

Building a Better Norfolk: A Zoning Ordinance of the 21st Century

The City of Norfolk, Virginia adopted a new zoning ordinance to enhance flood resilience and direct new more intense development to higher ground; the ordinance was adopted on January 23, 2018 and became effective on March 1, 2018. The ordinance establishes a Coastal Resilience Overlay (CRO) zone, where new development and redevelopment will have to comply with new flood resilience requirements, and an Upland Resilience Overlay (URO), designed to encourage new development in areas of the city with lower risk of flooding.

The zoning ordinances includes the following innovative practices for fostering more flood resilient urban development:

- **Freeboard** - The ordinance requires that construction in the 100-year floodplain be elevated at least 3 feet above the 100-year base flood elevation, and construction in the 500-year (0.2% chance) floodplain, to be elevated or floodproofed to 1.5 feet above the 500-year flood elevation. (Article 3.9.7)
- **Coastal Resilience Overlay** - In the CRO zone, additional requirements include the use of permeable surfaces on new parking spaces and stormwater infiltration requirements. (Article 3.9.18)
- **Upland Resilience Overlay** - In an URO zone, applied to areas outside of flood hazard zones, the ordinance includes policies aimed to target redevelopment to create transit-oriented, walkable, and bikeable neighborhoods. (Article 3.9.19)
- **Resilience Quotient System** - The ordinance also adds a new resilience quotient system, where developers earn points for adopting different resilient measures that promote flood risk reduction, stormwater management, and energy resilience, among other practices. New developments are required to meet different resilience point values based on the development type (e.g., residential, non-residential, mixed-use) and development size, unless the developer opts to meet specified standards for elevation and drainage. (Article 5.12)

To meet the **resilience quotient standards**, all development, unless exempted, must go through a site plan review process. Exempted development includes LEED-certified buildings receiving a certification of gold or above; the renovation, rehabilitation, or expansion of a building where the cost of work is less than 50% of the appraised value of the building; and work on historic properties. Additionally, the ordinance offers an alternative process, where applicants can simply meet a standard set of conditions in-lieu of considering different options available under the point system (including elevating mechanical equipment, installing systems to detain a certain amount stormwater on site, and installing systems that allow connection of generators, solar, wind or other locally generated power sources during power outages). For

other developments, seven criteria are reviewed during site 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."

For developers opting to earn points under the resilience quotient standards, the number of points that must be earned in each category depend on the size and number of units included in the development proposal. For example, smaller developments of five or less units must earn 4 points, 1 each per component; larger developments of 200 or more units must earn 10 points, 2 per component. The resilience quotient system awards points for the following resilience measures for residential development (similar standards are tailored for non-residential development):

- **Risk reduction** - elevate mechanical equipment; construct impact resistant roof; construct structure to withstand 110-mile winds; and/or install hurricane resistant shutters.
- **Stormwater management** - install a green roof, rain-gardens, or other stormwater infiltration systems; use pervious paving systems; provide a community-garden space; preserve pre-development natural, native vegetation; provide for new tree-planting; and/or preserve large non-exotic trees on site.
- **Energy resilience** - generate electricity with on-site solar or wind power; install geothermal heating and cooling systems; install green walls; adopt energy efficient lighting; include wiring that allows connection to solar, wind or back-up generator; install cool roof; install solar or tankless water heating system; install back-up generator; provide EV charging stations; use vegetation to shade structure; and/or install reflective shades.

The ordinance also includes incentives for extinguishing development rights in the Coastal Resilience Overlay district. Points can be earned in the Upland Resilience zone by extinguishing development rights by acquiring open space conservation easements or restricting densities of development in the CRO.

The new zoning ordinance was informed by prior planning documents: **PlaNorfolk2030** (adopted in 2013) and **Norfolk Vision 2100**, which was adopted in 2016 and defined the city's approach to flooding, sea-level rise, and long-term resilience.

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