

City of Alexandria Virginia

MEMORANDUM

MEMORANDUM TO INDUSTRY No 27-08

DATE: OCTOBER 16, 2026

TO: DEVELOPERS, ARCHITECTS, ENGINEERS, AND SURVEYORS

FROM: JESSE MAINES, DIVISION CHIEF, STORMWATER MANAGEMENT,
TRANSPORTATION AND ENVIRONMENTAL SERVICES

SUBJECT: FLOODPLAIN MANAGEMENT STANDARD CONDITIONS

BACKGROUND

The City of Alexandria administers a regulatory Floodplain Management Program and implements the development requirements of Article VI., Section 6-300 of the City Zoning Ordinance. Regulated projects must demonstrate compliance with this ordinance for any new or substantially improved development in any floodplain district.

PURPOSE AND APPLICABILITY

This memorandum establishes guidance for compliance with the hydrologic and hydraulic analysis called for in the ordinance for all development of new and substantially improved buildings where fill is added and identifies key design standards and submittal requirements for satisfying most requirements but is not all inclusive. All other requirements under this ordinance are strictly enforced.

The applicant remains responsible for satisfying all applicable federal, state, and City requirements.

DESIGN STANDARDS (SEC. 6-306, 6-307)

Element	Minimum Standard
Residential lowest floor (incl. basement)	BFE + 1 ft. Dry floodproofing is not permitted.
Nonresidential lowest floor	BFE + 1 ft, or dry floodproofed to BFE + 1 ft.
Flood Design Class 4 (USBC)	1 ft above the higher of the BFE or 0.2% flood elevation.
Mechanical, electrical, plumbing, HVAC	BFE + 1 ft.
Accessory structures	600 sq ft maximum; BFE + 1 ft.

- **Mixed-use buildings** are treated as residential unless: no more than 20% of the site is in Zone A/AE; at least 20,000 sq ft is nonresidential; no basements or below-grade parking are in Zone A/AE; and floodproofing meets NFIP Technical Bulletin 3 latest version.
- **Dry floodproofing** must be watertight and passive (no human intervention), certified per Technical Bulletin 3 latest version.
- **Enclosures below BFE + 1 ft** not floodproofed are limited to parking, access, and storage; must use flood damage-resistant materials; and require at least two flood openings on different sides providing 1 sq in per sq ft of enclosed area, no more than 1 ft above grade, or certified engineered openings.

FILL AND HYDRAULIC ANALYSIS (SEC. 6-304, 6-305, 6-306, 6-308)

- A PE-certified hydrologic and hydraulic analysis is required for any floodway encroachment (zero rise) and for developments adding fill in Zone A/AE (0.5 ft cumulative maximum).
- Hydrologic and Hydraulic Analysis requirements:
 - 1) At the Preliminary Plan submittal and at each subsequent design submittal, if the site plan changed from previous submittals in scope and scale of added fill, a Study of the Floodplain shall be submitted for review and approval in accordance with 6-305(E) of the Floodplain District Zoning Ordinance to include:
 - a) A technical memo signed and sealed by a Professional Engineer (VA). The technical memo shall include, at a minimum, the following:
 - i) An introduction and summary of existing conditions and a demonstrated understanding of the basis for the effective floodplains.
 - ii) An analysis of the existing model and its limitations, if any, in demonstrating the effects of the project on the modeling results.
 - iii) An estimated impact of the proposed project on the effective floodplain summarizing methodology employed and explanation of any engineering judgment to justify the estimated impact of the proposed project.
 - iv) If the project intends to adjust or move the existing floodplain boundary by floodproofing, fill, or other means, a schedule for acquiring FEMA CLOMR/LOMR must be included.
 - v) If including a no-rise certificate, include it at the end of the tech memo as an attachment.
 - b) Development of a HEC-RAS Model with the following scenarios. The Proposed Conditions scenario must show that the project will not increase the 1% annual chance water surface elevation (WSEL) above effective levels or cause no rise. The proposed 1% annual chance WSEL increase is computed by comparing the proposed condition model results to the existing condition model results at each cross section.

- i) Duplicate Effective – scenario used in the effective FEMA Flood Insurance Study (FIS).
 - ii) Existing Conditions (Corrected Effective) – updated duplicate effective model that represents existing conditions of the effected floodplain district. Existing cross sections may need to be revised/resampled to match existing condition topographic survey at the project site.
 - iii) Proposed Conditions – including proposed topography with fill, proposed structure(s), and other floodplain obstructions
 - iv) Incorporating all proposed development associated with the plan to evaluate the overall impact of the project.
- c) The following are required of the model:
- i) Vertical datum shall be NAVD88
 - ii) Unless otherwise specified by the Floodplain Administrator, all profiles currently in the model shall be run (10-,25-,50-,100-,500-yr)
 - iii) Development of a 1% annual chance (100-yr) WSEL comparison table (to be included in the tech memo) that include at least five cross sections upstream of the proposed development to a point downstream where there are at least two consecutive cross sections that exhibit no change in the 1% annual chance WSELs.
- d) Submittal of the Technical Memo and all hydraulic model files used shall be made to the APEX permitting system under the current development application case number for review.

SUBMITTAL REQUIREMENTS (SEC. 6-305, 6-307)

Submittal	Required For
BFE, lowest floor elevation, existing and proposed topography	All new buildings or substantial improvement applications in any floodplain district
FEMA Elevation Certificate	All new buildings or substantial improvements in any floodplain district
FEMA Floodproofing Certificate (Technical Bulletin 3)	Dry floodproofed buildings in any floodplain district
PE/architect flood-resistant construction certification	Prior to building permit in any floodplain district
Hydrologic and hydraulic analysis; CLOMR/LOMR	All potential development impacts to BFE

EFFECTIVE DATE

This memorandum becomes effective and is binding on issuance and only seeks to clarify the Floodplain Management requirements for preparation of the PE-certified hydrologic and hydraulic analysis in the ordinance for this Memo to Industry. All site development plans and grading plans remain subject to approved conditions, permits, recorded instruments, and applicable law.