

Coastal Flood Resilience Zoning Overlay District Article 25A

*Chris Busch, Asst. Deputy Director for
Climate Change & Environmental Planning*



**boston planning &
development agency**

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Climate Ready Resilience Objectives



UPDATED CLIMATE PROJECTIONS

Ensure that decision making in Boston is informed by the latest Boston-specific climate projections.



PREPARED AND CONNECTED COMMUNITIES

Support educated, connected communities in pursuing operational preparedness, adaptation planning, and emergency response.



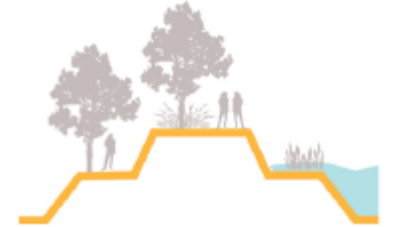
RESILIENT INFRASTRUCTURE

Prepare the infrastructure systems that support life in Boston for future climate conditions and create new resilient systems.



ADAPTED BUILDINGS

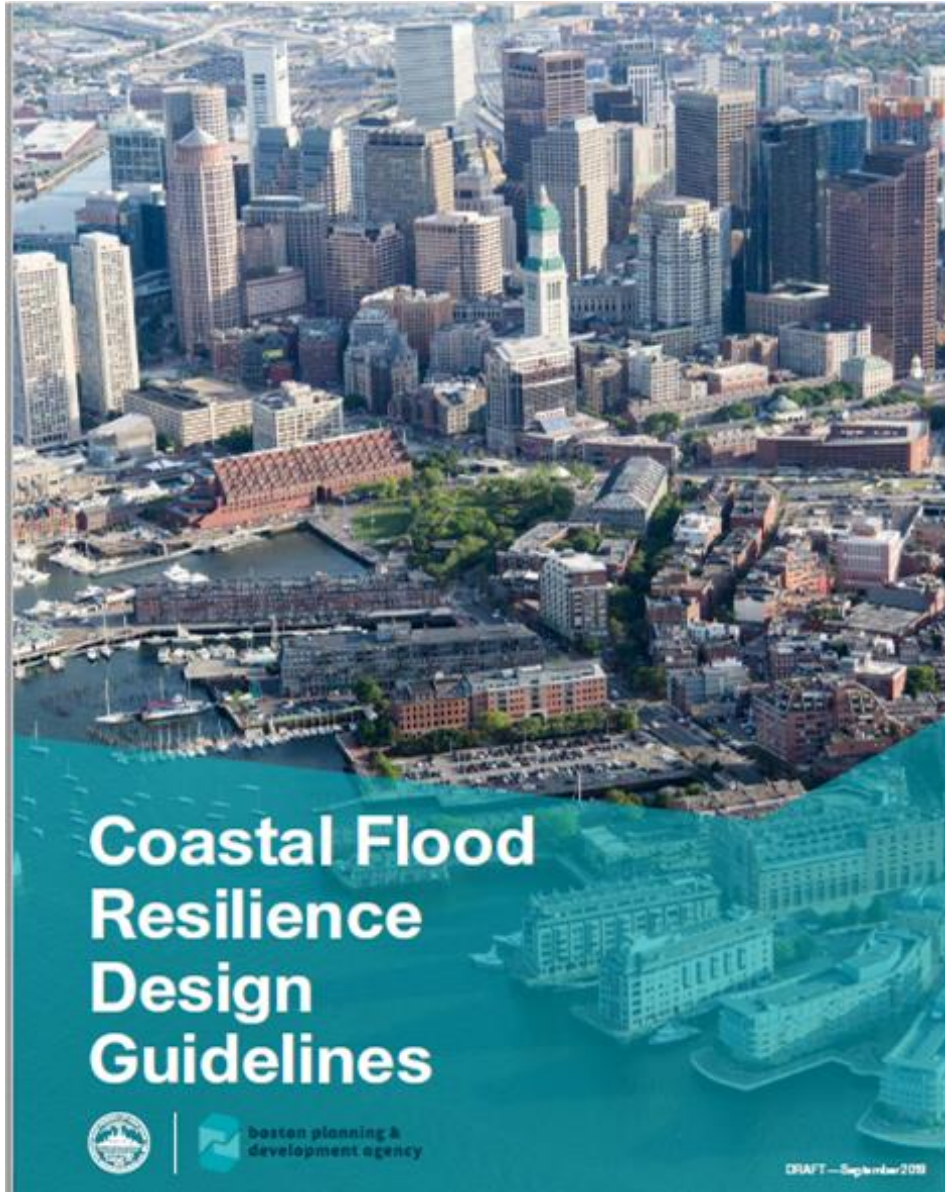
Create a regulatory environment and financial and other tools to promote new and existing buildings that are climate ready.



PROTECTED SHORES

Reduce Boston's risk of coastal and riverine flooding through both nature-based and hard-engineered flood defenses.

Coastal Resilience Design Guidelines



Long-term Strategy

Supporting Strategies

Enhanced Envelope

Conduct energy audit and blower door tests to identify air leaks.

Install blown-in cellulose insulation to wall cavities; add roof insulation outboard of deck.

Upgrade windows to low-e, low-U-factor casement windows.

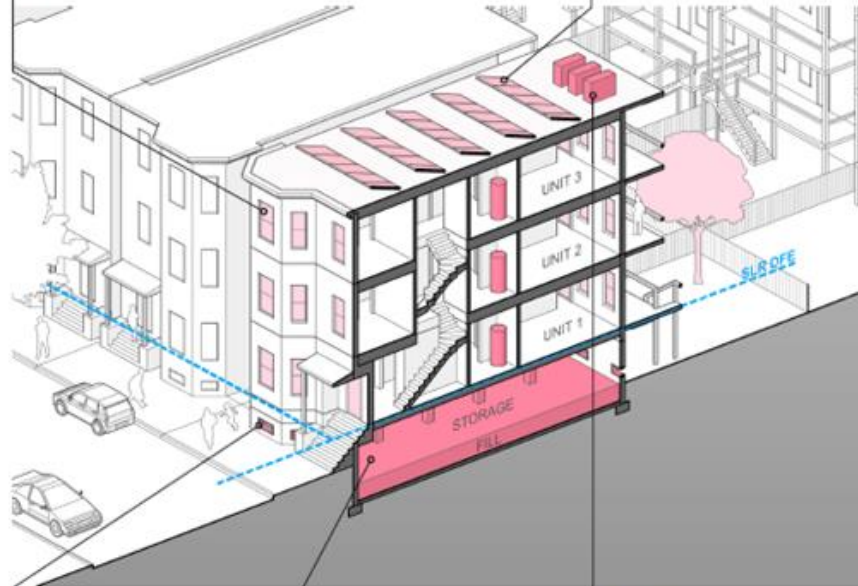
Cool roofing mitigates overheating by reducing roof temperatures.

Consider envelope upgrades in conjunction with replacing critical systems for resilience. A better envelope can result in down-sized HVAC systems that are less expensive to operate.

Supporting Strategies

On-Site Energy Generation

Install islandable, grid-connected solar PV system on the roof.



Building Envelope and Access

Wet Floodproof

Install flood vents at foundation walls in order for water to enter and balance hydrostatic forces.

Use salt-water-damage-resistant materials below SLR-DFE.

Eliminate any habitable spaces below SLR-DFE. Limit uses below SLR-DFE to parking, access, and storage.

Building Form

Elevate Building on Extended Foundation Walls

Abandon basement and fill it to the lowest adjacent grade.

Elevate building such that first occupiable floor is above SLR-DFE. Extend foundation walls.

When filling basement, consider structure and envelope to prevent wicking of moisture up into building after flooding.

Building Systems

Protect Critical Systems

Locate water heater and critical systems above the SLR-DFE.

Upgrade heating to high-efficiency mini-split heat pump system with equipment located outside and above the SLR-DFE.

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Section 25A-1 Purpose & Objectives

- Promote resilient design and consistent review standards
- Promote co-benefits of sustainable design
- Advance resilient design best practice
- Encourage resilient design that responds to Boston’s building types, individual buildings, district scale plans and the public realm

Use Resiliency Best Practices

Proposed designs / renovations should incorporate best practices and standards to reduce or eliminate coastal flood risk or damage resulting from future climate conditions.

Enhance the Public Realm

Resilient measures should be designed to not to diminish the pedestrian environment to the greatest extent possible by supporting pedestrian connections and enhancing the character of the Overlay parcels.

Generate Co-benefits

Wherever feasible, proposed flood resiliency upgrades should also enhance a building’s energy efficiency, greenhouse gas reduction potential, and passive survivability.

Guidelines

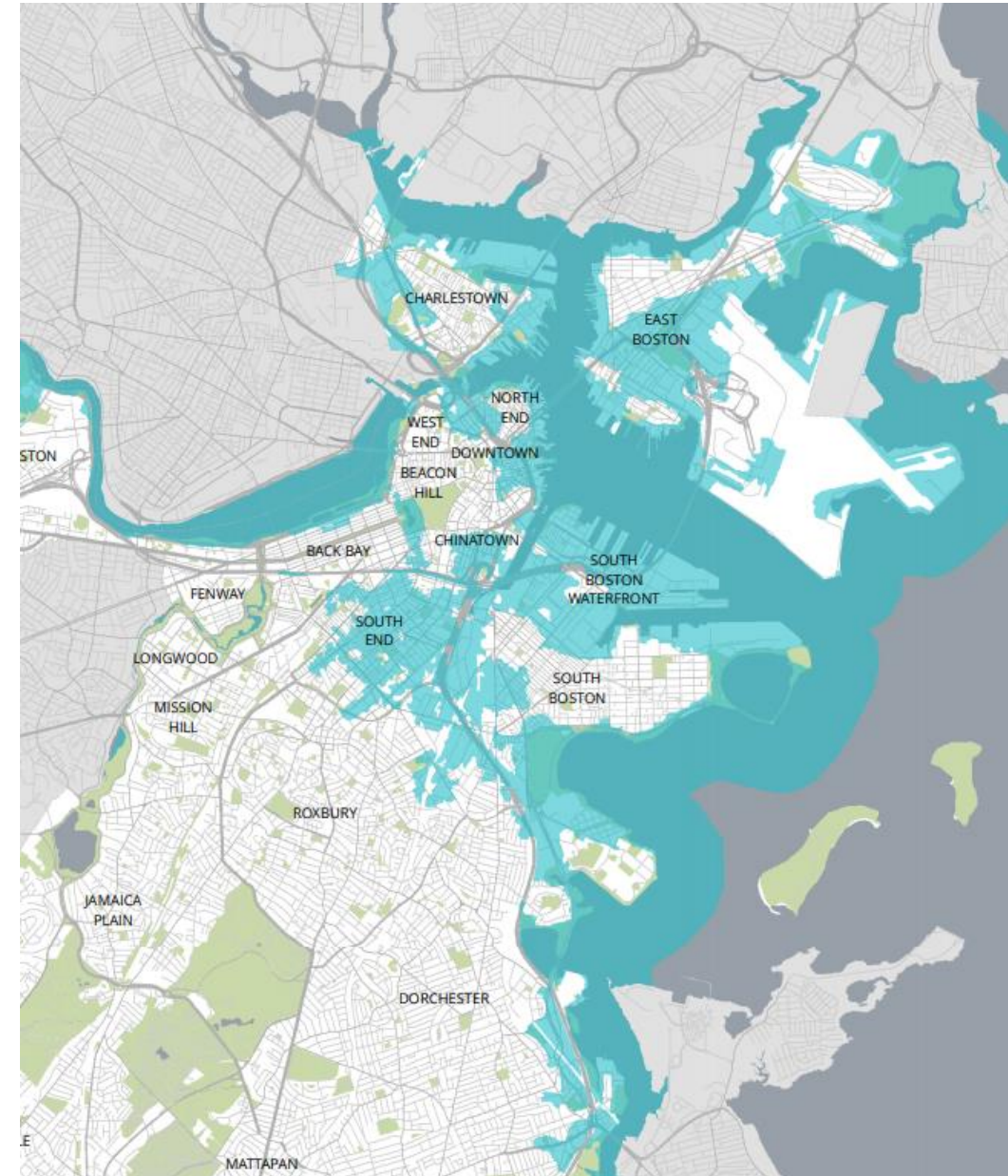
Relate to District Scale Solutions

Enhancements at a plot level should not worsen risk at adjacent parcels or restrict future implementation of larger coastal resilience district plans, and, to the extent feasible, should support the resiliency goals and implementation of district coastal resilience plans.

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Section 25A-3 Establishment of Overlay & Boundaries

- Physical Boundaries
 - Overlay Map
 - Based upon a 1% Chance Storm Event with 40 Inches of Sea Level Rise



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Section 25A-4 Applicability

- Projects Subject to CFROD
 - Additional Gross Floor Area
 - 20,000+ SF
 - Additional Units
 - 15+ dwelling units
 - Change in Use
 - 50,000 SF+; 100,000 SF Downtown
 - Substantial Rehabilitation
 - 100,000 SF+
- Resilience Review
 - Design Guidelines

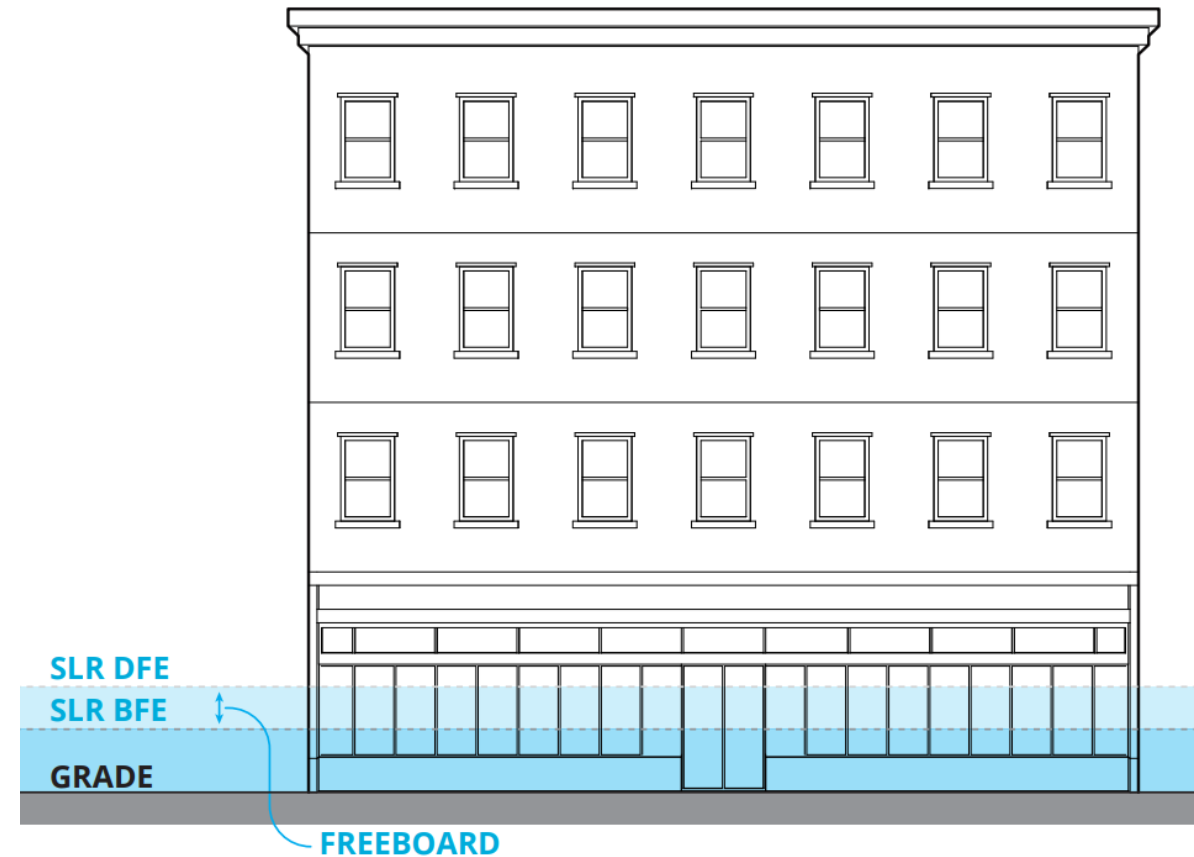


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Section 25A-6 Use & Dimensional Regulations

1. Regulations for All Uses & Structures

- Minimum Sea Level Rise Design Flood Elevation SLR-DFE: the minimum elevation of the lowest occupiable floor for residential uses or dry flood-proofing for non-residential uses.

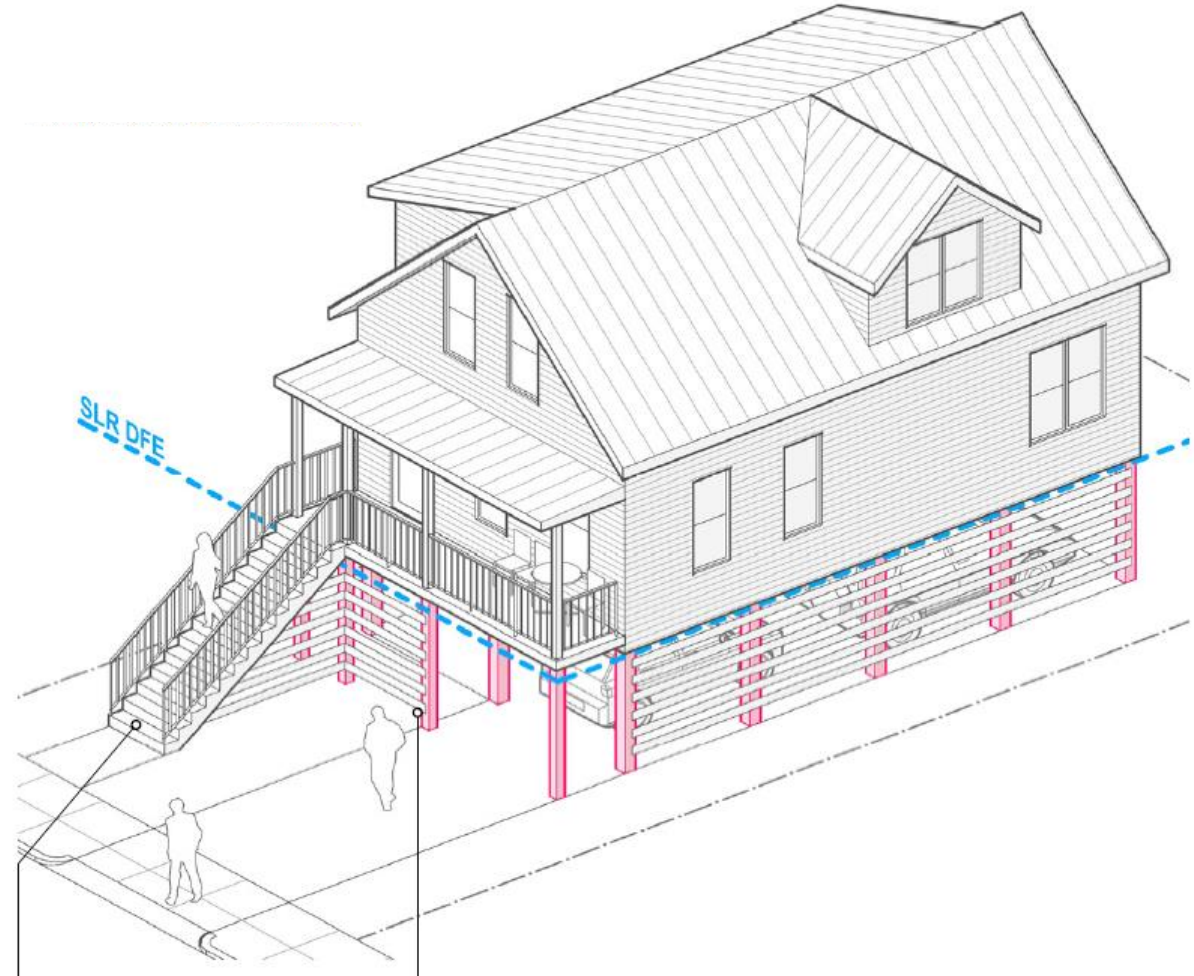


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Section 25A-6 Use & Dimensional Regulations - continued

1. Regulations for All Uses & Structures

- Limitations on Residential Uses Below Sea Level Rise Design Flood Elevation
 - Allowed Uses:
 - Access or vertical circulation
 - Flood prevention measures
 - Storage
 - Parking

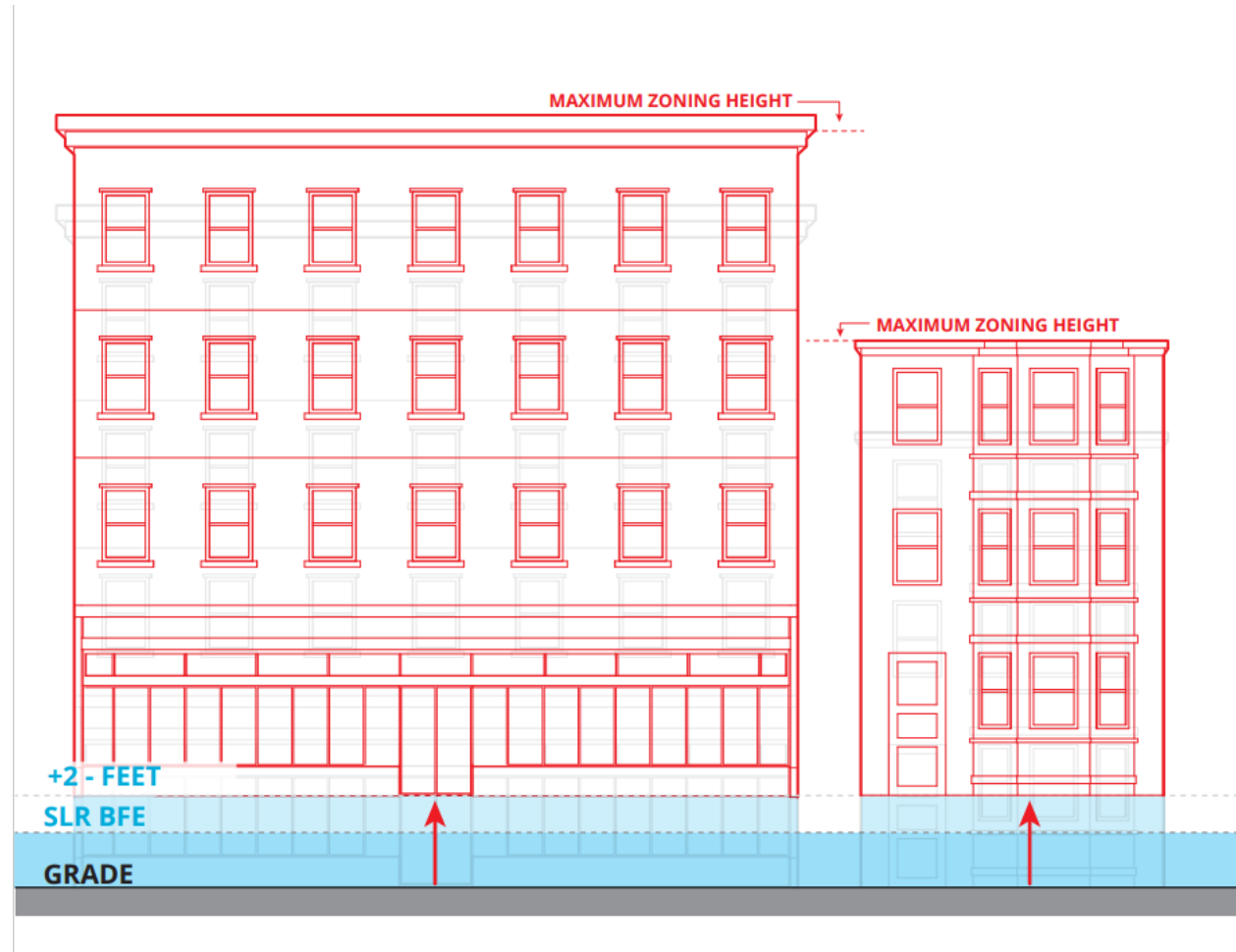


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Section 25A-6 Use & Dimensional Regulations - continued

2. Regulations for Projects Subject to Resilience Review

- Measurement of Dimensions:
 - Building height: SLR-BFE + 2-feet

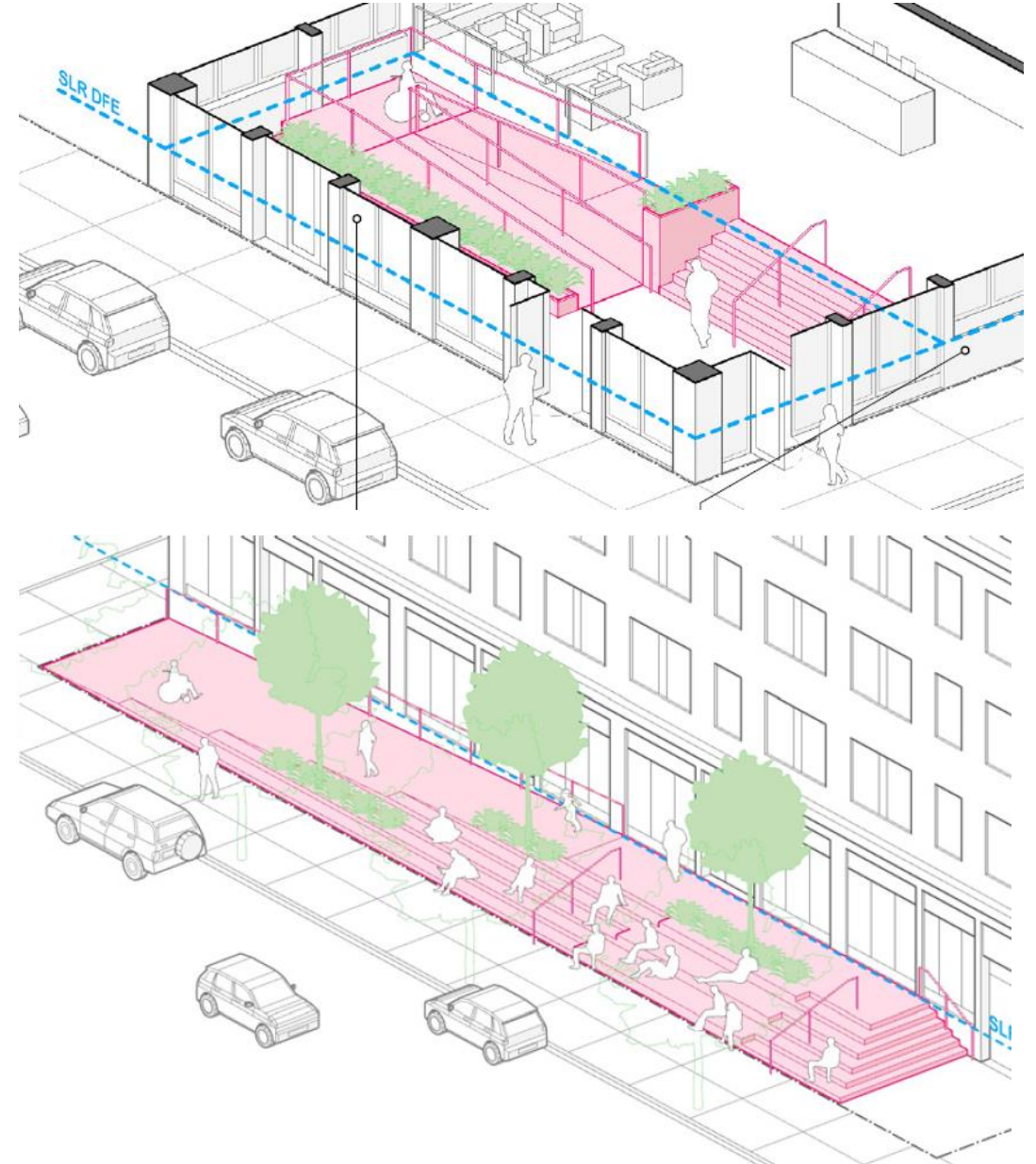


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Section 25A-6 Use & Dimensional Regulations - continued

2. Regulations for Projects Subject to Resilience Review

- Measurement of Dimensions:
 - Setbacks & Lot Coverage:
 - Allowance for areas used for vertical circulation and elevated mechanicals
 - Gross Floor Area exclusions:
 - Vertical circulation
 - Flood protection measures



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Public Process

Coastal Flood Resilience Zoning Overlay





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