

DEPARTMENT OF ENERGY AND ENVIRONMENT

NOTICE OF PROPOSED RULEMAKING

Flood Hazard Rules

The Director of the Department of Energy and Environment (DOEE), pursuant to the authority set forth in the District Department of the Environment Establishment Act of 2005, effective February 15, 2006 (D.C. Law 16-51; D.C. Official Code § 8-151.01 *et seq.*); the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*), the Soil Erosion and Sedimentation Control Act of 1977, effective September 28, 1977 (D.C. Law 2-23; 24 DCR 792); the District of Columbia Applications Insurance Implementation Act, effective May 26, 1976 (D.C. Law 1-64; D.C. Official Code § 6-501 *et seq.*); and Mayor's Order 2006-61 (dated June 14, 2006), hereby gives notice of his intent to adopt the following amendments to Chapter 31 (Flood Hazard Rules) of Title 20 (Environment) of the District of Columbia Municipal Regulations ("DCMR") in not less than thirty (30) days after the date of publication of this notice in the *District of Columbia Register*.

Proposed Rulemaking

This proposed rulemaking is necessary to protect the public health, safety, and welfare of District residents and businesses in the event of significant flooding and to minimize public and private losses due to flood conditions in flood hazard areas. The proposed amendments address deficiencies identified by the Federal Emergency Management Agency (FEMA) during a March 2016 audit of the District's implementation of the National Flood Insurance Program (NFIP). These proposed amendments will ensure the District remains eligible to participate in NFIP and to receive federal financial relief in the event of a flood-related disaster. The amendments also update the regulations to reflect revisions to the District's building code and zoning regulations and include new provisions to adapt to changing flood hazard conditions specified in Climate Ready DC and the Fisheries and Wildlife Omnibus Amendment Act of 2015. These amendments are intended to ensure that individuals living and doing business in flood hazard areas comply with safe building practices to prevent injury, loss of life, and property damage from flooding. These amendments will also help prepare the District's residents and structures for projected higher sea levels and a future with more frequent and intense storms due to climate change.

Proposed Amendments

Flood Hazard Area

One proposed amendment replaces the term "special flood hazard area" with the term "flood hazard area," and defines the term "flood hazard area" to include the land within the 500-year floodplain. This definition includes Zones A, AE, and X in accordance with FEMA's Flood Insurance Rate Map, effective September 27, 2010, and any subsequent revisions and amendments approved by FEMA. The proposed definition also includes any area that has been removed from the flood hazard area due to a Letter of Map Revision Based on Fill (LOMR-F).¹

¹ Federal Emergency Management Administration (2020). *Letter of Map Amendment & Letter of Map Revision-Based on Fill Process*. <https://www.fema.gov/flood-maps/change-your-flood-zone/loma-lomr-f>

Lastly, as proposed, the term Flood Hazard Area also includes areas on Rhode Island Avenue, NE that are susceptible to interior flooding. As with the current regulations, the proposed amendments will not require a structure located on a site that is partially within a regulated area to comply with the flood hazard rules if the structure itself is completely outside of the floodplain.

The proposed rule also, when appropriate, distinguishes between regulatory requirements in the 100-year versus other floodplains such as the 500-year floodplain or interior flooding areas. For instance, underground parking garages and ancillary residential use (such as tenant-only gyms and mailrooms) at residential multifamily buildings would be prohibited below the Design Flood Elevation (DFE) in the 100-year floodplain, but as proposed would be allowed to be constructed below the DFE in other floodplain areas provided that they are dry-floodproofed to prevent water intrusion and structurally designed to prevent collapse due to hydrostatic pressure. In areas outside the 100-year floodplain but within other flood hazard areas, the proposed rule slightly relaxes the definition of substantial improvement, further described below.

Regulating the 500-year Floodplain

Extension of the protections and requirements in these regulations to the 500-year floodplain will help prepare residents and property owners in the District for sea level rise and increases in precipitation, extreme weather, and flooding predicted in Climate Ready DC. Recent models prepared by the U.S. Army Corps of Engineers (USACE) using rainfall projections from Climate Ready DC data² confirm that flooding and storm events in the 500-year floodplain for the Anacostia River, Watts Branch, and Oxon Run, will, in the 2080s, be more like the conditions in the current 100-year floodplain.³

The District is already experiencing the effects of sea level rise. According to data from “The 2018 State of High Tide Flooding with a 2019 Outlook” by the National Oceanic and Atmospheric Administration (NOAA), there were a record twenty-two (22) high tide flood days in the District in 2018. The previous record prior to 2018 was ten (10) high tide flood days in a year. This is a major increase from the number of high tide flood days that would be typical of the year 2000, which was just three (3) per NOAA’s statistical analysis.⁴ This proposed amendment will help protect structures built to last 60 to 80 years and beyond, and the people and property associated with them, from expected future flood risks.

Regulating buildings and structures for flood control in the 500-year floodplain and interior flooding areas will reduce costs to taxpayers and the District government resulting from floods that are greater than a 100-year flood. Requiring more structures in the 500-year floodplain to

²DC Department of Energy and Environment (2015), *Climate Projections and Scenario Development*. https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/150828_AREA_Research_Report_Small.pdf

³ See, e.g., DC Silver Jackets (2021), *Watts Branch Flood Risk Management Study*, pp. 38-46. https://www.dropbox.com/s/bob1n0k5bou0ys/Watts%20Branch%20FRM%20Study%20Final%20Report_%28April%202021%29.pdf?dl=0.

⁴ National Oceanic and Atmospheric Administration. (2019). *NOAA Technical Report NOS CO-OPS 090*. “2018 State of U.S. High Tide Flooding with a 2019 Outlook.” Page 4. https://tidesandcurrents.noaa.gov/publications/Techrpt_090_2018_State_of_US_HighTideFlooding_with_a_2019_Outlook_Final.pdf

either be constructed above the 500-year elevation level or be floodproofed will mean that fewer structures will be damaged and fewer residents will need to be rescued during a flood, reducing the costs for emergency response and recovery. The amendment will also help the District to achieve the protective levels recommended by FEMA in its 2016 audit findings report.

Many jurisdictions across the nation have adopted a 500-year floodplain standard only after a 500-year flood or worse devastated the community. One example is the City of Houston, Texas which regulated based on a 500-year flood plain standard soon after, and in reaction to, the massive damages caused by Hurricane Harvey.⁵ In 2014, the City of Baltimore, Maryland regulated to a 500-year standard after recognizing the significant economic damages caused by frequent floods over the preceding 20 years, including damages from Hurricane Isabel in 2003 that totaled nearly two (2) billion dollars throughout the region.⁶ In 2019, the City of Austin, Texas amended its City Code to regulate to the 500-year floodplain standard following the release of updated NOAA rainfall studies and a 2018 flood crisis that caused a five-day potable water outage.⁷ By proposing these regulations, the District is being proactive to protect its residents, not waiting until significant flooding happens before implementing more protective measures.

Regulating the Rhode Island Avenue Metro Underpass Area

On August 14, 2023, approximately two inches (2 in.) of rain fell in less than an hour at this location, flooding the underpass, stranding cars, and filling a pet daycare business with six feet (6 ft.) of water.⁸ The flood killed ten dogs and forced the business to close temporarily. This was the most recent event in a string of floods that have affected the area in recent memory, including floods on August 10, 2022, and June 25 and 26, 2012. Though the area has a long history of flooding, it has never been included in a regulated floodplain because the area is subject to interior flooding, as opposed to riverine or coastal flooding. FEMA does not include interior flooding areas in their floodplain maps and up until this rulemaking, the District has defined the floodplain in the same way as FEMA. Since the flood, some residents have expressed a desire that buildings in these flood-prone areas have some additional scrutiny to address their flood risk.⁹

To account for this area's history of flooding and recent property damage and loss of life, the proposed rules will now regulate land near this location that is below the NAVD88 elevation of ninety-four- and one-half feet (94.5 ft.). This elevation is derived by adding five and a half feet

⁵ Dovey, Rachel. "Houston Passes New Rules for Flood Resilience." *NextCity*. April 4, 2018.

<https://nextcity.org/daily/entry/houston-passes-new-building-rules-for-flood-resilience>

⁶ See National Weather Service Baltimore. *Hurricane Isabel: 15 Year Anniversary*.

<https://www.arcgis.com/apps/MapJournal/index.html?appid=d4095bb3794a4e498e8f641b99d2492a>

⁷ City of Austin, TX. *Atlas 14 – Summary of Code Changes*.

http://www.austintexas.gov/sites/default/files/files/Watershed/atlas14/Atlas14_Code_Commentary.pdf

⁸ Nolen, Casey. "District Dogs owners says DC 'let a lot of people down' in a flood that killed ten dogs." *WUSA9*. August 15, 2023. <https://www.wusa9.com/article/news/local/district-dogs-owner-responds-after-deadly-flood/65-9e16f6f3-938c-47ad-9036-0a48199aa8a8>

⁹ Ramirez, Stephanie. "Furious pet owners say District Dogs providing little information after deadly flood." *FOX5DC*. August 16, 2023. <https://www.fox5dc.com/news/furious-pet-owners-sy-district-dogs-providing-little-information-after-deadly-flood>

(5.5 ft.) to the at-grade elevation of eighty-nine feet (89 ft.) of the pet daycare storefront that was flooded. Five and a half feet (5.5 ft.) is used because it is a close approximation of the reported six feet (6 ft.) of water in the facility and there is a publicly accessible contour map showing the elevation of ninety-four- and one-half feet (94.5 ft.). In this area, the proposed rules also define a new Design Flood Elevation of ninety-six- and one-half feet (96.5 ft.), which is two feet (2 ft.) of freeboard above the flood level of ninety-four- and one-half feet (94.5 ft.). Structures within this area, which have been flooded more often than other already regulated flood hazard areas, will now have the same protections as structures in other floodplain areas. If proposed development is within this new flood hazard area, but the lowest floor of the proposed structure is above the Design Flood Elevation of ninety-six and one half feet (96.5 ft.), then the development will be considered compliant with this chapter.

Substantial Improvements

To protect the supply of affordable housing and reduce costs to homeowners, substantial improvement and substantial damage of existing one-and-two family dwellings will not require full compliance with the proposed updated Flood Hazard Rules if the cost of work is less than \$200,000 and the dwelling is inside the flood hazard area but outside the 100-year floodplain. This proposed exemption balances the need for flood risk reduction with the need to mitigate the impacts of cost, property turnover, and displacement. This exception results from conversations by DOEE with residents and the Flood Hazard Technical Advisory Group of the Construction Codes Coordinating Board. DOEE believes the amendments as proposed will protect structures and residents in the 500-year floodplain yet still allow homeowners to maintain their dwellings without facing the significant costs resulting from compliance with the full retrofit requirements for larger projects.

DOEE is also proposing language that modifies the calculation of substantial improvement to include any combination of repairs or improvements taking place in the last five (5) years. This is in keeping with best floodplain management practices and is similar to regulations in the City of Baltimore, Maryland, and other communities. The proposed change prevents situations in which an applicant could make proposed improvements to a structure using multiple permits to avoid being considered a substantial improvement.

Design Flood Elevation

The proposed amendments update the DFE requirement. The DFE is the elevation to which buildings can resist flooding, helping ensure lives and properties are reasonably safe from flooding. Typically, the DFE is the elevation of the first floor of a structure or the height of the structure's floodproofing systems. DOEE is proposing to change the DFE from the 100-year flood elevation plus one and one-half feet (1.5 ft.) of freeboard to either the 100-year flood elevation plus two feet (ft.) of freeboard or the 500-year flood elevation, whichever is higher. The D.C. Construction Codes define the DFE as the 100-year flood elevation plus two feet (2 ft.) of freeboard or the 500-year flood elevation, so this will not change how development is currently done in the 100-year floodplain, but the proposed change will expand the application of these requirements to development in the 500-year floodplain and other flood hazard areas.

The proposed standard is based on case studies in cities such as Norfolk, VA, Fort Collins, CO, Austin, Texas, and Seattle, Washington. The specific elevation levels align with the existing version of the DC Building Code, which in turn is modeled after the Federal Flood Risk Management Standard,¹⁰ which applies to all federal facilities nationwide. A FEMA study of historic flooding in Boulder County, Colorado found that adopting a 100-year flood elevation plus two feet (2 ft.) of freeboard standard could have reduced losses due to flooding in that city by 38%.¹¹ As of 2015, a nationwide total of 192 local governments and four (4) states had adopted the two (2) feet of freeboard standard.¹²

Administrative Roles and Responsibilities

The proposed amendments detail the administrative roles and responsibilities of DOEE as the District Floodplain Administrator and of other District agencies, particularly the Department of Buildings (DOB), as the primary permit issuing agency for flood protection.

Flood Hazard Review Fees

The proposed amendments update the flood hazard review fees to recover actual costs incurred by DOEE staff to review projects of various types based on a project's size and complexity.

Distinctions between categories within the "Other Buildings" project type are informed by DC Office of Tax and Revenue Use Codes and FEMA National Flood Insurance Program definitions of "low-rise" and "high-rise" condominium buildings.¹³ The fee structure as proposed limits the burden of review costs on single-family homeowners and developers of small apartment buildings.

The proposed flood hazard review fee amounts are comparable with those in the surrounding jurisdictions and other major US cities. An example is a project that is a new construction 1-2 unit residential dwelling to be developed in the regulated floodplain. Such a project would incur a fee of \$857¹⁴ in Fairfax County, Virginia and \$2,100¹⁵ in Arlington County, Virginia. The proposed floodplain permit review fees for this sample project in the District would be approximately \$800. Larger developments have a higher initial review fee and could trigger additional fees if there are aspects of the project that require additional review time.

¹⁰ Federal Register Vol. 80, No. 23. *Executive Order 13690 of January 30, 2015, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input.*

<https://www.govinfo.gov/content/pkg/FR-2015-02-04/pdf/2015-02379.pdf>

¹¹ Federal Emergency Management Agency. *Reducing Losses Through Higher Regulatory Standards: 2013 Colorado Floods Case Study.* https://www.fema.gov/sites/default/files/documents/fema_colorado-2013-study-pamphlet.pdf f96124536d2c3ccc07b3db4a4f8c35b5/FEMA_CO_RegulatoryLAS.pdf

¹² Natural Resources Defense Council and Association of State Floodplain Managers, Inc. *Petition Requesting That The Federal Emergency Management Agency Amend Its Regulations Implementing the National Flood Insurance Program.* Jan. 5th, 2021.

https://asfpm-library.s3-us-west-2.amazonaws.com/ASFPM_Pubs/petition_fema_rulemaking_nfip_20210105.pdf

¹³ FEMA. *NFIP Flood Insurance Manual.* "Condominiums." April 2021.

https://www.fema.gov/sites/default/files/documents/fema_nfip-all-flood-insurance-manual-apr-2021.pdf

¹⁴ Fairfax County, VA. *Appendix Q - Land Development Services Fee Schedule.*

https://www.fairfaxcounty.gov/landdevelopment/sites/landdevelopment/files/assets/documents/fee-schedule_0.pdf

¹⁵ Arlington County, VA. *Land Disturbing Activities Fees.*

<https://www.arlingtonva.us/files/sharedassets/public/building/documents/fee-schedules/des-consolidated-fee-schedule-effective-july-17-2021-final.pdf>

Application Procedures and Requirements

The proposed amendments clarify the application procedures and requirements for a floodplain permit review by consolidating into one section the minimum standard information needed for every application, and then listing other special application requirements separately.

Covenants and Agreements

The proposed amendments require a permit applicant to file a covenant for operating and maintenance obligations for dry floodproofing systems. This is necessary because, if these systems are not operational and appropriately maintained and ready to be deployed at a moment's notice when a flood warning is issued, then they provide no flood protection, as unfortunately has been the case in numerous flood events across the country. A covenant ensures that the responsibility to maintain a dry floodproofing system is clearly conveyed whenever property ownership changes, ensuring that a building's new owners know of their obligation to comply with the dry floodproofing operations and maintenance standards.

Non-conversion agreements may also be required to ensure that approved non-residential uses are not later converted to residential uses that would increase flood risk and, therefore, would not otherwise be allowed under these regulations. Like a covenant, a non-conversion agreement is filed with the deed and ensures current and future owners know the restrictions on use of the building or structure. Templates and basic instructions for completing a floodproofing covenant and non-conversion agreement will be provided on DOEE's website.

No Adverse Impact

The proposed amendments require an applicant for development in a flood hazard area to demonstrate that their proposed development will cause no adverse impact to other properties due to the development increasing the regulatory flood elevation or expanding the flood zone. Increases in the regulatory flood elevations on the property of the applicant would be allowed so long as the development does not cause increased flood elevations on other properties. An applicant for development within a floodway will also be required to submit a No-Rise Certification to verify that no increase in the design flood elevation is caused at any point. An exception to these limitations is provided for development activities related to floodplain or waterbody restoration or a governmental flood control project. An example would be a stream restoration project that causes increases to flood elevations in certain locations with minimal impact but reduces overall flood risks along the length of the stream, in addition to creating other benefits for the community. These types of projects must still comply with other restrictions and are still subject to DOEE and FEMA approval. In response to stakeholder comments, an exemption is provided for projects that cause an increase in regulatory flood elevations or flood zone size at another property with the approval of that property's owner, and submission of Letter of Map Revision to FEMA to reflect the map change.

The proposed regulations regarding no adverse impact are based on the Association of State Floodplain Managers' "No Adverse Impact" policy recommendations¹⁶ and are similar to regulatory standards already effective in jurisdictions across the country. The City of Houston,

¹⁶ Association of State Floodplain Managers. *No Adverse Impact Floodplain Management*. <https://www.floods.org/resource-center/nai-no-adverse-impact-floodplain-management/>

Texas requires that development within the flood hazard area cause no net loss of storage or conveyance capacity under most circumstances,¹⁷ and Fairfax County, Virginia requires that applicants for floodplain development permits “provide factual information [to show] that any proposed structure will not adversely affect the existing 100-year flood level.”¹⁸ Prince George’s County, Maryland requires developers to “indicate that [a developed] floodplain can carry the discharge of the 1-percent annual chance (100-year) flood without increasing the water surface elevation at any point.”¹⁹ Additional local jurisdictions that require compensatory storage or no adverse hydraulic impact include Cook²⁰ and DuPage²¹ Counties in Illinois (the two largest counties in the Chicago metropolitan area), as well as the City of Milwaukee, Wisconsin.²² Seven states, including New Jersey, Illinois, and Michigan, have regulations that limit increases in the base flood elevation to a more stringent level than is required by federal minimum standards.²³

Hazardous Materials

The proposed amendments establish a new requirement for facilities located in a flood hazard area that store or process hazardous materials. An applicant for a development permit for such a facility will need to submit a flood emergency action plan. This plan would specify actions and operations to be executed to minimize the risk of hazardous materials being exposed to flood waters or otherwise becoming unstable due to flood conditions after a flood watch warning is issued by the National Weather Service (NWS). A flood emergency action plan could be incorporated into a Spill Prevention Control and Countermeasures Plan (SPCC) or Stormwater Pollution Prevention Plan (SWPPP) if those plans are otherwise required by law or regulation. This proposed requirement will minimize health and safety risks to first responders, District residents, and the natural ecosystem during a flood event. The flood emergency action plan template, which will be posted on DOEE’s website, is based on the State of Maryland’s spill prevention guidelines.²⁴

¹⁷ Houston, TX Code of Ordinances Art. 3 Div. 2 Sec. 19-34.

https://library.municode.com/tx/houston/codes/code_of_ordinances?nodeId=COOR_CH19FL_ARTIIIISTFLHARE_DIV2STHOSPFLHAAR_S19-34ADSTDEMI

¹⁸ Fairfax County, VA. *Public Facilities Manual*. “Storm Drainage.” Section 6-0704.

<https://online.encodeplus.com/regs/fairfaxcounty-va-pfm/doc-viewer.aspx#secid-183>

¹⁹ Prince George’s County Code of Ordinances Sec. 32-205 (h).

https://library.municode.com/md/prince_george's_county/codes/code_of_ordinances?nodeId=PTIITI17PULOLAPRGECOMA_SUBTITLE_32WAREPRGRCO_DIV4FLOR_S32-205DERE

²⁰ Cook County, Illinois Code of Ordinances Part II Ch. 106 Sec. 106.6(2)(b).

https://library.municode.com/il/cook_county/codes/code_of_ordinances?nodeId=PTIILADEOR_CH106FL_S106-6OCUSFLFRAR

²¹ DuPage County Stormwater & Floodplain Ordinance Art. X Sec. 15-81. D.

<https://cms5.revize.com/revize/dupage/Stormwater%20Management/Documents/Stormwater%20Permitting/Stormwater%20Ordinance/CSFO%20Effective%209-13-22.pdf>

²² City of Milwaukee Code of Ordinances Ch. 295 Subchapter 11 Section 1119(1).

<https://city.milwaukee.gov/ImageLibrary/Groups/ccClerk/Ordinances/Volume-2/CH295-SUB11.pdf>

²³ FEMA. *Appeals, Revisions, and Amendments to National Flood Insurance Program Maps – A Guide for Community Officials*. “Chapter 7 – Floodway Revisions.” 2009.

https://doee.dc.gov/sites/default/files/dc/sites/doee/service_content/attachments/Guide%20for%20Community%20Officials%20%28December%202009%29.pdf

²⁴ Maryland Department of Natural Resources. *Spill Prevention, Control, and Countermeasure Plans*.

<https://dnr.maryland.gov/boating/Pages/cleanmarina/plans.aspx>.

A provision restricting the placement of buoyant materials in the floodplain is being proposed based on a similar provision in the City of Baltimore's floodplain management regulations. Buoyant materials can cause damage to structures while floating downstream during a flood and can exacerbate the extent of flooding by blocking drainage structures.

Mixed-Use Buildings

In accordance with FEMA Technical Bulletin 6-93 and FEMA's P-2037 manual on *Flood Mitigation Measures for Multi-Family Buildings*, DOEE is proposing to allow mixed-use buildings to include an underground parking garage without a variance or code modification when the design meets the criteria in these regulations. Previously, it was not clear whether a mixed-use building was residential or non-residential under FEMA's guidance, and applicants were required to go through a lengthy variance or code modification process to have this determination made. DOEE negotiated this amendment with staff from FEMA headquarters and FEMA Region III to enable developers to create designs of mixed-use facilities with more certainty, simplify the review process, and reduce the time and cost to obtain permitting approval.

The proposed amendments do not change the existing prohibition on underground parking garages below residential-only multifamily structures in the 100-year floodplain, nor do they alter FEMA's existing requirement to elevate gyms, communal spaces, and other non-dwelling-unit amenities accessible only to residents at apartment buildings in the 100-year floodplain. The requirement to elevate rather than floodproof residential uses, including amenities only available to residents of a particular building, is mandated by FEMA as a condition of community participation in the National Flood Insurance Program. 44 C.F.R. § 60.3.

Accessory Structures

The proposed amendments set requirements for accessory structures located in a flood hazard area that have a footprint under six hundred square feet (600 sq. ft.). This provides flexibility for these small accessory structures that do not have residential uses to be wet floodproofed. This amendment addresses one of the adverse findings in FEMA's March 2016 District audit report and brings the District into alignment with FEMA's 2016 memorandum regarding accessory structures and FEMA's nationwide 2020 Policy #104-008-03 (*Floodplain Management Requirements for Agricultural Structures and Accessory Structures*).

Critical Facilities

The proposed amendments add a definition for critical facilities and set requirements for critical facilities located within flood hazard areas. As proposed, a critical facility includes buildings and structures used for activities listed in flood design class 4 of the American Society of Civil Engineers Standard 24 (ASCE 24), except those related to hazardous materials, which are addressed separately in this rulemaking. The definition also includes buildings and structures used for some of the activities listed in flood design class 3 of ASCE 24 that relate to confined or vulnerable populations, such as inpatient alcohol or drug rehabilitation facilities and psychiatric hospitals, that would not be able to evacuate without considerable assistance. New or substantially improved critical facilities in flood hazard areas will be required to meet stringent performance standards.

As proposed, applicants for permits to build or substantially improve a critical facility will be required to justify why the facility cannot be relocated and must provide a detailed analysis of the vulnerabilities and specific flood mitigation measures. A template for what should be included in such a justification will be provided on the DOEE website. The template will be based on Section 2.2.1.1 “Benefits/Costs: determining Acceptable Risk” of FEMA Manual 243 and FEMA Manual 543, *Design Guide for Improving Critical Facility Safety from Flooding and High Winds: Providing Protection to People and Buildings*. Based on stakeholder input, public housing units are not included in the list of proposed critical facilities to avoid imposing a disproportionate cost burden on the construction and maintenance of such dwellings compared to their privately-owned counterparts.

Historic Structures

The proposed amendments clarify the process and requirements to review and approve improvements to historic structures in flood hazard areas. The process involves coordinating DOEE’s flood hazard review with the review by the Historic Preservation Office (HPO) to achieve as much flood protection as possible while still maintaining the historic designation of the building. This process should improve review times as both reviews are already required, only now they will be coordinated.

The proposed amendments also switch the permit review approach for historic structures from the Substantial Improvement/Substantial Damage definition exemption approach allowed by FEMA regulations at 44 CFR § 59.1 to the variance approach allowed by 44 CFR § 60.6(a). As outlined in FEMA P-758 (*Substantial Improvement/Substantial Damage Desk Reference*), “Using the variance option allows communities to evaluate individual requests and place conditions on the variance to make historic buildings more flood damage-resistant and to minimize flood damage.” These changes will help ensure the historic resources of the District will be protected from flood damages and remain standing long into the future.

Tidal Shoreline Buffer

The proposed amendments establish additional restrictions for development in a tidal shoreline buffer. DOEE will make maps of these areas available on its website. In addition to protecting public health and safety, these buffers will also preserve critical wildlife habitat areas protected by the Fisheries and Wildlife Omnibus Amendment Act of 2015.

The tidal shoreline buffer includes the areas along the banks of the Potomac and Anacostia Rivers that will be inundated by tides on a daily basis by 2080, according to sea level rise projections in the 2022 NOAA Sea Level Rise Technical Report.²⁵ DOEE used three and four-tenths feet (3.4 feet) as the expected amount of sea level rise between 2000 and 2080 to determine the tidal shoreline buffer area. This number was selected after conversations with national flood experts and DOEE staff analysis of NOAA projections and scenarios used by other entities, such as the Department of Defense for its installations. Additional research conducted by NASA regarding changes in lunar orbital patterns reinforces the importance of addressing tidal flooding in the District. This research suggests that the number of days during

²⁵National Oceanic and Atmospheric Administration. (2022). *2022 Sea Level Rise Technical Report*. <https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-data.html#slr-report-data>.

which tidal flooding occurs along the Atlantic coast will increase in frequency approximately fivefold beginning in the mid-2030s.²⁶

Based on a literature review of projected building lifespans from private-sector and public-sector sources, estimates for the lifespan of many types of buildings, including homes, commercial offices, schools, and federal facilities, range from 30 to 60 years between initial construction and substantial improvement. DC’s Resilient Design Guidelines use an anticipated design life of approximately 60 years for “most buildings (e.g., public, office, residential), piers, wharfs, and bulkheads, plazas, retaining walls, culverts, [and] on-site energy generation/co-generation plants.”²⁷ Therefore, 2080 was chosen as the benchmark year for these proposed amendments for consistency and to support resilient design that is mindful of long-term sustainability.

New construction in the tidal shoreline buffer will be required to meet stringent protective standards in these areas commensurate with the level of flood risk. This is similar to the strategy implemented by Boston, Massachusetts’s Article 37 Green Building and Climate Resiliency Guidelines, which add height to the design flood elevation of any structure within the Boston Planning and Development Agency’s Sea Level Rise Flood Hazard Area.²⁸ It also is similar to the State of New Jersey’s Inundation Risk Zone designation, which places more stringent development regulations on areas that are projected to be permanently below water by the year 2100.²⁹ In 2022, Kaua’i County in Hawaii passed a similar ordinance that uses sea level rise projections to create a Sea Level Rise Constraint District in which more stringent building standards are used.³⁰

It is not anticipated that additional protective standards in the tidal shoreline buffer will cause a significant burden. Only one percent (1%) of the land area within the tidal shoreline buffer is private land and nearly all this area is already developed. A very limited portion of the area that the District of Columbia Office of Planning (DCOP) identified for expected future development in its 2015 Development Activity projections, two-thirds of which is government land, is within the tidal shoreline buffer. Most of this area is on the edges of lots and parcels. Development would still be allowed on these lots and parcels, with a possible need for minor adjustments to plans.

Variations and Code Modifications

The proposed amendments clarify the application process and requirements to request a Variance from DOEE or code modification from DOB. Each code modification review will be initiated upon written request to DOB. Requests for a variance, such as appeals of the

²⁶ Thompson, P.R. et al. *Nature Climate Change* 11, 584-590 (2021).

²⁷ Climate Ready DC. (2020). *Resilient Design Guidelines*. “Defining Life Expectancy.” https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/CRDC%20resilient%20design%20guidelines_FINALApproved.pdf.

²⁸ Boston Planning and Development Agency. *Article 37 Green Building and Climate Resiliency Guidelines*. <http://www.bostonplans.org/planning/initiatives/article-37-green-building-guidelines>.

²⁹ Kopp, R.E., et al. *New Jersey’s Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel*. Rutgers, The State University of New Jersey. Prepared for the New Jersey Department of Environmental Protection. Trenton, New Jersey.

³⁰ Kaua’i County, Hawaii County Code. (2022). *Sec. 8-12.5 Sea Level Rise District (S-SLR)*. https://library.qcode.us/lib/kauai_county_hi/pub/county_code/item/title_iv-chapter_8-article_12-sec_8_12_5

determination of regulatory flood elevations, flood hazard area boundaries, floodway locations, or other FIRM-related determinations, shall be made directly to DOEE as provided in § 3116. Variances are intended to be rare, to be based on unique technical constraints, and to involve the least modification necessary to provide relief.

Transition

DOEE has been publicly discussing the proposed amendments since March 2020. Given the length of time that the proposed amendments have been in the public sphere, DOEE is proposing that the amended regulations be enforced upon the date of publishing the final rulemaking. Any proposed development within a flood hazard area that has not submitted a complete application (which includes having a DOB permit number) within 30 days of the date of publishing the final rulemaking will be subject to the provisions of this chapter as amended, with one exception. An exception will be available for projects that have received an approval or final report through certain planning agency reviews if the applicant can demonstrate that the review conclusions pose a direct conflict with compliance with the proposed amendments. However, all projects for which permits are obtained more than six (6) months after the date of final adoption will need to comply with the amended provisions regardless of prior design contracts or third-party approvals. If a project receives an exception described above and the associated building permit is deemed expired or abandoned by DOB, then vesting under the 2010 version of the Flood Hazard Rules will also expire, and the project will need a new building permit that complies with the provisions of this chapter as amended.

Stakeholder Engagement Narrative

The informal stakeholder engagement process began through a series of presentations in March 2020 to District agencies, the Commission on Climate Change and Resiliency, the DC Building Industry Association (DCBIA), and environmental stakeholders. These stakeholders expressed support for the effort to update the regulations to address the increasing risk posed by climate change. Outreach efforts focused on government stakeholders, including presentations to the District of Columbia Housing Authority (DCHA), the District Department of Transportation (DDOT), the Department of General Services (DGS), the Deputy Mayor for Planning and Economic Development (DMPED), the Department of Parks and Recreation (DPR), the District of Columbia Public Schools (DCPS), the Homeland Security and Emergency Management Agency (HSEMA), the District of Columbia Office of Planning (DCOP), and other governmental critical infrastructure and utility stakeholders. As a result of these outreach efforts, protective standards were categorized based on property use rather than ownership.

After further analysis, and consideration of stakeholder comments, DOEE launched a series of Technical Workshops to gather further input from technical professionals. Four workshops were held from April to June 2021, including one overview workshop and three focus topics:

- Mapping - Delineation of the Tidal Shoreline Buffer (TSB), design flood elevations required in the TSB, and a discussion of the TSB's underlying sea level rise projections. This meeting also addressed DOEE's proposal for instances where applicants may have site-specific information that could remove their project from a regulatory floodplain. Changes resulting from stakeholder feedback are described above in the "Tidal Shoreline

Buffer” section. Information presented in that workshop was based on NOAA’s 2017 Sea Level Rise Report and at the time DOEE proposed using four and one-half feet (4.5 feet) of Sea Level Rise (NOAA’s intermediate high projection for 2080) to determine the TSB. NOAA’s 2022 report has since been published and DOEE is proposing to use the updated number of three and four-tenths feet (3.4 feet) for the same 2080 intermediate high projection based on that report.

- Vesting and Transition - This meeting focused on the timeline for implementation of proposed regulations, and discussed key criteria that must be met for a development project to be vested under the previous regulations. As a result of this meeting, DOEE is proposing vesting and transition provisions to better synchronize with those established by Section 123 of the 2017 DC Construction Codes.
- Commercial, Mixed-Use, and Multifamily Development - This meeting focused on topics relevant to large-scale buildings, including allowable use categories below grade, underground parking, and differences between requirements in 100-year vs. 500-year floodplains.

Presentation Slides and recordings from the public outreach meetings described above are available on DOEE’s Flood Hazard Rules Webpage: <https://doee.dc.gov/publication/title-20-chapter-31-flood-hazard-rules>

Social equity was a key focus of the stakeholder engagement program. To inform the regulation development process and address comments from DCOP, DOEE commissioned two cost/benefit analysis reports from an independent contractor. These reports used geographic information systems to identify impacted areas and used construction estimation methods with hazard mitigation literature to quantify the implications of the regulatory updates on current and future development. The research discovered that flood mitigation retrofits could provide a six to one (6:1) return on investment from avoided damages, but that Wards 6, 7, and 8 would face the greatest burden in potential costs resulting from the new need to retrofit substantially improved or substantially damaged properties in the 500-year floodplain or areas of interior flooding. These costs could exacerbate gentrification and displacement in affected communities.

The contractor’s research findings were bolstered by input received from public stakeholder engagement online meetings held in July and August of 2021 - two of the meetings focused on residential stakeholders and a third on the owners of residential and commercial properties. Attendees expressed support for addressing climate change mixed with concerns regarding compliance costs. Many residents inquired about what steps the District was taking to improve flood safety for at-risk homes.

To mitigate these impacts, DOEE proposes to exempt one-and-two-family dwellings and townhouses (not more than three stories above grade plane in height with a separate means of egress) from the substantial improvement/substantial damage provisions of the regulations if the structure is located in the flood hazard area, but outside the 100-year floodplain, and the cost of work is less than \$200,000. This one-and-two family threshold is based on an existing regulatory

precedent, as such structures are regulated by the DC Residential Code rather than the DC Building Code. DOEE believes that, by allowing homeowners to undertake significant maintenance and improvement projects without triggering a requirement for full structural elevation, these provisions provide flood risk reduction while mitigating the impacts of gentrification and displacement in Ward 6, 7, and 8. Multifamily buildings in the flood hazard area, but outside the 100-year floodplain, will be subject to the same 50% substantial improvement/substantial damage threshold as those in the 100-year floodplain, which helps to prevent landlords from subjecting tenants to flood risk without their knowledge or consent.

This exemption was developed in coordination with the Construction Codes Coordinating Board's Flood Hazard Technical Assistance Group (TAG) to ensure consistency with Appendix G (Flood-Resistant Construction) of the DC Building Code. TAG members emphasized the importance of requiring retrofits at large substantially-improved residential structures due to the challenges of evacuating large facilities and the greater financial capacity of their developers. The TAG noted that the District could consider a home retrofit assistance program that could provide financial assistance to homeowners in making their homes more resilient through measures such as mechanical/electrical/plumbing (MEP) equipment elevation or even whole-home elevation. DOEE began such a program, called FloodSmart Homes, in 2023.

In July and August of 2022, there was yet another opportunity for agency and public comment on the overarching principles of the updated Flood Hazard Rules through the DC Flood Task Force. Comments were supportive of the changes, and the regulation update has the full support of the members of the DC Flood Task Force that was established by the City Administrator and led by the Deputy Mayor for Operations and Infrastructure. In addition to discussing the principles of the flood hazard rules, the Task Force also publicly discussed the issue of interior flooding, frequently flooded locations, and how to map them on several occasions between November 2021 and January 2023, which informed changes to the definition of flood hazard area in these regulations. Meeting materials for the DC Flood Task Force are available at this webpage: <https://dcfloortaskforce.org/past-task-force-meetings/>.

Title 20 of the District of Columbia Municipal Regulations, Chapter 31, Flood Hazard Rules, is repealed and replaced as follows:

CHAPTER 31 FLOOD HAZARD RULES

3100 PURPOSE

3100.1 This chapter and the flood-resistant construction provisions of the District of Columbia Construction Codes (together referred to as the Floodplain Management Regulations) promote public health, safety, and general welfare, and minimize public and private losses due to flood conditions in flood hazard areas.

3100.2 This chapter establishes minimum requirements that are designed to:

- (a) Mitigate the impact of flooding on properties in the District;
- (b) Prevent or regulate the construction of flood barriers that will unnaturally divert floodwaters or may increase flood hazards to other lands;
- (c) Restrict or prohibit certain uses, activities, and development inside areas subject to flooding;
- (d) Require uses, activities, and developments that occur in flood-prone areas to be protected to prevent flood damage; and
- (e) Regulate uses, activities, and development that, acting alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies that may affect other properties.

3100.3 The degree of flood protection required by this chapter is based on scientific and engineering considerations and is intended to minimize the degree and extent of flood damage. The regulations and the construction codes are designed to keep properties reasonably safe from flooding. Enforcement of these regulations and the construction codes does not imply that land outside the flood hazard areas, or that uses permitted inside the flood hazard areas, will be free from flooding or flood damage. Larger floods can and will occur. Flood heights may be increased by man-made or natural causes.

3101 APPLICABILITY OF FLOOD HAZARD RULES

3101.1 This Chapter shall apply to all flood hazard areas within the jurisdiction of the District of Columbia (the District) as designated by the District or in the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) for the District prepared by the Federal Emergency Management Agency (FEMA). The effective FIS dated September 27, 2010, and the accompanying FIRM, as modified by any FEMA-approved Letters of Map Change, are hereby adopted by reference and shall serve as the basis for establishing 100-year and 500-year flood hazard areas. Maps and studies that establish flood hazard areas, including interior flooding areas, are maintained at the Department of Energy and Environment (DOEE) and are posted on DOEE's website at <http://doee.dc.gov>.

3101.2 The flood hazard area is:

- (a) The land inside the 100-year floodplain (Zones A, AE, A1-30, A99, AR, AO, or AH) in accordance with the FEMA Flood Insurance Rate Map, effective September 27, 2010, and subsequent revisions and amendments as approved by FEMA;

- (b) The land inside the 500-year floodplain (Zone X (shaded)) in accordance with the FEMA Flood Insurance Rate Map, effective September 27, 2010, and subsequent revisions and amendments as approved by FEMA:
- (c) The land that has been removed from the 500-year floodplain (including Zones A, AE, A1-30, A99, AR, AO, AH, or X (shaded) if done through a Letter of Map Revision Based on Fill (LOMR-F), and
- (d) For the Rhode Island Avenue Metro underpass area, the land that is below the NAVD88 elevation of ninety-four and one-half feet (94.5 ft.) and is within a five hundred feet (500 ft.) radius of the point on Rhode Island Avenue NE with these coordinates: 38° 55.2593'N 76° 59.8217'W.

3101.3 Compliance with this chapter does not relieve a person of responsibility and liability for damage to any persons or property caused by flooding.

3101.4 A person who is regulated under this chapter may authorize an agent to act on their behalf. However, the authorization does not change or eliminate that regulated person's duty, responsibility, or liability.

3101.5 In the event of a conflict between the requirements of this chapter and those of any other rule issued by DOEE, the more stringent restriction shall govern, to the extent consistent with applicable District statutes and federal law.

3101.6 In the event of a conflict between the requirements of this chapter and those of a deed restriction, covenant, or easement adopted after [effective date of final rules], the more stringent restriction shall govern.

3102 ADMINISTRATIVE ROLES AND RESPONSIBILITIES

3102.1 The Director of DOEE, or the Director's designee, is designated as the Floodplain Administrator.

3102.2 The duties and responsibilities of the Floodplain Administrator shall include:

- (a) Coordinating the review and approval process between the Department of Buildings (DOB) and DOEE to ensure that an application for a permit to build or engage in activities in a flood hazard area complies with the applicable requirements of the District of Columbia, and that the site is reasonably safe from flooding;
- (b) Reviewing a permit application to ensure that no encroachment on a watercourse, alteration of a watercourse, or improvement of any kind to a watercourse, is made unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering

practice that the proposed encroachment, alteration, or improvement would not increase the flood-carrying capacity of the watercourse;

- (c) As necessary, interpreting flood hazard area boundaries when there appears to be a conflict between a mapped boundary and actual field conditions, and providing available flood hazard information to the public;
- (d) Reviewing additional hydrologic, hydraulic, or other engineering data and studies required to support any request for a Letter of Map Change from FEMA;
- (e) Maintaining copies of the FIRM, FIS, and all revisions and amendments to flood maps and studies
- (f) Ensuring that all records necessary to administer federal and District programs related to flood hazards and protections are maintained and made available for public inspection, including FIRMs, FISs, Letters of Map Amendment, Letters of Map Revision, required certifications, and documentation specified by this chapter;
- (g) Ensuring that the applicant for a permit provides public notifications related to alterations of watercourses to adjacent communities and to FEMA;
- (h) Maintaining records of as-built lowest floor elevations or elevation certificates, floodproofing certificates, and other certifications or proof of compliance as may be required by this chapter or Appendix G 12-A DCMR (District of Columbia Municipal Regulations);
- (i) Making periodic recommendations to FEMA when updates to flood models and maps are needed, based on best-available data and climate science;
- (j) Making periodic recommendations to the Mayor when updates to flood models and maps are needed based on best-available data and climate science;
- (k) Providing annual progress reports to the Council of the District of Columbia, and reports to the Federal Insurance Administrator as required by FEMA;
- (l) Requiring that applicants, who submit hydrologic and hydraulic engineering analyses to support permit or Letter of Map Revision applications, submit data and information necessary to maintain the Flood Insurance Rate Maps to FEMA when the analyses propose to change base flood elevations, flood hazard area boundaries, or floodway designations.

The submissions shall be made within six (6) months of the data becoming available;

- (m) Reviewing subdivision proposals and other proposed new development, including manufactured home parks or subdivisions, to determine whether the proposals will be reasonably safe from flooding. If a subdivision proposal or other proposed new development is in a flood-prone area, any proposal shall be reviewed to ensure that:
 - (1) The proposals are consistent with the need to minimize flood damage inside the flood-prone area;
 - (2) All public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage; and
 - (3) Adequate drainage is provided to reduce exposure to flood hazards; and
- (n) Requiring a change to the permit for development on a development site located wholly or partially inside a flood hazard area, if upon inspection, DOEE determines that the permit conditions are inadequate to comply with the requirements of this chapter based on a discrepancy between the permit conditions and the actual site conditions.

3102.3 The duties and responsibilities of DOB include:

- (a) Issuing permits for all development on a development site located wholly or partially inside a flood hazard area;
- (b) Coordinating with DOEE to ensure that all development on a development site located wholly or partially inside a flood hazard area is compliant with the flood resistant construction provisions of the District of Columbia Construction Codes, including Appendix G of the Building Code, and the requirements of this chapter. Consistent with 12-A DCMR § G103.6, DOB shall not issue a permit for any development on a development site located wholly or partially inside a flood hazard area until DOEE has reviewed the permit application for compliance with this chapter and submitted recommendations;
- (c) Maintaining a complete record of all code modification requests and related actions in flood hazard areas; and
- (d) Determining, in coordination with DOEE, whether proposed reconstruction, rehabilitation, repair, alteration, addition, or other

improvement of existing buildings or structures located in flood hazard areas constitutes substantial improvement or repair of substantial damage.

3102.4 The Historic Preservation Office (HPO) is responsible for reviewing any permit application for repair or rehabilitation to historic structures wholly or partially inside a flood hazard area to assure coordination and consistency with this chapter.

3103 RESERVED

3104 RESERVED

3105 FEES

3105.1 An applicant requesting DOEE review and approval related to development on a development site located wholly or partially inside a flood hazard area shall first obtain a DOB permit number and pay the fees for DOEE services as shown in Tables 1 through 6. No permit shall be issued until all applicable review fees have been paid.

3105.2 DOEE shall not assess an applicant the Final Plan Review Fees if the development is not located inside the flood hazard area.

3105.3 Fees payable under this section shall be paid at the DOB Permit Center, or online through DOEE’s submittal database, and shall be in addition to any permit fees charged by DOB. If a person chooses to pay a fee in this chapter through an online payment platform, DOEE shall increase the fee by 2.36%.

3105.4 DOEE shall annually adjust the fees in the following Tables within this section for inflation using the Urban Consumer Price Index published by the United States Bureau of Labor Statistics. To perform this adjustment, DOEE shall increase each fee by the percentage, if any, by which the Consumer Price Index for June of the calendar year exceeds the Consumer Price Index for June of the previous year. Each inflation adjustment shall be posted to DOEE’s website.

3105.5 The initial plan review fee includes an initial review and review of three resubmissions. An applicant shall pay a resubmission fee for each subsequent resubmission, and the resubmission fee shall be paid prior to permit issuance.

Table 1. DOEE Review Fees for 1–2 Unit Dwellings or Accessory Structures in Flood Hazard Areas

Permit Type	Trade / Postcard Permit or Interior Work (Not SI)	Substantial Improvement (SI)	New Construction or Addition with Footprint Change
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Initial plan review fee due upon submittal to permitting database	\$0	\$0	\$600.00
Final plan review fee due before issuance of approval	\$0	\$0	\$200.00

Table 2. DOEE Review Fees for Residential-Only Apartment Building with 5 or Fewer Units in Flood Hazard Areas

Permit Type	Interior Work (Not SI)	Substantial Improvement	New Construction or Addition with Footprint Change
Initial plan review fee due upon submittal to permitting database	\$0	\$0	\$1,200.00
Final plan review fee due before issuance of approval	\$0	\$0	\$600.00

Table 3. DOEE Review Fees for Minor Development (Nonresidential Structures or Mixed-Use Buildings with 3 or Fewer Floors and/or 5 or Fewer Residential Units) in Flood Hazard Areas

Permit Type	Interior Work (Not SI)	Substantial Improvement	New Construction or Addition with Footprint Change
Initial plan review fee due upon submittal to permitting database	\$200	\$3,000.00	\$3,000.00
Final plan review fee due before issuance of approval	\$0	\$1,500.00	\$1,500.00

Table 4. DOEE Review Fees for Major Development (4 or More Floors and/or 6 or More Residential Units) in Flood Hazard Areas

Permit Type	Interior Work (Not SI)	Substantial Improvement	New Construction or Addition with Footprint Change
Initial plan review fee due upon submittal to permitting database	\$500	\$6,000.00	\$6,000.00
Final plan review fee due before issuance of approval	\$0	\$4,000.00	\$4,000.00

Table 5. DOEE Review Fees for Nonstructural Land-Disturbing Activity in Flood Hazard Areas

Permit Type	Infrastructure Projects	Nonstructural Landscaping or Site Improvements	Negligible Impact Projects
Initial plan review fee due upon submittal to permitting database	\$5,000.00	\$3,000.00	\$200.00
Final plan review fee due before issuance of approval	\$2,000.00	\$1,600.00	N/A

Table 6. Additional DOEE Fees for Flood Hazard Areas

Additional Fees (any development) due upon submission or when determined a requirement	1-2 Unit Dwellings /Accessory Structures	Other Building Work (as shown in Tables 2-4)	Nonstructural Land-Disturbing Activity
Predevelopment Meeting (per hour after five free hours)	\$100	\$100	\$100
Resubmission Fee (Beginning on Fourth Resubmission)	25% of initial plan review fee	25% of initial plan review fee	25% of initial plan review fee
Determination of Flood Hazard Zone and Elevation	\$100	\$100	\$100
Review of a Hydrologic and Hydraulic (H&H) Study involving culverts or in-channel structures	\$3,000 + \$500 per crossing structure more than one	\$3,000+ \$500 per crossing structure more than one	\$3,000+ \$500 per crossing structure more than one

Review of all other H&H studies	\$100	\$800	\$800
Processing/Review of a CLOMR or LOMR (each submission)	\$0	\$800	\$800
Review of a Proposed Code Modification or Variance	\$100	\$800	\$800

3106 PERMIT APPLICATION PROCEDURES AND REQUIREMENTS

3106.1 In any flood hazard area, a permit issued by DOB shall be required for all new construction, substantial improvement, or development. A permit for any development on a development site located wholly or partially inside a flood hazard area will not be issued by DOB unless DOEE has determined that the proposed work conforms to the Floodplain Management Regulations.

3106.2 Permit applicants shall provide the information required by the Floodplain Management Regulations in sufficient detail and clarity to determine whether the following conditions are met:

- (a) The proposal is designed and constructed with methods, practices and materials that minimize flood damage and that are in accordance with the Floodplain Management Regulations and the American Society of Civil Engineers Standard 24-14 (ASCE 24), Flood Resistant Design and Construction;
- (b) All utilities and facilities, such as sewer, gas, electrical, and water systems, are located and constructed to minimize or eliminate flood damage;
- (c) The proposed development provides adequate drainage to reduce exposure to flood hazards;
- (d) Any wet-floodproofed enclosure at a new construction or substantial improvement of residential or non-residential structures is:
 - (1) Used only for parking of vehicles, building access, or storage;
 - (2) Designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters and is either:
 - (A) Certified by a District registered professional engineer or architect; or
 - (B) Meets the construction requirements listed in ASCE 24 related to flood resistance; and

- (3) Above grade on at least one side.

3106.3 The applicant shall provide any information or documentation requested by DOEE for DOEE to determine whether the proposed development is a substantial improvement. Required documentation includes estimates of the improvement or repair costs pursuant to the methodology set forth in the Substantial Improvement/Substantial Damage Desk Reference (FEMA P-758, May 2010).

3106.4 The applicant shall provide the following additional information, as applicable:

- (a) **Zone A.** If the specific regulatory flood elevation for a flood hazard area has not been provided in the FIS and FIRM for a development site located in Zone A, then the applicant shall provide the following for DOEE's review and approval:
 - (1) Available reports or studies from federal or District agencies or other sources related to flood elevation; or
 - (2) A new hydrologic and hydraulic (H&H) analysis.
- (b) **Subdivisions.** An applicant for a subdivision (including a new manufactured home park or subdivision, or expansion to an existing manufactured home park or subdivision) of more than five (5) acres in area or with more than fifty (50) lots shall show the flood hazard area boundaries and regulatory flood elevations on the plat submitted in the application.
- (c) **Conditional Letter of Map Revision (CLOMR).** If the project requires a CLOMR, the applicant shall provide DOEE the following documentation prepared by a registered professional engineer for submission to FEMA:
 - (1) Completed FEMA CLOMR forms available at <https://www.fema.gov/>;
 - (2) H&H analyses with any additional information required by FEMA;
 - (3) A letter of transmittal to FEMA;
 - (4) Receipt for payment of FEMA's processing fees;
 - (5) Copies of correspondence and documentation submitted to FEMA in which the applicant addresses any issues and comments on the CLOMR request; and

- (6) If FEMA issues a CLOMR, as-built plans showing the site elevations and a FEMA approved Letter of Map Revision (LOMR) prior to the issuance of a Certificate of Occupancy.
- (d) **Letter of Map Revision (LOMR).** If the project requires a LOMR, the applicant shall provide DOEE the following documentation prepared by a District-registered professional engineer for submission to FEMA:
- (1) Completed FEMA LOMR forms available at <https://www.fema.gov/>;
 - (2) H&H analyses with any additional information required by FEMA;
 - (3) A letter of transmittal to FEMA;
 - (4) Receipt of payment of FEMA's processing fees;
 - (5) Before FEMA issues a LOMR, copies of correspondence letters and documentations submitted to FEMA in which the applicant addresses any issues and comments on the LOMR request; and
 - (6) A LOMR approved by FEMA before building permit approval, except DOEE may approve site development permits without a FEMA-approved LOMR if the site development permits are for grading or filling of the site that is necessary to elevate it and remove it from the floodplain as specified in the CLOMR.
- (e) **Alteration of a watercourse.** For development that will alter a watercourse, the applicant shall:
- (1) Provide an H&H analysis prepared and sealed by a District-registered professional engineer that demonstrates the flood-carrying capacity of the altered portion of the watercourse will not be decreased; and
 - (2) Make notifications in accordance with 44 CFR § 60.3(b)(6).
- (f) **No Adverse Impact.** For all development (other than development related to interior work that is not considered substantial improvement, floodplain restoration, water body restoration, elevation of a public roadway located outside of a floodway or a flood hazard area with base flood elevations included in the FIS or on the FIRM but no designated floodways, or flood control governmental projects), an applicant shall:
- (1) Submit volumetric calculations prepared and sealed by a District-registered professional engineer or surveyor demonstrating that no

net loss of natural floodplain storage will occur, as the volume of the loss of floodwater storage due to filling in the flood hazard area shall be offset by providing an equal volume of flood storage by excavation or other compensatory measures at or adjacent to the development site outside the footprint of a proposed structure; or

- (2) Submit an H&H analysis prepared and sealed by a District-registered professional engineer demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the base flood elevation on any property not owned by the applicant.
- (g) **Floodway.** For development in a floodway or in riverine flood hazard areas where design flood elevations (DFEs) are specified but floodways have not been designated, other than development related to floodplain restoration, water body restoration, or flood control governmental projects, the applicant shall provide a site plan with an H&H analysis performed in accordance with 44 CFR § 60.3(d)(3) and a No-Rise Certification prepared and sealed by a District-registered professional engineer to demonstrate that the development will not result in any increase in flood levels inside the District during the occurrence of the base flood discharge.
- (h) **Floodplain Restoration, Waterbody Restoration, or Flood Control Government Projects.** For development related to floodplain restoration, waterbody restoration, or flood control, the applicant may, with DOEE approval, increase regulatory flood elevations up to one foot (1 ft.) if the increase in flood elevation is offset by stream or channel improvements which have been approved by DOEE. The applicant shall first provide DOEE a FEMA approved CLOMR (See also §§ 3106.4 (c) and (d)).
- (i) **Covenants and Agreements.** Covenants and agreements shall be recorded before permit issuance, as described in § 3112.
- (j) **Elevation Certificates.** An applicant shall submit an elevation certificate for flood elevations, building elevations, and floodway data as shown on construction drawings. Additional elevation certificates are required during and after construction as specified in § 3108.6.
- (k) **Floodproofing Certificates.** When an applicant seeks to undertake dry floodproofing that is not prohibited by this chapter, the applicant shall submit a floodproofing certificate of flood elevations, building elevations, and floodway data as shown on construction drawings. An additional floodproofing certificate is required after construction as specified in § 3108.7.

- (l) **Engineered Flood Opening Documentation.** For an enclosure below the DFE that complies with the Floodplain Management Regulations through the use of engineered flood openings, the applicant shall provide 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. The statement shall be provided to DOB and reviewed and approved by DOEE before the issuance of a certificate of completion or the first certificate of occupancy.
- (m) **Mechanical, Electrical, and Plumbing.** For development that includes mechanical, electrical, and plumbing that is not required to be accompanied by plan designs, DOEE may request that the applicant submit supplemental documentation, such as photographs or work receipts for work performed by a licensed professional, or receive an inspection by DOEE, to verify installation that is in accordance with § 3108.1.
- (n) **Removing a Property from the Flood Hazard Area.** Requests for removal from the flood hazard areas described in § 3101.2 (c) and (d) shall be accompanied and justified by an H&H analysis that is prepared and sealed by a registered design professional and submitted to DOEE for review.

3106.5 A permit for any development on a development site located wholly or partially inside a flood hazard area will not be issued until the applicant has obtained all legally required District and federal permits, including those required by section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. § 1334.

3107 DESIGN FLOOD ELEVATIONS (DFEs)

3107.1 DFEs must be identified for all development on a development site located wholly or partially inside a flood hazard area. Applicants may voluntarily design their project to be elevated or protected at a height above the DFEs required in this section.

3107.2 If an application includes a site plan, an applicant shall provide with the site plan cross sections that show the ground elevation and DFE at the site.

3107.3 Unless otherwise designated, the DFE shall be the higher of:

- (a) The base flood elevation plus a freeboard equal to two feet (2 ft.), or
- (b) The high flood elevation, in accordance with the most current FIS and FIRM published by FEMA and adopted by the District.

- 3107.4 For critical facilities permitted wholly or partially inside flood hazard areas, the DFE shall be equivalent to that identified in § 3107.3 plus two feet (2 ft.).
- 3107.5 For any new construction or substantial improvement located on a development site wholly or partially inside a tidal shoreline buffer area, the DFE shall be equivalent to that identified in § 3107.3 plus three and four-tenths feet (3.4 ft.).
- 3107.6 If the DFE is not specified on the FIS or FIRM, the applicant shall, subject to DOEE approval, either:
- (a) Determine the DFE by obtaining, reviewing, and reasonably utilizing data available from a federal or state agency; or
 - (b) Determine the DFE by using hydrologic and hydraulic engineering techniques, and as follows:
 - (1) The determination shall be performed and sealed by a District-registered professional engineer.
 - (2) Studies, analyses, and computations shall be submitted in sufficient detail to allow review and approval by DOEE.
 - (3) The accuracy of data submitted for the determination shall be the responsibility of the applicant.
- 3107.7 For the Zone X (shaded) flood hazard area mapped by Letter of Map Revision (LOMR) 15-03-2388P, where no high flood elevation is specified on the FIS and FIRM, the DFE shall be the elevation of the base flood elevation plus freeboard of two feet (2 ft.) if no high flood elevation data is available from a federal, state, or other source approved by DOEE. Requests for removal from this flood hazard area based on elevation shall be accompanied and justified by an H&H analysis that is prepared and sealed by a registered design professional and submitted to DOEE for review.
- 3107.8 For the Rhode Island Avenue Metro underpass area specified in § 3101.2(d), the DFE shall be the NAVD88 elevation of ninety-six and one-half feet (96.5 ft.).

3108 GENERAL TECHNICAL PROVISIONS

- 3108.1 **Utilities and Finishes.** The applicant shall apply the following minimum standards to all proposed development on a development site located wholly or partially inside a flood hazard area:
- (a) Installation or replacement of any electrical systems, equipment, and components; heating, ventilating, air conditioning, and plumbing appliances; plumbing fixtures; duct systems; and other service equipment

shall be performed so that the systems are elevated above the DFE or designed to prevent water from entering or accumulating inside the components during flooding.

- (b) New and replacement sanitary sewage systems and gas and oil supply systems shall be designed:
 - (1) To minimize or eliminate infiltration of flood waters into the systems; and
 - (2) So that discharges from the systems into flood waters and onsite waste disposal systems are located to avoid impairment to them or contamination from them during flooding.
- (c) All new or replacement water facilities and systems shall be designed, located, and constructed to minimize or eliminate flood damage and the infiltration of flood waters.
- (d) Flood-resistant building materials and installation methods for flooring and interior and exterior walls and wall coverings shall be used below the DFE in accordance with the August 2008 version of FEMA Technical Bulletin 2, Flood Damage-Resistant Materials Requirements.
- (e) All electrical outlets located below the DFE shall be of the ground fault circuit interrupter (GFCI) type.
- (f) All buildings, structures, storage tanks, and appliances and components therein shall be firmly anchored in accordance with ASCE 24 to prevent flotation, collapse, or lateral movement during a flood.

3108.2 **Placement.** For all development on a development site located partially inside a flood hazard area, every proposed structure shall be placed or designed and constructed to minimize impact upon the flow and height of flood water.

3108.3 **Additions.** All additions to residential and nonresidential structures located wholly or partially inside flood hazard areas shall comply with the elevation and dry floodproofing requirements of 12-J DCMR (“District of Columbia Existing Building Code”).

3108.4 **Historic Preservation.** DOEE, in coordination with the Historic Preservation Office (HPO), shall review any permit application for repair or rehabilitation to historic structures wholly or partially inside a flood hazard area. If relief from any of the Floodplain Management Regulations becomes necessary for continued designation as a historic structure, the applicant shall submit either a variance petition or a code modification application as described in § 3116 and § 3117, respectively.

3108.5 **Accessory Structures.** For a development site located wholly or partially inside a flood hazard area:

- (a) Accessory structures that are smaller than six hundred (600) square feet must be elevated, dry floodproofed, or wet floodproofed to at least the DFE; and
- (b) An accessory structure shall not be converted to a residential use.

3108.6 **Elevation Certificates.** For any elevated structure, the applicant shall submit to DOEE for review and approval an elevation certificate, which shall be prepared and sealed by a registered design professional using the latest FEMA Elevation Certificate Form and submitted and verified by DOEE:

- (a) As part of the initial application for a building permit as described in § 3106.4(j);
- (b) Upon placement of the lowest floor and before further vertical construction, and construction shall not continue further until this elevation certificate has been reviewed and approved; and
- (c) Before the final building inspection or before the issuance of a conditional certificate of occupancy for core and shell, whichever is earlier. Occupancy shall not begin until this elevation certificate has been reviewed and approved pursuant to the flood resistant provisions of the D.C. Building Code, 12-A DCMR § 110.3.

3108.7 **Dry Floodproofing.** When dry floodproofing is requested for development on a development site:

- (a) The applicant shall submit to DOEE for review and approval a floodproofing certificate, which shall be prepared and sealed by a registered design professional and submitted and verified by DOEE:
 - (1) As part of the initial application in support of a building permit as described in § 3106.4(k);
 - (2) Before the final inspection, the issuance of a certificate of completion, or the issuance of the first certificate of occupancy for an occupied space at grade or above, whichever is earlier; and
 - (3) Using the latest FEMA Floodproofing Certificate Form.
- (b) Occupancy shall not begin until DOEE has reviewed and approved the floodproofing certificate.

- (c) The property owner shall be responsible for maintenance of the dry floodproofing system and shall record that responsibility in a declaration of covenants. The property owner must properly maintain that system as demonstrated by:
 - (1) Annually deploying the dry flood proofing system and documenting the deployment with a timestamped photo to be kept on file for five (5) years; and
 - (2) Conducting any maintenance, as specified in the floodproofing plans approved by DOEE, and preserving documentation of any maintenance conducted on site for at least five (5) years after that maintenance is conducted.
- (d) A property owner shall submit a flood emergency operations plan and inspection and maintenance plan that complies with the requirements of ASCE 24 along with all other required documentation in this chapter as part of the initial permit application to DOEE for approval.
- (e) Dry floodproofing shall be limited to areas where the flood velocities adjacent to the structure are less than or equal to five feet per second (5 ft./sec.) during the design flood. If the specific regulatory flood velocity for a development site in a flood hazard area has not been provided in the FIS and FIRM, then the applicant shall provide the following data to establish those velocities for DOEE's review and approval:
 - (1) Available reports or studies from federal or District agencies or other sources related to flood velocity; or
 - (2) A hydrologic and hydraulic (H&H) analysis prepared and sealed by a District-registered professional engineer.

3108.8

Enclosures. Any enclosure shall be designed and constructed to allow for the automatic entry and exit of floodwaters for the purpose of equalizing hydrostatic forces on exterior walls. Designs shall be in accordance with ASCE 24 and Appendix G 12-A DCMR. Design and construction of flood openings shall meet the following criteria:

- (a) There shall be at least two (2) flood openings on different sides of each enclosed area;
- (b) For the substantial improvement of residential structures wholly or partially mapped in flood hazard areas having space below the DFE that has only one exterior wall, there shall be at least two (2) flood openings on one (1) side or on different sides of each enclosed area;

- (c) The total net area of all flood openings shall be at least one square inch (1 sq. in.) for each one square foot (1 sq. ft.) of enclosed area, or the flood openings shall be engineered flood openings that are designed and certified by a licensed professional engineer to automatically allow entry and exit of flood waters;
- (d) The bottom of each flood opening shall be one foot (1 ft.) or less above the higher of either the interior floor or grade or the exterior grade immediately below the opening;
- (e) Any louvers, screens, or other covers for the flood openings shall allow the automatic flow of floodwaters into and out of the enclosed area; and
- (f) Interior partitions and load-bearing walls shall have openings to allow water to readily reach every enclosed area.

3109 RESIDENTIAL STRUCTURES

3109.1 **Lowest Floor Height.** For the new construction or substantial improvement of residential structures wholly or partially inside the flood hazard areas specified in § 3101.2(a), the lowest floor (including the basement, parking garage, and any ancillary residential uses) shall be at least the height of the DFE. The lowest floor of any underground parking garage or ancillary residential use portion of any new construction, or substantial improvement of a building located entirely outside of flood hazard areas specified in § 3101.2(a), but wholly or partially inside flood hazard areas specified in § 3101.2(b), (c), or (d), shall be at or above the DFE or be designed and constructed to be dry floodproofed during any flood up to the height of the DFE.

3109.2 **Residential Enclosures.** For the new construction or substantial improvement of residential structures wholly or partially inside flood hazard areas, any enclosures below the DFE shall only be used for parking of vehicles, building access, or incidental storage. The enclosure shall be designed and constructed in accordance with § 3108.8.

3109.3 **Additions.** For all lateral additions to an existing residential structure that constitute a substantial improvement and are located wholly or partially inside the flood hazard area, the lowest floor of the addition shall be at least the height of the DFE.

3110 NONRESIDENTIAL STRUCTURES

3110.1 **Lowest Floor Height.** For the new construction or substantial improvement of non-residential structures wholly or partially inside flood hazard areas, the lowest floor (including the basement) either shall be at least the height of the DFE or the entire structure shall be designed and constructed to be dry floodproofed during any flood up to the DFE height.

- 3110.2 **Additions.** For all lateral additions to an existing nonresidential structure that constitute a substantial improvement and are located wholly or partially inside the Flood Hazard Area, the lowest floor of the addition shall be at least the height of the DFE or designed and constructed to be dry floodproofed during any flood up to the height of the DFE for the additions to a non-residential structure.
- 3110.3 **Nonresidential Enclosures.** For the new construction or substantial improvement of non-residential structures wholly or partially inside flood hazard areas, any enclosures below the DFE shall only be used for parking of vehicles, building access, or incidental storage. Enclosed areas of non-residential structures that are below the lowest floor must be adequately anchored and built using flood resistant building material. Any utilities or service facilities located below the DFE must be designed and/or located to prevent flood damage. The enclosure shall be designed and constructed in accordance with § 3108.8.
- 3110.4 **Non-Conversion.** For any new construction of, or substantial improvement to, a nonresidential building located wholly or partially inside a flood hazard area, a non-residential space below the DFE shall not be converted to a residential use.

3111 MIXED-USE BUILDINGS

- 3111.1 **Lowest Floor Height.** The lowest floor (including basement or underground parking garage) of any new construction or substantial improvement of a mixed-use building located on a development site wholly or partially inside a flood hazard area shall either be at or above the DFE or be designed and constructed to be dry floodproofed during any flood up to the DFE.
- 3111.2 **Residential Portion.** The lowest floor of the residential portion of any new construction of, or substantial improvement to, a mixed-use building located on a development site wholly or partially inside a flood hazard area shall be at or above the DFE.
- 3111.3 **Nonresidential Portion.** The lowest floor of the nonresidential portion of any new construction or substantial improvement of a mixed-use building located on a development site wholly or partially inside a flood hazard area shall either be at or above the design flood elevation or be designed and constructed to be dry floodproofed during any flood up to the design flood elevation.
- 3111.4 **Ancillary Residential Use Portion.** The lowest floor of the ancillary residential use portion of any new construction or substantial improvement of a mixed-use building located on a development site wholly or partially inside a flood hazard area shall be at or above the DFE, except that the lowest floor of the ancillary residential use portion of any new construction or substantial improvement of a mixed-use building located entirely outside of flood hazard areas specified in § 3101.2(a), but wholly or partially inside flood hazard areas specified in §§

3101.2(b), (c), or (d), shall be at or above the DFE or be designed and constructed to be dry floodproofed during any flood up to the height of the DFE.

3111.5 **Mixed-Use Enclosures.** For the new construction or substantial improvement of mixed-use structures wholly or partially inside flood hazard areas, the non-residential portions below the DFE must be dry floodproofed. All residential units, building systems and service equipment that serve residential units and ancillary areas used by residents, must be elevated above the DFE. When an enclosure is created by elevating the non-residential portions at or above the DFE, the space below the DFE shall only be used for parking of vehicles, building access, or incidental storage. These enclosed areas shall be adequately anchored and built using flood resistant building material. Any utilities or service facilities below the DFE shall be designed and/or located to prevent flood damage. The enclosure shall be designed and constructed in accordance with § 3108.8.

3111.6 **Dry Floodproofing.** Dry floodproofing of non-residential portions of mixed-use buildings is allowed if all residential units, building systems, and service equipment that serve residential units, and ancillary areas used by residents, are elevated above the DFE. Dry floodproofed shared accesses, such as lobbies to residential and non-residential portions, must provide separate access to the elevated residential portions of the mixed-use structures. When the separate access to the residential portions of a mixed-use building is enclosed by walls and below an elevated building, the walls must comply with the requirements for enclosures in § 3108.8.

3111.7 **Non-Conversion.** For any new construction of or substantial improvement to a mixed-use building located wholly or partially inside a flood hazard area, a non-residential space below the DFE shall not be converted to a residential use.

3112 COVENANTS AND AGREEMENTS

3112.1 The owner of each lot and parcel on which substantial improvement or new construction of a residential, mixed-use, or nonresidential structure is located wholly or partially inside a flood hazard area shall record with the Office of the Recorder of Deeds a non-conversion agreement not to convert areas of parking, storage, or access below the DFE to a residential use.

3112.2 The owner of each lot and parcel on which substantial improvement or new construction of an accessory structure is located wholly or partially inside a flood hazard area shall record with the Office of the Recorder of Deeds a non-conversion agreement not to convert an accessory structure to a residential use.

3112.3 The owner of each lot and parcel on which substantial improvement or new construction of any structure is located wholly or partially inside a flood hazard area and is designed to be dry floodproofed shall record with the Office of the

Recorder of Deeds a covenant to maintain the dry floodproofing system, including the deployment, operation, or maintenance of the system.

- 3112.4 Each non-conversion agreement or covenant shall:
- (a) Be in the form approved by DOEE;
 - (b) Be approved for technical sufficiency by DOEE;
 - (c) Be binding on each subsequent owner (run with the land); and
 - (d) Provide for inspection of and access to the areas, structures, and systems described in the covenant or non-conversion agreement at reasonable times by DOEE or its authorized representative.
- 3112.5 Before any DOEE-issued permit required under this chapter is issued, the property owner shall file and record each required covenant or non-conversion agreement, at the expense of the owner, with the Office of the Recorder of Deeds.
- 3112.6 The owner shall provide DOB with one copy of the covenant or non-conversion agreement that is certified by the Office of the Recorder of Deeds as having been recorded among the land records against the lot and parcel on which development is occurring.
- 3112.7 For any modification or termination of the covenant or non-conversion agreement, the owner shall obtain prior written approval by DOEE and record the covenant or agreement accordingly.
- 3112.8 An agency or authority of the federal government or District Government shall not be required to make or record a covenant or non-conversion agreement. If a District property is leased to a private entity for more than three (3) years, the lessee and District agency shall sign an agreement that documents the property's dry floodproofing system and who is responsible for its operation and maintenance, as well as an agreement not to convert an accessory structure, parking area, storage area, or access that is below the DFE into residential use.

3113 CRITICAL FACILITIES

- 3113.1 In addition to all other applicable provisions of this chapter, new construction of critical facilities or substantial improvement of existing critical facilities in the flood hazard areas shall comply with the additional requirements described in this section.
- 3113.2 The applicant shall submit materials demonstrating that:

- (a) The development project has received all applicable federal and District authorizations, including approvals related to stormwater management and soil erosion and sediment control;
- (b) There is no practical alternative for development outside the flood hazard area;
- (c) In determining the proposed location, the applicant has considered the likelihood of inundation by sea level rise and the increased intensity of rainfall and its associated flooding over the course of the life of the critical facility structure;
- (d) The development is designed to avoid or, in the alternative, minimize environmental and structural damage and other flood-related impacts from floods and from sea level rise; and
- (e) Specific flood mitigation measures are incorporated into the design of the facility to protect the development and access to it.

3113.3 The applicant shall submit for DOEE’s review:

- (a) A comprehensive resilient systems plan that demonstrates how any equipment and systems supporting critical functions of the development will be protected during a flood to the height of the DFE; and
- (b) An evacuation plan that fully explains how any evacuation of the site before or during a 100-year or 500-year flood would proceed, by providing for:
 - (1) Adequate vehicle access at all times and conditions; and
 - (2) Alternate escape routes.

3114 HAZARDOUS AND BUOYANT MATERIALS STORAGE AND EMERGENCY PLANS

3114.1 Any proposed development on a development site that is located wholly or partially inside a flood hazard area and involves a facility that produces, stores, or disposes of hazardous materials shall be considered a critical facility and subject to section § 3113.

3114.2 Any proposed development described in § 3114.1 shall be:

- (a) Elevated or designed and constructed to remain dry and prevent pollution from the facility in the event of a flood reaching the DFE for critical facilities specified in § 3107.4; and

- (b) Constructed in accordance with the standards for dry floodproofing contained in § 3108.7.

3114.3 The owner of a property or a facility that is located wholly or partially inside a flood hazard area shall store any hazardous materials so that they do not come into contact with floodwaters or become debris in the event of a flood reaching the DFE for critical facilities specified in § 3107.4.

3114.4 The owner of a property or a facility that is located wholly or partially inside a flood hazard area that stores buoyant materials, including tires, storage tanks, lumber, auto body components, insulation, and prefabricated above-ground pools, shall:

- (a) Not store the materials in a flood hazard area for more than sixty (60) days; and
- (b) Anchor or enclose the materials to resist flotation.

3115 TIDAL SHORELINE BUFFER

3115.1 The provisions of this section shall apply for all development on a development site located wholly or partially inside the flood hazard area known as the tidal shoreline buffer.

3115.2 A non-residential space below the tidal shoreline flood elevation shall not be converted to a residential use.

3115.3 An applicant for new construction or substantial improvement of structures wholly or partially inside the tidal shoreline buffer shall submit for DOEE's review, in addition to documents required by the other applicable requirements in this chapter:

- (a) Evaluations to prove that alternative site locations are not possible;
- (b) A comprehensive resilient systems plan that includes a suitability assessment of equipment and systems supporting critical functions of the development and specifies flood mitigation measures that will be taken to protect this equipment and systems, and ensure continuity of operations; and
- (c) An evacuation plan that fully explains the way the development will be evacuated before or during a 100-year and 500-year flood by providing for:
 - (1) Adequate vehicle access at all times and conditions, and

- (2) Alternate escape routes.

3116 VARIANCES TO THIS CHAPTER

- 3116.1 An applicant for a permit in the floodplain who is subject to the requirements of this chapter may petition DOEE for a variance from any of the following as applied to the applicant:
- (a) Regulatory flood elevation determinations, flood hazard area boundaries, floodway locations, or other FIRM-related determinations;
 - (b) Decisions made by DOEE regarding land-disturbing development, including but not limited to mining, dredging, filling, grading, paving, and excavations; and
 - (c) Decisions made by DOEE regarding the information requirements set forth in the permit application process pursuant to § 3106.
- 3116.2 DOEE may grant a variance in response to a petition pursuant to § 3116.1 if the applicant shows, to the satisfaction of DOEE, that:
- (a) The unique characteristics of the size, configuration, or topography of the site justify a change to the regulatory flood elevations in this chapter;
 - (b) Failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable due to conditions such as unique physical and topographical conditions of the property;
 - (c) Granting a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, or conflict with other existing laws; or regulations; or
 - (d) The variance is the minimum necessary to afford relief considering the flood hazard.
- 3116.3 A variance shall not be granted for any construction, development, use, or activity inside any floodway area that would cause any increase in the regulatory flood elevations.
- 3116.4 A variance shall not be granted for an accessory structure exceeding six hundred (600) square feet.
- 3116.5 When DOEE issues an order granting a variance, that order may include, and the requester must abide by, any reasonable condition or safeguard DOEE deems necessary to protect the public health, safety, and welfare, and to achieve the

objectives of this chapter and the District of Columbia Applications Insurance Implementation Act (D.C. Official Code § 6-501 *et seq.*).

3116.6 All other requests to deviate from the floodplain management regulations, including those regarding buildings or other temporary or permanent structures, shall be made to DOB through the code modification process in § 3117.

3117 CODE MODIFICATIONS TO FLOOD RESISTANT DESIGN PROVISIONS OF THE CONSTRUCTION CODES

3117.1 An applicant seeking a code modification to any provision of the Construction Codes relating to any development on a development site located wholly or partially inside a flood hazard area must have DOB approval. No approval will be granted by DOB unless:

- (a) The code modification complies with the procedures set forth in Appendix G 12-A DCMR; and
- (b) DOEE has reviewed and provided a recommendation to DOB regarding the code modification request.

3117.2 Notwithstanding any provision of this section, all structures wholly or partially inside flood hazard areas shall be designed and constructed to have the capability of resisting the base flood and high flood.

3118 APPEALS TO DOEE

3118.1 A person adversely affected by a decision made by DOEE under this chapter may appeal the action in accordance with this section.

3118.2 A person adversely affected by a DOEE action may, within fifteen (15) calendar days of the action, appeal the action to the Director of DOEE or the Director's designee. In making an appeal, the person shall:

- (a) Submit the request in writing to DOEE by email to flood.risk@dc.gov, or by mail that is postmarked within fifteen (15) days of the adverse action to the Director or the Director's designee;
- (b) Provide information or material that would support a change in or withdrawal of DOEE's action; and
- (c) Provide any additional information requested by DOEE.

3118.3 Appeals must be in writing and include all information and material that the aggrieved person wishes to present for consideration on appeal.

3118.4 When considering an appeal, the Director or the Director's designee may stay the effect of a decision or action being appealed pending determination of the appeal. Unless stayed, the original decision or action remains in effect.

3118.5 Any person adversely affected or aggrieved by a decision of the Director under this section may request a hearing in accordance with § 3119.

3119 APPEALS TO THE OFFICE OF ADMINISTRATIVE HEARINGS

3119.1 A person adversely affected by a decision of the Director or DOEE under § 3118 may appeal the decision to the Office of Administrative Hearings (OAH) within fifteen (15) calendar days of DOEE's final decision.

3119.2 Prehearing practice and the conduct of the hearing shall be in accordance with the Office of Administrative Hearings Establishment Act of 2001, effective March 6, 2002 (D.C. Law 14-76; D.C. Official Code § 2-1831.01 *et seq.*), and the regulations set forth at Title 1, chapter 28, of the District of Columbia Municipal Regulations.

3120 PENALTIES

3120.1 Any person who violates this chapter and the Construction Codes (DCMR Title 12) will be subject to any applicable penalties in the Construction Codes as well as any applicable penalties provided in this chapter.

3120.2 Violations of the provisions of this chapter shall be subject to any applicable penalties provided in the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*), or the District of Columbia Applications Insurance Implementation Act, effective May 26, 1976 (D.C. Law 1-64; D.C. Official Code § 6-501 *et seq.*), as well as any civil fines, fees, and penalties established by DOEE pursuant to the Civil Infractions Act of 1985 (D.C. Official Code §§ 2-1801 *et seq.*).

3121-3197 [RESERVED]

3198 TRANSITION

3198.1 An applicant that has submitted a complete application in accordance with 21 DCMR § 3106 and 12-A DCMR § G104 within 30 days of [date of publication as final] may comply with the previous edition of the Flood Hazard Rules.

3198.2 Applications for which DOEE determines that an unexpired approval or final report listed below conflicts with this chapter may comply with the provisions of this chapter effective as of [day before publication of final rules], provided that the permit is obtained before [6 months after the date of publication as final]:

- (a) Final approval by the Historic Preservation Review Board;
- (b) Final approval by the Commission on Fine Arts;
- (c) Final approval by the National Capital Planning Commission;
- (d) Variance or special exception from the Board of Zoning Adjustment;
- (e) Stage 2 or Consolidated Planned Unit Development review by the District Office of Planning; or
- (f) Design review by the District Office of Planning.

3198.3 If a permit under which a floodplain plan was approved by the DOEE expires or is abandoned in accordance with 12-A DCMR Chapter 1, then the DOEE's floodplain approval shall be considered expired.

3199 DEFINITIONS

When used in this chapter, the following words and phrases shall have the meanings ascribed:

Accessory Structure – a structure that is:

- (a) Not used for human habitation;
- (b) Incidental to a main structure on the premises; and
- (c) Used only for the parking of vehicles or limited storage.

Adjacent community – any State, or political subdivision thereof, that is immediately adjacent to the borders of the District of Columbia and that has authority to adopt and enforce floodplain management regulations for areas inside its jurisdiction.

Alteration of a watercourse – a dam, impoundment, channel relocation, change in channel alignment, channelization, or change in cross-sectional area of the channel or the channel capacity, or any other form of modification, which may alter, impede, retard, or change the direction or velocity of the riverine flow of water during conditions of the base flood.

Ancillary residential use portion – a portion of a building that is used by residents, but not as a residential unit. Ancillary residential uses include lobbies, mailrooms, loading docks, and gyms that are available only to residents, but do not include above-grade enclosed areas that are below the DFE and used solely for parking of vehicles, building access, or storage.

American Society of Civil Engineers Standard 24-14 (ASCE 24), Flood Resistant Design and Construction – a publication of the American Society of Civil Engineers (ASCE) that provides minimum requirements for flood-resistant design and construction of structures located in flood hazard areas. FEMA has deemed that ASCE 24 meets or exceeds the minimum National

Flood Insurance Program requirements for buildings and structures. ASCE 24 is a referenced standard in the International and District of Columbia Construction Codes. ASCE 24-14 refers to the version of ASCE 24 published in 2014 that is available on the ASCE website at: <https://ascelibrary.org/doi/book/10.1061/9780784413791>.

Base flood – the flood having a one (1) percent chance of being equaled or exceeded in any given year. The base flood is commonly referred to as the “one-hundred-year (100-year) flood” or the “one-percent-annual-chance flood.”

Base floodplain – the area that would be inundated by a flood having a one (1) percent chance of being equaled or exceeded in any given year, also known as the one-hundred-year (100-year) floodplain.

Base flood elevation – the 100-year flood elevation, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North America 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.

Construction – the building, rebuilding, renovation, repair, extension, expansion, alteration, or relocation of a structure.

Critical facility – a building or structure intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquake that contains essential equipment, houses services necessary for emergency response and recovery, or would pose a substantial risk to the public or significant disruption to the community at large in the event of failure, disruption of function during or after flooding, or damage by flooding. Critical facilities include:

- (a) Hospitals and health care facilities having surgery or emergency treatment facilities;
- (b) Fire, rescue, ambulance, and police stations and emergency vehicle garages;
- (c) Designated emergency shelters;
- (d) Designated emergency preparedness, communication, and operation centers and other facilities required for emergency response;
- (e) Power generating stations and other public utility facilities required in emergencies;
- (f) Critical aviation facilities such as control towers, air traffic control centers, and hangars for aircraft used in emergency response;
- (g) Ancillary structures such as communication towers, electrical substations, fuel or water storage tanks, or other structures necessary to allow continued functioning of a critical facility during and after an emergency;
- (h) Jails, correctional facilities, and detention facilities;
- (i) Care facilities where residents have limited mobility or ability, including nursing homes but not including care facilities for five or fewer persons;
- (j) Shelters and short-term family housing facilities for individuals experiencing homelessness;

- (k) Elementary schools and secondary schools;
- (l) Preschool and child care facilities not located in one- and two-family dwellings;
- (m) Inpatient alcohol or drug rehabilitation facilities;
- (n) Psychiatric hospitals;
- (o) Animal shelters and wildlife rehabilitation facilities; and
- (p) Facilities that produce, store, or dispose of hazardous materials.

Design Flood Elevation (DFE) – the 100-year flood elevation (base flood elevation) plus two feet (2 ft.), or the 500-year flood elevation (high flood elevation), whichever is higher, based on the FEMA Flood Insurance Rate Map, effective September 27, 2010, and subsequent revisions and amendments as approved by FEMA, or the flood protection elevation as designated herein in accordance with the Floodplain Management Regulations.

Development – any human-made change to improved or unimproved premises, including buildings or other structures, temporary structures, temporary or permanent storage of materials, mining, dredging, filling, grading, paving, excavations, operations, and other land-disturbing activities.

Development Site – a record lot located wholly or partially inside a flood hazard area on which any development is proposed to occur.

District-registered professional engineer – an engineer who registers as a professional engineer and becomes licensed to practice as an engineer in the District of Columbia.

District of Columbia (D.C.) Building Code –the District of Columbia Building Code Supplement, 12-A DCMR, or any successor thereto.

District of Columbia (D.C.) Construction Codes – the District of Columbia Construction Codes Supplement, 12-A DCMR, and any subsequent editions thereof, or any successor thereto.

DOB – the District of Columbia Department of Buildings.

DOEE – the Department of Energy and Environment.

Dry floodproofing – a combination of design modifications that result in a building or structure, including the attendant utility and sanitary facilities, being watertight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist hydrostatic loads.

Elevation Certificate – the National Flood Insurance Program Elevation Certificate (FEMA form 086-0-33), any successor to FEMA form 086-0-33, or other DOEE-approved form used to certify that new buildings and substantial improvements in flood hazard areas are properly elevated in accordance with the Floodplain Management Regulations.

Enclosure – an area below the lowest floor of an elevated building that is enclosed on all sides by walls.

Encroachment – the placement of fill, excavation, buildings, permanent structures, or other development into a flood hazard area that may impede or alter the flow capacity of riverine flood hazard areas.

Existing manufactured home park or subdivision – 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 finished before the effective date of the Floodplain Management Regulations adopted by the District of Columbia.

Expansion to an existing manufactured home park or subdivision – the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

FEMA – the Federal Emergency Management Agency.

Flood or flooding – a general and temporary condition of partial or complete inundation of normally dry land from:

- (a) The overflow of inland or tidal waters; or
- (b) The unusual and rapid accumulation or runoff of surface waters from any source.

Flood hazard area – the land inside the 500-year (Zone X(shaded)) or 100-year (Zones A, AE, A1-30, A99, AR, AO, or AH) floodplain in accordance with the FEMA Flood Insurance Rate Map, effective September 27, 2010, and subsequent revisions and amendments as approved by FEMA, or other area designated herein as a flood hazard area in accordance with the Floodplain Management Regulations.

Flood Insurance Rate Map (FIRM) – an official map of a community on which FEMA has delineated both the flood hazard areas and other risk premium zones applicable to the community.

Flood Insurance Study (FIS) – the official report provided by FEMA 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.

Floodplain – a relatively flat or low land area that is subject to partial or complete inundation from an adjoining or nearby stream, river, or watercourse; or any area subject to the usual and rapid accumulation of surface waters from any source.

Floodplain Management Regulations – The flood-resistant construction provisions of the D.C. Construction Codes, in combination with this chapter.

Floodproofing – any combination of structural and nonstructural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

Floodproofing Certificate – the National Flood Insurance Program Floodproofing Certificate for Non-Residential Structures (FEMA form 086-0-34), any successor to FEMA form 086-0-34, or other DOEE approved form used to certify a floodproofing design for buildings that are permitted by these regulations to use dry floodproofing as an alternative to elevating to or above the DFE.

Floodway – the channel of a 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.

Freeboard – a factor of safety usually expressed in feet above a flood level for purposes of floodplain management intended 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.

Hazardous Materials – The following materials:

- (a) Acetone;
- (b) Ammonia;
- (c) Benzene;
- (d) Calcium carbide;
- (e) Carbon disulfide;
- (f) Celluloid;
- (g) Chlorine;
- (h) Hydrochloric acid;
- (i) Hydrocyanic acid;
- (j) Magnesium;
- (k) Nitric acid and oxides of nitrogen;
- (l) Petroleum products (gasoline, fuel oil, etc.);
- (m) Phosphorus;
- (n) Potassium;
- (o) Sodium;
- (p) Sulfur and sulfur products;
- (q) Pesticides (including insecticides, fungicides, and rodenticides); and
- (r) Radioactive substances.

High flood – the flood having a two-tenths percent (0.2%) chance of being equaled or exceeded in any given year, also known as the five-hundred-year (500-year) flood.

High flood elevation – the 500-year flood water surface elevation, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North America Vertical Datum (NAVD), or other datum specified on the Flood Insurance Rate Map (FIRM).

Historic structure – any structure that is:

- (a) Individually listed in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual 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 that 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:
 - (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.

Hydrologic and Hydraulic (H&H) Analysis – an analysis that quantifies the volumetric flow of water. Hydraulic analyses determine the depth of flow, flow velocity, and forces from flowing water.

Interior Flooding – Floods, also known as flash floods, urban floods, stormwater floods, and cloudburst floods, that are caused by heavy rainfall that cannot be absorbed by the ground and then overwhelm the drainage system. Interior flooding can occur when river elevations are normal because interior floods are attributed to topography, development, localized weather, and the capacity of stormwater systems. Generally, areas of interior flood risk are not mapped on FEMA’s flood insurance rate maps.

Land-disturbing activity – Movement of earth, land, or sediment that disturbs the land surface and the related use of pervious land to support that movement. Land-disturbing activity includes stripping, grading, grubbing, trenching, excavating, transporting, and filling of land, as well as the use of pervious adjacent land for movement and storage of construction vehicles and materials. Land-disturbing activity does not include repaving or remilling that does not expose the underlying soil.

Letter of Map Change – an official determination issued by FEMA that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

- (a) 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 specific property, portion of a property, or structure is not located in a special flood hazard area.
- (b) Letter of Map Revision (LOMR)– A revision based on technical data that may show changes to flood zones, flood elevations, special flood hazard area boundaries and floodway delineations, and other planimetric features.
- (c) Letter of Map Revision Based on Fill (LOMR-F) – A determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer located inside the special flood hazard area. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community’s floodplain management regulations.
- (d) 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 the 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; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA to revise the effective FIRM.

Lowest floor – the floor of the lowest enclosed area, including basement. The term excludes the floor of any unfinished or flood-resistant enclosure usable solely for vehicle parking, building access or limited storage provided that the enclosure is not built so as to render the structure in violation of Section 1612 of the D.C. Building Code and Appendix G 12-A DCMR.

Manufactured home – a structure that is transportable in one or more sections, built on a permanent chassis, designed for use with or without a permanent foundation when attached to the required utilities, and constructed to the Federal Manufactured Home Construction and Safety Standards and rules and regulations promulgated by the U.S. Department of Housing and Urban Development in 24 CFR Part 3280. The term also includes mobile homes, park trailers, travel trailers and similar transportable structures that are placed on a site for 180 consecutive days or longer.

Mixed-use building – any building or structure that has non-residential and residential portions.

National Flood Insurance Program (NFIP) – a Federal program administered by FEMA enabling property owners in participating communities to purchase insurance protection against losses from flooding. Participation in the NFIP is based on an agreement between local communities and FEMA under which FEMA agrees to make flood insurance available in the

community as a financial protection against flood losses if the community will adopt and enforce a floodplain management ordinance to reduce future flood risks from new construction and development in flood hazard areas.

NAVD88 – The North American Vertical Datum of 1988 (NAVD88), which is the current vertical control datum for the District of Columbia. It defines a specific zero elevation point from which vertical elevation is measured.

New construction – site preparation for, and construction of, entirely new structures and structures that maintain only the existing foundation, the exterior walls, or both. New construction means, for the purposes of determining insurance rates, structures for which the “start of construction” started on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to the structures. For floodplain management purposes, new construction means structures for which the start of construction started on or after the effective date of a floodplain management regulation adopted by the District and includes any subsequent improvements to the structures.

New manufactured home park or subdivision – 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 finished on or after the effective date of these regulations.

No-Rise Certification – a document that the applicant provides to demonstrate that their project does not cause any increase to the base flood elevation.

Non-residential – any building or structure or portion thereof that is not classified residential.

Non-residential portion of a mixed-use building – a portion of the mixed-use building that is available for use by the general public or is publicly accessible.

Recreational vehicle – a vehicle that is built on a single chassis, 400 square feet (37.16 m²) or less when measured at the largest horizontal projection, designed to be self-propelled or permanently towable by a light-duty truck, and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal 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.

Registered Design Professional – an individual who is registered or licensed to practice engineering, architecture, or land surveying, as defined by the statutory requirements of the professional registration laws of District of Columbia.

Residential – refers to:

- (a) Building and structures and portions thereof in which people live or that are used for sleeping purposes on a transient or non-transient basis;
- (b) Structures including one- and two-family dwellings, townhouses, condominiums, multifamily dwellings, apartments, congregate residences, boarding houses, lodging houses, rooming houses, hotels, motels, apartment buildings, convents, monasteries, dormitories, fraternity houses, sorority houses, vacation time-share properties; and
- (c) Institutional facilities in which people are cared for or live on a 24-hour basis in a supervised environment including board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers, convalescent facilities, hospitals, nursing homes, mental hospitals, detoxification facilities, prisons, jails, reformatories, detention centers, correctional centers, and prerelease centers.

Residential portion of a mixed-use building – residential or dwelling unit where people live or that are used for sleeping purposes. Ancillary residential uses such as lobbies, mailrooms, loading docks, and gyms that are available only to residents inside the residential portion of a mixed-use building.

Resilient systems plan – a suitability assessment of equipment and systems that support critical functions of the facility and that specifies flood mitigation measures that will be taken to protect the systems.

Resubmission – After the initial submission of a permit application by an applicant to DOEE, each time the applicant makes changes to, or provides new information for their application (including at the request of DOEE), is considered a resubmission.

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 permit 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.

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 or recreational vehicle that is on-site for more than one hundred eighty (180) days.

Subdivision – the division or assembly of land into one or more lots of record that are platted and recorded on the records of the Surveyor in accordance with the Subdivision Regulations of the District of Columbia, 10B DCMR §§ 2700 *et seq.*

Substantial damage – damage of any origin sustained by a structure for which the cost of restoring the structure to the condition before the damage occurred would equal or exceed 50 percent (50%) of the tax assessed value of the structure before the damage occurred.

Substantial improvement – any combination of repairs, reconstruction, rehabilitation, additions, modifications, or improvements of a building or structure made during the 5-year period immediately preceding a permit application, the aggregate cost of which, together with the cost of the work proposed by the latest permit application, equals or exceeds fifty percent (50%) of the tax assessed value of the structure before the start of construction. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not include:

- (a) 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, or
- (b) Any repair, reconstruction, rehabilitation, alteration, addition or other improvement of a detached one- and two-family dwelling or townhouse not more than three stories above grade plane in height with a separate means of egress located wholly outside of flood hazard areas described in § 3101.2 (a), the cost of which is less than \$200,000. The Floodplain Administrator may adjust this value annually using updated assessment data from the Office of Tax and Revenue for the value of improvements at residential properties in Zone X (shaded).

Tidal shoreline buffer – land projected to be inundated by water by year 2080 due to changes in sea level as determined by best available science. The flood hazard area is the land inside the Tidal Shoreline Buffer layer depicted in the DOEE Flood Risk Portal (<http://dcfloodrisk.org/>), along with any subsequent revisions and amendments.

Watercourse – A river, creek, stream, channel, or other topographic feature in, on, through, or over which water flows at least periodically.

Wet floodproofing – floodproofing method that relies on the use of flood-damage-resistant materials and construction techniques to minimize flood damages to areas below the DFE of a structure intentionally allowed to flood.

Comments Requested

All persons desiring to comment on the proposed Flood Hazard Rules should file comments in writing not later than forty-five (45) days after the publication of this notice in the D.C. Register. All comments will be treated as public documents and will be made available for public viewing on DOEE's website at www.doe.dc.gov.

When DOEE identifies a comment containing copyrighted material, DOEE will provide a reference to that material on its website. If a comment is sent by email, the email address will be automatically captured and included as part of the comment that is placed in the public record and made available on DOEE's website. All comments should be labeled "Flood Hazard Rules" and filed with the Department of Energy and Environment, Regulatory Review Division, 1200 First Street NE, 5th Floor, Washington, DC 20002, Attention: Flood Hazard Rules Comments, or by email to Flood.Risk@dc.gov.