

City of Jacksonville AAA Working Group
Research: Norfolk – Adaptation/Resilience Approach

Relevant Action’s within Norfolk General Plan

Chapter 2: Identifying Land Use Strategies

- Action LU1.2.8. Evaluate the impact of potential sea level rise when reviewing development proposals and future changes to development regulations (see the Promoting Environmental Sustainability and Fostering Responsible Regional Cooperation chapters).

Chapter 6: Promoting Environmental Sustainability

- Action ES2.1.1. Evaluate the impact of potential sea level rise when reviewing development proposals and in the preparation of budgets, using *Vision 2100* as a guide.
- Action ES2.1.2. Promote growth in the least hazard-prone areas, as determined by the FEMA Flood Insurance Rate Map (Map ES-1), the Storm Surge Map (Map ES-2), the Noise and Accident Potential Zones Map (Map LU-4), and other emerging datasets identifying potential sea level rise, land subsidence, and other hazards.
- Action ES2.1.3. Revise development regulations to respond to the impact of potential sea level rise.
- Action ES2.1.7. Continue to implement wetland design changes, such as the use of living shorelines that allow for the landward migration of wetlands, for resilience to sea level rise.

Chapter 11: Preserving Our Heritage

- Action H2.2.1. Develop innovative approaches and strategies related to sea-level rise adaptation in historic neighborhoods.

Chapter 12: Fostering Responsible Regional Cooperation

- Action RC3.1.3. Coordinate with regional partners and programs working on issues related to sea level rise.

Within Norfolk Zoning Ordinance (adopted Jan. 2018)

- Overlays
 - Flood Plain / Coastal Hazard Overlay
 - Areas designated by FEMA as “special flood hazard areas” and other areas identified as likely to benefit from floodplain management.
 - Scope
 - Regulates uses, activities, or development
 - Restricts or prohibits certain uses, activities, and development
 - Requires uses, activities, and development in these areas to be protected and/or flood-proofed
 - Protect individuals from buying lands and structures unsuited for certain purposes because of flood hazards
 - Ensure adequate drainage is provided

- Examples of provisions:
 - Freeboard (factor of safety expressed in feet above a flood level for purposes of floodplain management)
 - On-site waste disposal, located and designed to avoid damage or potential for contamination during flooding
 - Sanitary sewage systems, located and designed to avoid damage or potential for contamination during flooding
 - Water supply systems, located and designed to limit floodwater infiltration
 - Drainage, designed to move water away from structures
 - Elevation and flood-proofing
 - Specific provisions applicable by flood zone
 - Location of new construction
 - Use of fill
 - Coastal Resilience Overlay
 - Encourage the new development that occurs in those areas of the city subject to higher-flood risk (identified in General Plan) to actively increase resilience to SLR, storm-related flooding events, and other shocks and stresses specific to the coastal environment.
 - Examples of provisions:
 - Ground flood height
 - Open space set-asides
 - Resilience quotient (more on this item below)
 - Upland Resilience Overlay
 - Encourage the new development in certain areas that have both a reduced risk of flooding and the potential to support transformational redevelopment.
 - Examples of provisions:
 - Alternative provision of resilience quotient requirements
- Resilience Quotient

All proposed development shall be reviewed to identify how it will enhance resilience for both the development specifically, and the city generally. Ensures development practices that promote resiliency.

 - Unless exempted, all development shall comply with resilience quotient standards.
 - The following shall be reviewed and addressed in the site plan review:
 - Reducing risks from flooding;
 - Managing stormwater;
 - Promoting energy resilience including the use of alternative energy;
 - Conserving water resources and protecting water quality;
 - Supporting multiple modes of mobility, specifically including walkability and bikeability;
 - Developing in a manner that promotes healthy and safe environments and lifestyles; and

- Providing inclusionary dwelling units within mixed-income residential or mixed-use developments.
- Single-family developments may elect to comply with different quotient standards (provided in code).
- For multi-family developments, alternative minimum requirements are provided with Resilient Point System for Residential Development (table outlining activity and points earned).
- Alternative minimum requirements also provided for non-residential development, with corresponding table of activities and points earned.

Resilient Development Activity	Points Earned
Elevate the ground story finished floor and all significant electrical and mechanical equipment no less than 3 feet above highest adjacent grade or to an elevation of 11 (NAVD '88)	1.00, plus 0.50 per ft. above 3 ft.
Install a generator for power generation in the event of power failure sufficient to keep critical operations functional	0.50
Establish operating procedures for how the project will handle loss of off-site or grid power, transition to a backup source of power, and transition back to normal operation	0.50
Component 2: Stormwater Management	
Install a green roof on at least 50 percent of the total roof area (25 percent for renovated buildings) and only plant materials permitted in Section 5.2, Landscaping Standards	2.00
Install a green roof on at least 25 percent of the total roof area and only plant materials permitted in Section 5.2, Landscaping Standards	1.00
Provide rain gardens, street-side swales, turf and soil management or other appropriate storm water infiltration system(s) to capture and infiltrate a minimum of 25 percent of site generated stormwater	1.00

D. REQUIREMENTS

The following regulations shall be applicable within any designated IRIO district:

(1) Uses

(a) New Single-Family Homes

- (i) Except as permitted in subsection (ii) below, newly-constructed single-family dwellings shall not have more than four bedrooms.
- (ii) Single-family dwellings on lots larger than 10,000 square feet may have one additional bedroom for each 10,000 square feet.

(2) Required Off-Street Parking

Parking and maneuvering for parking spaces shall be in compliance with Section 5.1, Parking, Loading, and Bicycle Standards, and shall be subject to the following additional requirements:

- (b) Single-family detached residences with three bedrooms or less shall provide two off-street parking spaces.
- (c) Single-family detached residences with four bedrooms shall provide three off-street parking spaces where the required spaces shall have sufficient unobstructed maneuvering room onsite

3.9.18. CRO: COASTAL RESILIENCE OVERLAY

A. PURPOSE

The purpose of the Coastal Resilience Overlay (CRO) district is to encourage new development that occurs in those areas of the city subject to higher-flood risk as identified in *plaNorfolk2030* to actively increase resilience to sea level rise, storm-related flooding events, and other shocks and stresses specific to the coastal environment. This district is intended to provide tools for reducing the flood risk both to individual properties and to the surrounding community; enhance the projected lifespan of new structures; and generally, improve the coastal resilience of the city.

B. APPLICABILITY

The standards and requirements in this overlay district apply to development located in the CRO district in addition to whatever standards and requirements otherwise apply in the underlying district. Wherever the standards or requirements of this overlay district conflict with those set forth in the underlying zoning, the provisions of this overlay district shall govern. The CRO shall apply to all land in the city that is in the FPCH-O (see Section 3.9.7, Flood Plain/Coastal Hazard Overlay).

C. STANDARDS APPLICABLE TO DEVELOPMENT IN THE COASTAL RESILIENCE OVERLAY DISTRICT

(1) Ground Floor Height

- (a)** The minimum ground story finished floor elevation for single-family and multi-family dwellings shall be no less than 3 feet above highest adjacent grade, unless a higher elevation is required by the FPCH-O (see Section 3.9.7, Flood Plain/Coastal Hazard Overlay), and all significant elements of electrical and mechanical systems shall be elevated an additional one foot above the finished floor elevation.
- (b)** An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area shall not be considered a building's ground floor.
- (c)** Basements are prohibited.

(2) Landscaping

The required landscaping determined under Table 5.2.6, Landscaping Installation and Tree Canopy Standards, shall consist exclusively of salt tolerant and native species.

(3) Open Space Set-Asides

The area required to be set aside as open space in Table 5.5.4(A), Required Open Space Set-Asides, shall not be decreased and shall consist of pervious surfaces capable of infiltrating stormwater.

(4) Parking

- (a)** The total number of motor vehicle parking spaces serving a commercial use shall not exceed 110 percent of the minimum parking standards in Table 5.1.7(D), Minimum Number of Parking Spaces.
- (b)** As much as 30 percent of the number of minimum required parking spaces serving a commercial use may be satisfied by providing compact spaces, provided those spaces are located within 100 feet of the main entrance(s) of the principal use(s) on the property.
- (c)** The surface area of new parking spaces shall consist of pervious materials and all parking lot drainage shall be directed into on-site systems designed to hold and infiltrate no less than the first 1.5 inches of rainfall from a single storm event. The ZA may modify this requirement for single-family and two-family units not being developed under a common plan of development.

(5) Resilience Quotient

The minimum resilient building points required for a development utilizing the provisions of Section 5.12, Resilience Quotient, shall be increased for development in this overlay as follows:

Article 3: Zoning Districts

3.9 Overlay Districts and Designations

3.9.19 URO: Upland Resilience Overlay

(a) Residential Development

- (i)** Residential development subject to the provisions of Section 5.12.6, Resilient Quotient Compliance for Multiple Dwelling Unit Residential Development, and electing to utilize the alternative procedure identified in that section shall be required to obtain an additional 0.5 point in both Component 1, Risk Reduction, and Component 2, Stormwater Management, within Table 5.12.6, Resilient Point System for Residential Development.
- (ii)** Residential development subject to the provisions of Section 5.12.6, Resilient Quotient Compliance for Multiple Dwelling Unit Residential Developments, and electing to utilize the site plan review procedure to determine full compliance with the conditions contained in Section 5.12.4.A shall be required to provide approximately 25 percent greater flooding risk reduction and stormwater management efforts.

(b) Non-residential and Mixed-Use Development

- (i)** Non-residential development subject to the provisions of Section 5.12.7, Resilient Quotient Compliance for Non-Residential Developments, and electing to utilize the alternative procedure identified in that section shall be required to obtain an additional 0.5 point in both Component 1, Risk Reduction, and Component 2, Stormwater Management, within Table 5.12.7, Resilient Point System for Non-Residential Development.
- (ii)** Non-residential development subject to the provisions of Section 5.12.7, Resilient Quotient Compliance for Non-Residential Developments, and electing to utilize the site plan review procedure to determine full compliance with the conditions contained in Section 5.12.4.A shall be required to provide 25 percent greater flooding risk reduction and stormwater management efforts.

3.9.19. URO: UPLAND RESILIENCE OVERLAY

A. PURPOSE

The purpose of the Upland Resilience Overlay (URO) is to encourage the new development in certain areas of the city that have both a reduced risk of flooding and the potential to support transformational redevelopment. This district is intended to provide incentives for those developing in these areas to transform them into walkable, bikeable, transit-rich neighborhoods.

B. APPLICABILITY

The standards and requirements in this section apply to development located in the URO district in addition to whatever standards and requirements otherwise apply in the underlying district. Wherever the standards or requirements of this

overlay district conflict with those set forth in the underlying zoning, the provisions of this overlay district shall govern. The URO shall apply to all land in the city located in the MF-NS, MF-AC, MF-HR, C-C, C-R, I-L, or I-G base zoning districts and outside the FPCH-O district (see Section 3.9.7, Flood Plain/Coastal Hazard Overlay).

C. STANDARDS APPLICABLE TO DEVELOPMENT IN THE UPLAND RESILIENCE OVERLAY DISTRICT

The following standards shall apply to any development located in the URO district within one of the applicable base zoning districts. The otherwise applicable performance, intensity, compatibility, development and form standards shall apply.

(1) Alternative Provision of Resilience Quotient Requirements in URO

Four points may be counted towards the resilience points outlined in Tables 5.12.6, Resilient Point System for Residential Development, and 5.12.7, Resilient Point System for Non-Residential Development, for each development right extinguished in the CRO district by direct purchase or easement. The four points may be applied to any component or multiple components within the Resilient Point System. To qualify, the easement applied to the CRO-located property must include the following limitations.

- (a)** The easement shall either:
 - (i)** Restrict the use of the property to passive open space or conservation use in perpetuity, or;
 - (ii)** Reduce the maximum achievable density, under the standards of the base zoning district and any applicable overlay zoning districts, by one dwelling unit in perpetuity.
- (b)** The servient property shall be a conforming zoning lot that is either already developed or that could be developed as a matter of right in the future.
- (c)** The easement shall grant rights to the city to make improvements to the lot for water retention or flood protection.
- (d)** In the case of a property already developed:
 - (i)** Any structures in place as of the recordation of the easement shall be removed within 120 days, except where subsection (ii), below, applies.
 - (ii)** Life rights may be granted to an owner permitting the owner to delay removal of the structures for as long as the owner is willing or able to remain on the premises. In this case, the structures shall be removed within 90 days of the owner vacating the premises. The easement shall provide that life rights terminate if, at any time, the structure suffers a casualty loss equal to or exceeding 50 percent of the structure value.

Article 3: Zoning Districts

3.9 Overlay Districts and Designations

3.9.20 HL: Historic Landmark Designation

(e) Limitations:

- (i)** An easement shall only be applicable to a single property located in the URO district and each URO-designated property may only apply the points reduction once.
- (ii)** In order to prevent a single easement from being used by multiple property owners, the city shall maintain a database listing the location and status of each easement and the URO-designated property that it applies to.
- (iii)** The easement shall be held by a conservation organization, land trust or land conservancy qualified to hold easements and protect land by the Commonwealth of Virginia pursuant to the Virginia Conservation Easement Act, §§ 10.1-1009 through 10.1-1016 of the Code of Virginia.

3.9.20. HL: HISTORIC LANDMARK DESIGNATION

The purpose of the Historic Landmark (HL) designation is protect and conserve individual structures and sites that contain historic or cultural significance. Guidelines within the district are intended to encourage development that is consistent with, and supportive of, established historic character.

A. APPLICABILITY

This district applies to development of a Historic Landmark (HL) structure or site as identified on the Official Zoning Map.

B. DEVELOPMENT GUIDELINES

Prior to development of a Historic Landmark, a landowner shall receive approval of a Certificate of Appropriateness, in accordance with Section 2.4.10, Certificate of Appropriateness.

C. REQUIRED MAINTENANCE

All buildings and structures within an historic district or historic overlay district or a designated Norfolk Historic Landmark shall be maintained in good repair, kept in a structurally sound fashion, and be reasonably protected against decay and deterioration in compliance with the applicable maintenance provisions of the Uniform Statewide Building Code.

D. ADAPTIVE RE-USE

Any one use listed in either Table 3.2.12 or Table 3.3.9 of this ordinance may be permitted in a building designated as a Norfolk Historic Landmark if approved by a Conditional Use Permit.