

Climate Resilience Zoning Task Force

Overview of Current Zoning and Potential Approaches

The following pages lay out, in some detail (but not in entirety), the provisions of the Zoning Ordinance that are most closely related to the Task Force’s resilience objectives. This document is intended as a framework for discussing what kinds of additions, changes, or other approaches should be pursued.

It is organized into three main types of zoning provisions, which have been presented at past meetings (described to the right): BASE ZONING provisions, CITYWIDE REVIEW provisions, and AREA-SPECIFIC provisions. These different approaches can influence development outcomes in different ways. They can be complementary but can also conflict with each other in ways that produce unintended outcomes.

The first step in this discussion will be to reach some consensus on **which overall approaches are preferred by the CRZTF and which are not**. After eliminating the non-preferred approaches and prioritizing the rest, they can be pursued in more detail.

This document focuses just on the zoning approaches and not on the resilience standards themselves, which were discussed at the October CRZTF meeting and continue to be developed by staff and consultants based on feedback from that meeting. The ultimate goal will be to combine resilience standards with preferred zoning approaches to create specific recommendations.

Base Zoning Provisions

These provisions apply to any development that is subject to zoning – from the enlargement of a single-family home to a million-square-foot mixed-use development. The main limitation is that they only apply when there is a substantial alteration to a building or land use. “Pre-existing non-conforming” buildings and uses are not required to change.

These provisions affect the broadest range of possible outcomes, but can also have many unintended consequences. If base zoning standards are too onerous, the likely effect is that very little change will occur unless it results in substantial economic benefit for the property owner. Onerous requirements could also result in more proposals requesting relief from the Board of Zoning Appeal rather than meeting the intended standards.

Citywide Review Zoning Provisions

These provisions apply to development exceeding a threshold that justifies extra review – the typical threshold is 25,000 square feet of floor area – but applies in zoning districts throughout the city. Because it only applies to a limited set of developments, it provides an opportunity to apply more nuanced standards, both prescriptive and performance-based. Many larger developments in this category also require review by the Planning Board, which provides the opportunity for a more holistic review process with public input and approval based on a set of criteria.

As discussed at a prior meeting, most new development in Cambridge (by floor area) falls into this large project category. However, this category does not include most smaller-scale development, alterations, or changes of use that affect existing development, which still makes up a large part of all development in the city.

Area-Specific Zoning Provisions

These provisions apply only within areas of the city (including special districts and overlay districts) where there are unique area-specific planning objectives or where it was decided that standards should be applied in a way that is not applicable more generally.

Being able to target certain standards to certain areas is a powerful planning tool, but if not considered carefully these approaches can result in outcomes that are inconsistent or seem counterintuitive given the City’s planning goals. Since the CRZTF has a citywide scope, it is important to ask – not just should certain standards be applied in certain identified areas, but should certain standards NOT be applied in areas that are NOT identified?

Base Zoning Topic	Zoning Section	Current Zoning Provisions (Simplified)	Issues	Potential Approaches	Relevant Objective(s)
Basement GFA Exemptions	2.000 Definition of GFA	Currently exempt: - basement and cellar areas devoted to the operations and maintenance of the building such as heating and cooling equipment, electrical and telephone facilities, and fuel storage - any basement or cellar living space in any single-family or two-family home - any basement or cellar living space in any other type of structure with the issuance of a special permit, if the uses occupying such exempted GFA support the character of the neighborhood or district	Incentivizes below-grade mechanical equipment, residential living space, and other space, without consideration of flood resilience standards	Eliminate exemption to disincentivize use of basements AND/OR Add qualifying criteria for flood resilience to incentivize protection of uses that are in flood-prone areas	1, 2
Height Standards	2.000 Definition of Building Height / 5.23 Height Exceptions	Height is "the vertical distance of the highest point of the roof above the mean grade of the ground adjoining the building." Excludes areas not used for human occupancy such as chimneys, water towers, air conditioning equipment, elevator bulkheads, skylights, ventilators, domes, towers, spires, wireless or broadcasting towers, wind turbines, solar energy systems, beehives.	There are height limits but no "depth limits," which encourages building down rather than up. Raising a building for flood protection could exceed height limitations. Stair/elevator roof headhouses also constrained by height limit, discouraging roof access by residents.	Allow adjustment of height limitations to account for flood protection elevation (as-of-right, special permit?) AND/OR Consider height exceptions for roof access if greater roof access promotes resilience AND/OR "Depth limit" standard - prohibiting certain uses below certain elevations	1, 2
Stairs/Ramps in Front Setbacks	5.24.2 Yard Exceptions	Steps and porches are exempt from setback calculations, but only if they are uncovered, do not project more than 10 feet from the foundation line, and are no more than 4 feet above the average level of the adjoining ground.	Elevation for flood resilience may require employing more stair/ramp entrances	Provide more flexibility to exclude covered entry porches from front setback limitations (as-of-right, special permit?)	1, 2
Limitations on Covered Outdoor Areas	2.000 Definition of GFA / 5.24.2 Yard Exceptions	GFA includes: - all covered outdoor areas (like porches and balconies), except that permeable open space beneath overhangs no more than 3 feet from an exterior wall are exempt - all unroofed porches and balconies above the third floor, except where it is exempt (with limitations) as an incentive for Functional Green Roofs Setbacks exclude eaves, chimneys, bay windows, balconies, open fire escapes and like projections which do not project more than 3.5 feet but only on a building not more than 35 feet in height.	GFA and setback limitations discourage covered, open-air balconies in many cases; exceptions are very limited	Broader GFA and/or exemptions for outdoor shading (as-of-right, special permit?)	7
Green Roof Area Standards	2.000 Definition of GFA / 22.30 Functional Green Roof Standards	Functional Green Roof Area is exempt from GFA if it meets minimum standards. Special permit is required if the green roof is meant to be usable by building occupants to ensure the vegetated area is designed to withstand that use. GFA exemption can be expanded to include a deck, up to 15% of the Functional Green Roof Area (in some districts by special permit).	Green roofs are incentivized through GFA exemption, but do not count toward meeting open space standards.	Consider counting portions of Functional Green Roofs toward meeting open space requirements AND/OR Consider stronger GFA incentives AND/OR Incorporate green roofs into PERFORMANCE standard (e.g., "cool factor")	3, 5, 13

Base Zoning Topic	Zoning Section	Current Zoning Provisions (Simplified)	Issues	Potential Approaches	Relevant Objective(s)
Open Space Standards	2.000 Definition of Green Area Open Space	Different types of open space:- Green Area: Must be open and unobstructed to the sky, at grade, consist of permeable materials with a minimum depth of 3 feet, and consist entirely of vegetation, water, and other natural features, except that hard surfaces or non-planted ground cover may not exceed 25% of total required Green Area Open Space. (Most districts do not have a distinct Green Area Open Space minimum requirement; some districts require Green Area as a portion or all of required front yards.)- Permeable: Same as Green Area but "not restricted as to type" - may or may not include vegetation, may include unit pavers, may only include pedestrian walkways not exceeding 48 inches in width or half the width of the area in which they are located. (In lower-scale residential districts, at least 50% of open space requirement must be permeable - minimum permeable area ranges from 15-25% of total lot area.)- Private: Reserved for the use of residents, must be open and unobstructed to the sky, no limitations on surface but cannot be used for parking or driveways, must be at least 15 feet in both width and length, at least half must be at grade, some above-grade balconies and decks may be counted with limitations. (Minimum ranges from 10-15% of lot area, applicable to residential uses only.)	Specific standards can be hard to meet; not required in most development scenarios	Simplify definitions and standards to be consistent with resilience objectivesConsider rebalancing among green, permeable, and private open space standards (PRESCRIPTIVE and/or PERFORMANCE approach?)	3, 4, 5, 6, 13
Surface Parking Lots	6.48 Required Landscaping for Parking Lots	Specific standards for surface parking lots of 5 spaces or more include landscaping at least 5% of interior area, planting areas at least 25 square feet each (5'x5'), one tree per 10 parking spaces minimum 3" caliper at planting, barriers to protect trees from cars, no more than 15 contiguous spaces without a landscape buffer at least the dimensions of one space.	No minimum standards for a "tree," no specific standards for shading; standards help provide some landscaping but also spread out the overall area occupied by parking	Adjust/increase PRESCRIPTIVE base requirements related to trees, shading, and vegetation AND/OR Apply a PERFORMANCE approach (e.g., cool factor) incorporate parking, shading, and vegetation	3, 4, 5, 6, 7, 8, 13

Citywide Review Topic	Zoning Section	Current Zoning Provisions (Simplified)	Issue	Potential Approaches	Relevant Objective(s)
Prescriptive Standards for Large Development	19.50 Building and Site Plan Requirements	Projects 25,000+ SF must meet detailed standards (some can be modified by Planning Board special permit): <ul style="list-style-type: none"> - Tree protection (see below) - Height/setback limitations within proximity to residential districts - Location of residential/retail uses - Landscaped front setbacks (see below) - Pedestrian environment (e.g., portions of buildings facing public streets must have active uses, glazing, entrances, &c.) - Surface parking (prohibited in front of the principal building wall plane) - Mechanical equipment, refuse storage, and loading (must be screened, not in setback) - Open space (see below) - Green building requirements (see below) 	No standards specifically for flood resilience; some standards (open space, tree protection, parking location) relate to heat resilience indirectly	Add resilience standards PRESCRIPTIVE and/or PERFORMANCE approach?	Any/all
Prescriptive Standards for Large Development	19.55 Landscaping	Area between the principal wall plane of a building and a public street or public park must be Green Area, expansion of the adjacent public sidewalk, park area, or other landscaped area or paved pedestrian area and extending along the entire length of the lot facing the street or park. Must be at mean grade of public street or open space at the property line, then can change in grade if maintained permanently without structural support. Areas devoted to motor vehicular use are prohibited except access drives limited to 30 feet of width per driveway and one driveway per 100 feet of lot frontage. (Some detailed exceptions.)	At-grade standard can be problematic when buildings require elevation for flood protection	Incorporate/adjust standards for front yards to include: <ul style="list-style-type: none"> - Tree planting, vegetation, and shading - Allow for elevation where flood protection is needed PRESCRIPTIVE and/or PERFORMANCE approach?	1, 3, 4, 5, 6, 7, 13
Prescriptive Standards for Large Development	19.59 Open Space	At least 15% of the lot shall consist of any combination of Green Area or Permeable Open Space. May be met on a lot held in the same ownership within 300 feet.	No quantitative standards for trees and vegetation	Incorporate/adjust standards for front yards to include: <ul style="list-style-type: none"> - Tree planting, vegetation, and shading - Green infrastructure PRESCRIPTIVE and/or PERFORMANCE approach?	3, 4, 5, 6, 7, 13
Performance Standards for Large Development	19.51.2 (Trees)	Any application for a Building Permit for development subject to this Section 19.50 shall be accompanied by a Tree Study, certified complete by the City Arborist, as required by the Tree Protection Ordinance of the City of Cambridge, Chapter 8.66.	Tree protection relates only to existing trees, no citywide standards for new tree plantings	Consider public shade trees as well as private trees	4
Performance Standards for Large Development	22.20 (ref. in 19.510) Green Building Requirements	Projects 25,000+ SF must submit documentation verifying "certifiability" using LEED rating system. Minimum SILVER for projects 50,000 SF or more, CERTIFIED for projects 25,000-50,000 SF. Proposed changes (currently under review) would increase to GOLD for 50,000 SF or more, SILVER for 25,000-50,000 SF, and allow alternative compliance using Passive House or Enterprise Green Communities rating systems.	Criteria for rainwater management and heat island reduction are optional; flood resilience criteria not part of LEED-NC criteria	Include some optional credits as requirements OR Develop separate resilience standards	Any/all
Review Criteria for Large Development	19.20 Project Review Special Permit	Most projects 50,000+ SF (with others) require Planning Board special permit based on urban design objectives (see below) and transportation impact review. Developers must submit: <ul style="list-style-type: none"> - Traffic study - Tree study (per Tree Protection Ordinance) - Urban design narrative - Sewer service infrastructure narrative - Water service infrastructure narrative - Noise mitigation narrative 	Some resilience issues are covered (stormwater, tree protection) but others are not	Include "Resilience Narrative" addressing flood-resilient design, heat-resilient design, and programmatic measures to plan for extreme events	Any/all

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Review Criteria for Large Development	19.30 Citywide Urban Design Objectives	The objectives are not treated as individual requirements, but the permit granting authority must find that, on balance, the objectives are being served. Each objective includes "indicators" to help in assessing whether the objective is met. (19.31) New projects should be responsive to the existing or anticipated pattern of development. (19.32) Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings. (19.33) The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. (19.34) Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system. (19.35) New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically. (19.36) Expansion of the inventory of housing in the city is encouraged. (19.37) Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city.	Resilience objective not explicitly stated; some indicators are indirectly supportive (e.g., stormwater management, open space) while some create tension with resilience objectives (e.g., consistency with historic patterns of development, pedestrian-friendly ground floors, mechanical equipment in basements)	Add a resilience objective with indicators for flood-resilient design, heat-resilient design, and programmatic measures to plan for extreme events AND/OR Adjust/modify existing indicators (see below)	Any/all
Review Criteria for Large Development	19.31(2) Indicator	New buildings are designed and oriented on the lot so as to be consistent with the established streetscape on those streets on which the project lot abuts. Streetscape is meant to refer to the pattern of building setbacks and heights in relationship to public streets.	Flood-resilient design might not always be consistent with established patterns	Modify to acknowledge resilience objectives	1, 2, 3, 4, 5, 6, 7
Review Criteria for Large Development	19.33(1)(c) Indicator	Placement of mechanical equipment at locations on the site other than on the rooftop (such as in the basement), which reduces the bulk of elements located on the roof; however, at-grade locations external to the building should not be viewed as desirable alternatives.	Mechanical equipment in basement might not be consistent with flood resilience objectives; resilient systems (solar, cool roofs) should be noted	Modify to acknowledge resilience objectives	1, 2, 3, 4, 5, 6, 7
Review Criteria for Large Development	19.32(1) Indicator	Ground floors facing public space are actively inhabited by people, such as retail stores, consumer service businesses and restaurants where they are allowed, or general office, educational or residential uses and building lobbies. Windows and doors are a prominent aspect of the relevant building facades. More active uses are encouraged facing public streets, parks and pathways.	Tension between active ground floors and resilience objectives including elevation for flood protection, green area and shade trees in front setbacks	Modify to acknowledge resilience objectives	1, 2
Review Criteria for Large Development	19.32(2) Indicator	Covered parking on the lower floors of a building and on-grade open parking, particularly where located in front of a building, is discouraged where a building faces a public street or public park, and publicly accessible pathways.	Could be read to discourage shading over parking areas	Modify to acknowledge resilience objectives	6, 7, 8
Review Criteria for Large Development	19.33(4) Indicator	Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.	Green infrastructure could be noted more prominently	Modify to acknowledge resilience objectives	3, 4, 5, 6

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Review Criteria for Large Development	19.33(5) Indicator	Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of stormwater runoff compared to pre-development conditions.	More detail regarding green infrastructure and cooling objectives could be included	Modify to acknowledge resilience objectives	3, 4, 5, 6
Review Criteria for Large Development	19.33(6) Indicator	The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar Energy System as defined in Section 22.60 of this Zoning Ordinance.	Some structural shading may be desired for cooling	Modify to acknowledge resilience objectives	7
Review Criteria for Large Development	19.33(7) Indicator	Changes in grade across the lot are designed in ways that minimize the need for structural retaining walls close to property lines.	Where buildings are elevated for flood protection, raised or stepped front yards may be desirable	Modify to acknowledge resilience objectives	1, 2
Review Criteria for Large Development	19.44(3) Indicator	Buildings are designed to use natural resources and energy resources efficiently in construction, maintenance, and long-term operation of the building, including supporting mechanical systems that reduce the need for mechanical equipment generally and its location on the roof of a building specifically ...	Could note other resilience objectives (e.g., passive design); flood resilience concerns re: mechanical equipment location	Modify to acknowledge resilience objectives	9
Review Criteria for Large Development	19.47 Indicators	(1) On large-parcel commercial developments, publicly beneficial open space is provided. (2) Open space facilities are designed to enhance or expand existing facilities or to expand networks of pedestrian and bicycle movement within the vicinity of the development. (3) A wider range of open space activities than presently found in the abutting area is provided.	Mostly related to public use/enjoyment, less on flooding/heat resilience	Add indicators related to flooding/heat resilience strategies such as vegetation, trees, green infrastructure; consider encouraging pooled open space to create larger vegetated areas	3, 4, 5, 6, 7, 8, 12

Area-Specific Zoning Topic	Zoning Section	Current Zoning Provisions (Simplified)	Issue	Potential Approaches	Relevant Objective(s)
Flood Plain Requirements	20.70 Flood Plain Overlay District	Any construction or alterations in FEMA 100-year flood plain requires Planning Board special permit and must meet requirements for compensatory flood storage (paralleling Conservation Commission review); residential buildings with 1-3 units must meet standards but special permit requirement is waived	Compensatory flood storage not entirely relevant to stormwater management and SLR/SS flood protection	No change (i.e., incorporate flood resilience standards through citywide project review) OR Adopt analogous overlay approach for SLR/SS flood resilience (would require new standards and a procedure for regular map updates)	1, 2
Special "Corridor" Areas	20.60 Parkway Overlay District (covers Alewife Book Parkway, Route 2, parts of Fresh Pond Parkway and Concord Ave); 20.80 Memorial Drive Overlay District; 20.200 Prospect Street Overlay District; Special Districts in Article 17.000	Various "corridor" overlay districts require front yard standards including: - Green Area front yards (sometimes requiring a minimum ranging from 15-25 feet) - Front yard and/or street tree planting (typically 25-foot intervals) - Setbacks/landscaping for surface parking (in addition to base standards)	Standards limited to a specific area; outcomes not always consistent with broader urban design objectives	No change OR Supersede with citywide standards for front yards (PRESCRIPTIVE and/or PERFORMANCE) OR Expand overlay approach to other specific areas where heat resilience is prioritized	4, 5, 6, 7
Special Development Planning Areas	20.90 Alewife Overlay Districts	Building and site design standards including: 15-foot green area front yards 15% open space 25% permeable area (reduced if stormwater management standards are met)	Standards indirectly related to flood and heat resilience	Apply additional flood and heat resilience standards through area-wide zoning process (per recent Alewife District Plan)	4, 5, 6, 7
Special Development Planning Areas	Overlay Districts in Article 20.000, Special Districts in Article 17.000	Some special planning areas (e.g., Harvard Square, Central Square) do not have standards for green area, tree planting, &c.	Inconsistent standards area-by-area	Review and study what specific standards are appropriate in what specific districts OR Replace district-by-district with more uniform citywide approach	4, 5, 6, 7
Basement Uses	20.600 Basement Housing Overlay District	In a limited area, apartments may be added to basements of existing older buildings by special permit; requires stormwater/sewer separation, backflow preventers, and flood report prepared by engineer (reviewed by City Engineer)	Tension with flood resilience objectives - but review requirement provides some benefit	Revisit concept altogether OR Expand required review to other instances of basement use AND/OR Supersede with citywide standards for basements	1, 2