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MEMORANDUM

DATE: October 25, 2019

TO: Councilor Susan Albright, Chair, Zoning & Planning Committee
Members of the Zoning & Planning Committee

FROM: Barney Heath, Director, Department of Planning and Development
James Freas, Deputy Director of Planning

RE: **#363-19 Amendment(s) to Chapter 30 relative to building efficiencies**
DIRECTOR OF PLANNING & CO-DIRECTORS OF SUSTAINABILITY requesting discussion and adoption of amendments to Chapter 30, the Newton Zoning Ordinance to create exemptions to building envelope standards such as height and setback to facilitate the implementation of energy efficiency and alternative energy measures in buildings including external insulation, doorway vestibules, heat pumps, and solar panels among other features.

#364-19 Amendment(s) to Chapter 30 relative to sustainable design
DIRECTOR OF PLANNING & CO-DIRECTORS OF SUSTAINABILITY requesting discussion and adoption of amendments to Chapter 30, the Newton Zoning Ordinance to create a new set of standards related to sustainable development design with requirements for new buildings and development projects to include environmental and energy efficiency features.

MEETING: October 28, 2019

CC: Planning Board
Ann Berwick, Co-Director of Sustainability
William Ferguson, Co-Director of Sustainability
John Lojek, Commissioner of Inspectional Services
Alissa O. Giuliani, City Solicitor
Jonathan Yeo, Chief Operating Officer

On October 16th, Planning staff presented two potential amendments to the Zoning Ordinance. The first of these provided for changes to dimensional requirements in the zoning ordinance that would reduce barriers to buildings improvements that would improve the environmental performance of the building. The second created a new sustainable design ordinance that would clarify and make predictable the environmental performance rules for larger buildings requiring a special permit in the City. This draft ordinance also included standards for providing electric vehicle charging stations. The following memo shows staff's continuing analysis of these proposed rules. Staff is requesting that a public hearing be set for these items on November 13th.

Reducing Barriers to Environmental Building Improvements

Staff from Planning, ISD, and Sustainability met to discuss zoning amendments allowing encroachments into the building envelope standards for environmentally beneficial improvements. That discussion is summed up below:

- Heat pumps – Staff confirmed that the benefit of this encroachment should only be made available for heat pump condensers and not for efficient AC units. In short, only heat pumps truly offer a substantial environmental benefit worthy, on balance, of this allowance.
- Screening heat pumps – A screening requirement would seem to counteract the incentive being offered.
- Exterior insulation – Agreed that allowing encroachment for new construction as well eliminates a potential disincentive for builders to pursue this important energy efficiency measure.
- New numbers in the attached draft ordinance indicate a more realistic size for these building features.
- For solar panels, set rules for a flat roof condition.

Sustainable Building/Site Design Requirements

Staff has not yet proposed any changes to this draft ordinance. Based on the comments received thus far, there is additional analysis that must be completed. The greatest issues remaining include:

- The project size threshold at which this ordinance would be triggered – 10,000 sf, 20,000 sf, or something in between.
- Whether a project must be certified by the given green building program or simply deemed certifiable.
- The extent of the electric vehicle charging station requirements.
- Tightening of the exception clause.

With the exception of the last item, Staff's concern is with the potential impact of these requirements on smaller development projects that might serve to limit or even block small-scale residential or commercial projects. Such projects already are built with little financial wiggle room and the additional cost of an expanded design team and review process could be challenging. As 20,000 sf is essentially the City's current practice, this threshold seems a safe place to start. Below that number requires that staff engage in further analysis, conversations with builders and the sustainable buildings/design network, and potentially, some modeling as was done with the inclusionary zoning effort.

Next Steps

- Staff is recommending the Committee conduct a public hearing on these items on November 13th.

1.5. Rules of Measurement

1.5.3. Setback

- A. **Defined.** A line equidistant from the lot line which establishes the nearest point to the lot line at which the nearest point of a structure may be erected. In the case of a corner lot, the rear lot line shall be the lot line opposite the street on which the main entrance is located.
- B. No building need be set back more than the average of the setbacks of the buildings on the nearest lot on either side, a vacant lot or a lot occupied by a building set back more than the required distance for its district to be counted as though occupied by a building set back such required distance. Averaging applies only to the front setback. In no case shall any part of a building in a residence district extend nearer the street line than 10 feet.
- C. Distances shall be measured from the lot lines to the nearest portion of the structure. ~~including outside vestibule or porch.~~
- D. The following structures may project into the setback:
 - 1. Steps, landings and bulkheads; ~~may project into the setback.~~
 - 2. Heat pump compressors;
 - 3. Exterior insulation may project up to 8 inches;
 - 4. Doorway vestibules may project up to 4 feet with a width no greater than 6 feet;
 - 5. Gutters, cornices, ~~projecting eaves exterior window shading~~ and ornamental features ~~may project up to 2 feet; and into the setback.~~
 - 6. Roof overhangs may project up to 3 feet.

1.5.4. Height

- A. **Defined:**
 - 1. The vertical distance between the elevations of the average grade plane and the highest point of the roof. Not included in such measurements are:
 - a. Cornices which do not extend more than 5 feet above the roof line;
 - b. Chimneys, vents, ventilators and enclosures for machinery of elevators which do not exceed 15 feet in height above the roof line;
 - c. Enclosures for tanks which do not exceed 20 feet in height above the roof line and do not exceed in aggregate area 10 percent of the area of the roof;
 - d. Solar panels which do not extend more than 4 feet above the ridgeline or, in the case of a flat roof, no more than 4 feet above the parapet; and
 - e. Towers, spires, domes and ornamental features.

1.5.5. Floor Area

- A. **Floor Area Ratio.**
 - 1. The gross floor area of all buildings on the lot divided by the total lot area.

2. FAR tables can be found in Sec. 3.1.9 and Sec. 3.2.11.

B. Floor Area, Gross.

1. **Residential Districts.** The sum of the floor area of all principal and accessory buildings whether or not habitable shall be taken from the exterior face of the exterior walls of each building without deduction for garage space, hallways, stairs, closets, thickness of walls, columns, atria, open wells and other vertical open spaces, or other features as defined in this Sec. 1.5.5, as defined below:
 - a. Gross floor area shall include:
 - i. First and second stories;
 - ii. Any floor area above the second story, whether finished or unfinished, that meets all of the following criteria:
 - a. It lies below the area of a horizontal plane that is 5 feet above it and which touches the side walls and/or the underside of the roof rafters;
 - b. Is at least 7 feet in any horizontal dimension, as measured within the area having a wall height of 5 feet or more;
 - c. Has a minimum ceiling height of 7 feet on at least 50 percent of its required floor area; and
 - d. Has a floor area of not less than 70 square feet as measured within the area having a wall height of 5 feet or more;
 - iii. Atria, open wells, and other vertical open spaces, where floor area shall be calculated by multiplying the floor level area of such space by a factor equal to the average height in feet divided by 10;
 - iv. Enclosed porches;
 - v. Attached garages;
 - vi. Detached garages and any space above the first story of a detached garage that has a ceiling height of 7 feet or greater;
 - vii. Other detached accessory buildings, such as sheds or cabanas, except as exempted in paragraph b. below;
 - viii. A portion of mass below the first story, to be calculated using the formula in paragraph D. below; and
 - b. Gross floor area shall not include:
 - i. Unenclosed porches;
 - ii. Doorway vestibules up to a maximum floor area of 24 square feet;
 - iii. Exterior insulation;
 - iv. Carports; and
 - v. detached accessory building equal to or less than 120 square feet in size.

8.3. Defined Terms

Exterior Insulation. Insulation that is installed exterior to the exterior structural wall of the building so as to improve the energy efficiency of the building.

Exterior Window Shading. Non-habitable architectural features attached to a building above windows to reduce the amount of sunlight entering the window.

Heat Pump Compressor. A device that serves as a heating and cooling system for a building by transferring heat energy into a building to heat it and out of the building to cool it. The compressor is the external portion of this system.