 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.
- P. 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.
- Q. 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.
- R. Highest adjacent grade - the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
- S. 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.
- T. Hydrologic and Hydraulic Engineering Analysis – Analyses performed by a *licensed*

professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the *base flood*, other frequency floods, *flood elevations*, *floodway* information and boundaries, and *flood profiles*.

- U. 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*.

- V. Lowest adjacent grade - the lowest natural elevation of the ground surface next to the walls of a structure.
- W. 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.
- X. 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.
- Y. Manufactured home park or subdivision - a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.
- Z. Mean Sea Level - is an elevation point that represents the average height of the ocean's surface (such as the halfway point between the mean high tide and the mean low tide) which is used as a standard in reckoning land elevation.

- AA. 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, 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.
- BB. Post-FIRM structures - A structure for which construction or substantial improvement occurred after December 31, 1974 or on or after _____ {insert the effective date of the community’s initial Flood Insurance Rate Map} whichever is later.
- CC. Pre-FIRM structures - A structure for which construction or substantial improvement occurred on or before December 31, 1974 or before _____ {insert the effective date of the community’s initial Flood Insurance Rate Map}.
- DD. 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. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- EE. 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.
- FF. Repetitive Loss Structure – A building covered by a contract for flood insurance that has incurred flood-related damages on two occasions, in which the cost of the repair, on the average, equaled 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.
- GG. 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.
- HH. 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.
- II. 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 ordinance.

- JJ. 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.
- KK. Structure - for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.
- LL. Substantial damage - Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
- MM. 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. This term includes structures which have incurred *repetitive loss* or *substantial damage* regardless of the actual repair work performed. 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 the local code enforcement 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 ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement 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 ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.
- NN. 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 Section 3.7 B11, Section 4.3 B, Section 4.4 A, Section 4.5, and section 4.8 is presumed to be

in violation until such time as that documentation is provided.

- OO. 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.

ARTICLE VII - ENACTMENT

ENACTED AND ORDAINED THIS ____ DAY OF _____, 20___. This ordinance shall become effective upon passage.

Signature

Title

Attested



XVI. Example FEMA Region III Local Floodplain Ordinance Review Checklist

Community: _____

City: _____ State: Virginia Date: _____

Reviewer: _____ (circle one) **FEMA State Other:** _____

Reviewer's **Compliant** **NON - Compliant**

Determination:

Approved by: _____ (FEMA only) **Date:** ____/____/____

Flood Zones: **A** **AE w/o FW** **AE w/FW**
 AO **AH** **V** **VE**

Level of Regulations: **a** **b** **c** **d** **e**

(If a community has both floodways & coastal high hazard areas, circle d & e.)

NOTE: The "Item Description" is a synopsis of the regulatory requirement and should not be construed as a complete description. Refer to the actual language contained in the National Flood Insurance Program Rules and Regulations for complete descriptions of the required standards.

Item Description <i>(Section reference to NFIP Regulations follows)</i>	State Model	Community's Ordinance			
		Review	Approval		
"Required" provisions for all ordinances					
1. Citation of Statutory Authorization. [59.22(a)(2)]	Art. I, Sect. 1.1				
2. Purpose section citing health, safety, and welfare reasons for adoption. [59.22(1)]	Art. I, sect. 1.1				
3. Adopt definitions of: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Base Flood <input checked="" type="checkbox"/> Base Flood Elevation <input checked="" type="checkbox"/> Basement <input checked="" type="checkbox"/> Development <input checked="" type="checkbox"/> Existing Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Expansion to an Existing <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Flood Insurance Rate Map <input checked="" type="checkbox"/> Flood Insurance Study <input checked="" type="checkbox"/> Floodway <input checked="" type="checkbox"/> Lowest Floor </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Manufactured Home <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> New Construction/Date _____ <input checked="" type="checkbox"/> New Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Recreational Vehicle <input checked="" type="checkbox"/> Special Flood Hazard Area <input checked="" type="checkbox"/> Start of Construction <input checked="" type="checkbox"/> Structure <input checked="" type="checkbox"/> Substantial Damage <input checked="" type="checkbox"/> Substantial Improvement <input checked="" type="checkbox"/> Violation </td> </tr> </table>	<input checked="" type="checkbox"/> Base Flood <input checked="" type="checkbox"/> Base Flood Elevation <input checked="" type="checkbox"/> Basement <input checked="" type="checkbox"/> Development <input checked="" type="checkbox"/> Existing Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Expansion to an Existing <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Flood Insurance Rate Map <input checked="" type="checkbox"/> Flood Insurance Study <input checked="" type="checkbox"/> Floodway <input checked="" type="checkbox"/> Lowest Floor	<input checked="" type="checkbox"/> Manufactured Home <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> New Construction/Date _____ <input checked="" type="checkbox"/> New Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Recreational Vehicle <input checked="" type="checkbox"/> Special Flood Hazard Area <input checked="" type="checkbox"/> Start of Construction <input checked="" type="checkbox"/> Structure <input checked="" type="checkbox"/> Substantial Damage <input checked="" type="checkbox"/> Substantial Improvement <input checked="" type="checkbox"/> Violation	<p>NOTE: Definitions for Existing, Expansion to An Existing, Manufactured Home Park or Subdivision or New Manufactured Home Park are not required if community requires elevation of all manufactured homes to the BFE (1986 regulations).</p> <p><input checked="" type="checkbox"/> Community requires elevation of all manufactured homes placed/substantially improved to the BFE (1986 regulations).</p>		
<input checked="" type="checkbox"/> Base Flood <input checked="" type="checkbox"/> Base Flood Elevation <input checked="" type="checkbox"/> Basement <input checked="" type="checkbox"/> Development <input checked="" type="checkbox"/> Existing Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Expansion to an Existing <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Flood Insurance Rate Map <input checked="" type="checkbox"/> Flood Insurance Study <input checked="" type="checkbox"/> Floodway <input checked="" type="checkbox"/> Lowest Floor	<input checked="" type="checkbox"/> Manufactured Home <input checked="" type="checkbox"/> Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> New Construction/Date _____ <input checked="" type="checkbox"/> New Manufactured Home Park or Subdivision <input checked="" type="checkbox"/> Recreational Vehicle <input checked="" type="checkbox"/> Special Flood Hazard Area <input checked="" type="checkbox"/> Start of Construction <input checked="" type="checkbox"/> Structure <input checked="" type="checkbox"/> Substantial Damage <input checked="" type="checkbox"/> Substantial Improvement <input checked="" type="checkbox"/> Violation				
<input checked="" type="checkbox"/> Floodproofing <input checked="" type="checkbox"/> Historic Structures & other definitions as appropriate such as:	Glossary				
4. Adopt or reference correct Flood Insurance Rate Map (and where applicable, Flood Boundary Floodway Map) and date. [60.2(h)]	Art. III, 3.1				
5. Adopt or reference correct Flood Insurance Study and date. [60.2(h)]	Art. III, 3.1				

6. Include a reference to all subsequent revisions and amendments to above-referenced flood maps and Flood Insurance Study.	Art. III, 3.1		
7. Adequate enforcement provisions including a violations/penalty section specifying community actions to assure compliance. [60.2(e)]	Art. I, 1.6		
8. Abrogation and Greater Restriction section. [60.1(b)]	Art. I, 1.4		

Item Description (Section reference of NFIP Regulations follows)	State Model	Community's Ordinance	
		Review	Approval
Required provisions for all ordinances (continued)			
9. Disclaimer of Liability (Degree of flood protection required by the ordinance is considered reasonable but does not imply total flood protection.)	Art. I, sect. 1.3		
10. Severability section. (If any section, provision or portion of the ordinance is deemed unconstitutional or invalid by a court, the remainder of the ordinance shall be effective.)	Art. I, sect. 1.6		
11. Framework for administering the ordinance (permit system, establish office for administering the ordinance, recordkeeping, etc.) [59.22(b)(1)]	Art..II, 2.1		
12. Designate title of community Floodplain Administrator [59.22 (b)]	Art. II, 2.1		
13. Requirement to submit new technical data: within 6 months, notify FEMA of changes in the base flood elevation by submitting technical or scientific data so insurance & floodplain management can be based on current data. [65.3]	Art. II, sect. 2.7		
14. Variance section with evaluation criteria & insurance notice. [60.6(a)]	Art. VI		
15. For adopted ordinance: Signature of Appropriate Official & Certification. Date ordinance adopted: _____ <i>Effective Date</i> _____ <i>Ordinance Number</i> _____	Art. VII		

60.3 (a) When no SFHA's have been identified, no water surface elevation data has been provided, and floodways and coastal high hazards areas have not been identified and the community applies for participation in the NFIP, the following are required:

16. Require permits for all proposed construction or other development including placement of manufactured homes. [60.3(a)(1)]	Art. IV, 4.1		
17. Assure that all other State and Federal permits are obtained. [60.3(a)(2)]	Art. IV, 4.1		
18. Review permits to assure sites are reasonably safe from flooding and require for new construction and substantial improvements in flood-prone areas: [60.3(a)(3)]	Art. IV, sect. 4.1		
(a) Anchoring (including manufactured homes) to prevent floatation, collapse, or lateral movement. [60.3(a)(3)(i)]	4.2, A, B		
(b) Use of flood-resistant materials. [60.3(a)(3)(ii)]	4.2. C		
(c) Construction methods/practices that minimize flood damage. [60.3(a)(3)(iii)]	4.2. D		
(d) Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities designed and/or located to prevent water entry or accumulation. [60.3(a)(3)(iv)]	4.2. E		
19. Review subdivision proposals to assure that:	Art. IV, 4.4		
(a) Such proposals minimize flood damage. [60.3(a)(4)(i)]			
(b) Public utilities and facilities are located & constructed so as to minimize flood damage. [60.3(a)(4)(ii)]	Art. IV, 4.4		

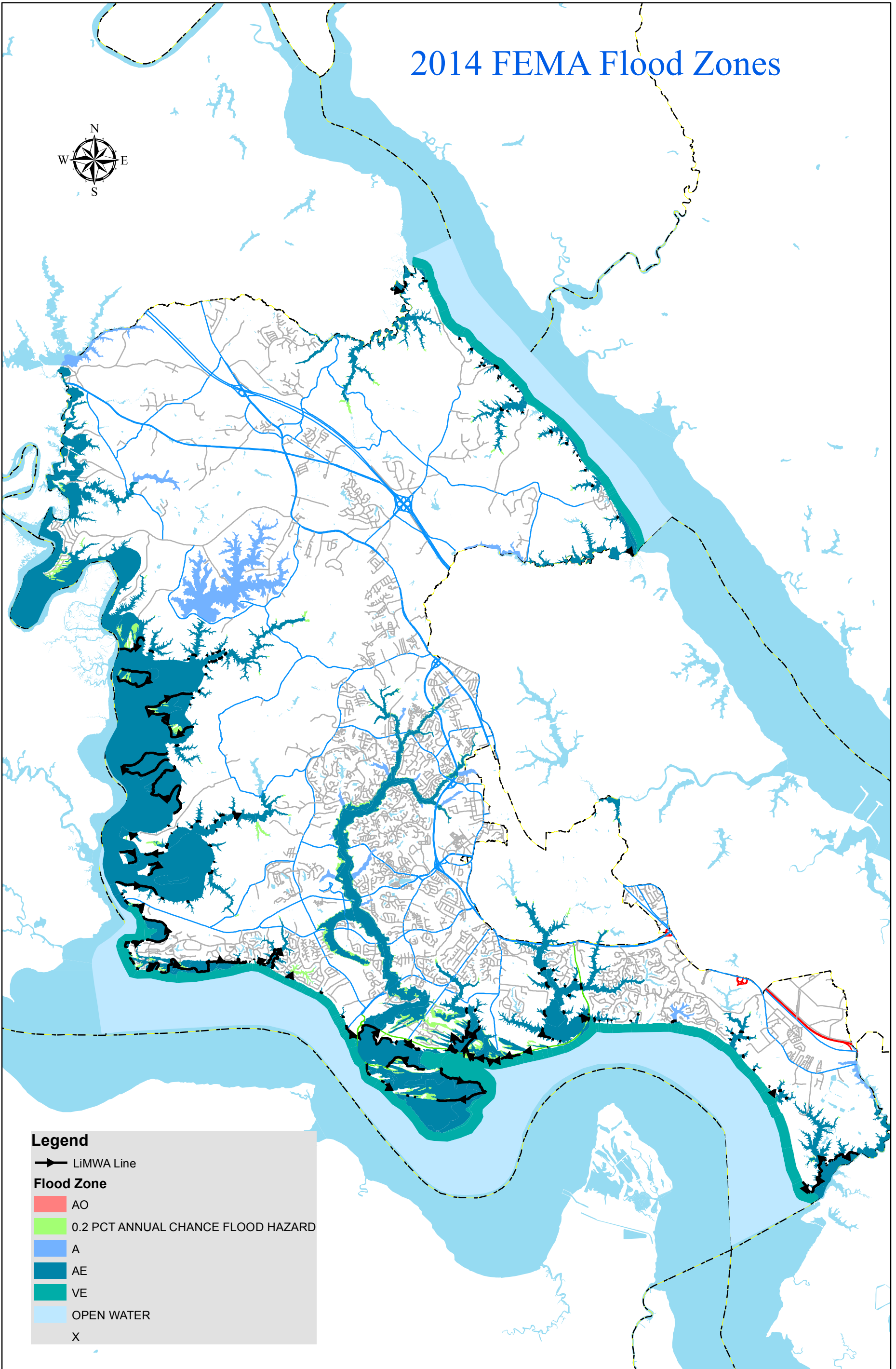
(c) Adequate drainage is provided. [60.3(a)(4)(iii)]	Art. IV, 4.4		
20. Require new and replacement water supply and sanitary sewer systems to be designed to minimize or eliminate infiltration. [60.3(a)(5) & (6)]	4.2 F, G		
21. Require on-site waste disposal systems be located to avoid impairment or contamination. [60.3(a)(6)(ii)]	4.2 H		
Item Description (Section reference of NFIP Regulations follows)	State Mode <i>l</i>	Community's Ordinance	
		Review	Approval
60.3(b) When SFHA's are identified by the publication of a community's FHBM or FIRM, but water surface elevation data have not been provided or a floodway or coastal high hazard area has not been identified, then all the above ordinance provisions for 60.3(a) and the following are required:			
22. Require permits for all proposed construction and other development within SFHAs on the FIRM. [60.3(b)(1)]	Art. IV, sect 4.1		
23. Require base flood elevation data for subdivision proposals or other developments greater than 50 lots or 5 acres. [60.3(b)(3)]	3.1		
24. In A Zones, in the absence of FEMA BFE data and floodway data, consider other available data as basis for elevating residential structures to or above base flood level, and for floodproofing or elevating nonresidential structures to or above base flood level. [60.3(b)(4)]	3.1		
25. Where BFE data are utilized, obtain and maintain records of lowest floor and floodproofing elevations for new construction and substantial improvements. [60.3(b)(5)]	Art. IV, sect. 4.1		
26. <i>In riverine areas</i> , notify neighboring communities of watercourse alterations or relocations. [60.3(b)(6)]	Art. IV, 4.2 I		
27. Maintain flood carrying capacity of altered or relocated watercourse. [60.3(b)(7)]	Art. IV, 4.2 J		
28. Require all manufactured homes to be elevated and anchored to resist flotation, collapse, or lateral movement. [60.3(b)(8)]	Art. IV, 4.3		
60.3(c) When final flood elevations, but no floodways or coastal high hazard areas have been provided on a community's FIRM, then all the above ordinance provisions for 60.3(a) & 60.3(b) and the following are required:			
29. Require all new and substantially improved <u>residential</u> structures within A1-30, AE, and AH Zones have their lowest floor (including basement) elevated to or above the BFE. [60.3(c)(2)]	Art. IV, sect. 4.3		
30. In AO Zones, require that new and substantially improved <u>residential</u> structures have their lowest floor (including basement) at or above the highest adjacent grade at least as high as the FIRM's depth number. [60.3(c)(7)]	---Community has no AO zones.		
	3.1		
31. Require that new and substantially improved <u>nonresidential</u> structures within A1-30, AE, and AH Zones have their lowest floor elevated or floodproofed to or above the base flood elevation. [60.3(c)(3)]	Art. IV, sect. 4.3		
32. In AO Zones, require new and substantially improved <u>nonresidential</u>	-----Community has no AO zones.		

structures have their lowest floor elevated or completely floodproofed above the highest adjacent grade to at least as high as the depth number on the FIRM. [60.3(c)(8)]	3.1		
33. Require that, for floodproofed non-residential structures, a registered professional/architect certify that the design and methods of construction meet requirements at (c) (3) (ii). [60.3(c)(4)]	Art. IV, sect. 4.3		
34. Require, for all new construction and substantial improvements, that fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage have permanent openings designed to allow the entry and exit of flood waters in accordance with specifications of 60.3(c)(5) .	Art. IV, sect. 4.3		
35. Within Zones A1-30 and AE without a designated floodway, new development shall not be permitted unless it is demonstrated that the cumulative effect of all past and projected development will not increase the BFE by more than 1 foot. [60.3(c)(10)]	<input type="checkbox"/> All AE zones have floodways designated.		
	3.1		
36. In Zones AO and AH, require drainage paths around structures on slopes to guide water away from structures. [60.3(c)(11)]	<input checked="" type="checkbox"/> Community has neither AO nor AH zones.		
	3.1	n/a	
37. Require that manufactured homes placed or substantially improved within A1-30, AH, and AE Zones, which meet one of the following location criteria, to be elevated such that the lowest floor is at or above the BFE and be securely anchored: i. outside a manufactured home park or subdivision; ii. in a new manufactured home park or subdivision; iii. in an expansion to an existing manufactured home park or subdivision; iv. on a site in an existing park which a manufactured home has incurred substantial damage as a result of flood. [60.3(c)(6)]	<input type="checkbox"/> Community requires elevation of all manufactured homes placed/substantially improved to the BFE (1986 regulations).		
	Art. IV, sect. 4.3 D		
38. In A1-30, AH, and AE Zones, require that manufactured homes to be placed or substantially improved in an <u>existing</u> manufactured home park to be elevated so that: i. the lowest floor is at or above the BFE <u>or</u> ii. the chassis is supported by reinforced piers no less than 36 inches above grade and securely anchored. [60.3(c)(12)]	<input type="checkbox"/> Community requires elevation of all manufactured homes placed/substantially improved to the BFE (1986 regulations).		
	Art. IV, sect. 4.3		
39. In A1-30, AH, and AE Zones, all recreational vehicles to be placed on a site must be elevated and anchored <u>or</u> be on the site for less than 180 consecutive days <u>or</u> be fully licensed and highway ready. [60.3(c)(14)]	Art. IV, sect. 4.3 D 2		
60.3(d) When final flood elevations and floodway delineations have been provided on a community's FIRM, then all the above ordinance provisions for 60.3(a), 60.3(b) & 60.3(c) and the following are required:			
40. In a regulatory floodway, prohibit any encroachment which would cause any increase in the base flood level unless hydrologic and hydraulic analyses prove that the proposed encroachment would not increase flood levels during the base flood discharge. [60.3(d)(3)]	3.1		

Item Description (Section reference of NFIP Regulations follows)	State Mode l	Community's Ordinance	
		Review	Approval
60.3(e) When final flood elevations & coastal high hazard areas have been provided on a community's FIRM, then all the above ordinance provisions for 60.3(a), 60.3(b) & 60.3(c) & the following are required: NOTE: If a community has both floodways & coastal high hazard areas, it must meet the requirements of both 60.3(d) & (e).			
41. In V1-30, VE, and V Zones, obtain and maintain the elevation of the bottom of the lowest horizontal structural member of the lowest floor of all new and substantially improved structures. [60.3(e)(2)]	3.1		
42. In V1-30, VE, and V Zones, require that all new construction and substantial improvements: (a) Are elevated on pilings/columns so that the bottom of the lowest horizontal structural member is at or above the BFE and the piles/column foundation/structure are anchored to resist flotation, collapse & lateral movement. [60.3(e)(4)]	3.1		
(b) A registered professional engineer/architect shall develop/ review structural design, specs & plans; and shall certify that the design and methods of construction meet elevation and anchoring requirements at (e)(4)(i) and (ii). [60.3(e)(4)]	3.1		
(c) Have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls. Such enclosed space shall be useable solely for parking, building access, or storage. [60.3(e)(5)]	3.1		
(d) All new construction is landward of the reach of mean high tide. [60.3(e)(3)]	3.1		
(e) Prohibit use of fill for structural support. [60.3(e)(6)]	3.1		
(f) Prohibit alteration of sand dunes and mangrove stands which would increase potential flood damage. [60.3(e)(7)]	3.1		
43. Require that manufactured homes placed or substantially improved within V1-30, VE, and V Zones, which meet one of the following location criteria, meet the V Zone standards in 60.3(e)(2) through (e)(7): i. outside a manufactured home park or subdivision; ii. in a new manufactured home park or subdivision; iii. in an expansion to an existing manufactured home park or subdivision; iv. on a site in an existing park which a manufactured home has incurred substantial damage as a result of flood. [60.3(e)(8)]	<input type="checkbox"/> Community requires elevation of all manufactured homes placed/substantially improved to the BFE (1986 regulations).		
	3.1		
44. In V1-30, VE and V Zones, require that manufactured homes to be placed or substantially improved in an <u>existing</u> manufactured home park to be elevated so that: i. the lowest floor is at or above the BFE, or ii. the chassis is supported by reinforced piers no less than 36 inches above grade and securely anchored. [60.3(e)(8)(iv); 60.3(c)(12)]	<input type="checkbox"/> Community requires elevation of all manufactured homes placed/substantially improved to the BFE (1986 regulations).		
	3.1		

45. In V1-30, VE, and V Zones, all recreational vehicles to be placed on a site must be elevated and anchored <u>or</u> be on the site for less than 180 consecutive days <u>or</u> be fully licensed & highway ready. [60.3(e)(9)]	3.1		
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2014 FEMA Flood Zones



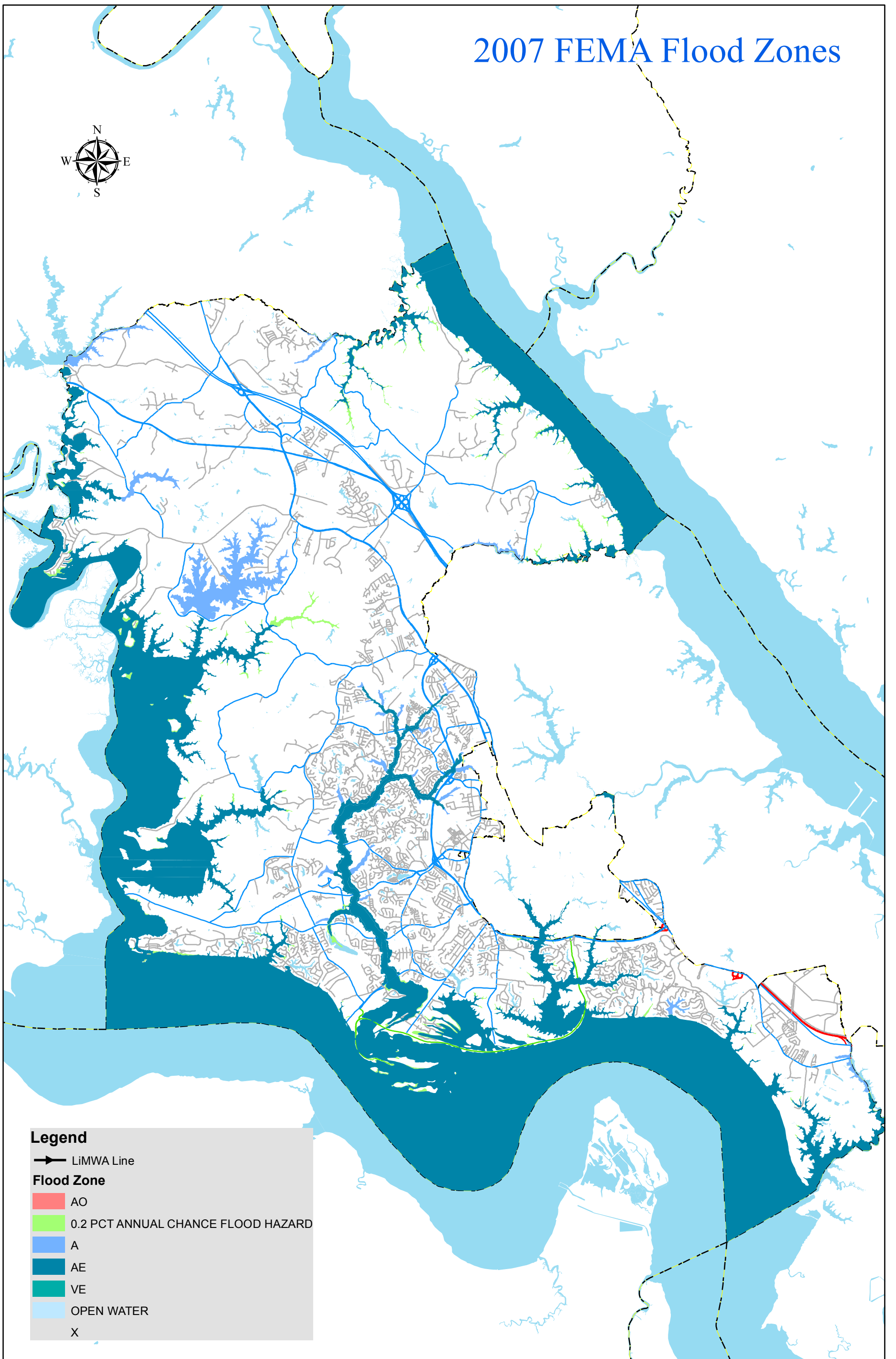
Legend

→ LIMWA Line

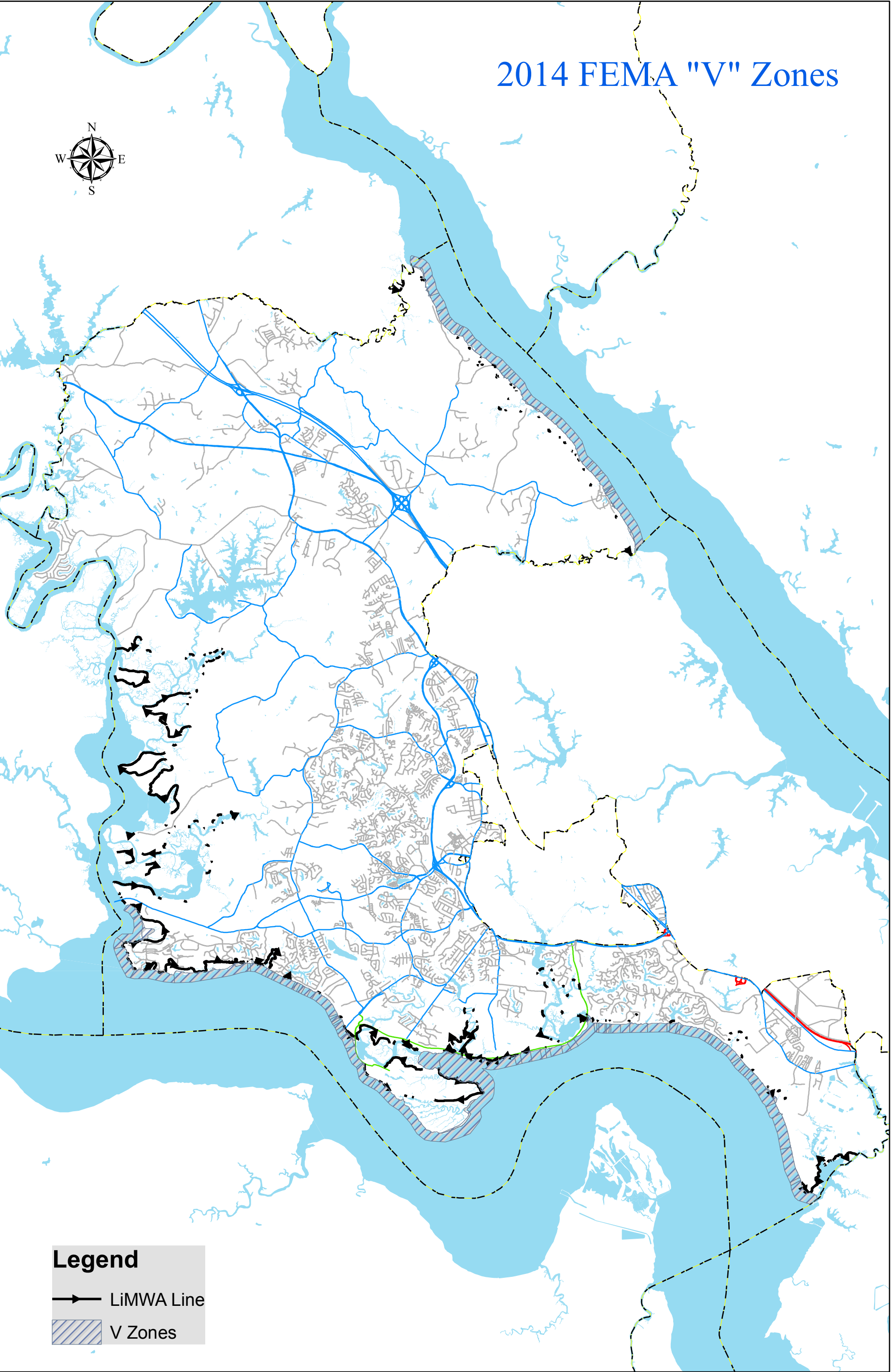
Flood Zone

- AO
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- A
- AE
- VE
- OPEN WATER
- X

2007 FEMA Flood Zones



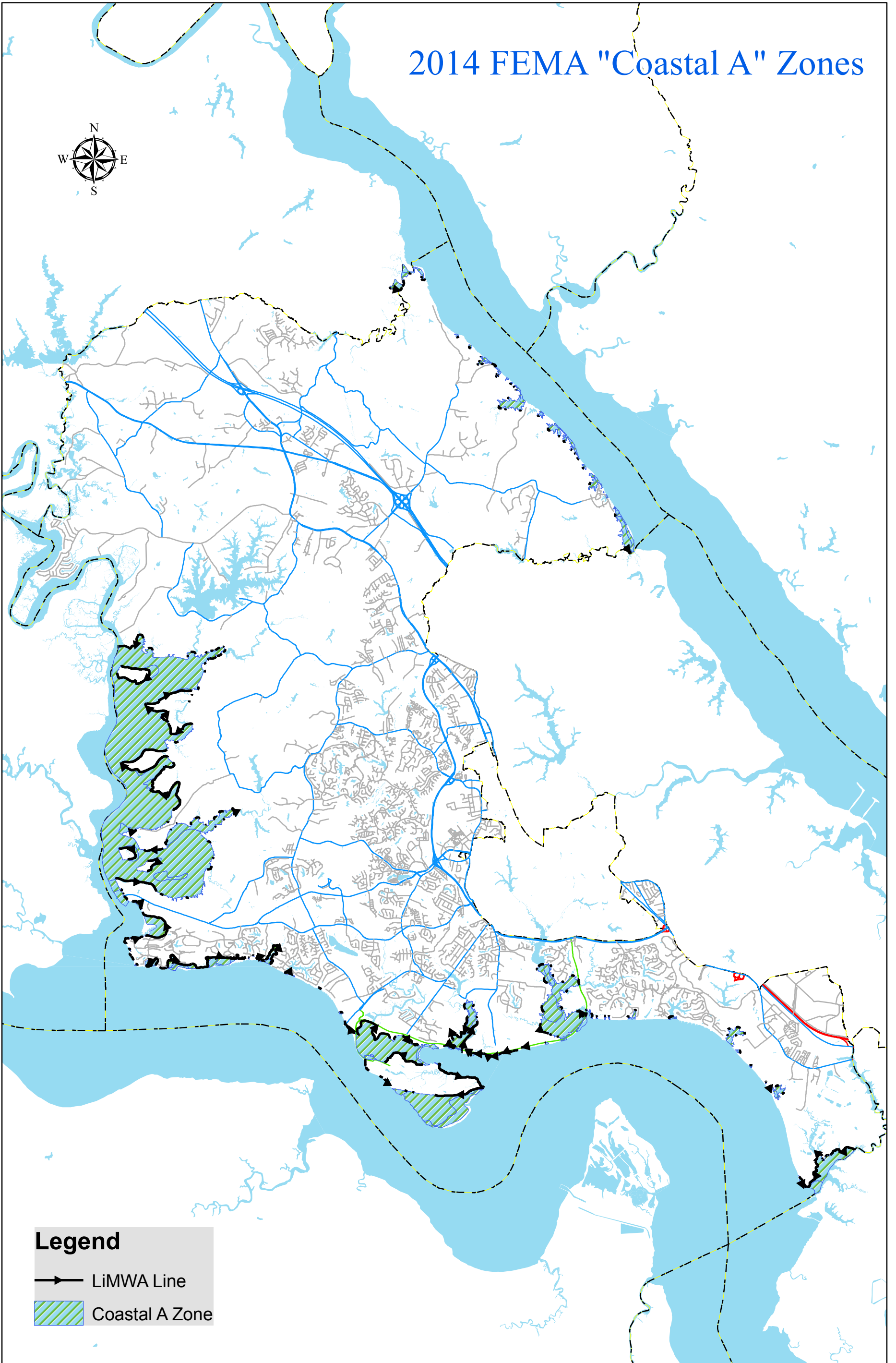
2014 FEMA "V" Zones



Legend

- ▶ LiMWA Line
- ▨ V Zones

2014 FEMA "Coastal A" Zones



Legend

- LiMWA Line
- ▨ Coastal A Zone

Parcels added to SFHA Subdivision	2015		
	Vacant	Improved	Total
Acreage Lots	25	31	56
Adam's Hunt		6	6
Bozarth & Mahone	3	4	7
Camelot		1	1
Chickahominy Haven	12	45	57
Chisel Run	1		1
Cypress Point	3	1	4
Deer Run	1	2	3
Drummond's Field		1	1
Durfey's Mill	2	1	3
Eagle Tree Farms	1	1	2
Eastern State Hospital	1		1
Fieldcrest	3	41	44
First Colony	6	35	41
Ford's Colony	16	58	74
Gatehouse Farms		24	24
Gilley Properties LLC		1	1
Governors Land	3	14	17
Green Cove	2	2	4
Haven Lake	2	6	8
Kingsmill	4	45	49
Kingspoint		7	7
Lake Powell Forest	1		1
Lake Powell Pointe	5	4	9
Lake Toano Estates		4	4
Lakewood		6	6
Landfall at Jamestown	1	5	6
Landfall Village	1		1
Mallard Hill		7	7
Marywood	1		1
Mason Park	1		1
Monticello Woods	1	3	4
Neck-O-Land Hundred	1		1
Page Landing		4	4
Peleg's Point	1	5	6
Powhatan Shores		4	4
River's Bend at Uncles Neck	8	6	14
Riverview Plantation	2	8	10
Rolling Woods	1		1
Season's Trace		4	4
Settler's Mill	2		2
Shellbank Woods	1		1
Spotswood Commons		1	1
St. George's Hundred	1	15	16
Stratford Hall		1	1
Sycamore Landing		5	5
The Colony	3	5	8
Villages at Westminster		7	7
Vineyards at Jockey's Neck		3	3
Ware Creek Manor		3	3
Westport Ford's Colony	2		2
Windsor Forest		3	3
Woodland Farms	1	2	3
Total	119	431	550

Parcels removed from SFHA Subdivision	2015		
	Vacant	Improved	Total
Acreage Lots	8	14	22
Busch Gardens		1	1
Chickahominy Haven	1		1
Chieftan's Village	1		1
Colonial Heritage		2	2
Cypress Point	1		1
Gilley Properties LLC		1	1
Governors Land	9	23	32
Heron Run		4	4
Ivey Dell		2	2
James River Commerce Center	1		1
Jamestown 1607		1	1
Kingsmill	3	19	22
Kingspoint		5	5
Landfall Village	2		2
Longhill Station		7	7
Mallard Hill		1	1
McFarlin Park		1	1
Page Landing	1	1	2
Parrish		1	1
Peleg's Point		8	8
Powhatan Shores		1	1
Sadie Lee Taylor	1	3	4
Scott's Pond		8	8
Season's Trace		19	19
Shellbank Woods		5	5
South England Point	1		1
Stonehouse		1	1
Westport Ford's Colony	1		1
Woodland Farms		2	2
Total	30	130	160

Please note that parcels added to SFHA may only include portions of the property.

"V" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
1	0630100005	GS STONEHOUSE GREEN LAND SUB 2 LLC	9800 SIX MT ZION RD	Stonehouse	
2	0720100002	LAMBHEY, DAVID O TRUSTEE & KIM C TRUS	10006 SYCAMORE LANDING RD	Acreage Lots	
3	0720100003	SIEWERS, JOHN C II TRUSTEE	9936 SYCAMORE LANDING RD	Acreage Lots	
4	0720100005A	FRANK, STEVEN P	9904 SYCAMORE LANDING RD	Acreage Lots	
5	0720100005B	FRANK, STEVEN P	9912 SYCAMORE LANDING RD	Acreage Lots	
6	0720100005C	WILSON, ALBERT ALONZO ESTATE %S FRAN	9920 SYCAMORE LANDING RD	Acreage Lots	
7	0720100006	DANA, THOMAS W TRUSTEE III	9888 SYCAMORE LANDING RD	Acreage Lots	
8	0720100006A	PRANTL, FERDINAND Z & HANSON, DONNA	9896 SYCAMORE LANDING RD	Acreage Lots	
9	0720300001	BARTOLOTTA, EMILY MURPHY & ARMSTRONG	10100 SYCAMORE LANDING RD	Acreage Lots	
10	0720300001A	MARSHALL, ALMA C &	10112 SYCAMORE LANDING RD	William Lee Tract	
11	0720300001B	MURPHY, THOMAS E & ELEANOR S	10050 SYCAMORE LANDING RD	Acreage Lots	
12	0720300002	SARKO, CYNTHIA L	10116 SYCAMORE LANDING RD	William Lee Tract	
13	0720300003	STONE, MARY HOGAN	10120 SYCAMORE LANDING RD	William Lee Tract	
14	0720300004	BAUGHAN, BERNARD L & RUTH K LIFE EST	10124 SYCAMORE LANDING RD	William Lee Tract	
15	0720300005	DUNBAR, ADAM & JENNIFER	10128 SYCAMORE LANDING RD	William Lee Tract	
16	0720300005A	WJR ASSOCIATES, LLC	10130 SYCAMORE LANDING RD	William Lee Tract	
17	0720300006	AINSWORTH, GERALD C SR & KATHRYN M	10134 SYCAMORE LANDING RD	William Lee Tract	
18	0720300007	MILLERMON, ARDEN PAUL &	10138 SYCAMORE LANDING RD	William Lee Tract	Out building located in V zone
19	0720300008	PORTELA, ERIC & DEBORAH	10142 SYCAMORE LANDING RD	William Lee Tract	
20	0720300008A	KETRON, JOSEPH M JR & KETRON, JIMMY	10200 SYCAMORE LANDING RD	William Lee Tract	
21	0720300010	BRIDEWELL, TRAVIS A &	10206 SYCAMORE LANDING RD	William Lee Tract	
22	0720300011	MOWRY, W SCOTT TRUSTEE & CRYSTALYNN	10210 SYCAMORE LANDING RD	William Lee Tract	
23	0720300012	HERTZLER, ROSEMARY B	10214 SYCAMORE LANDING RD	William Lee Tract	
24	0720300013	MITCHELL, NANCY & ROWE, JANIS &	10218 SYCAMORE LANDING RD	William Lee Tract	
25	0720300014	MALLORY, NORMA D	10222 SYCAMORE LANDING RD	William Lee Tract	
26	0720300015	MARTIN, JAMES F & BLOXOM, BONNIE T	10226 SYCAMORE LANDING RD	William Lee Tract	
27	0720300016	MARTIN, FRANK LEE &	10230 SYCAMORE LANDING RD	William Lee Tract	
28	0720400001	HUNT, DONALD C TRUSTEE & CAROLYN L T	10010 SYCAMORE LANDING RD	William Lee Tract	
29	0720400002	DAVIDSON, J BARRY JR	10016 SYCAMORE LANDING RD	William Lee Tract	
30	0720400004	COSTELLO, RICHARD A &	10020 SYCAMORE LANDING RD	William Lee Tract	
31	0720400004A	RINALDI, MARK G & CLAUDIA MORAN	10022 SYCAMORE LANDING RD	William Lee Tract	
32	0720400005A	SINGLEY, ROBERT J JR & MARY ANNE K	10030 SYCAMORE LANDING RD	William Lee Tract	
33	0720400005B	WHITESIDE, WILLIAM C TRUSTEE & JANET	10036 SYCAMORE LANDING RD	William Lee Tract	
34	0720400006	EMANUEL, KATHERYN A	10035 SYCAMORE LANDING RD	William Lee Tract	Portion of out building located in V zone
35	0740100002	MITCHELL FAMILY LTD	9730 SYCAMORE LANDING RD	Acreage Lots	
36	0740300001	HANSON, KELVIN G & HANSON, ROY	9650 SYCAMORE LANDING RD	Ivey Dell	
37	0830100002	COMM OF VA DIV OF PARKS	5526 RIVERVIEW ROAD	Acreage Lots	
38	0830200003	MRAZIK, JACK A & AVIVA P	5217 IVEY LANE	Ivey Dell	
39	0830200004	HARRELL FAMILY LIVING TRUST	5232 IVEY LANE	Ivey Dell	
40	0830200005	WOODWARD, ELSIE C	5224 IVEY LANE	Ivey Dell	
41	1640100004	UNITED STATES OF AMERICA	250 SHERWOOD FOREST	Acreage Lots	

Please note that most parcels only include a portion of the "V" zone designation.

"V" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
42	1640100009	PLANTATION CLUB,LTD THE	153 RIVERVIEW PLANT DR	Riverview Plantation	
43	1640500001	JESSEMAN, GREGORY H & MARIA L	143 RIVERVIEW PLANT DR	Riverview Plantation	
44	1640500002	ESTEVEZ, IRENE M	141 RIVERVIEW PLANT DR	Riverview Plantation	
45	1640500005	MILLER, EDWARD F TRUSTEE & CHRISTINE	112 FOUR MILE TREE	Riverview Plantation	
46	1640500006	BOVEJA, RAJINDER K SR & BOVEJA, RAJI	114 FOUR MILE TREE	Riverview Plantation	
47	1640500010	VOSTEEN, LOUIS F &	124 FOUR MILE TREE	Riverview Plantation	
48	1640500012	JAISSE, WILLIAM F; TRUSTEE	126 FOUR MILE TREE	Riverview Plantation	
49	1640500013	FINGER, JOHN F &	128 FOUR MILE TREE	Riverview Plantation	
50	1640500014	FINGER, JOHN F &	129 FOUR MILE TREE	Riverview Plantation	
51	1730200001	VAUGHAN, JOHN TRUSTEE & SCHELD,	163 RIVERVIEW PLANT DR	Riverview Plantation	
52	1730200002	MCCRAY, JOHN H &	165 RIVERVIEW PLANT DR	Riverview Plantation	
53	1730200003	STIEFFEN, S WALLACE & JACQUELINE	167 RIVERVIEW PLANT DR	Riverview Plantation	
54	1730200004	LUCAS, EDWARD STEVEN TRUSTEE & LINDA	201 SHERWOOD FOREST	Riverview Plantation	
55	1730200005	FOUT, GARY T & DONNA M	203 SHERWOOD FOREST	Riverview Plantation	
56	1730200006	COX, MARY Y REVOCABLE LIVING TRUST	205 SHERWOOD FOREST	Riverview Plantation	
57	1730200007	COX, MARY Y REVOCABLE LIVING TRUST	209 SHERWOOD FOREST	Riverview Plantation	
58	1730200008	BOYER, JOHN HARDIN TRUSTEE JR & MERE	213 SHERWOOD FOREST	Riverview Plantation	
59	1730200009	PARSONS, KENNETH D &	217 SHERWOOD FOREST	Riverview Plantation	
60	1730200010	STANFORD, DONALD R & ROSALINDA G	221 SHERWOOD FOREST	Riverview Plantation	
61	1730200011	KEYSER, STEPHEN A TRUSTEE	223 SHERWOOD FOREST	Riverview Plantation	
62	1730200012	KEYSER, PATRICIA F TRUSTEE	225 SHERWOOD FOREST	Riverview Plantation	
63	3430200002	BELL, BAXTER I JR TRUSTEE	3504 BARRETT'S FERRY DRIVE	Barrett's Ferry	
64	3430300002	HOFMEYER, EUGENE J& RUTH M OF THE HO	1481 JOHN TYLER HGWY	Barrett's Ferry Landing	
65	3430300003	HOFMEYER, EUGENE J& RUTH M OF THE HO	1485 JOHN TYLER HGWY	Barrett's Ferry Landing	
66	3430300004	HOFMEYER, EUGENE J& RUTH M OF THE HO	1489 JOHN TYLER HGWY	Barrett's Ferry Landing	
67	3430300005	HOFMEYER, EUGENE J& RUTH M OF THE HO	1493 JOHN TYLER HGWY	Barrett's Ferry Landing	
68	3430300006	HOFMEYER, EUGENE J& RUTH M OF THE HO	1497 JOHN TYLER HGWY	Barrett's Ferry Landing	
69	3430300007	HOFMEYER, EUGENE J& RUTH M OF THE HO	1501 JOHN TYLER HGWY	Barrett's Ferry Landing	
70	4310100002	GOVERNOR'S LAND FOUNDATION		Governors Land	
71	4310100005	GOVERNOR'S LAND FOUND-	1280 TWO RIVERS ROAD	Governors Land	
72	4310200006	MARCHETTI, ROBERT A & MARGARET R	1528 HARBOR ROAD	Governors Land	Portion of out building located in V zone
73	4310200007	ROESCH, EDGAR B; JR	1532 HARBOR ROAD	Governors Land	Rear of residential house in VE
74	4310200008	SNOW, BRENDA L	1536 HARBOR ROAD	Governors Land	Rear of residential house in VE
75	4310200009	SCHMEISER, ARTHUR J JR & NANCY M	1540 HARBOR ROAD	Governors Land	
76	4310200010	MARCHETTI, ROBERT A & MARGARET R	1544 HARBOR ROAD	Governors Land	
77	4310200011	LOVELL, JIMMY S & LATA L	1548 HARBOR ROAD	Governors Land	
78	4310200012	CRITCHFIELD, LOIS M TRUSTEE	1552 HARBOR ROAD	Governors Land	Rear corner of residential house in VE
79	4310200013	SPALLER, WILLIAM M TRUSTEE & ELAINE	1556 HARBOR ROAD	Governors Land	Rear of residential house in VE
80	4310500001A	GOVERNOR'S LAND FOUND-		Governors Land	
81	4310600003	BODNER, THEODORE H & DIANA M	3508 BARRETT'S FERRY DRIVE	Barrett's Ferry	
82	4310600004	NILSEN, VEGARD & MITCHELL, ALLISON D	3512 BARRETT'S FERRY DRIVE	Barrett's Ferry	

Please note that most parcels only include a portion of the "V" zone designation.

"V" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
83	4310600005	VOLZ, LAWRENCE R	3516 BARRETT'S FERRY DRIVE	Barrett's Ferry	
84	4310600006	MILLER, LEONARD G REVOCABLE LIVING T	3520 BARRETT'S FERRY DRIVE	Barrett's Ferry	
85	4310600007	DEGINDER, BRUCE R	3528 BARRETT'S FERRY DRIVE	Barrett's Ferry	
86	4310600008	GELHAUSEN, PAUL A TRUSTEE & JENNY L	3532 BARRETT'S FERRY DRIVE	Barrett's Ferry	
87	4320100003	BELL, BAXTER I JR TRUSTEE	1671 JOHN TYLER HGWY	Acreage Lots	
88	4320700001A	GOVERNOR'S LAND FOUNDATION		Governors Land	
89	4320700001B	GOVERNOR'S LAND FOUND-		Governors Land	
90	4321000001A	GOVERNOR'S LAND FOUND-		Governors Land	
91	4321100001	PRIESTER, PATRICK JAMES JR	3535 BARRETT'S FERRY DRIVE	Barrett's Ferry	
92	4321400001C	GOVERNOR'S LAND FOUND-		Governors Land	
93	4321400003	FORSYTH, JODY W & QUAN-FORSYTH, WILM	1784 CYPRESS ISLE	Governors Land	
94	4321400004	WISMER, JOHN G & VIKKI L	1788 CYPRESS ISLE	Governors Land	
95	4321400006	COMPTON, JEAN T TRUSTEE & H RAY TRUS	1796 CYPRESS ISLE	Governors Land	
96	4321400007	BRYMAR PROPERTIES OF VIRGINIA LLC	1800 CYPRESS ISLE	Governors Land	
97	4321400008	JOHNSON, NANCY M TRUSTEE	1804 CYPRESS ISLE	Governors Land	
98	4321400010	KITTELBERGER, LARRY E TRUSTEE & COLG	1812 CYPRESS ISLE	Governors Land	
99	4321400012	MOORE, WILLIAM S TRUSTEE & CAROL M T	1820 CYPRESS ISLE	Governors Land	
100	4321400013	MOORE, WILLIAM S TRUSTEE & CAROL M T	1824 CYPRESS ISLE	Governors Land	
101	4420100016A	GOVERNOR'S LAND FOUND-		Governors Land	
102	4420700001B	GOVERNOR'S LAND FOUND-		Governors Land	
103	4420700011	KAPLAN, JAMES R & JANE T	3021 KITCHUM'S CLOSE	Governors Land	
104	4420700012	GERDELMAN, JOHN W & SUE H	3025 KITCHUM'S CLOSE	Governors Land	
105	4420700013	CAMPBELL, ANH N TRUSTEE & GLENN C TR	3020 KITCHUM'S CLOSE	Governors Land	
106	4420700016	ABRESCH, HAEJU TRUSTEE & ABRESCH, DO	3000 KITCHUM'S CLOSE	Governors Land	
107	4420700017	ROBINSON, NEAL J TRUSTEE	2996 KITCHUM'S CLOSE	Governors Land	
108	4420900001A	GOVERNOR'S LAND FOUND-		Governors Land	
109	4420900009	BOURNE LAND TRUST	2960 RIVER REACH	Governors Land	
110	4421000001B	GOVERNOR'S LAND FOUND-		Governors Land	
111	4421000001C	GOVERNOR'S LAND FOUND-		Governors Land	
112	4421000002	FRANKLIN, JOHN A	2984 KITCHUM'S CLOSE	Governors Land	
113	4421000003	FITZPATRICK, PAMELA W TRUSTEE	2988 KITCHUM'S CLOSE	Governors Land	
114	4510100011	KITTY MESSER ON CROAKER LLC		Acreage Lots	
115	4510100013D	INGRAM, JANICE LEE	3526 GOVERNOR'S LANDING ROAD	Acreage Lots	
116	4510200001	KITTY MESSER IN RUSHMERE LLC	132 SHELLBANK DRIVE	Shellbank	
117	4510200001A	KITTY MESSER ON THE JAMES, L.L.C.	134 SHELLBANK DRIVE	Shellbank	
118	4510200003	PALUZSAY, REBECCA S TRUSTEE	128 SHELLBANK DRIVE	Shellbank	
119	4510200005	HUNT, ROGER PENDELTON & ELI Z	126 SHELLBANK DRIVE	Shellbank	
120	4510200006	GILLEY, MILLICENT R TRUSTEE	124 SHELLBANK DRIVE	Shellbank	
121	4510200007	HOWARD, BILL R JR TRUSTEE	120 SHELLBANK DRIVE	Shellbank	
122	4510900001A	GOVERNOR'S LAND FOUND-		Governors Land	
123	4530200008	GUERNSEY, ROGER S & MERRY FEYOCK	113 SHELLBANK DRIVE	Shellbank	

Please note that most parcels only include a portion of the "V" zone designation.

"V" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
124	453020009	WHITE, GEORGE K TRUSTEE & BRENDA N T	111 SHELLBANK DRIVE	Shellbank	
125	453020011	WHITE, GEORGE K TRUSTEE & BRENDA N T	109 SHELLBANK DRIVE	Shellbank	
126	4530200012B	SHIELD, STEPHEN W & KATHERINE R	109-A SHELLBANK DRIVE	Shellbank	
127	4530200013	SHIELD, STEPHEN W & KATHERINE R	107 SHELLBANK DRIVE	Shellbank	
128	4530200014	COBB, RALPH D TRUSTEE & JOYCE E TRUS	105 SHELLBANK DRIVE	Shellbank	
129	4530200015	NEIDHART, JAMES D & GERALDINE A	103 SHELLBANK DRIVE	Shellbank	
130	4530200016	NEIDHART, JAMES D & GERALDINE A	101 SHELLBANK DRIVE	Shellbank	
131	4530200017	RODGERS, MICHAEL P & SHARON R	99 SHELLBANK DRIVE	Shellbank	
132	4530200018	RYLAND, JOHN W &	97 SHELLBANK DRIVE	Shellbank	
133	4530400001	GREATER FIRST COLONY AREA CIVIC ASSO	94 SHELLBANK DRIVE	First Colony	
134	4540200054	JANTZEN, NELSON R, III & STANLEY, HE	162 THE MAINE	First Colony	
135	4540200055	MOORE, JEFFREY D & ANNE C	164 THE MAINE	First Colony	
136	4540200056	MACGILLIVRAY, RODERICK P & PATRICIA	166 THE MAINE	First Colony	
137	4540200057	FUNIGIELLO, PHILIP J TRUSTEE	168 THE MAINE	First Colony	
138	4540200058	JONES, FRANCES TRUSTEE	170 THE MAINE	First Colony	
139	4540200059	FISCELLA, PAUL A & HELEN C	172 THE MAINE	First Colony	
140	4540200060	REILLY, PAUL DAVID TRUSTEE & KAREN S	174 THE MAINE	First Colony	
141	4540200061	LEE, DAVID M & DIANE K	176 THE MAINE	First Colony	
142	4540200062	LEAHEY, THOMAS F & DOROTHY B	178 THE MAINE	First Colony	
143	4540200063	OGLESBY, J STUART & SANDRA C	180 THE MAINE	First Colony	
144	4540200064	ABELARD, CLARCK E & AUGUSTA V	182 THE MAINE	First Colony	
145	4540200065	AMREIN, GEORGE E & MARY-JANE B	184 THE MAINE	First Colony	
146	4540200066	WILLOZ, CLIFFORD PAUL TRUSTEE &	186 THE MAINE	First Colony	
147	4540200067	EVANS, DAVID W & TRACEY H	188 THE MAINE	First Colony	
148	4540200068	CAFIERO, CARL A & PATRICIA E	190 THE MAINE	First Colony	
149	4540200069	HOBBS, DAVID E &	192 THE MAINE	First Colony	
150	4540200070	HOBBS, DAVID E &	194 THE MAINE	First Colony	
151	4540200071	HILL, C DEBRA TRUSTEE & BUCHANAN, CA	196 THE MAINE	First Colony	
152	4540200072	REILLY, PAUL DAVID TRUSTEE & KAREN S	198 THE MAINE	First Colony	
153	4540200073	REILLY, PAUL DAVID TRUSTEE & KAREN S	200 THE MAINE	First Colony	
154	4540200074	GRAY, GARLAND II & ANN G	202 THE MAINE	First Colony	
155	4540200075	ALEXANDER, DONALD L TRUSTEE & ALICE	204 THE MAINE	First Colony	
156	4540200076	FOWLER, GEORGE M &	206 THE MAINE	First Colony	
157	4540200077	COLLINS, ROLLIN E & MARLENE E	208 THE MAINE	First Colony	
158	4540200078	CARLSON, ERIC J & MARY ANN	210 THE MAINE	First Colony	
159	4540200079	NOEL HUME, IVOR TRUSTEE & BEVERLY CA	2 WEST CIRCLE	First Colony	
160	4540200080A	PALMER AND PALMER CO LC	3 WEST CIRCLE	First Colony	
161	4540300008	HORNER FAMILY LIVING TRUST	3181 DERBY LANE	Drummond's Quarter on the James	
162	4540300009	POWELL, SAMUEL T &	3180 DERBY LANE	Drummond's Quarter on the James	
163	4540300010	EWELL, GRAY ANN G	3201 DERBY LANE	Drummond's Quarter on the James	
164	4630100001D	WILLIAMS, JOHN D &	2497 MANION DRIVE	Drummond's Field	

Please note that most parcels only include a portion of the "V" zone designation.

"V" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
165	4630100002	COLONIAL PENNIMAN LLC	2425 MANION DRIVE	Drummond's Field	
166	4630100003	JAMESTOWN 4-H	3751 4H CLUB RD	Acreage Lots	Out building located in V zone
167	4630100005	JAMES CITY COUNTY	2205 JAMESTOWN ROAD	Acreage Lots	
168	4630100015	COMMONWEALTH OF VIRGINIA	1348 COLONIAL PARKWAY	Acreage Lots	Out building located in V zone
169	4630200001	SLOAN, MICHAEL	2527 MANION DRIVE	Drummond's Field	
170	4630200002	LORD, DOUGLAS R & DEBRA J	2525 MANION DRIVE	Drummond's Field	
171	4630200003	MEADOR, CHARLES C &	2523 MANION DRIVE	Drummond's Field	
172	4630200004	CLARE, FRANK BRIAN TRUSTEE JR & CLAR	2521 MANION DRIVE	Drummond's Field	
173	4630200005	BEITH, REINER & LEDA ANNE	2519 MANION DRIVE	Drummond's Field	
174	4630200006	DAVIES, ROBERT J & JENNIFER A	2517 MANION DRIVE	Drummond's Field	
175	4630200007	WALTRIP, C LEWIS II TRUSTEE	2515 MANION DRIVE	Drummond's Field	
176	4630200008	BRANSCOME HENRY S &	2513 MANION DRIVE	Drummond's Field	
177	4630200011	CHOHANY, JOHN G	2507 MANION DRIVE	Drummond's Field	
178	4630200012	CHOHANY, JOHN G	2505 MANION DRIVE	Drummond's Field	
179	4630200014	BRADY, A WAYNE TRUSTEE & JEANETTE TR	2501 MANION DRIVE	Drummond's Field	
180	5030100001	XANTERRA KINGSMILL LLC		Kingsmill	
181	5031200013	DIVELY, ROBERT C & LINDA L & DIVELY,	175 WEST LANDING	Kingsmill	
182	5031200014	STRUP, MARY C TRUSTEE	171 WEST LANDING	Kingsmill	
183	5031200015	MCNAMARA, MICHAEL L & CAROLYN C	167 WEST LANDING	Kingsmill	
184	5031200016	BALL, STEPHEN E & MICHELE Z	163 WEST LANDING	Kingsmill	
185	5031200017	MERCER, JAMES C & DONNA M	159 WEST LANDING	Kingsmill	
186	5031200018	MEISTER, DAVID R	155 WEST LANDING	Kingsmill	
187	5031200019	WENDELL, JOHN MACLEAN JR TRUSTEE & J	151 WEST LANDING	Kingsmill	
188	5031200020	ZINN, JAMES M & BARBARA S	147 WEST LANDING	Kingsmill	
189	5031200021	CASEY, ARTHUR S &	143 WEST LANDING	Kingsmill	
190	5031200022	PATTEN, DONALD N & MARTHA H	139 WEST LANDING	Kingsmill	
191	5031200023	CARR, DANIEL E & ANNE C	135 WEST LANDING	Kingsmill	
192	5031200031	DRISKILL, DANIEL L & VIVIAN W	323 EAST LANDING	Kingsmill	
193	5040100002C	XANTERRA KINGSMILL LLC	KINGSMILL ROAD	Kingsmill	Outdoor seating area in V zone
194	5040100007	XANTERRA KINGSMILL LLC	130 WAREHAM'S POND RD	Kingsmill	
195	5042000001C	KINGSMILL COMMUNITY SERVICES ASSOCIA	445 RIVER'S EDGE	Kingsmill	
196	5042000001E	KINGSMILL COMMUNITY SERVICES ASSOCIA	229 RIVER'S EDGE	Kingsmill	
197	5130100004	XANTERRA KINGSMILL LLC	175 GEORGE SANDYS'	Kingsmill	
198	5130600001C	KINGSMILL COMMUNITY SERVICE		Kingsmill	
199	5130700001B	KINGSMILL COMMUNITY SERVICE		Kingsmill	
200	5130800001C	KINGSMILL COMMUNITY SERVICE		Kingsmill	
201	5131000001A	BUSCH PROPERTIES INC	WILLIAM SPENCER	Kingsmill	
202	5131100001A	KINGSMILL COMMUNITY SERVICES ASSOCIA	RIVER BLUFFS	Kingsmill	
203	5420100001	ASSOCIATION FOR THE	1365 COLONIAL PARKWAY	Acreage Lots	
204	5510100001	UNITED STATES OF AMERICA	1368 COLONIAL PARKWAY	Acreage Lots	
205	5610100001	UNITED STATES OF AMERICA	541 NECK-O-LAND RD	Acreage Lots	

Please note that most parcels only include a portion of the "V" zone designation.

"V" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
206	5610100002	UNITED STATES OF AMERICA	1801 TREASURE ISLAND RD	Acreage Lots	
207	5820100002	CARTERS GROVE ASSOCIATES LLC	250 RON SPRINGS DR	Acreage Lots	
208	5820100003	HAMPTON ROADS	300 RON SPRINGS DR	Acreage Lots	
209	5820300001A	RIVER BLUFFS CONDOMINIUM ASSOCIATION	500 RIVER BLUFFS	Kingsmill	
210	5820400001A	KINGSMILL COMMUNITY SERVICES ASSOCIA	110 THE BLUFFS	Kingsmill	
211	5910100030	CARTERS GROVE ASSOCIATES LLC	8797 POCAHONTAS TR	Acreage Lots	
212	5940100003	BASF CORPORATION	8961 POCAHONTAS TR	Acreage Lots	
213	6220100001	UNITED STATES OF	800 BLOW FLATS ROAD	Fort Eustis	

Please note that most parcels only include a portion of the "V" zone designation.

Existing Structures located in "V" Zones

Updated July 1, 2015

PIN	Owner	Parcel Address	Subdivision	Notes
0720300007	MILLERMON, ARDEN PAUL &	10138 SYCAMORE LANDING RD	William Lee Tract	Out building
0720400006	EMANUEL, KATHERYN A	10035 SYCAMORE LANDING RD	William Lee Tract	Out building (small corner in VE)
4310200006	MARCHETTI, ROBERT A & MARGARET R	1528 HARBOR ROAD	Governors Land	Out building (small corner in VE)
4310200007	ROESCH, EDGAR B; JR	1532 HARBOR ROAD	Governors Land	Residential house (rear in VE)
4310200008	SNOW, BRENDA L	1536 HARBOR ROAD	Governors Land	Residential house (rear in VE)
4310200012	CRITCHFIELD, LOIS M TRUSTEE	1552 HARBOR ROAD	Governors Land	Residential house (rear corner in VE)
4310200013	SPALLER, WILLIAM M TRUSTEE & ELAINE	1556 HARBOR ROAD	Governors Land	Residential house (rear in VE)
4630100003	JAMESTOWN 4-H	3751 4H CLUB RD		Out building
4630100015	COMMONWEALTH OF VIRGINIA	1348 COLONIAL PARKWAY		Out building

* List does not include water dependent structures.

"Coastal A" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
1	0630100005	GS STONEHOUSE GREEN LAND SUB 2 LLC	9800 SIX MT ZION RD	Stonehouse	
2	0720100006	DANA, THOMAS W TRUSTEE III	9888 SYCAMORE LANDING RD	Acreage Lots	
3	0740100002	MITCHELL FAMILY LTD	9730 SYCAMORE LANDING RD	Acreage Lots	
4	0740300001	HANSON, KELVIN G & HANSON, ROY	9650 SYCAMORE LANDING RD	Ivey Dell	
5	0830100002	COMM OF VA DIV OF PARKS	5526 RIVERVIEW ROAD	Acreage Lots	
6	0830200003	MRAZIK, JACK A & AVIVA P	5217 IVEY LANE	Ivey Dell	
7	0830200005	WOODWARD, ELSIE C	5224 IVEY LANE	Ivey Dell	
8	0830200006	NELSON, THOMAS B & PATRICIA A	5216 IVEY LANE	Ivey Dell	
9	1510400003	MANN, KATHERINE GALLAGHER & WILLIAM	420 STONEHOUSE ROAD	Woodland Farms	
10	1640100004	UNITED STATES OF AMERICA	250 SHERWOOD FOREST	Camp Peary	
11	1640100009	PLANTATION CLUB,LTD THE	153 RIVERVIEW PLANT DR	Riverview Plantation	
12	1640300001	FORREST, RONALD FELTON TRUSTEE	123 FOUR MILE TREE	Riverview Plantation	
13	1640300002	FORREST, RONALD FELTON TRUSTEE	121 FOUR MILE TREE	Riverview Plantation	
14	1640300003	ELLIS, THERESE A & JAHN, MARGARET E	119 PLEASANT POINT	Riverview Plantation	
15	1640300004	SHAVER, SCOTT G &	117 PLEASANT POINT	Riverview Plantation	
16	1640300005	KERNS, VIRGINIA BAKER & HALLETT, RON	115 PLEASANT POINT	Riverview Plantation	
17	1640300006	TREESE, KENNETH S &	113 PLEASANT POINT	Riverview Plantation	
18	1640300007	MCCARTNEY, ROBERT B;	111 PLEASANT POINT	Riverview Plantation	
19	1640300008	LOUBIER, ANTHONY J	109 PLEASANT POINT	Riverview Plantation	
20	1640500001	JESSEMAN, GREGORY H & MARIA L	143 RIVERVIEW PLANT DR	Riverview Plantation	
21	1640500002	ESTEVEZ, IRENE M	141 RIVERVIEW PLANT DR	Riverview Plantation	
22	1640500004	PONTON, ROBERT &	110 FOUR MILE TREE	Riverview Plantation	
23	1640500005	MILLER, EDWARD F TRUSTEE & CHRISTINE	112 FOUR MILE TREE	Riverview Plantation	
24	1640500006	BOVEJA, RAJINDER K SR & BOVEJA, RAJI	114 FOUR MILE TREE	Riverview Plantation	
25	1640500007	MEADOWS, DENNIE TRUSTEE & JUDITH C T	116 FOUR MILE TREE	Riverview Plantation	
26	1640500008	MEADOWS, DENNIE TRUSTEE & JUDITH C T	118 FOUR MILE TREE	Riverview Plantation	
27	1640500009	VOSTEEN, LOUIS F &	120 FOUR MILE TREE	Riverview Plantation	
28	1640500010	VOSTEEN, LOUIS F &	124 FOUR MILE TREE	Riverview Plantation	
29	1640500012	JAISSE, WILLIAM F; TRUSTEE	126 FOUR MILE TREE	Riverview Plantation	
30	1640500013	FINGER, JOHN F &	128 FOUR MILE TREE	Riverview Plantation	
31	1640500014	FINGER, JOHN F &	129 FOUR MILE TREE	Riverview Plantation	
32	1640900002	EVANS, PETER S TRUSTEE & DONNA M TRU	109 GREENWAY CIRCLE	Riverview Plantation	
33	1640900003	ANDREWS, OBEDIAH, JR &	108 GREENWAY CIRCLE	Riverview Plantation	
34	1730200001	VAUGHAN, JOHN TRUSTEE & SCHELD,	163 RIVERVIEW PLANT DR	Riverview Plantation	
35	1730200009	PARSONS, KENNETH D &	217 SHERWOOD FOREST	Riverview Plantation	
36	1730200010	STANFORD, DONALD R & ROSALINDA G	221 SHERWOOD FOREST	Riverview Plantation	
37	1730200011	KEYSER, STEPHEN A TRUSTEE	223 SHERWOOD FOREST	Riverview Plantation	existing home in Coastal A area
38	1730200012	KEYSER, PATRICIA F TRUSTEE	225 SHERWOOD FOREST	Riverview Plantation	
39	1730200013	KEILITZ, INGO &	224 SHERWOOD FOREST	Riverview Plantation	
40	2030100001	WRIGHTS ISLAND GAME ASSN.	6650 MENZELS ROAD	Acreage Lots	out-building in Coastal A area
41	2040100001	PATES NECK TIMBER CO	1945 LITTLE CREEK DAM ROAD	Acreage Lots	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
42	2040100002	DANIELS, JAMES A, JR &	1955 LITTLE CREEK DAM ROAD	Acreage Lots	
43	2130100005A	WOOD, JAMES THOMAS RESIDUARY TRUST	213 TURNERS NECK RD	Acreage Lots	
44	2130100005B	HINEMAN, LAURA L TRUSTEE	300 TURNERS NECK RD	Acreage Lots	
45	2140100048	SHEPHERDS LANDING PARTNERSHIP	2583 LITTLE CREEK DAM ROAD	Acreage Lots	
46	2840100001	DAVIS, CURTIS & CHRISTIAN, CHRIS		Acreage Lots	entire parcel in Coastal A area
47	2840100001A	NAYSES BAY HUNT CLUB,		Acreage Lots	entire parcel in Coastal A area
48	2840100002	COX, JOSEPH		Acreage Lots	entire parcel in Coastal A area
49	2840100003	CANADY, JAMES ET ALS		Acreage Lots	entire parcel in Coastal A area
50	2840100004	NAYSES BAY HUNT CLUB,		Acreage Lots	entire parcel in Coastal A area
51	2840100005	RICHARDSON HOLDINGS LIMITED PARTNERS	1703 JOLLY POND ROAD	Acreage Lots	out-building in Coastal A area
52	2840100006	SHIELD'S POINT, LLC	2312 BUSH NECK ROAD	Acreage Lots	
53	2840100007	SHIELD'S POINT, LLC	2190 BUSH NECK ROAD	Acreage Lots	
54	2840100008	SHIELD'S POINT, LLC	2220 BUSH NECK ROAD	Acreage Lots	
55	2910100001	RICHARDSON, JOHN COLEMAN	1715 JOLLY POND ROAD	Acreage Lots	
56	2920100004	CHICKAHOMINY SUMMERPLACE, LLC	1613 JOLLY POND ROAD	Summerplace	out-building in Coastal A area
57	2930100002	RICHARDSON HOLDINGS LIMITED PARTNER-	1985 JOLLY POND ROAD	Acreage Lots	
58	3410100001	MINOR, FAITH ELIZABETH & MORRIS,	1498 BUSH NECK ROAD	Acreage Lots	out-building in Coastal A area
59	3410100002	BUSH NECK FARM, INC	1502 BUSH NECK ROAD	Acreage Lots	
60	3420100001	GORDON, LINDA HENDERSON	2000 BUSH NECK ROAD	Acreage Lots	
61	3420100002	ALLEN, DAVID H & STEPHANIE M	2001 BUSH NECK ROAD	Acreage Lots	
62	3420100002A	TUCKER, THOMAS R TRUSTEE	2030 BUSH NECK ROAD	Acreage Lots	
63	3420100003	HANKINS & HANKINS ET AL		Acreage Lots	
64	3420100004	RUSSO, JOSEPHINE	2096 BUSH NECK ROAD	Acreage Lots	
65	3420100005	HOLLAND, RICHARD E TRUSTEE JR & DEBR	2122 BUSH NECK ROAD	Acreage Lots	
66	3420100007	FIRTH, JOHN L JR & BARBARA H	2110 BUSH NECK ROAD	Acreage Lots	
67	3420100008	CLARK, MARY LOU	2035 BUSH NECK ROAD	Acreage Lots	existing home in Coastal A area
68	3430100002	JAMES CITY COUNTY	1350 JOHN TYLER HGWY	Acreage Lots	out-building in Coastal A area
69	3430200002	BELL, BAXTER I JR TRUSTEE	3504 BARRETT'S FERRY DRIVE	Barrett's Ferry	
70	3430300001	HOFMEYER, EUGENE J& RUTH M OF THE HO	1477 JOHN TYLER HGWY	Barrett's Ferry Landing	
71	3430300002	HOFMEYER, EUGENE J& RUTH M OF THE HO	1481 JOHN TYLER HGWY	Barrett's Ferry Landing	
72	3430300004	HOFMEYER, EUGENE J& RUTH M OF THE HO	1489 JOHN TYLER HGWY	Barrett's Ferry Landing	
73	3430300005	HOFMEYER, EUGENE J& RUTH M OF THE HO	1493 JOHN TYLER HGWY	Barrett's Ferry Landing	
74	3430300006	HOFMEYER, EUGENE J& RUTH M OF THE HO	1497 JOHN TYLER HGWY	Barrett's Ferry Landing	
75	3430300007	HOFMEYER, EUGENE J& RUTH M OF THE HO	1501 JOHN TYLER HGWY	Barrett's Ferry Landing	
76	3440100001	HANKINS & HANKINS ET AL	1669 BUSH NECK ROAD	Acreage Lots	
77	3440100004	POWHATAN ASSOCIATES		Acreage Lots	entire parcel in Coastal A area
78	3440100005	AMBS, LORAN D TRUSTEE & JOANNA G TRU	1666 JOHN TYLER HGWY	Acreage Lots	
79	3510100001	PICKETT HOLDINGS LLC	2171 BUSH NECK ROAD	Acreage Lots	
80	3510100002	BROWNING, LYLE EDWARD	2307 BUSH NECK ROAD	Acreage Lots	
81	3510100004	ARMISTEAD, R T & HANSON, LETITIA A T	2094 BUSH NECK ROAD	Acreage Lots	
82	3510100005	SAUNDERS, MARY B TRUSTEE	2070 BUSH NECK ROAD	Acreage Lots	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
83	3510100006	NAYSES, BAY LAND COMPANY	2051 BUSH NECK ROAD	Acreage Lots	
84	3510100008	LAFF A LOT ROD & GUN CL	1901 BUSH NECK ROAD	Acreage Lots	
85	3510100009	NAYSES BAY HUNT CLUB,		Acreage Lots	entire parcel in Coastal A area
86	3510100010A	AKDOGAN, RECEP & LISA E	2050 BUSH NECK ROAD	Acreage Lots	
87	3510100010B	AKDOGAN, RECEP & LISA E	2046 BUSH NECK ROAD	Acreage Lots	entire parcel in Coastal A area
88	3510100010C	GRANNON, CRAIG C TRUSTEE &	2042 BUSH NECK ROAD	Acreage Lots	entire parcel in Coastal A area
89	3520100016	ARMISTEAD, R T & HANSON, LETITIA A T	3783 BRICK BAT ROAD	Acreage Lots	existing home in Coastal A area
90	3530100001	POWHATAN ASSOCIATES	3599 BRICK BAT ROAD	Acreage Lots	out-building in Coastal A area
91	3540100001	MCMURRAN, MARTHA W & SWR - PINWOOD	3773 BRICK BAT ROAD	Acreage Lots	
92	3630100003	MCMURRAN, MARTHA W & SWR - PINWOOD	3763 BRICK BAT ROAD	Acreage Lots	
93	4310100002	GOVERNOR'S LAND FOUNDATION		Governors Land	
94	4310100005	GOVERNOR'S LAND FOUND-	1280 TWO RIVERS ROAD	Governors Land	
95	4310200013	SPALLER, WILLIAM M TRUSTEE & ELAINE	1556 HARBOR ROAD	Governors Land	
96	4310200014	RIVER HOUSE ENTERPRISES LLC	1560 HARBOR ROAD	Governors Land	
97	4310200015	WHITWELL, JOAN E TRUSTEE	1564 HARBOR ROAD	Governors Land	
98	4310200016	TOET, EDWIN JR TRUSTEE	1568 HARBOR ROAD	Governors Land	
99	4310200017	PIERSON, MICHAEL W TRUSTEE & ELAINE	1572 HARBOR ROAD	Governors Land	
100	4310200018	CLARK, RONALD A & BEETON, THERESA A	1576 HARBOR ROAD	Governors Land	
101	4310200019	WILKINSON, THOMAS A III & MARY D	1580 HARBOR ROAD	Governors Land	
102	4310200020	TRUMBLE, ROBERT H & ANN H	1584 HARBOR ROAD	Governors Land	
103	4310200021	HOUGEN, LEE R TRUSTEE & HOUGEN PAULA	1588 HARBOR ROAD	Governors Land	
104	4310200022	TRICKEY, DAVID J & GRIVAT, SANDI	1592 HARBOR ROAD	Governors Land	
105	4310200023	THOMPSON, KENNETH O & PEGGY L	1596 HARBOR ROAD	Governors Land	
106	4310500001A	GOVERNOR'S LAND FOUND-		Governors Land	
107	4310600003	BODNER, THEODORE H & DIANA M	3508 BARRETT'S FERRY DRIVE	Barrett's Ferry	
108	4310600004	NILSEN, VEGARD & MITCHELL, ALLISON D	3512 BARRETT'S FERRY DRIVE	Barrett's Ferry	
109	4310600005	VOLZ, LAWRENCE R	3516 BARRETT'S FERRY DRIVE	Barrett's Ferry	
110	4310600006	MILLER, LEONARD G REVOCABLE LIVING T	3520 BARRETT'S FERRY DRIVE	Barrett's Ferry	
111	4310600007	DEGINDER, BRUCE R	3528 BARRETT'S FERRY DRIVE	Barrett's Ferry	
112	4310600008	GELHAUSEN, PAUL A TRUSTEE & JENNY L	3532 BARRETT'S FERRY DRIVE	Barrett's Ferry	
113	4320100003	BELL, BAXTER I JR TRUSTEE	1671 JOHN TYLER HGWY	Acreage Lots	
114	4320100006	GOVERNOR'S LAND FOUNDATION		Governors Land	
115	4320100011	GOVERNOR'S LAND FOUND-	1697 RIVER OAKS ROAD	Governors Land	
116	4320100012	CLAYBANK LANDING LLC	1750 JOHN TYLER HGWY	Acreage Lots	
117	4320100013	CLAYBANK LANDING LLC	1850 JOHN TYLER HGWY	Acreage Lots	
118	4320100014	CLAYBANK LANDING LLC	1950 JOHN TYLER HGWY	Acreage Lots	
119	4320400001B	GOVERNOR'S LAND FOUND-	1905 N FOWLER'S CLOSE	Governors Land	
120	4320500013	FLORES, RICHARD A & CANIANO, DONNA A	2928 NATHANIEL'S RUN	Governors Land	
121	4320500014	PASTERNAK, LOUISE A TRUSTEE	2924 NATHANIEL'S RUN	Governors Land	
122	4320500015	MOXON, MARY ANN TRUSTEE	2920 NATHANIEL'S RUN	Governors Land	
123	4320500019	CATTRON, KIRT R & JUANITA CAROLYN	2904 NATHANIEL'S RUN	Governors Land	existing structure close to Coastal A area

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
124	4320700001A	GOVERNOR'S LAND FOUNDATION		Governors Land	commercial structure in Coastal A area
125	4320700001B	GOVERNOR'S LAND FOUND-		Governors Land	
126	43207000024	MCKELVAIN, BETSY W LIVING TRUST	1600 HARBOR ROAD	Governors Land	
127	43207000025	WILLIAMS, SHARON A TRUSTEE	1604 HARBOR ROAD	Governors Land	
128	43207000026	PETERS, CHARLES D & ELLEN B	1608 HARBOR ROAD	Governors Land	
129	43207000027	NICHOLS, STERLING M & DOROTHY P	1612 HARBOR ROAD	Governors Land	
130	43207000028	WEBB, J RICHARD & JUDITH P	1616 HARBOR ROAD	Governors Land	
131	43207000029	MCLENNAN, BARBARA N TRUST	1620 HARBOR ROAD	Governors Land	
132	43207000030	MOORE, PATRICIA M	1619 HARBOR ROAD	Governors Land	
133	4321000001A	GOVERNOR'S LAND FOUND-		Governors Land	
134	43211000001	PRIESTER, PATRICK JAMES JR	3535 BARRETT'S FERRY DRIVE	Barrett's Ferry	
135	4321200001A	GOVERNOR'S LAND FOUND-		Governors Land	
136	4321400001B	GOVERNOR'S LAND FOUND-	1823 CYPRESS ISLE	Governors Land	
137	4321400001C	GOVERNOR'S LAND FOUND-		Governors Land	
138	43214000003	FORSYTH, JODY W & QUAN-FORSYTH, WILM	1784 CYPRESS ISLE	Governors Land	
139	43214000006	COMPTON, JEAN T TRUSTEE & H RAY TRUS	1796 CYPRESS ISLE	Governors Land	
140	43214000007	BRYMAR PROPERTIES OF VIRGINIA LLC	1800 CYPRESS ISLE	Governors Land	
141	43214000008	JOHNSON, NANCY M TRUSTEE	1804 CYPRESS ISLE	Governors Land	
142	43214000010	KITTELBERGER, LARRY E TRUSTEE & COLG	1812 CYPRESS ISLE	Governors Land	
143	43214000012	MOORE, WILLIAM S TRUSTEE & CAROL M T	1820 CYPRESS ISLE	Governors Land	
144	43214000013	MOORE, WILLIAM S TRUSTEE & CAROL M T	1824 CYPRESS ISLE	Governors Land	
145	43214000014	STONEHILL, ROBERT J & CARLYN L	1828 CYPRESS ISLE	Governors Land	
146	43214000015	BERNO, WILLIAM S TRUSTEE & VIRGINIA	1832 CYPRESS ISLE	Governors Land	existing home in Coastal A area
147	44101000007	GOVERNOR'S LAND FOUNDATION		Governors Land	
148	4420100016A	GOVERNOR'S LAND FOUND-		Governors Land	
149	44201000028	GOVERNOR'S LAND FOUND-		Governors Land	
150	44203000010	WRIGHT, STEPHEN M & DIANE M	2936 EAST ISLAND RD	Governors Land	
151	44203000011	THEES, WILLIAM JR TRUSTEE & STEPHANI	2937 EAST ISLAND RD	Governors Land	
152	44203000012	EVANS, ROBERT R TRUSTEE & JEAN T TRU	2933 EAST ISLAND RD	Governors Land	
153	44203000013	BISCHOFF, FRED TRUSTEE	2521 SANCTUARY DRIVE	Governors Land	
154	44203000014	CAPLES, R TRUSTEE	2517 SANCTUARY DRIVE	Governors Land	
155	44203000015	KOEHN, GLEN C &	2513 SANCTUARY DRIVE	Governors Land	
156	44203000016	SCHALLER, LINDA L	2509 SANCTUARY DRIVE	Governors Land	
157	44203000017	CONE, JAY C & KARA, MISH	2505 SANCTUARY DRIVE	Governors Land	
158	44203000019	BOWEN, CHARLES TRUSTEE	2497 SANCTUARY DRIVE	Governors Land	
159	44203000020	MAIER, PAUL V TRUSTEE & SHIRLEY D TR	2489 SANCTUARY DRIVE	Governors Land	
160	4420700001B	GOVERNOR'S LAND FOUND-		Governors Land	
161	44207000010	TREOLO, PAUL, JR & SANDRA K	3017 KITCHUM'S CLOSE	Governors Land	
162	44207000011	KAPLAN, JAMES R & JANE T	3021 KITCHUM'S CLOSE	Governors Land	
163	44207000013	CAMPBELL, ANH N TRUSTEE & GLENN C TR	3020 KITCHUM'S CLOSE	Governors Land	
164	44207000015	NELLIS, DALE JR & KIRSTEN E	3004 KITCHUM'S CLOSE	Governors Land	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

	PIN	Owner	Parcel Address	SUBNAME	Notes
165	4420700016	ABRESCH, HAEJU TRUSTEE & ABRESCH, DO	3000 KITCHUM'S CLOSE	Governors Land	
166	4420900001A	GOVERNOR'S LAND FOUND-		Governors Land	
167	4420900009	BOURNE LAND TRUST	2960 RIVER REACH	Governors Land	
168	4421000001B	GOVERNOR'S LAND FOUND-		Governors Land	
169	4421000001C	GOVERNOR'S LAND FOUND-		Governors Land	
170	4421000002	FRANKLIN, JOHN A	2984 KITCHUM'S CLOSE	Governors Land	
171	4421000003	FITZPATRICK, PAMELA W TRUSTEE	2988 KITCHUM'S CLOSE	Governors Land	
172	4510100011	KITTY MESSER ON CROAKER LLC		Acreage Lots	entire parcel in Coastal A area
173	4510100012	PALUZSAY, REBECCA S TRUSTEE		Acreage Lots	
174	4510100013B	INGRAM, JANICE LEE		Acreage Lots	
175	4510100013C	INGRAM, JANICE LEE		Acreage Lots	
176	4510100013D	INGRAM, JANICE LEE	3526 GOVERNOR'S LANDING ROAD	Acreage Lots	
177	4510200001	KITTY MESSER IN RUSHMERE LLC	132 SHELLBANK DRIVE	Shellbank	
178	4510200001A	KITTY MESSER ON THE JAMES, L.L.C.	134 SHELLBANK DRIVE	Shellbank	
179	4510200003	PALUZSAY, REBECCA S TRUSTEE	128 SHELLBANK DRIVE	Shellbank	
180	4510400020	MURPHY FAMILY LIVING TRUST	321 THE MAINE WEST	Shellbank Woods	
181	4510400021	DEMMERT, DONALD GUNTHER & HILDEGARD	320 THE MAINE WEST	Shellbank Woods	
182	4510400022	JOLIFFE, THOMAS P III & PERLA A	318 THE MAINE WEST	Shellbank Woods	
183	4510400097	KIRBY, STEVEN L	121 GREENBRIER	Shellbank Woods	
184	4510400098	LOUIE, STEPHEN & JEAN C	122 GREENBRIER	Shellbank Woods	
185	4510400099	LYONS, PAUL E & JUDY P	120 GREENBRIER	Shellbank Woods	
186	4510400100	CONNELLY, MARY LOUISE TRUSTEE	118 GREENBRIER	Shellbank Woods	
187	4510400101	BRUSS, EUGENE A &	116 GREENBRIER	Shellbank Woods	
188	4510400102	BAGLI, FRANCIS L & LYNN D	114 GREENBRIER	Shellbank Woods	
189	4510400103	HEWITT, JAMES A TRUSTEE JR & DEBORAH	112 GREENBRIER	Shellbank Woods	
190	4510900001A	GOVERNOR'S LAND FOUND-		Governors Land	
191	4530200018	RYLAND, JOHN W &	97 SHELLBANK DRIVE	Shellbank	
192	4530400001	GREATER FIRST COLONY AREA CIVIC ASSO	94 SHELLBANK DRIVE	First Colony	
193	4540200054	JANTZEN, NELSON R, III & STANLEY, HE	162 THE MAINE	First Colony	
194	4540200076	FOWLER, GEORGE M &	206 THE MAINE	First Colony	
195	4540200077	COLLINS, ROLLIN E & MARLENE E	208 THE MAINE	First Colony	
196	4540200078	CARLSON, ERIC J & MARY ANN	210 THE MAINE	First Colony	
197	4540200079	NOEL HUME, IVOR TRUSTEE & BEVERLY CA	2 WEST CIRCLE	First Colony	
198	4540200080	RICKMOND, DARRELL C, JR	4 WEST CIRCLE	First Colony	
199	4540200080A	PALMER AND PALMER CO LC	3 WEST CIRCLE	First Colony	
200	4540300008	HORNER FAMILY LIVING TRUST	3181 DERBY LANE	Drummond's Quarter on the James	
201	4540300010	EWELL, GRAY ANN G	3201 DERBY LANE	Drummond's Quarter on the James	
202	4630100003	JAMESTOWN 4-H	3751 4H CLUB RD	Acreage Lots	
203	4630100005	JAMES CITY COUNTY	2205 JAMESTOWN ROAD	Acreage Lots	
204	4630100015	COMMONWEALTH OF VIRGINIA	1348 COLONIAL PARKWAY	Acreage Lots	
205	4740100039	ROGERS, NEIL I & CHERYL M	2220 LAKE POWELL RD	Acreage Lots	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
206	4740100040	REGJAG LLC	318 NECK-O-LAND RD	Acreage Lots	
207	4740100041	REGJAG LLC	320 NECK-O-LAND RD	Acreage Lots	
208	4740100042	PELEG'S POINT SIX LLC	324 NECK-O-LAND RD	Acreage Lots	
209	4740100042E	REGJAG LLC	231 GATE HOUSE BLVD	Acreage Lots	
210	4820100005A	WILLIAMSBURG-JAMESTOWN	100 MARCLAY ROAD	Acreage Lots	
211	4820100012	SHORT NECK LLC	20 MARCLAY ROAD	Acreage Lots	
212	4830100035	JAMES CITY COUNTY BIBLE &	2205 TREASURE ISLAND RD	Acreage Lots	
213	4830100039A	HARTMANN, PAUL K & BARBARA S	2262 LAKE POWELL RD	Acreage Lots	
214	4830100039B	SANDS, MARK L & CAROL A	2260 LAKE POWELL RD	Acreage Lots	
215	4830100040B	ROBINSON, BARRY S & VICKIE LEE	2258 LAKE POWELL RD	Acreage Lots	
216	4830100041	HARCUM, WILLIAM R	2236 LAKE POWELL RD	Acreage Lots	
217	4830100041A	HARCUM, E RAE & PHOEBE M	2240 LAKE POWELL RD	Acreage Lots	
218	4830100042	REGJAG LLC		Acreage Lots	
219	4840100010	WILLIAMSBURG VINEYARDS, LLC	2638 LAKE POWELL RD	Acreage Lots	
220	4910100007	KINGSPPOINT CLUB, INC		Kingspoint	
221	4910240024	WILLIAMSON, FORREST W TRUSTEE &	142 KINGSPPOINT DR	Kingspoint	
222	4910240025	KNOWLES, BRUCE H & ELEANOR A	140 KINGSPPOINT DR	Kingspoint	
223	4910240026	MEADOWS, MARK K & GEMMA C	138 KINGSPPOINT DR	Kingspoint	
224	4910240029	LEE, NUMA RAY TRUSTEE	103 ACACIA COURT	Kingspoint	
225	4910240030	FUQUA, WILLIAM C TRUSTEE	104 ACACIA COURT	Kingspoint	
226	4930100001	UNITED STATES OF AMERICA	6450 CONSERVANCY	Acreage Lots	
227	4930100002	UNITED STATES OF AMERICA	125 PINEPOINT ROAD	Acreage Lots	
228	4930260015	ANDERSON, WILLIAM KYLE & AMY L	112 PINEPOINT ROAD	Kingspoint	
229	4930260016	BAKKER, DANIEL A & MARIA S	114 PINEPOINT ROAD	Kingspoint	
230	4930260017	WHITE, JAMES H TRUSTEE & JOYCE A TRU	116 PINEPOINT ROAD	Kingspoint	
231	4930260018	AVELLANET, JOHN & SHEILA	118 PINEPOINT ROAD	Kingspoint	
232	4930260019	CRONE, VICTORIA H	120 PINEPOINT ROAD	Kingspoint	
233	4930260020	PEERS, PIETER & MORDIJCK, SASKIA	122 PINEPOINT ROAD	Kingspoint	
234	4930260021	ROUZIE, JOHN EDWARDS, JR	121 PINEPOINT ROAD	Kingspoint	
235	4930270008	SCHMIDT, DANIEL W & LARKIN A	218 SOUTHPOINT DR	Kingspoint	
236	4930270009	ADLUNG, RENE C TRUSTEE & SIBYLLE M T	220 SOUTHPOINT DR	Kingspoint	
237	4930270010	IMOEHL, WILLIAM J & CAROLYN C	221 SOUTHPOINT DR	Kingspoint	
238	4930270011	TRIMMER, WILLIAM T III & TRIMMER, MI	219 SOUTHPOINT DR	Kingspoint	
239	4930270012	ADAMS, KENNETH A &	217 SOUTHPOINT DR	Kingspoint	
240	4930270013	KOCH, DENISE W TRUSTEE	215 SOUTHPOINT DR	Kingspoint	
241	4930270014	GRAYSON, BRYAN H	213 SOUTHPOINT DR	Kingspoint	
242	4930280004	PRATT, DONALD I TRUSTEE JR & GERALDI	110 ARCHERS HOPE DR	Kingspoint	
243	4930280005	CAVINNESS, THOMAS L, JR	110 ARCHERS HOPE DR	Kingspoint	
244	4930280006	MANNING, HARVEY D TRUSTEE JR & PEGGY	112 ARCHERS HOPE DR	Kingspoint	
245	4930280007	SCHUMANN, KEITH W	114 ARCHERS HOPE DR	Kingspoint	out-building in Coastal A area
246	4930280008	NANCE, GEORGE L	118 ARCHERS HOPE DR	Kingspoint	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

"Coastal A" Zones Parcels

Updated June 30, 2015

PIN	Owner	Parcel Address	SUBNAME	Notes	
247	4930280009	HILL, WILLIAM GUY, SR &	117 ARCHERS HOPE DR	Kingspoint	
248	4930300001	ROBINSON, MILLARD P; JR & MIREILLE A	6401 CONSERVANCY	Vineyards at Jockey's Neck	
249	4930300002	SWEANEY, ROBERT D & TERESA C	6405 CONSERVANCY	Vineyards at Jockey's Neck	
250	4930300003	THALER, F ROGER TRUSTEE	6409 CONSERVANCY	Vineyards at Jockey's Neck	
251	4930300004	SCHULTZ, ROGER E &	6413 CONSERVANCY	Vineyards at Jockey's Neck	
252	4930300005	KNOWLES, BRUCE HILL TRUSTEE & ELEANO	6417 CONSERVANCY	Vineyards at Jockey's Neck	out-building in Coastal A area
253	4930300006	MUNZEL, THOMAS L TRUSTEE & KAREN A T	6421 CONSERVANCY	Vineyards at Jockey's Neck	
254	4930300007	BECK, ROBERT G TRUSTEE	6425 CONSERVANCY	Vineyards at Jockey's Neck	
255	4930300008	PRITCHARD, MARGARET B TRUSTEE	6428 CONSERVANCY	Vineyards at Jockey's Neck	
256	4930300009	MCNAMARA, MICHAEL L & CAROLYN C	6424 CONSERVANCY	Vineyards at Jockey's Neck	
257	5030100001	XANTERRA KINGSMILL LLC		Kingsmill	
258	5031200012	DUBEY, ROBERT S	176 WEST LANDING	Kingsmill	
259	5031200013	DIVELY, ROBERT C & LINDA L & DIVELY,	175 WEST LANDING	Kingsmill	
260	5031200023	CARR, DANIEL E & ANNE C	135 WEST LANDING	Kingsmill	
261	5031200031	DRISKILL, DANIEL L & VIVIAN W	323 EAST LANDING	Kingsmill	
262	5031200032	POPE, CHARLES L & MARY F	319 EAST LANDING	Kingsmill	
263	5031200033	CASEY, CARLTON D & ELIZABETH W	315 EAST LANDING	Kingsmill	
264	5040100002C	XANTERRA KINGSMILL LLC	KINGSMILL ROAD	Kingsmill	
265	5040100007	XANTERRA KINGSMILL LLC	130 WAREHAM'S POND RD	Kingsmill	
266	5042000001C	KINGSMILL COMMUNITY SERVICES ASSOCIA	445 RIVER'S EDGE	Kingsmill	
267	5042000001E	KINGSMILL COMMUNITY SERVICES ASSOCIA	229 RIVER'S EDGE	Kingsmill	
268	5130100002	XANTERRA KINGSMILL LLC	1000 CARTER'S GROVE COUNTRY ROAD	Acreage Lots	
269	5130100004	XANTERRA KINGSMILL LLC	175 GEORGE SANDYS'	Kingsmill	
270	5230100011A	XANTERRA KINGSMILL LLC	8581 POCAHONTAS TR	Acreage Lots	
271	5420100001	ASSOCIATION FOR THE	1365 COLONIAL PARKWAY	Acreage Lots	Dale House in Coastal A area
272	5510100001	UNITED STATES OF AMERICA	1368 COLONIAL PARKWAY	Acreage Lots	
273	5520300001A	PELEGS POINT OWNERS ASSOCIATION INC		Peleg's Point	
274	5610100001	UNITED STATES OF AMERICA	541 NECK-O-LAND RD	Acreage Lots	Glass House in Coastal A area
275	5610100002	UNITED STATES OF AMERICA	1801 TREASURE ISLAND RD	Acreage Lots	
276	5620100001	JAMES CITY COUNTY BIBLE&	1700 TREASURE ISLAND RD	Acreage Lots	
277	5820100002	CARTERS GROVE ASSOCIATES LLC	250 RON SPRINGS DR	Acreage Lots	
278	5820100003	HAMPTON ROADS	300 RON SPRINGS DR	Acreage Lots	
279	5910100030	CARTERS GROVE ASSOCIATES LLC	8797 POCAHONTAS TR	Acreage Lots	
280	5920100054	MONTROSE, LLC	1737 ENDEAVOR DRIVE	James River Commerce Center	
281	5940100003	BASF CORPORATION	8961 POCAHONTAS TR		
282	6030100002	BRANSCOME INC.	750 BLOW FLATS ROAD	Acreage Lots	
283	6030100003	SANIFILL OF VIRGINIA,INC	700 BLOW FLATS ROAD	Acreage Lots	
284	6220100001	UNITED STATES OF	800 BLOW FLATS ROAD	Fort Eustis	

Please note that most parcels only include a portion of the "Coastal A" zone designation.

Existing Structures located in "Coastal A" Zones

Updated June 30, 2015

PIN	Owner	Parcel Address	Subdivision	Notes
1730200011	Keyser, Stephen	223 Sherwood Forest	Riverview Plantation	Residential home
2030100001	Wrights Island Game Assoc.	6650 Menzels Road		Out buildings (2)
2840100005	Richardson Holdings	1703 Jolly Pond Road		Out-buildings (3) docks / duck blinds?
2920100004	Chickahominy Summerplace, LLC	1613 Jolly Pond Road	Summerplace	Out-buildings (2) docks / duck blinds?
3410100001	Minor, Faith	1498 Bush Neck Road		Out building
3420100008	Clark, Mary Lou	2035 Busch Neck Road		Residential house and detached garage
3520100016	Armstead, R.T.	n/a		Residential home / Out-building
3530100001	Powhatan Associates	3599 Brick Bat Road		Out building (boat house)
3430100002	James City County	1350 John Tyler Highway	Chickahominy Riverfront Park	Out building
4320100015	Berno, William S.	1832 Cypress Isle	Governor's Land	Residential house
4320700001A	Governor's Land Associates	n/a	Governor's Land	Commercial structure at the marina
4930280007	Schumann, Keith	114 Archers Hope Drive	Kingspoint	Dock / boat house
4930300005	Knowles, Bruce Hill	6417 Conservancy	Vineyards at Jockey's Neck	Dock / boat house
5420100001	Association for the Preservation of VA	n/a	Jamestown Island	Dale House
5610100001	United States of America	n/a	Colonial Parkway	Glass House

* List does not include all water dependent structures.

ORDINANCE NO. _____

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 25, ZONING, OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE IV, OVERLAY DISTRICTS; DIVISION 3, FLOODPLAIN AREA REGULATIONS, SECTION 24-588, COMPLIANCE AND LIABILITY, SECTION 24-590, DESIGNATION OF FLOODPLAIN DISTRICTS, SECTION 24-591, OFFICIAL MAP, 24-592, PERMITS, SECTION 24-595, REGULATIONS FOR CONSTRUCTION, SECTION 24-596, REGULATION FOR SUBDIVISION AND SITE PLANS, SECTION 24-597, REGULATION FOR REPLACEMENT MANUFACTURED HOMES, SECTION 24-599, DESIGN CRITERIA FOR UTILITIES AND FACILITIES, SECTION 24-600, REGULATIONS FOR FILLING IN FLOOD FRINGE AND APPROXIMATED FLOODPLAIN DISTRICTS, SECTION 24-602, EXISTING STRUCTURES IN FLOODPLAIN DISTRICTS AND SECTION 24-603, VARIANCES; FACTORS TO BE CONSIDERED.

BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF JAMES CITY COUNTY, VIRGINIA, THAT CHAPTER 24 ZONING IS HEREBY AMENDED AND REORDAINED BY AMENDING ARTICLE IV, OVERLAY DISTRICTS; DIVISION 3, FLOODPLAIN AREA REGULATIONS, SECTION 24-588, COMPLIANCE AND LIABILITY, SECTION 24-590, DESIGNATION OF FLOODPLAIN DISTRICTS, SECTION 24-591, OFFICIAL MAP, 24-592, PERMITS, SECTION 24-595, REGULATIONS FOR CONSTRUCTION, SECTION 24-596, REGULATION FOR SUBDIVISION AND SITE PLANS, SECTION 24-597, REGULATION FOR REPLACEMENT MANUFACTURED HOMES, SECTION 24-599, DESIGN CRITERIA FOR UTILITIES AND FACILITIES, SECTION 24-600, REGULATIONS FOR FILLING IN FLOOD FRINGE AND APPROXIMATED FLOODPLAIN DISTRICTS, SECTION 24-602, EXISTING STRUCTURES IN FLOODPLAIN DISTRICTS AND SECTION 24-603, VARIANCES; FACTORS TO BE CONSIDERED. THIS ORDINANCE SHALL BE EFFECTIVE ON DECEMBER 16, 2015.

Chapter 24

ARTICLE VI. OVERLAY DISTRICTS

DIVISION 3. FLOODPLAIN AREA REGULATIONS

Sec. 24-586. Statement of intent.

(a) These regulations are intended to prevent the loss of life and 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 the impairment of the tax base by:

- (1) Regulating uses, activities and development which, alone or in combination with other existing or future uses, activities and development, may cause unacceptable increases in flood heights, velocities and frequencies;
- (2) Restricting or prohibiting certain uses, activities and development within districts subject to flooding;
- (3) Requiring uses, activities and developments that do occur in flood-prone districts to be protected and/or flood-proofed against flooding and flood damage; and

- (4) Protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards.

(b) These regulations comply with the requirements of the National Flood Insurance Program (42 USC 4001-4128) of the Federal Insurance Administration. These regulations are necessary in order for all property owners within the county to be eligible for the National Flood Insurance Program and thereby purchase such insurance at nominal rates.

Sec. 24-587. Applicability.

These regulations shall apply to all property located within an area designated as a floodplain area, and as such shall supplement the regulations of the zoning district within which such property is located. Where these regulations are at variance with other provisions of this chapter, it is intended that these regulations shall apply. These regulations shall only apply to property which is designated as being within a floodplain area.

Sec. 24-588. Compliance, *liability and severability*, and liability.

(a) No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged or structurally altered except in full compliance with the terms and provisions of these regulations and any other applicable ordinances and regulations; including, but not limited to: the Virginia Uniform Statewide Building Code (USBC), the Virginia Industrialized Building Safety Regulations (IBSR), and the Manufactured Home Safety Regulations (MHSR).

(b) The degree of flood protection sought by the provisions of these regulations is for reasonable regulatory purposes and is based on acceptable engineering methods of study. 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 regulations do not imply that districts outside the floodplain district or that land uses permitted within such district will be free from flooding or flood damage.

(c) Records of actions associated with administering these regulations shall be kept on file and maintained by the development manager or his designee.

(d) These regulations shall not create liability on the part of the county or any officer or employee thereof for any flood damages that result from reliance on these regulations or any administrative decision lawfully made thereunder.

(e) If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance shall be declared invalid for any reason whatever, such decision shall not affect the remaining portions of this ordinance. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this ordinance are hereby declared to be severable.

Sec. 24-589. Definitions.

The terms used in these regulations are defined in section 24-2 of this chapter except for the board of zoning appeals, which is defined in section 24-645.

Sec. 24-590. Designation of floodplain districts.

(a) The various floodplain districts shall include areas subject to inundation by waters of the *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~. The minimum basis for the delineation of these districts shall be, but not be limited to, the ~~December 16, 2015~~ ~~September 28, 2007~~, flood insurance study *and*

flood insurance rate maps prepared by the Federal Emergency Management Agency (FEMA), Federal Insurance Agency (FIA) *and subsequent revisions or amendments thereto*, since other flood-prone areas exist in James City County which are not shown on the floodplain maps. To determine these areas, the *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~ elevations and floodways from federal, state and local sources may be used when available. Where the specific *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~ elevation cannot be determined for an area by using available sources of data, then the applicant for the proposed use, development and/or activity shall determine this elevation to the satisfaction of the development manager or his designee in accordance with hydrologic and hydraulic engineering techniques. 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 consider full development of the watershed and shall be submitted in sufficient detail to allow a thorough review by the development manager or his designee.

Where flood elevations are provided by the FIA, these elevations shall not be changed except with FEMA approval. Local sources of flood-prone area data include, but are not limited to, the ~~following reports: Drainage Study of Upper Powhatan Creek Watersheds, Camp Dresser and McKee 1987; Mill Creek-Lake Powell Watershed Study, GKY and Associates, 1988 report, locally approved watershed management plans and comprehensive drainage studies.~~ ; ~~Powhatan Creek Floodplain Study, Williamsburg Environmental Group, 2008; Upper Powhatan Creek Floodplain Study, Williamsburg Environmental Group, 2010.~~

When base elevations have increased or decreased resulting from physical changes affecting flooding conditions, technical or scientific data shall be submitted to FEMA no later than six months after the date of such information becomes available. Such submission is necessary so that, upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirement will be based upon current data.

(b) The floodway district, minimally shown on the maps accompanying the flood insurance study, is established for purposes of these regulations using the criterion that certain areas within the floodplain must be kept free of encroachment in order that the *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~ be conveyed without increasing the water surface areas included in this district.

(c) The flood-fringe district shall be that area of the *one (1%) percent annual chance (100-year) flood* ~~100-year floodplain~~ not included in the floodway district. The basis for the outmost boundary of the district shall be the ~~100-year flood~~ *one (1%) percent annual chance (100-year)* elevations minimally shown as Zones AE *and AO* on the maps accompanying the flood insurance study.

(d) The approximated floodplain district shall be that floodplain area for which no detailed flood profiles or elevations are provided but where a *one (1%) percent annual chance (100-year) flood* ~~100-year floodplain~~ boundary has been approximated. Such areas are minimally shown as Zone A on the maps accompanying the flood insurance study.

(e) *Coastal A zones shall be those areas as defined by the Virginia Uniform Statewide Building Code that are subject to wave heights between 1.5 feet and 3 feet and identified on the FIRM as AE areas that are seaward of the Limit of Moderate Wave Action (LiMWA) line.*

(f) Coastal high-hazard areas district shall be those portions of land within the coastal floodplain subject to inundations by high velocity waters and wave action greater than 3 feet. Such areas are minimally shown as Zones V and VE.

Sec. 24-591. Official map.

The boundaries of floodway, flood-fringe and approximated floodplain districts in section 24-590(b), (c) and (d) above are established as minimum areas, as shown on the flood insurance rate map dated *December 16, 2015* ~~September 28, 2007~~, which is declared to be a part of these regulations and which shall be kept on file at the office of the ~~development manager~~ *county engineer*.

Sec. 24-592. Permits.

No specific permit shall be required by these regulations. An application for subdivision, site plan, rezoning, building permit, special use permit, ~~sedimentation and erosion control permit~~ *Virginia Erosion and Sediment Control Program / Virginia Stormwater Management Program permit*, wetlands permit or other local development permit shall be considered an application for development under these regulations. The applicant shall be informed of the provisions of this article as they may apply to the property and no permit shall be issued until the applicant has complied with such provisions.

Sec. 24-593. Permitted uses.

Permitted uses, special permit uses, accessory uses, dimensional standards and special requirements shall be as established by the underlying zoning district except as specifically modified herein.

Sec. 24-594. Prohibited uses.

(a) The following uses shall be specifically prohibited within all floodplain districts:

- (1) Sanitary landfills, junkyards, outdoor storage of inoperative vehicles.
- (2) Manufactured homes.
- (3) Surface mines and borrow pits.
- (4) Manufacture, bulk storage, transformation or distribution of petroleum, chemical or asphalt products or any hazardous materials as defined in either or both of the following:
 - a. Superfund Amendment and Reauthorization Act of 1986.
 - b. Identification and Listing of Hazardous Wastes, 40 CFR section 261 (1987).

The following products shall be specifically included:

- i. Oil and oil products including petrochemicals.
- ii. Radioactive materials.
- iii. Any material transported or stored in large commercial quantities (such as 55-gallon drums) which is a very soluble acid or base, causes abnormal growth of an organ or organism, or is highly biodegradable, exerting a strong oxygen demand.
- iv. Biologically accumulative poisons.

- v. Substances containing the active ingredients of poisons that are or were ever registered in accordance with the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 USC 135 et seq.).
 - vi. Substances highly lethal to mammalian or aquatic life.
- (5) Storage or land application of industrial wastes.
- (6) Outdoor storage of equipment, materials or supplies which are buoyant, flammable or explosive.
- (b) Nonconforming uses of this chapter notwithstanding, no expansion of any of the above uses located within the floodplain district shall be permitted.

Sec. 24-595. Regulations for construction.

(a) The construction or placement of any structure or obstruction, filling or changing the cross-section or flow characteristics within the ~~one (1%) percent annual chance (100-year) flood~~ 100-year floodplain shall not be permitted unless the project is in conformance with the following requirements:

(1) *All construction shall use methods that minimize flood damage and which are in accordance with the Virginia Uniform Statewide Building Code. Structures shall be constructed with materials and equipment resistant to flood damage and shall be anchored to prevent floatation, collapse, or lateral movement.*

(2) ~~(1)~~ In case of residential usage, the finished elevation of the lowest floor, including the basement or cellar of the building, shall be *have* at least two feet *freeboard* above the ~~one (1%) percent annual chance (100-year) flood~~ 100-year flood elevation. For nonresidential structures, watertight floodproofing in accordance with the Virginia Uniform Statewide Building Code may be provided in lieu of the finished grade requirement described herein. ~~Prior to issuance of a certificate of occupancy, the owner of any structure located in a floodplain district shall submit a completed elevation certificate or floodproofing certificate as appropriate to the director of building safety and permits.~~

(3) ~~(2)~~ Utility and sanitary facilities, including but not limited to mechanical, plumbing and electrical systems and gas lines, shall be floodproofed up to the level of two feet *freeboard* above the ~~one (1%) percent annual chance (100-year)~~ 100-year base flood elevation.

(4) ~~(3)~~ Encroachments, including fill, new construction, substantial improvements and other development are prohibited within the floodway or any floodplain district having a ~~100-year elevation greater than 7-1/2 feet (North American Vertical Datum—NAVD, 1988)~~ unless it has ~~been demonstrated through hydrologic and hydraulic analyses that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge.~~ Hydrologic and hydraulic analyses shall be undertaken by a professional engineer and shall be submitted in sufficient detail to allow a thorough review by the development manager or his designee. *Hydrologic and hydraulic analyses shall not be required for properties affected only by coastal (tidal) flooding.*

(5) *All new construction and substantial improved structures in zone AO shall meet the following requirements:*

(a) *The lowest floor, including basement, shall be at or above the highest adjacent grade and two feet above the FIRM's depth number.*

(b) *Nonresidential structures may use watertight floodproofing in accordance with the Virginia Uniform Statewide Building Code in lieu of the finished grade requirement described herein.*

(c) *Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.*

(6) *All new construction and substantial improvements in zones V, VE and Coastal A shall meet the following requirements:*

(a) *Elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at least two feet above the base flood level. The pile of column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to effects of wind and water loads acting simultaneously on all building components. A registered design professional engineer or architect shall develop and seal the structural design, specifications and plans for the construction, and shall certify the design and methods of construction.*

(b) *New construction shall be landward of reach of mean high tide.*

(c) *Fill for structural support and alterations of sand dunes are prohibited.*

(7) *Prior to issuance of a certificate of occupancy, the owner of any structure located in a floodplain district shall submit a completed elevation certificate or floodproofing certificate as appropriate to the director of building safety and permits.*

(8)(4) *All other federal and state permits shall be obtained by the applicant before a building permit can be issued.*

(b) *It shall be the responsibility of the applicant to provide this data, certified by a licensed surveyor or engineer or other source acceptable to the director of building safety and permits.*

Sec. 24-596. Regulations for subdivisions and site plans.

The applicant of any subdivision of land or site plan within the county shall submit with his application a statement by a licensed surveyor or engineer as to whether or not any property shown on the plat or plan is at an elevation lower than the *one(1%) percent annual chance (100-year) flood 100-year flood* level. Where a *one(1%) percent annual chance (100-year) flood 100-year flood* level exists, the extent of this area shall be shown on the plat or plan. Further, the elevation of the finished surface of the ground at each building location shall be shown. Lots created after February 6, 1991, which are within a floodplain district *having a 100-year flood elevation greater than 7½ feet*, shall contain a natural, unfilled building site at least one foot above the *one(1%) percent annual chance (100-year) flood 100-year flood* elevation adequate to accommodate all proposed buildings. All buildings shall be constructed solely within such building site and outside of the *one(1%) percent annual chance (100-year) flood 100-year flood* plain.

Sec. 24-597. Regulations for replacement manufactured homes.

(a) Replacement manufactured homes shall be elevated on a permanent foundation so that the lowest floor ~~is~~ has two feet *freeboard* above the level of the *one(1%) percent annual chance (100-year) flood* ~~100-year flood~~ elevation.

(b) In floodplain areas, replacement manufactured homes shall be anchored to resist flotation, collapse or lateral movement by providing over-the-top and frame ties to ground anchors in either of the following arrangements:

- (1) Over-the-top ties at each corner plus one frame tie at the middle of each side; or
 - (2) Frame ties at each corner plus no less than five evenly spaced additional frame ties per side.
- (c) All ties to the ground shall be able to carry a force of 4,800 pounds.

Sec. 24-598. Recreational vehicles.

Recreational vehicles placed on sites must either be on the site for fewer than 180 consecutive days and be fully licensed and ready for highway use or meet requirements for placement, elevation and anchoring requirements for manufactured homes.

Sec. 24-599. Design criteria for utilities and facilities.

(a) *Sanitary sewer facilities.* All new or replacement sanitary sewer facilities shall be designed to eliminate infiltration of floodwaters into the systems up to the *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~ level and discharges from the systems into the floodwaters *in accordance with the Commonwealth of Virginia, Department of Health, Sewage Collection and Treatment Regulations.* In addition, they should be located and constructed to eliminate flood damage and impairment.

(b) *Water facilities.* All new or replacement water facilities shall be designed to eliminate infiltration of floodwaters into the systems and shall be located and constructed to minimize or eliminate flood damages.

(c) *Drainage facilities.* All storm drainage facilities shall be designed to convey the flow of surface waters without damage to persons or property. The systems shall ensure drainage away from buildings and on site waste disposal sites.

(d) *Septic tanks.* New or replacement septic tank drain fields shall be placed where they shall not be impaired or contaminated by a base flood. The Virginia Department of Health shall be consulted to verify compliance with this requirement.

(e) *Utilities.* All utilities, such as gas lines, electrical and telephone systems, being placed in floodprone areas should be located and constructed to eliminate the chance of impairment during a ~~100-year~~ flooding occurrence.

(f) *Streets and sidewalks.* Streets and sidewalks should be designed to minimize their potential for increasing and aggravating the levels of flood flow. Drainage openings shall be required to sufficiently discharge flood flows without unduly increasing flood heights.

Sec. 24-600. Regulations for filling in flood fringe and approximated floodplain districts.

No permit shall be issued or approved until the site development plan for such fill meets the following requirements:

- (1) The filling of land shall be designed and constructed to minimize obstruction to and effect upon the flow of water and more particularly that:
 - a. Such fill will not result in any increase in flood levels during the occurrence of a *one (1%) percent annual chance (100-year) flood* ~~100-year flood~~ discharge.
 - b. The flood-carrying capacity of the watercourse shall be maintained.
- (2) Fill shall be effectively protected against erosion by vegetative cover, riprap, gabions, bulkhead or other acceptable method. Any structure, equipment or material permitted shall be firmly anchored to prevent dislocation due to flooding;
- (3) Fill shall be of a material that will not pollute surface water or groundwater;
- (4) Where, in the opinion of the ~~development manager or his designee~~ *county engineer*, additional topographic, engineering and other data or studies are necessary to determine the effects of flooding on a proposed structure or fill and/or the effect of such structure or fill on the flow of water in flood stage, the applicant shall submit such data or studies.

Sec. 24-601. Watercourse modification.

The Federal Insurance Administrator, adjacent jurisdictions and the Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management shall be notified *and all Federal and State permits shall be obtained* prior to the alteration or relocation of any watercourse. The flood-carrying capacity to such watercourse shall be maintained.

Sec. 24-602. Existing structures in floodplain districts.

A structure or use of a structure or premises which lawfully existed before the enactment of these regulations, but which is not in conformity with these regulations, may be continued subject to the following conditions:

- (1) Existing structures in the floodway district shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed expansion would not result in any increase in the *1% annual chance (100-year)* ~~100-year~~ flood elevation;
- (2) Any modification, alteration, repair, reconstruction or improvement of any kind to a structure and/or use located in any floodplain area to an extent or amount of less than 50 percent of its market value shall be elevated *to conform to the Virginia Uniform Statewide Building Code* ~~to or above the base flood elevation~~; and,
- (3) The substantial improvement of any kind to a structure and/or use, regardless of its locations in a floodplain area, to an extent or amount of 50 percent or more of its market value shall be undertaken only in full compliance with the provisions of these regulations and the Virginia Uniform Statewide

Building Code and shall require that the entire structure be brought into full compliance with these provisions.

Sec. 24-603. Variances; factors to be considered.

(a) *Factors in passing upon applications for variance.* In passing upon applications for variances, the board of zoning appeals shall satisfy all relevant factors and procedures specified in other sections of the zoning ordinance and consider the following additional factors:

- (1) The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development or activity within any floodway district that will cause any increase in the 1% annual chance (100-year) flood ~~100-year flood~~ elevation.
 - (2) The danger that materials may be swept onto other lands or downstream to the injury of others.
 - (3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.
 - (4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
 - (5) The importance of the services provided by the proposed facility to the community.
 - (6) The requirements of the facility for a waterfront location.
 - (7) The availability of alternative locations not subject to flooding for the proposed use.
 - (8) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
 - (9) The relationship of the proposed use to the Comprehensive Plan and floodplain management program for the area.
 - (10) The safety of access by ordinary and emergency vehicles to the property in time of flood.
 - (11) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters expected at the site.
 - (12) The repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
 - (13) Such other factors which are relevant to the purposes of this ordinance.
- (b) *Referral to qualified persons or agencies for technical assistance.* The board of zoning appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities and the adequacy of the plans for flood protection and other related matters.

(c) *Factors considered in variance application review.* In reviewing all variance applications, the board of zoning appeals shall consider the following factors:

- (1) Increases in flood heights;
- (2) Additional threats to public safety;
- (3) Extraordinary public expense;
- (4) Creation of nuisances;
- (5) Fraud or victimization of the public; and
- (6) Conflicts with local laws or ordinances.

(d) *Issuance.* Variances shall be issued only after the board of zoning appeals has determined that variance will be the minimum required to provide relief from any hardship to the applicant.

(e) *Notification of increased risk.* The board of zoning appeals shall notify the applicant for a variance, in writing, that the issuance of a variance to construct a structure below the 1% annual chance (100-year) flood ~~100-year flood~~ elevation increases the risks to life and property and will result in increased premium rates for flood insurance.

(f) *Records of variance actions.* A record shall be maintained of the above notification as well as all variance actions, including justification for the issuance of the variances. Any variances which are issued shall be noted in the annual or biennial report submitted to the Federal Insurance Administrator.

Secs. 24-604 - 24-613. Reserved.

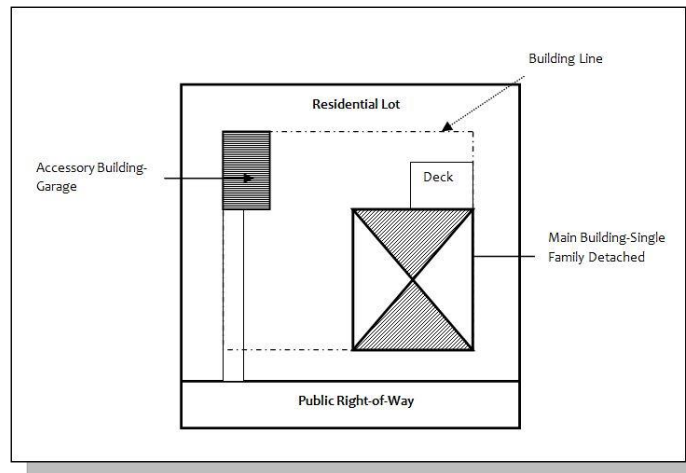
ORDINANCE NO. _____

AN ORDINANCE TO AMEND AND REORDAIN CHAPTER 25, ZONING, OF THE CODE OF THE COUNTY OF JAMES CITY, VIRGINIA, BY AMENDING ARTICLE I, IN GENERAL, SECTION 24-2 DEFINITIONS.

BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF JAMES CITY COUNTY, VIRGINIA, THAT CHAPTER 24 ZONING IS HEREBY AMENDED AND REORDAINED BY AMENDING ARTICLE I, IN GENERAL, SECTION 24-2 DEFINITIONS.

Sec. 24-2. Definitions.

Accessory building or structure. A subordinate building or structure customarily incidental to and located upon the same lot occupied by the main use or building. With the exception of detached accessory apartments, as may be approved by a special use permit, no such accessory building or structure shall be used for housekeeping purposes. Garages or other accessory structures such as carports, porches, decks and stoops attached to the main building shall be considered part of the main building. Accessory buildings and structures located ten feet or less from a main structure shall be considered part of the main structure for the purpose of determining side and rear yards. (Refer to the definition of “structure.”)



Base flood/100-year flood. The flood having a one (1%) percent chance of being equaled or exceeded in any given year. A flood that, on the average, is likely to occur once every 100 years (i.e., that has a one percent chance of occurring each year although the flood may occur in any year).

Base flood elevation. The Federal Emergency Management Agency (FEMA) designated one (1%) percent annual chance (100-year) 100-year water surface elevation.

Basement. A story having part but not more than one-half of its height below grade. A basement shall be counted as a story for the purpose of height regulations if it is used for business purposes or for dwelling purposes by other than a janitor employed on the premises. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean any area of the building having its floor subgrade (below ground level) on all sides.

Developable area. The total land area of the site minus resource protection area as defined in the Chesapeake Bay Preservation Ordinance, areas subject to flooding under the **one (1%) percent annual chance (100-year) 100-year** storm event (FEMA zones **A, AE, AO, V and VE A and AE**), and areas of 1,000 square feet or greater containing steep slopes. (Refer to definition of “non-developable area” and “steep slopes.”)

Development. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, the placement of manufactured homes, streets and other paving, utilities, filling, grading, excavation, mining, dredging, drilling operations, storage of equipment or materials.

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 (post and piers).

Encroachment. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean 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 of capacity of a floodplain.

Existing Structure. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean structures for which the start of construction commenced before the effective date of the FIRM on or before February 6, 1991.

Flood or flooding. The terms include:

- (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; or
 - (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 normal 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 a 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.

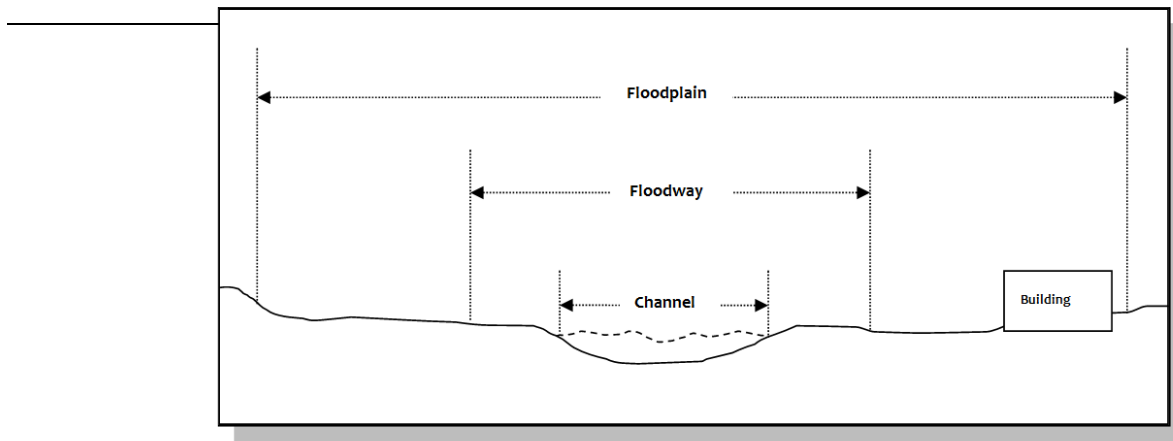
Flood Insurance Rate Map (FIRM). An official map of a community, on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

Flood Insurance Study (FIS). A report by the Federal Emergency Management Agency 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.

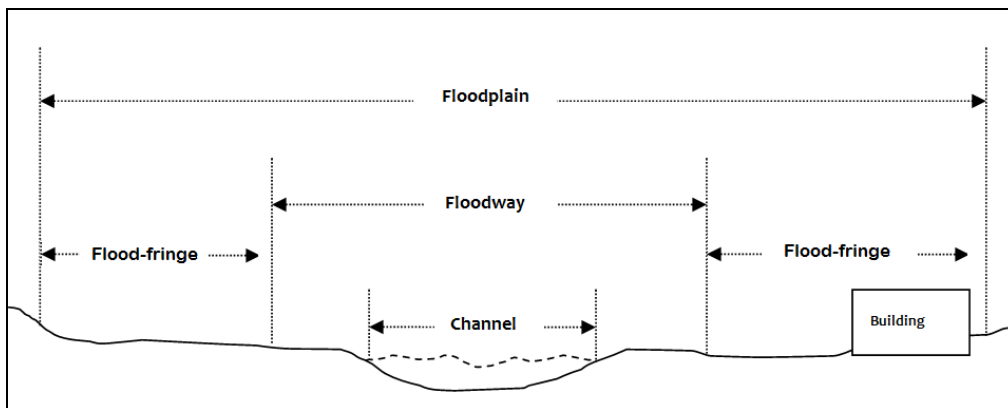
Floodplain or flood-prone area. Any land area susceptible to being inundated by water from any source.

Flood proofing. 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.

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.



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.



Freeboard. A factor of safety usually expressed in feet above a flood level for purposes of floodplain management also known as the design base flood elevation for building code purposes.

Highest adjacent grade. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall also mean 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 preliminary 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 by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states with approved programs.

Hydrologic and Hydraulic Analysis. Analyses performed by a licensed professional engineer in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries and flood profiles.

Letters of Map Changes (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 established 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 the 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 complies with the minimum National Flood Insurance Program 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.

Lowest floor. The lowest floor of the lowest enclosed area including the 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 to render the structure in violation of the applicable non-elevation design requirement of Federal Code 44CFR Section 60.3.

Manufactured home. A manufactured home is a structure subject to federal regulation which is transportable in one or more sections; is eight body feet or more in width and 40 body feet or more in length in the traveling mode, or is 320 or more square feet when erected on site; is built on a permanent chassis; is designed to be

used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities; and includes the plumbing, heating, air conditioning and electrical systems contained in the structure.

Manufactured home park. A lot or parcel, not part of a manufactured home subdivision, on which are located or which are arranged or equipped for the accommodation of three or more manufactured homes occupied as single-family dwellings.

New construction. For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after July 18, 1975, the effective date of an initial Flood Insurance Rate Map, and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which start of construction commenced on or after August 8, 1977, the effective date of these floodplain management regulations, and includes any subsequent improvements to such structures.

Non-developable area. Non-developable areas consist of all resource protection area as defined in the Chesapeake Bay Preservation Ordinance, areas subject to flooding under the ~~100-year~~ *one (1%) percent annual chance (100-year)* storm event (FEMA zones ~~A and AE~~ *A, AE, AO, V, VE and Coastal A*), and areas of 1,000 square feet or greater containing steep slopes. (Refer to definition of “steep slopes.”)

Post-FIRM structures. *A structure for which construction or substantial improvement occurred after February 6, 1991.*

Pre-FIRM structures. *A structure for which construction or substantial improvement occurred on or before February 6, 1991.*

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.

Repetitive Loss Structure. *A building covered by a contract for flood insurance that has incurred flood-related damages on two occasions during a 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25 percent of the market value of the building at the time of each flood event.*

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 a path of flooding is unpredictable and indeterminate and where velocity flows may be evident. Such Flooding is characterized by ponding or sheet flow.*

Special flood hazard area. *The land in the floodplain subject to one (1%) percent or greater chance of being flood in any given year. The area may be designated as Zone A, AE, AO, Coastal A, V or VE on the official Flood Insurance Rate Map (FIRM) for James City County and defined as follows:*

“A” zones are areas subject to inundation by the one (1%) percent annual chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no base flood elevations or flood depths are shown.

“AE” zones are areas subject to inundation by the one (1%) percent annual chance flood event determined by detailed methods. Base flood elevations are shown.

“AO” zones are areas subject to inundation by one (1%) percent annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet.

Coastal A zones are areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet and identified on the FIRM as AE areas that are seaward of the Limit of Moderate Wave Action (LiMWA) line.

“V” zones are areas along coasts subject to inundation by the one (1%) percent annual chance flood event with additional hazards associated with storm-induced waves. Because detailed hydraulic analyses have not been performed, no base flood elevations or flood depths are shown.

“VE” zones are areas subject to inundation by the one (1%) percent annual chance flood event with additional hazards due to storm-induced velocity wave action three feet or greater. Base flood elevations derived from detailed hydraulic analyses are shown

Start of construction. The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is 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, or filling; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration on any wall, ceiling, floor, or other structural part of a building, whether or not the alteration affects the external dimensions of the building.

Structure. Anything constructed or erected, the use of which required permanent location on the ground or attachment to something having a permanent location on the ground. The term structure shall not refer to fences, walls used as fences, mailboxes, retention walls, street signs, utility pedestals, docks or other features which are constructed or erected as determined by the zoning administrator. *Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall also mean a walled and roofed building, including a gas or liquid storage tank that is principally above ground as well as a manufactured home.*

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

Substantial improvement. Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage regardless of the actual repair work performed. The term does not, however, include 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 the local code enforcement 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 ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement 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 Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.*

Violation. Solely for the purposes of Article VI, Overlay District, Division 3, Floodplain Area Regulations, this term shall mean the failure of a structure or other development to be fully compliant with the community's floodplain area regulations. A structure or other development without the elevation certificate, other certification, or other evidence of compliance required is presumed to be in violation until such time as the document is provided.

Virginia Erosion and Sediment Control Program or VESCP. A program approved by the State Water Control Board that has been established by a VESCP authority for the effective control of soil erosion, sediment deposition, and nonagricultural runoff associated with a land-disturbing activity to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources and shall include such items where applicable such as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan of development review, inspection, enforcement where authorized in the Virginia Erosion and Sediment Control Law and its attendant regulations and Chapter 8 of the County Code, and evaluation consistent with the requirements of the Virginia Erosion and Sediment Control Law and its attendant regulations and Chapter 8 of the County Code.

Virginia Stormwater Management Program or VSMP. A program approved by the State Water Control Board after September 13, 2011 that has been established by a VSMP authority to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan of development review, inspection, enforcement, where authorized in the Virginia Stormwater Management Act or associated regulations or Chapter 8 of the County Code, and evaluation consistent with the requirements of the Virginia Stormwater Management Act and associated regulations and Chapter 8 of the County Code.

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.

MEMORANDUM

DATE: July 16, 2015

TO: The Policy Committee

FROM: Christy H. Parrish, Deputy Zoning Administrator

SUBJECT: Updated Federal Emergency Management Agency Flood Insurance Rate Maps and Zoning Ordinance Update

FEMA Map Updates

In the fall of 2009, FEMA initiated a coastal analysis and mapping study for communities along the mid-Atlantic coast. This study included the entire Chesapeake Bay and its tributary rivers and streams to better estimate coastal flood hazards and more accurately define the limits of tidal flooding based on improved technology available. Detailed information regarding this study can be found at www.R3Coastal.com.

As part of this effort, FEMA recently released updates to the coastal flood maps, known as Flood Insurance Rate Maps (FIRMs), for James City County. Changes include the addition of and /or modifications to Base Flood Elevations, base flood depths, Special Flood Hazard Areas (SFHAs), zone designations, and the regulatory floodway. SFHAs are the areas subject to inundation by the flood having a one-percent (1%) chance of being equaled or exceeded in any given year (base flood). These updates were preliminarily issued to James City County and incorporated areas on March 28, 2014. The FIRMs indicate flood-prone coastal areas in James City County and include changes to the Powhatan Creek Floodplain, which became effective on March 6, 2014. Insurance companies use FIRMs to determine flood insurance rates for buildings and contents. The new FIRMs and study can be found at <https://www.rampp-team.com/va.htm>. Staff identified 550 parcels that were added to the SFHA and 160 parcels which were removed.

Staff mailed over 2,500 letters regarding the proposed map changes and along with FEMA representatives, held a public Coastal Flood Risk Open House on August 13, 2014, at Legacy Hall. FEMA published a public notice of the proposed flood hazard determinations in the Federal Register in September 2014 and in the Virginia Gazette in October 2014. This notice advertised a 90-day appeal period allowing individuals to appeal the proposed flood hazard determinations if that person believed his or her property rights would be adversely affected. Information regarding this 90-day appeal period was also placed on the County's website. FEMA did not receive any appeals of the proposed flood hazard determinations.

Now that the 90-day appeal period is over, staff received a Letter of Final Determination from FEMA dated June 16, 2015. This letter states that the changes to the maps are final and will become effective as of December 16, 2015. In addition, James City County is required, as a condition of continued eligibility in the National Flood Insurance Program (NFIP), to adopt or show evidence of adoption of floodplain management regulations that meet the standards of the NFIP regulations prior to December 16, 2015.

National Flood Insurance Program

Congress established the NFIP due to escalating costs to taxpayers for flood disaster relief. If a community participates in sound floodplain management, the Federal Government will make flood insurance available to residents in that community. This includes adopting a local floodplain ordinance that meets NFIP criteria. Development may still take place within the SFHAs shown on the FIRMs, provided that it complies with this ordinance.

Zoning Ordinance Update

FEMA and the Virginia Department of Conservation and Recreation (DCR) provide localities with a “Guidance for Local Floodplain Ordinances in VA” document and checklist to ensure compliance with the NFIP. This document also encourages higher standards above the NFIP minimum standards to better protect people and properties from the local flood hazard.

James City County participates in the FEMA Community Rating System (“CRS”) which recognizes and rewards communities that carry out floodplain management activities beyond the minimum criteria of the NFIP by reducing flood insurance rates in the community. The County’s participation in the CRS has resulted in a 15 percent discount in flood insurance premiums by citizens. This discount is automatically applied to policy rates issued for properties in the County.

As the James City County Floodplain ordinance was last reviewed and updated in 2011, staff is not recommending large wholesale changes. The majority of changes include additional definitions, terminology, severability clause and revised effective date of the new maps and study.

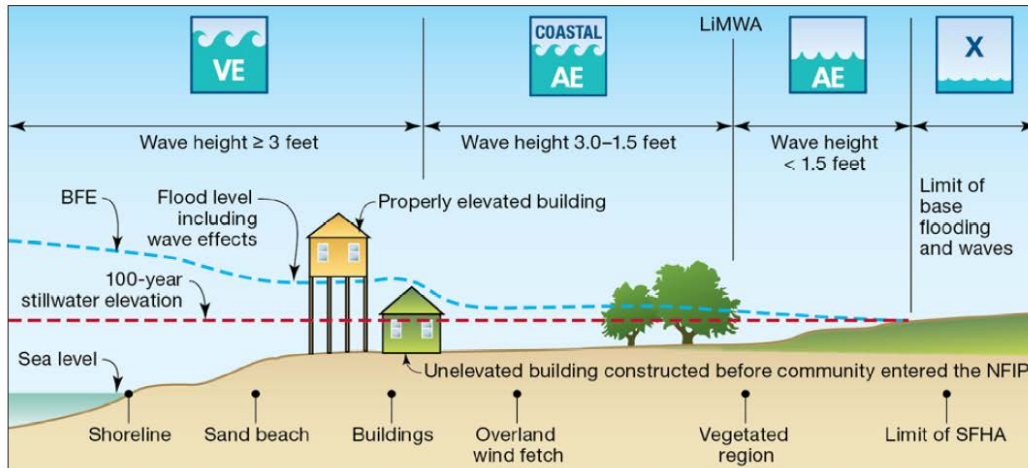
However, James City County is also required to include two new floodplain designations that are reflected on the new maps:

1. “AO” zones are areas subject to inundation by one percent (1%) annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. There is only one area shown on the new maps with this designation. This area is near the Jamestown Ferry on property owned by the Commonwealth of Virginia. New construction and substantial improvements in this zone would have the same freeboard requirements. The current James City County floodplain ordinance requires the structure’s finished floor be elevated two feet above the base flood elevation indicated on the FIRMs.
2. “V” zones are areas subject to inundation by the one percent (1%) annual chance flood event with additional hazards due to storm-induced velocity wave action of three feet or greater. Base flood elevations derived from detailed hydraulic analyses are shown. These areas are along the shorelines of the York River and James River. New construction and substantial improvements in these zones will be required to be elevated two feet above the base flood elevation on pilings or columns which could include a breakaway foundation for aesthetic purposes. Staff has identified 213 parcels, including four (4) residential dwellings that have portions of this designation.

The current James City County Floodplain Ordinance requires the finished first floor be elevated two feet above the base flood elevation indicated on the FIRMs.

In addition to the above required changes, FEMA had added a Limit of Moderate Wave Action (LiMWA) line to the FIRMs that primarily follow the shoreline. The LiMWA line is for informational purposes and indicates the potential for moderate waves that may cause damage to structures.

Please reference the below illustration for details:



The area in front of the LiMWA line is also referred to as the “Coastal AE” zone. The “Coastal AE” zone is defined as areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet and identified on the FIRM as AE areas that are seaward of the LiMWA line.

While this line will not impact flood insurance rates, FEMA along with DCR recommends localities adopt the “Coastal AE” zone as a higher standard in its ordinance to help reduce risk of structural damage from moderate wave action. If adopted, construction standards in the “Coastal AE” zones would be the same as the “VE” zones (elevated two feet above the base flood elevation on pilings or columns which could include breakaway foundation for aesthetic purposes) for new construction and substantial improvements. Staff has included the “Coastal AE” in the proposed changes for consideration. Staff has identified 284 parcels, including (4) residential dwellings and three (3) non-residential structures other than sheds and water-dependent structures that have portions of this “Coastal AE” designation.

York County, Gloucester County and the City of Norfolk have adopted the “Coastal AE” zone as a higher standard in their floodplain ordinances. Please see the below table for details:

Locality	Freeboard Requirement* in SFHA	Higher Standards in "Coastal A"
James City County (current)	2 Feet	n/a
James City County (proposed)	2 Feet	To be determined
York County	3 feet	1 foot of additional freeboard
Gloucester	2 Feet	"V" zone construction standards
Poquoson	3 feet	No
Norfolk	3 feet	"V" zone construction standards
Lancaster County	1.5 Feet	No
Portsmouth	3 feet	"V" zone construction standards
Mathews	base flood elevation	No

*Freeboard requirement is a factor of safety usually expressed in feet above a flood level also known as the design base flood elevation for building code purposes.

Adopting the “Coastal AE” zone as part of the zoning ordinance will be beneficial to our CRS rating and could provide additional savings to insurance as well as protect new and substantially improved structures from wave impacts.

Below are some options for the Policy Committee to consider:

1. All new construction and substantial improvements in zones V, VE and Coastal A shall meet the following requirements
 - (a) Elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at least two feet above the base flood level. The pile of column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to effects of wind and water loads acting simultaneously on all building components. A registered design professional engineer or architect shall develop and seal the structural design, specifications and plans for the construction, and shall certify the design and methods of construction.
 - (b) New construction shall be landward of reach of mean high tide.
 - (c) Fill for structural support and alterations of sand dunes are prohibited
2. Coastal Floodplain zones identified as “Coastal AE” zone on the FIRM that is subject to wave heights between 1.5 feet and 3 feet, and which is identified on the FIRM as being within the LiMWA, buildings and or structures shall have the lowest floor elevated to provide at least one (1) additional foot of freeboard (i.e. 3 feet).
3. Provide the two options above in the ordinance as alternatives to provide flexibility to the property owner.
4. Do not recommend adopting higher standards for the “Coastal AE” zone.

Staff has enclosed a sample ordinance with option one for discussion purposes only.

Additional information is available at www.jamescitycountyva.gov/floodplains and more information, including links to the interactive mapping website, can be found at: <http://maps.riskmap3.com/VA/JamesCityCo/>.

Attachments:

- Copy of Initiating Resolution
- FEMA Letter of Final Determination dated June 16, 2015
- Flood Hazard Mapping Fact Sheet
- Guidance for Local Floodplain Ordinances in VA
- Map - 2014 FEMA Flood Zones
- Map - 2007 FEMA Flood Zones
- Map - 2014 FEMA “V” Zones
- Map – 2014 FEMA “Coastal A” Zones
- Parcel List – SFHA additions and removals

Updated FEMA Flood Insurance Rate Maps and Zoning Ordinance Update

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- Parcel List - “V” Zones
- Parcel List - Existing Structures located in “V” Zones
- Parcel List – “Coastal A” Zones
- Parcel List - Existing Structures located in “Coastal A” Zones Parcel List
- Article VI, Overlay Districts, Division 3 Floodplain Area Regulations revisions
- Section 24-2 Definitions revisions

POLICY COMMITTEE MEETING

April 16, 2015

4:00 p.m.

County Government Center, Building A

1.) Roll Call

Present

Mr. John Wright
Mr. Tim O'Connor

Staff Present

Mr. Paul Holt
Mr. Chris Johnson
Mr. Jason Purse
Ms. Tammy Rosario
Mr. Maxwell Hlavin
Mr. Alex Baruch

Others Present

Absent

Mr. Krapf
Mr. Richardson

Mr. John Wright called the meeting to order at 4:00 p.m.

2.) Minutes

a. March 4, 2015

Ms. Tim O'Connor moved to approve the March 4, 2015 minutes.

In a unanimous voice vote, the minutes were approved as submitted (2-0).

3.) Old Business

There was no old business to discuss.

4.) New Business

a. ZO-0004-2015, A-1, General Agricultural, and Definition Amendments to Incorporate State Code Changes

Mr. Jason Purse stated that there were a number of State Code changes made in the legislative sessions in 2014 and 2015. Mr. Purse stated that the County is taking care of all of the changes in one group including the ones in 2015 that are going to be enacted in July. Mr. Purse gave an overview of the changes being made to the ordinance. Mr. Purse stated that housekeeping changes were made to the aquaculture/fish farming and wayside stands sections. Mr. Purse stated that limited farm brewery and limited farm distillery are the main additions to the ordinance. Mr. Purse stated that this adds a production component to the on-site farming, meaning that if you have an active farm and are growing the materials that you can use to make beer or distill a product as a permitted use. Mr. Purse stated that the ordinance limits it to only allowing a tasting room associated with the limited brewery. Restaurants or tap rooms would still require a special use permit. Mr. Purse stated that staff also proposed adding small scale

alcohol production as a special use permit, which would allow a brewery type use where material was not grown onsite.

Mr. Wright inquired whether the required permits were still required for serving alcohol in these situations.

Mr. Purse stated that it would still be required.

Mr. Wright asked if the group home provision would be allowed in New Town.

Mr. Purse stated that it would be allowed in New Town per the State Code. Mr. Purse stated that the State Code says that the County cannot prevent this type of group home. Mr. Purse stated that there were some examples of group homes in Kingsmill, for example.

Mr. O'Connor stated that an HOA is violating state law if they have it written into their by-laws that this type of group home is not permitted. Mr. O'Connor asked if it was eight unrelated people plus caretakers.

Mr. Paul Holt stated that it is eight people plus a resident caretaker.

Mr. Purse read the State Code.

Mr. Purse stated that you have to be licensed for a very specific type of group home and not all group homes qualify for this.

Mr. Holt stated that HOAs are allowed to limit other types of group homes but not this one.

Mr. O'Connor stated that it is defined in the State Code and is an exception. Mr. O'Connor asked if the language needed to be defined specifically as eight or fewer adults plus caretakers.

Mr. Purse stated that staff did not want to get too wordy in the use list but the definition in the ordinance clarifies the specifics.

Mr. O'Connor stated that he would like to avoid any confusion by making it as clear as possible.

Mr. Purse stated that staff had not run into any problems given the definition.

Mr. Maxwell Hlavin stated that the State Code definition would trump the ordinance if it came to any questions.

Mr. O'Connor asked about fish farming and aquaculture and if harvesting is considered a part of the farming activity.

Mr. Purse stated that if a farmer were to harvest the fish it would be a part of the farming activity, bringing it to shore would be part of the farming activity, but you cannot process it or package it.

Mr. Holt stated that a farmer could harvest the fish and take it to the front of their property and sell it as a whole fish through a wayside stand but they could not can, package or process the fish.

Mr. O'Connor stated that there would not be a problem with having a truck come and pick up the fish to haul them away.

Mr. Holt stated that was correct.

In a unanimous voice vote, the draft Ordinance was forwarded to Planning Commission for consideration (2-0).

- b. ZO-0002-2015, Article V, Division 10, General Business, B-1 and Division 11, Limited Business/Industrial, M-1

Mr. Purse gave an overview of the changes being made to the ordinance. Mr. Purse stated that microbreweries were taken out of the ordinance and replaced with the small scale alcohol production as a permitted use to remain consistent.

In a unanimous voice vote, the draft Ordinance was forwarded to Planning Commission for consideration (2-0).

- c. ZO-0003-2015, Article I, In General –Administrative fees, Amendment and variations of conditions and Submittal requirements

Mr. Chris Johnson gave an overview of the changes proposed to the ordinance. Mr. Johnson stated that due to changes in the State Code and the way the County processes legislative applications, in 2009 the State Code was amended to allow proffers amendments that do not affect conditions of use or density to bypass the public hearing process otherwise required by County Code prior to consideration for adoption by the Board of Supervisors. Mr. Johnson stated that staff has processed proffer amendment requests that do not affect use or density by relying on County Administration and the County Attorney to informally poll the Board of Supervisors prior to processing the request as a rezoning application. Mr. Johnson stated that in order to provide a measure of clarity to the process for future requests, staff is proposing amendments to the County Code to add an administrative fee and outlining the submittal requirements and administrative procedures for the processing of written proffer amendment requests that do not require a public hearing as determined by the Board of Supervisors.

Mr. Johnson stated that the other change proposed in this amendment is to the submittal requirements portion of the ordinance. Mr. Johnson stated that since December 2014, all document materials included in the Board of Supervisors agenda have been required to be submitted in an electronic format. Mr. Johnson stated in order to provide clarity to the process for the public, development community and applicants, staff is proposing this amendment to clarify formatting expectations for all materials which are intended to be included on a Planning Commission or Board of Supervisors meeting agenda. Mr. Johnson stated that staff recommends the Policy Committee recommend approval of the draft amendment to the Zoning Ordinance to the Planning Commission.

Mr. Holt stated that the most recent example of a proffer amendment that did not require a public hearing would have been the Gatehouse Farms case.

Mr. Johnson stated that the Gatehouse Farms case was to eliminate proffer conditions that no longer applied to the property because there was going to be no recreation facility on that property. Mr. Johnson stated before the Gatehouse Farms case the Stonehouse case was the other application processed in this manner. Mr. Johnson stated that the Toano Trace proffer amendment case came in under a similar request but was determined by the Attorney's Office to affect the condition of use of the property and therefore had to be processed a public hearing case.

Mr. Johnson stated that with this amendment staff would be able to point to a place in the ordinance that describes the process and lays out the guidelines and two directions the Board of Supervisors could take and would point to a fee structure if the case dictates that a public hearing is required.

Mr. Wright stated that this would also be beneficial to the Planning Commission.

Mr. Johnson stated that anything that clarifies a process would be beneficial to the public and everyone else involved in handling such a request in the future.

Mr. Wright asked if the amendment would decrease the Planning Division's workload.

Mr. Johnson stated that it would not decrease staff's workload but would clarify expectations and eliminate undocumented requirements and procedures.

Mr. Holt stated that there is a process in State Code that says this process can be done; however, the County Code does not describe the process.

Mr. Wright asked if for the submittal requirements, would a standard software be used.

Mr. Holt stated that it would be in PDF format. Mr. Holt stated that all of the different software products export to PDF. Mr. Holt stated that staff would provide the companies with the website that they can submit the documents to so it will not be any additional legwork or custom software for the applicant.

Mr. Wright stated that it would be a benefit to the applicant and staff.

Mr. Johnson stated that for the small applicant who does not have that range of experience staff would continue to help scan materials in for submittal.

Mr. O'Connor asked if paper copies would still be required.

Mr. Johnson stated that paper copies would still be required because staff still has to send out copies to agencies for review and paper copies make it easier to review/discuss a plan around a table.

Mr. Holt stated that for example at DRC staff may still need to have a big plan to review out in front of everyone but in the future we may be able to reduce the amount of paper copies if we have the technology to support review of plans that way.

Mr. O'Connor stated that he prefers having paper copies when reviewing documents.

Ms. Tammy Rosario stated that having a paper plan allows for easier notations.

Mr. O'Connor stated that it is easier to see the whole picture when the big plan is spread out in front of you.

In a unanimous voice vote, the draft Ordinance was forwarded to Planning Commission for consideration (2-0).

d. PC Remote attendance policy

Mr. Holt gave an overview of the proposed policy. Mr. Holt stated that the examples from other localities are similar because the State Code is prescriptive about what the allowable conditions are for being allowed to attend a meeting remotely. Mr. Holt stated that the model ordinance from the Virginia Municipal League (VML) was the best formatted example. Mr. Holt stated that staff's recommendation would be to use the VML example as a starting point to put together a version applicable to James City County.

Mr. Wright asked how this would be implemented in a meeting.

Mr. Holt stated that under the model policy item # 1A or 2A, the day before the meeting the member would notify the chair and the Planning Director. Mr. Holt stated that the meeting would be set up where the motion would be taken at the beginning of the meeting to allow or not allow the member to attend remotely. Mr. Holt stated that mechanically the person would be on speakerphone throughout the meeting.

Mr. Wright stated that that the policy says only two meetings or 25% of the meetings whichever is fewer.

Mr. Holt stated that since the Planning Commission meets monthly it would be a maximum of two meetings.

Mr. O'Connor asked if travel for work would be considered a personal matter.

Mr. Hlavin stated the policy can be left open for interpretation or can be limited but traveling for work would be considered a personal matter in my interpretation.

Mr. Wright asked if he had a personal matter that took him away from the area and wanted to listen to the meeting and be marked absent would that be allowed?

Mr. Hlavin stated that Mr. Wright in that circumstance would be allowed to listen to the meeting but not participate. Mr. Hlavin stated that the policy has a provision if there is personal

disability which does not allow you to attend there is no limit to the amount of times a person would be allowed to phone in under those circumstances.

Mr. Holt asked for any direction from the Policy Committee on what staff should include in the policy.

Mr. Wright stated that he thinks the policy should cover both sections.

Mr. O'Connor stated that a possible wording could be personal matter including but not limited to. Mr. O'Connor stated that it is possible to amend this policy if we see issues with it in the future.

Mr. Holt stated that changing the policy could not be done on the fly but could be done.

Mr. O'Connor asked if there is an issue with the number of times a person could be allowed to call in could that be amended.

Mr. Holt stated that the amount could not be increased but could be limited to one or two.

Mr. O'Connor asked about the last time this policy came under consideration under the Freedom of Information Act (FOIA) the person would need to be in a public place when participating in the meeting.

Mr. Hlavin stated that there are different rules for members of State Assembly that if they want to participate they would have to be in a public space and have separate rules.

In a unanimous voice vote, the Policy Committee voted 2-0 to send a policy to the Planning Commission based on the VML model.

4.) Adjournment

Mr. O'Connor moved to adjourn.

The meeting was adjourned at approximately 4:36 p.m.

John Wright III