June 22, 2017

Tom Wilbur
Akridge
601 Thirteenth Street, NW, Suite 300 North
Washington, DC 20005

Re: River Point
Washington, DC 20020
WSSI Project Number: 22767.01

Mr. Wilbur:

This letter is provided to present some of the more pertinent District of Columbia floodplain regulations, as outlined in Title 20, Chapter 31 "Flood Hazard Rules" as they relate to the River Point project at Buzzard Point. The most pertinent regulation is that they require all residential buildings located within 100-year floodplains to have their lowest floors, including basements, elevated to be at least 18" above the 100-year flood elevation. The 100-year flood elevation is otherwise known as the Base Flood Elevation (BFE). Non-residential buildings must either have their lowest floors elevated to be at least 18" above the BFE or be floodproofed to at least 18" above the BFE. The regulations do not specifically address mixed use development, but they defer to the standards outlined in FEMA's technical guidance documents, namely TB-6-93 "Below Grade Parking Requirements" which discusses below grade parking garages for mixed use development. Per TB 6-93 (attached):

> ***Below-Grade parking for Mixed-Use Buildings***
>
> *While the NFIP regulations state that dry floodproofing of below-grade parking garages is allowed only for non-residential buildings in A zones, professionally designed buildings that have both commercial (non-residential) and residential uses may be designed with floodproofed below-grade parking garages. All residential-use areas of the building must be above the BFE."*

Because the DC flood regulations do not specifically address mixed use development, but do reference TB 6-93, DOEE has implemented a Code Modification process in which any development that proposes an enclosure or below grade garage must be processed through DOEE to determine whether the proposed development is considered "reasonably safe from flooding" (a minimum standard of the National Flood Insurance Program). DOEE can use TB 6-93 at their discretion to make a determination as to whether the project is reasonably safe from flooding and granting the code modification. DOEE is using this as an opportunity to institute higher standards for projects that need a code modification. There are no established regulations for what constitutes reasonably safe from flooding in a code modification request. The established process

5300 Wellington Branch Drive, Suite 100, Gainesville, Virginia 20155 • Phone 703.679.5600 • Fax 703.679.5601
mmarsala@wetlandstudies.com • wetlandstudies.com

requires the developer to present a design that DOEE can interpret as reasonably safe from flooding and grant a code modification to allow a mixed use development with below grade parking. Therefore, the proposed design will need to meet or exceed all minimum requirements. A project that can meet higher standards is more likely to be granted a code modification.

Although FEMA's minimum requirement is that buildings only need to be protected to the BFE, the District's more stringent regulations require protection to 18" above the BFE. Based on this, for a proposed development consisting of mixed use, residential floors must meet minimum residential vertical flood protection requirements of 18" above the BFE while all non-residential levels could be below the BFE, but must be floodproofed to at least 18" above the BFE. Therefore, the minimum required Design Flood Elevation (DFE) for a mixed use development at this site is 10.6' (BFE) + 18" = 12.1 feet, which would be sufficient to meet DOEE requirements for a project that does not require a code modification.

New Federal regulations, per Executive Order 13690 and subsequently developed Federal Flood Risk Development Standards (FFRMS), require an even higher flood protection level for any development associated with Federal funding. To meet those higher standards, Federally funded development must meet one of the following higher standards for flood protection:

- *Use data and methods informed by best-available, actionable climate science;*
- *Build two feet above the 100-year (1%-annual-chance) flood elevation for standard projects, and three feet above for critical buildings like hospitals and evacuation centers; or*
- *Build to the 500-year (0.2%-annual-chance) flood elevation.*

The River Point development proposes redevelopment of an existing building that will have two below grade parking levels, the first floor consisting of 100% retail/commercial space, and all residential units located on the second floor and above, for a split of approximately 12% non-residential/88% residential for the entire building. This mixed-use development does not involve Federal funding, nor is it considered a critical facility. Therefore, per DC's Flood Hazard Rules and FEMA's Technical Bulletin TB-6-93, the DFE for this mixed use facility would be 18" above the BFE. However, the proposed design seeks to establish a higher resiliency standard and proposes a DFE at elevation 12.6', which is 2 feet above the BFE. This not only exceeds the 18" of vertical protection required by DOEE, but meets the higher resiliency Federal standards that would be required if it were a Federally funded non-critical facility. In addition, the lowest residential floor is not only at the DFE, but is located over 10 feet above the 500-year storm. Considering how the primary concern of floodplain development and flood insurance is with regards to residential properties and habitable space, all habitable space in this proposed development will be well above the highest resiliency standard for decades to come regardless of climate change, storm surge or sea level rise.

Also, keep in mind, regardless of the DFE afforded by the project, the structure must be designed to withstand buoyancy and impact forces, be constructed of flood resistant materials, be constructed with methods and practices that minimize flood damage, have utilities located such

that they are protected under flood conditions, institute a sufficient flood warning and evacuation plan and system, and provide safe egress from the building. All of these flood safety aspects must be adequately addressed, in addition to providing vertical flood protection, to meet minimum FEMA and DC regulations pertaining to development within a floodplain.

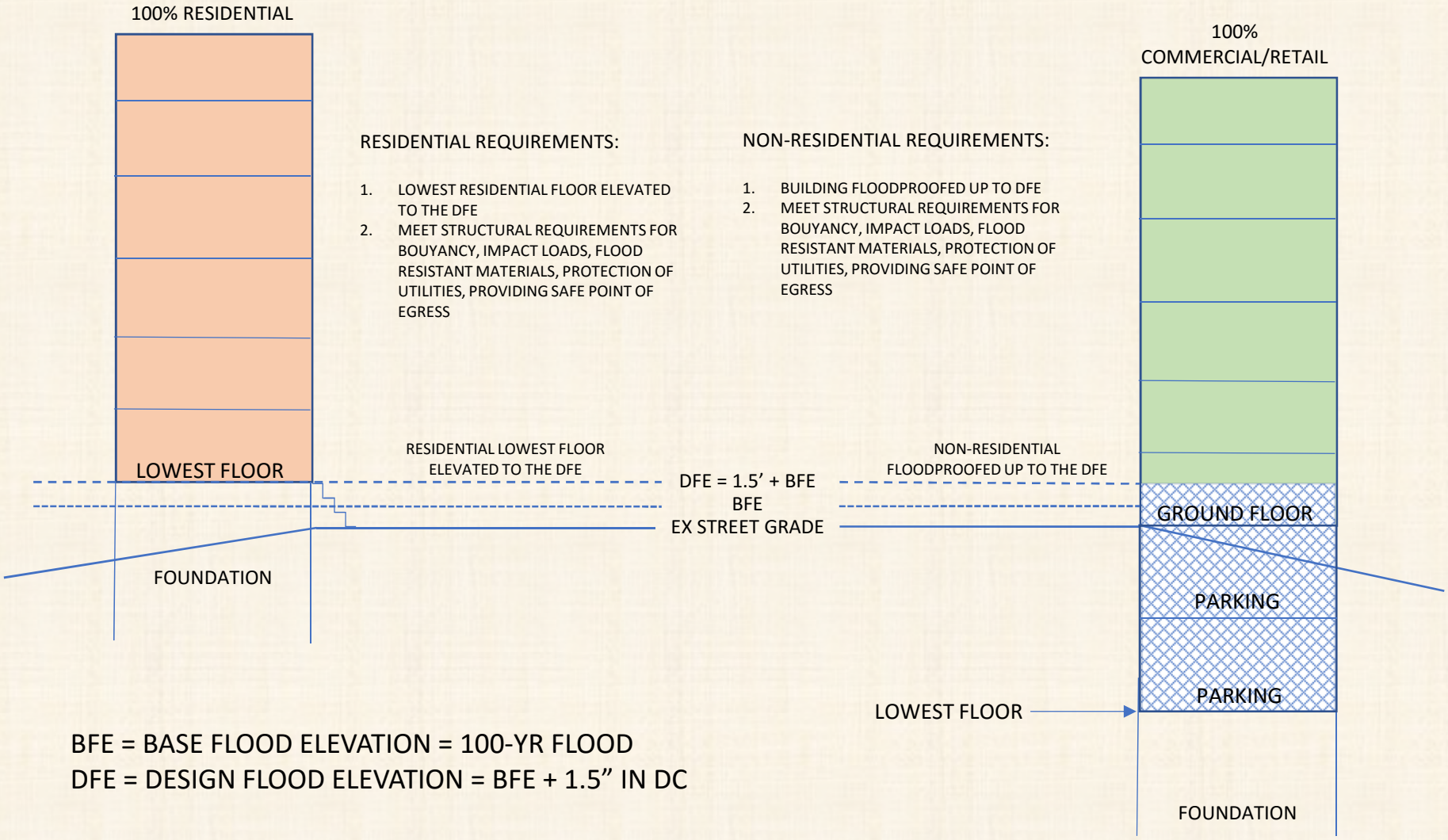
Respectfully,

WETLAND STUDIES AND SOLUTIONS, INC.

Michael S. Marsala, P.E., CFM
Senior Associate Engineer

L:\22000s\22700\22767.02\Admin\04-ENGR\25_Regulation Summary\2017-06-22_RiverPoint_FPL Reg Summary.docx

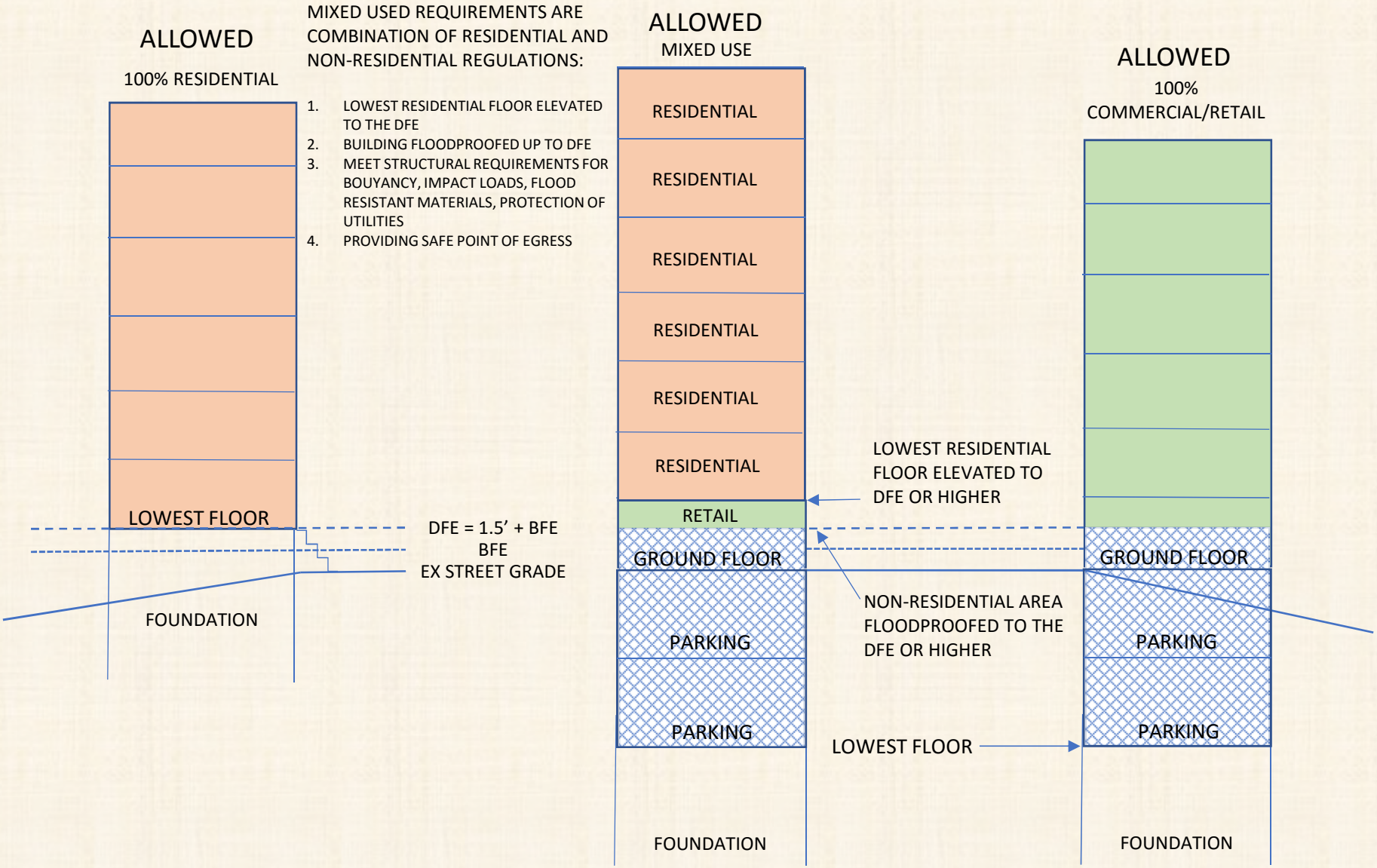
BOTH OF THESE SCENARIOS MEET CURRENT FEMA AND DC FLOODPLAIN REGULATIONS – NO CODE MODIFICATION REQUIRED



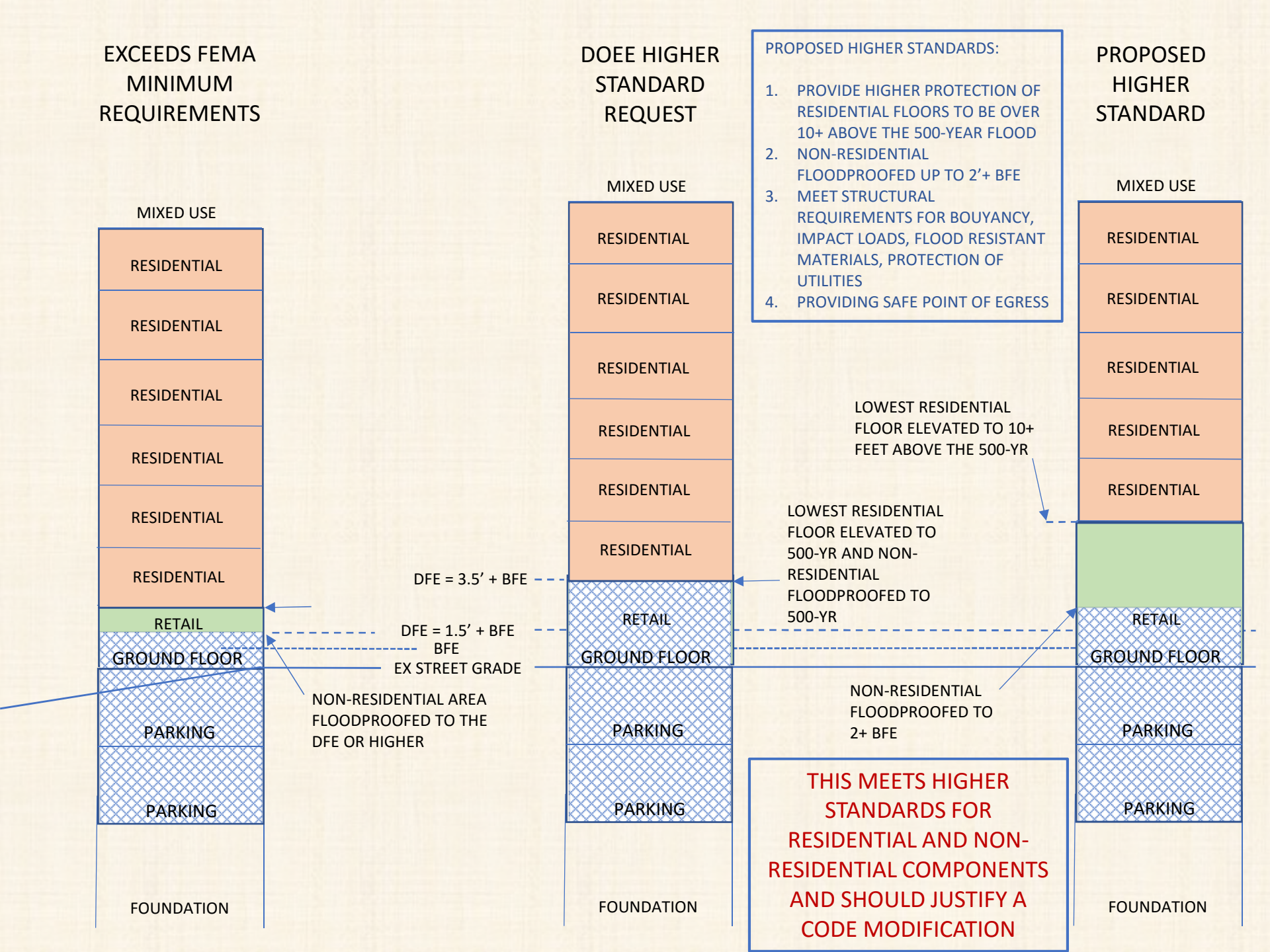
BFE = BASE FLOOD ELEVATION = 100-YR FLOOD

DFE = DESIGN FLOOD ELEVATION = BFE + 1.5" IN DC

FEMA ALLOWS FOR MIXED USE DEVELOPMENT IN A FLOODPLAIN



BECAUSE MIXED USE IS NOT DEFINED, DC REQUIRED CODE MODIFICATION TO JUSTIFY ALLOWING BELOW GRADE PARKING


EXCEEDS FEMA MINIMUM REQUIREMENTS
DOEE HIGHER STANDARD REQUEST
PROPOSED HIGHER STANDARD
PROPOSED HIGHER STANDARDS:
1. PROVIDE HIGHER PROTECTION OF RESIDENTIAL FLOORS TO BE OVER 10+ ABOVE THE 500-YEAR FLOOD
2. NON-RESIDENTIAL FLOODPROOFED UP TO 2'+ BFE
3. MEET STRUCTURAL REQUIREMENTS FOR BOUYANCY, IMPACT LOADS, FLOOD RESISTANT MATERIALS, PROTECTION OF UTILITIES
4. PROVIDING SAFE POINT OF EGRESS
MIXED USE
RESIDENTIAL
RETAIL
GROUND FLOOR
PARKING
FOUNDATION
DFE = 3.5' + BFE
DFE = 1.5' + BFE
BFE
EX STREET GRADE
NON-RESIDENTIAL AREA FLOODPROOFED TO THE DFE OR HIGHER
LOWEST RESIDENTIAL FLOOR ELEVATED TO 500-YR AND NON-RESIDENTIAL FLOODPROOFED TO 500-YR
LOWEST RESIDENTIAL FLOOR ELEVATED TO 10+ FEET ABOVE THE 500-YR
NON-RESIDENTIAL FLOODPROOFED TO 2+ BFE
THIS MEETS HIGHER STANDARDS FOR RESIDENTIAL AND NON-RESIDENTIAL COMPONENTS AND SHOULD JUSTIFY A CODE MODIFICATION