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# CITY OF CAMBRIDGE

Community Development Department

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To: Planning Board  
From: Community Development Department (CDD) Staff  
Date: December 14, 2021  
Re: **Michael Jeremy Yamin, et al., Zoning Petition**

**IRAM FAROOQ**  
*Assistant City Manager for  
Community Development*

**SANDRA CLARKE**  
*Deputy Director  
Chief of Administration*

**KHALIL MOGASSABI**  
*Deputy Director  
Chief of Planning*

## Overview

**Petitioner:** Michael Jeremy Yamin, et al. (group of at least 10 registered voters)

**Zoning Articles:** Section 11.207.5.3, Yard Setback standards for Affordable Housing Overlay (AHO) Projects

**Petition Summary:** Amend the current regulations to require setbacks “no less than 50% of the Base District formula calculations in all cases.”

**Planning Board Action:** Recommendation to City Council

**Memo Contents:** Summary of the proposed zoning, background information on the topic of the Petition, and considerations and comments from staff.

### Summary of Petition Effects

The Petition is intended to modify the “yard” or “setback” requirements for new buildings built under the Affordable Housing Overlay (“AHO”).

The Petition would insert the clause “but no less than 50% of the Base District formula calculations in all cases” into the requirements for front yards and side yards. In many cases, this change would make the required front and side yard setbacks more restrictive than current zoning for AHO projects. Paragraph (a) of Section 11.207.5.2.3 would also be amended, but the effect is unclear.

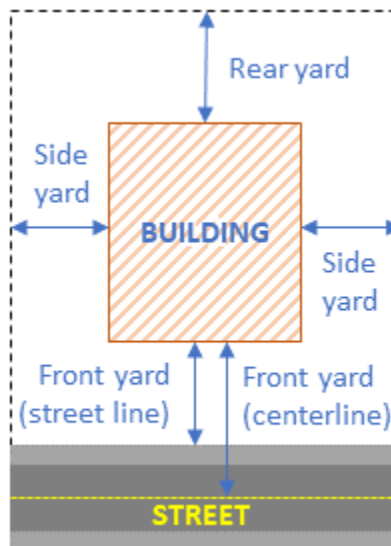
The proposed amendments, if adopted, would apply to AHO projects in many zoning districts throughout the city, as explained further below. Any AHO project that had not received a building permit prior to the first publication of notice of the Ordinance Committee's public hearing would potentially be affected.

### Background

#### *Yards/Setbacks*

Required “yards” or “setbacks” are one of the basic development standards in the Zoning Ordinance. A “yard” refers to the open area between the outer wall plane of a building and the nearest property line, and it is measured by the linear “setback” distance between the two.

- “Front yards” are between a building’s front façade and a lot line abutting a street, referred to as a “street line.” However, sometimes the front yard setback distance is measured from the street centerline.
- “Side yards” are between a building’s façade and a lot line that is perpendicular to a street line.
- “Rear yards” are between a building’s façade and a lot line that is opposite to a street line.
- Note that in the case of corner lots or irregular lots with frontage on multiple streets, any setback from a street is considered a “front yard” and other setbacks are usually considered “side yards.”



Currently, yards are required for residential development in most districts of the city, but are usually not required for non-residential development in Business and Industry zoning districts.

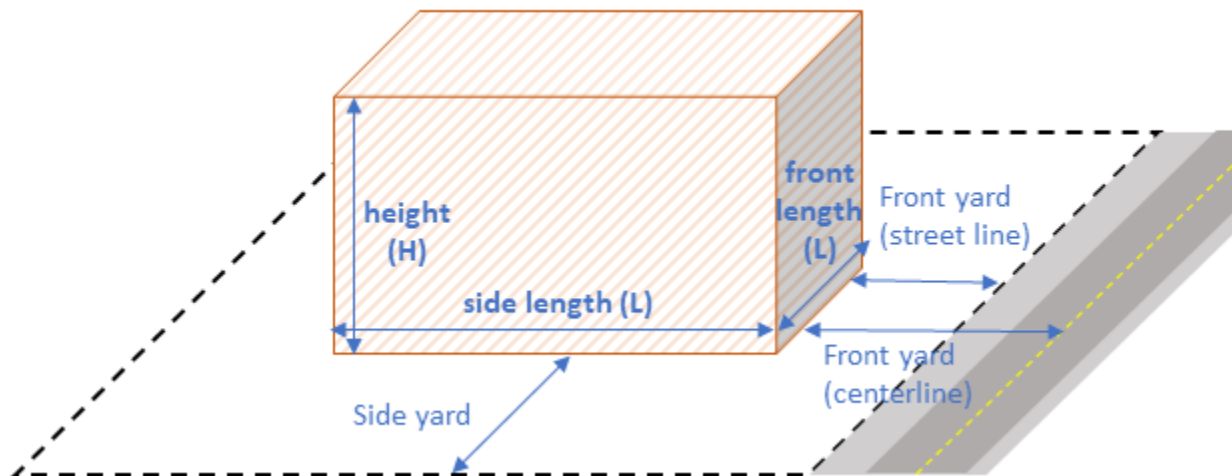
*“Absolute Minimum” Setbacks*

The simplest yard standards are fixed setback distances (in feet) between the building façade and lot line. In Residence districts, the minimum front yard setback ranges from 5 to 25 feet, and the minimum rear yard setback is typically 20 to 25 feet. In some districts, there is a 7.5-foot minimum side yard setback, but in other districts the side yard is regulated only by “formula” setbacks described below. These “absolute minimum” setbacks have remained fairly constant over time.

*“Formula” Setbacks*

For residential development, “absolute minimum” setback requirements are often supplemented by requirements that vary based on the size of a building. The 1943 Zoning Ordinance contained setback requirements based on a building’s height. The 1961 Zoning Ordinance introduced more complex “formula setback” calculations that still apply, at least in part, to residential development in Residence C, C-1, C-1A, C-2, C-2A, C-2B, C-3, and C-3A districts, as well as all Office, some Business (BA, BA-1, BA-3, BA-4, and BB), and some Industry (IA-1, IA-2, and IB-2) districts.

Determining the required formula setback first requires calculating the sum of a building’s height (“H”) plus its horizontal length (“L”) from the perspective of a front, side, or rear property line. That “H+L” sum is then divided by a number, which varies based on the zoning district and the type of yard (front, side, or rear), to determine the required setback distance (see chart on following page). In the case of front yards, the formula setback is measured from the street centerline. These figures are shown in the diagram below for a simple building massing. However, the calculation is more complicated for a more irregularly shaped building with multiple rooflines and/or outer wall sections.



**Current Yard Requirements – Base Zoning**

District	Max. Height (residential)	"Formula" setback requirements			"Absolute minimum" setback requirements		
		Front Yard (centerline)	Side Yard	Rear Yard	Front Yard (street line)	Side Yard	Rear Yard
<b>C</b>	35'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	7.5' (sum 20')	20'
<b>C-1</b>	35'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	7.5'	20'
<b>C-1A</b>	45'	N/A	$(H+L) \div 7$	$(H+L) \div 5$	10'	N/A	N/A
<b>C-2</b>	85'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>C-2A</b>	60'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>C-2B</b>	45'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>C-3</b>	120'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>C-3A</b>	120'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>O-1</b>	35'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>O-2</b>	85'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>O-2A</b>	70'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>O-3</b>	120'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>O-3A</b>	120'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>BA</b>	45'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>BA-1</b>	35'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	7.5'	20'
<b>BA-2</b>	45'	N/A	N/A	N/A	5'	10'	20'
<b>BA-3</b>	35'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 4$	10'	N/A	20'
<b>BA-4</b>	35' or 44'	$(H+L) \div 4$	$(H+L) \div 5$	$(H+L) \div 5$	10'	10'	10'
<b>BB</b>	80'	$(H+L) \div 5$	$(H+L) \div 6$	$(H+L) \div 5$	5'	N/A	20'
<b>IA-1</b>	45'	no min	$(H+L) \div 7$	$(H+L) \div 5$	no min	10' (by SP)	10' (by SP)
<b>IA-2</b>	70'	no min	$(H+L) \div 7$	$(H+L) \div 5$	no min	10' (by SP)	10' (by SP)
<b>IB-2</b>	35'	15	$(H+L) \div 7$	$(H+L) \div 5$	15'	10' (by SP)	10' (by SP)

Note: This chart is only a summary, review the full text of the Cambridge Zoning Ordinance for details.

**Affordable Housing Overlay Standards**

The Affordable Housing Overlay ("AHO"), adopted in 2020, was intended to facilitate the development of "100%-affordable" housing by relaxing some zoning requirements and creating an as-of-right permitting process. Proposals undergo advisory design review, but do not need special permits or variances if they meet the AHO standards.

The AHO disregards formula setback calculations and only requires absolute minimum setbacks. The AHO requires a minimum 15' front yard setback, 7.5' side yard setback, and 20' rear yard setback, which may be reduced if the underlying district has a less restrictive absolute minimum setback. For example, in a Residence C-1A district, the front yard setback for an AHO project could be reduced from 15' to 10', which is the minimum in the district, but the required side yard setback would remain 7.5' because the underlying district has only a formula side yard setback. Also, the front yard setback can be reduced further to match the average setback for the nearest four buildings fronting the same side of the street,

to promote consistency with the surrounding context, and the front setback can be reduced to 10’ in all cases for a corner lot.

The Petition would reintroduce a formula setback calculation to the AHO, but would only require half the distance of the setback required under base zoning, and only for the front and side yards. The proposed formula setback would apply “in all cases,” so it would supersede the fixed setback distances as well as the allowed reductions in the front setback to match the existing context. The chart below summarizes the current AHO standards in the districts listed above, and the additional formula setbacks that would be required if the Petition were adopted.

**Current and Proposed Yard Requirements – AHO Zoning**

District	Max. Height (AHO)	Current AHO setback requirements			Proposed formula setback requirements		
		Front Yard (street line)	Side Yard	Rear Yard	Front Yard (centerline)	Side Yard	Rear Yard
C	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
C-1	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
C-1A	65-70'	10'	7.5'	20'	N/A	$(H+L) \div 14$	N/A
C-2	80'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
C-2A	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
C-2B	65-70'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
C-3	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
C-3A	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
O-1	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
O-2	80'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
O-2A	80'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
O-3	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
O-3A	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
BA	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
BA-1	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
BA-2	65-70'	5'	7.5'	20'	N/A	N/A	N/A
BA-3	45-50'	10'	7.5'	20'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
BA-4	65-70'	10'	7.5'	10'	$(H+L) \div 8$	$(H+L) \div 10$	N/A
BB	80'	5'	7.5'	20'	$(H+L) \div 10$	$(H+L) \div 12$	N/A
IA-1	65-70'	no min	7.5'	10'	N/A	$(H+L) \div 14$	N/A
IA-2	80'	no min	7.5'	10'	N/A	$(H+L) \div 14$	N/A
IB-2	45-50'	10'	7.5'	10'	N/A	$(H+L) \div 14$	N/A

Note: This chart is only a summary, review the full text of the Cambridge Zoning Ordinance for details.

To date, no building permit has been issued for an AHO project. There are three potential AHO developments that have submitted plans to begin the advisory review process at the Planning Board. An amendment to the AHO section of the Zoning Ordinance would impact any AHO development that had not yet been issued a building permit by the time the Petition’s public hearing was advertised.

## Zoning Considerations

Reintroducing a formula setback calculation to the Affordable Housing Overlay could significantly change the development standards for an AHO project. Because the formula setback calculations depend on the conditions of each building and site, it is impossible to know with certainty what the impacts would be on all potential AHO projects. Each AHO project would need to be carefully studied to determine how it would comply.

In broad concept, formula setbacks would result in greater required setbacks for buildings that are taller or longer, and smaller required setbacks for buildings that are shorter or smaller in footprint. However, experience with formula setback requirements in Cambridge has revealed many issues with how it works in practice. These issues would potentially affect AHO projects if the Petition is adopted.

- **Unpredictability:** Unlike height limits, which are uniform across a district, it can be nearly impossible for a neighbor or for the general public to know with certainty how much of a setback would be required if a new building were built on a given site, because so much depends on how the building is shaped. In most cases the required setback can be large, but in some cases a portion of a building can be closer to the lot line than expected as an outcome of the formula calculation. Moreover, it takes a high degree of experience and specialization for architects to successfully work within formula setback requirements.
- **Multiple Constraints:** Because buildings need to meet setback requirements on all sides of the lot, the combination of multiple formula setback requirements can be very constraining. For example, adjusting the frontage of a building to meet the front yard formula can affect the side yard formula, and vice versa. On a narrower lot, where side yard formulas need to be met on at least two sides, the requirements can “squeeze” the buildable footprint on the lot from both sides. This can create a negative feedback loop – as the building footprint gets narrower, the building might become longer, which further increases the required setback on each side.
- **Context:** Because of the larger setbacks required for larger buildings, formula setbacks often tend to result in building and site designs that are disconnected from their surrounding context, especially in zoning districts that allow greater density and taller heights. Developments with larger setbacks tend to be surrounded by large areas of surface parking and landscaping, in contrast to historic “streetwall” development patterns in Cambridge in which buildings have smaller front and side yard setbacks. Current design guidelines, including guidelines for the AHO, prioritize compatibility with the surrounding context. Therefore, formula setback requirements might be in tension with the city’s design objectives in many instances.
- **Need for Relief:** Setback requirements are one of the more frequent reasons why housing developers need to seek variances. The factors described above often contribute to the issue – for example, requirements cannot be met because the lot is narrow or irregularly shaped, or there are existing buildings that do not conform. The variance process is intended to deal with scenarios where unusual site conditions make it unreasonable to apply the district zoning standards, but because variances require discretionary approval, they can be subject to appeal

and litigation. The AHO is intended, in part, to set development standards that are flexible enough to permit affordable housing development without the need for discretionary relief.

- **Efficiency:** In theory, formula setbacks could be less onerous if development follows a pattern of very small-footprint buildings – for example, a 35’ by 35’ building, about the size of a typical wood-frame house in Cambridge, could still have a required side yard setback of 7.5 feet under the proposed zoning. However, this type of outcome is rare in practice. Affordable housing is particularly sensitive to the economics of development, and it is often more cost-efficient (to a point) to construct larger buildings with more dwelling units than to build many smaller buildings. Also, because zoning and building codes require separation between buildings, a group of smaller buildings would not fit as many units on a lot as a larger building. Cambridge’s design guidelines, including AHO guidelines, do encourage breaking down the massing of larger buildings and avoiding long, unbroken building lengths. However, design approaches need to consider economic feasibility, and some design objectives can be achieved through more careful articulation of building massing, façade design, or other techniques and not only by reducing building size.

For the AHO to be effective at what it was intended to do, it should set clear standards for what development is allowed or not allowed. However, it should also provide enough flexibility so that affordable housing developers and designers can balance the conditions of the site, the City’s design objectives, and economic factors to create viable developments.