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Barney Heath  
Director

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## PUBLIC HEARING MEMORANDUM

**DATE:** June 10, 2024

**TO:** R. Lisle Baker, Chair, Zoning & Planning Committee  
Members of the Zoning & Planning Committee

**FROM:** Barney Heath, Director, Department of Planning and Development  
Jennifer Caira, Deputy Director, Department of Planning and Development  
Zachery LeMel, Chief of Long Range Planning  
Olivia James, Community Engagement Specialist

**RE:** **#76-24(3) Discussion and possible ordinance amendments to change how building height is measured**  
ZONING & PLANNING COMMITTEE requesting discussion and possible amendments to Chapter 30, Zoning to require that building height is measured from original grade instead of finished grade.

**MEETING:** June 10, 2024

**CC:** City Council  
Planning Board  
Anthony Ciccariello, Commissioner of Inspectional Services  
Jonathan Yeo, Chief Operating Officer  
Alissa O. Giuliani, City Solicitor

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### Overview

This docket item is intended to identify and address concerns regarding the significant altering of the existing grades when new homes are built. The Zoning Ordinance requires that building height be measured from the average grade plane (Section 1.5.4 F), which represents the average of finished grade elevations around the perimeter of the building. The maximum height is then measured from this plane. The average grade plane is based on finished grades, which may be very different from existing grades. For example, a site for a new single-family home could use soil and retaining walls to first build up the site prior to constructing the home. The new grades, which may be significantly higher than the existing grades of the site as well as the neighboring sites, are then used to set the baseline for the maximum height.

The use of grading, terracing, and retaining walls to raise up a building is often done to maximize areas in the basement that do not count towards floor area, build a full basement where there is a high-water table, and/or to create a flat yard. The effect of these grading alterations are homes that appear taller than those nearby.

Planning staff have reviewed zoning ordinances from nearby communities and worked closely with staff in Inspectional Services and Engineering to identify potential zoning amendments to limit the ability to do significant grading by-right. Staff propose an amendment to measure height based on the average grade of the original grade (i.e. pre-construction). Current regulations, found in Sec. 1.5.4.E. of the Zoning Ordinance, use finished grade. While each municipality measures height differently, City staff research found Newton's neighbors typically measure from original grade or a fixed point such as the sidewalk or centerline of the street, with Newton as an outlier measuring from finished grade. Measuring from original grade is appropriate for built out cities and towns like Newton, where new development and redevelopment should more carefully work within the existing context of the site and neighborhood.

## **Background**

Prior to 2009 the Zoning Ordinance required a Special Permit to change the existing grades of a site by more than three feet. This was primarily intended to protect abutting properties from drainage problems caused by grade changes. While well intentioned, the three-foot regulation became difficult to implement. Strictly interpreted, it would require a Special Permit any time a foundation was excavated, or a hole was dug, regardless of the size of the site and likelihood that the grading would result in stormwater runoff. The Commissioner of Inspectional Services issued interpretations over the years that this provision was not applicable to foundation excavations or to excavations leading to garages under residences. This resulted in developers attempting to use this interpretation to justify major driveway and hillside excavations that raised both aesthetic and engineering concerns.

In 2007 the zoning task force recommended that this provision be eliminated and be replaced by a Special Permit requirement for retaining walls over a certain height in setbacks and in 2009 the City Council adopted a Special Permit requirement for retaining walls greater than four feet located in a setback (Section 5.4.2). The intent was that limiting the height of retaining walls within the setback would limit the grade changes adjacent to abutting properties.

While the three-foot grade change regulation proved to be difficult to implement, the 2009 amendment has not stopped the significant regrading of sites. Retaining walls are often kept below four feet within the setback and significant grading can still occur, raising the height of the building in comparison to neighboring properties. Retaining walls were also being built greatly exceeding four feet, just outside of the setbacks. The recent zoning amendment to require a special permit for any retaining wall over four feet, regardless of location, will now require discretionary review for any large wall. This amendment is intended to more directly address the grading and height concerns by changing the baseline from which height is measured.

Planning staff presented the proposal to measure height from original grade to the Zoning and Planning Committee on May 13, 2024, and since that meeting staff have conducted additional research, described below.

## Analysis

Planning staff reviewed the height measurements used in Watertown, Wellesley, Needham, Bedford, Brookline, Arlington, and Waltham and the proposed amendment is most closely based on the language used by Bedford and Needham. Staff also communicated with staff in these communities (with the exception of Waltham) to better understand their experiences. In our discussions Planning staff learned that many of these municipalities decided to use original grade for similar reasons that Newton's ZAP is currently considering the change. This includes addressing grade manipulation (Watertown), "mansionsization" (Bedford), and teardowns (Bedford). When asked whether there have been any significant concerns over impacts to property value, no municipality could recall this issue coming up. As our contact in Bedford explained, "I think many residents are pleased with the change and it seemed popular at Town Meeting when it passed."

Staff have met with various architects and builders who generally support these proposed amendments but expressed an interest in more research and concerns for how this might impact small and/or steeply sloped sites. In reviewing other ordinances, steep sites were generally accounted for by utilizing average original grade (in lieu of a fixed point such as the sidewalk or street where this is used). While this amendment may make it difficult to add significant soil to raise the grade and create a flat site where it is currently sloped, or to be able to bury enough of the basement so it does not count towards FAR, staff believe this will lead to designs that better respect the existing conditions. Utilizing average grade will still allow for grading to occur on site, just not to the extent that the midpoint of the basement is higher than the original grade. Property owners will also continue to have the option to seek a special permit for a third story or for additional FAR.

While this amendment is intended to result in designs that fit within the existing grade of the site, the current definition for a two-family home is limiting and on sloped sites may force the regrading to create a flat site. The definition states: "Two-Family, Detached. A building that contains 2 dwelling units and is either divided vertically so that the dwelling units are side by side but separated by a shared wall extending the entire maximum height of one or both units, and/or is divided horizontally so that one dwelling unit is above another." Requiring the shared wall to extend the maximum height of one or both units limits the ability to step one unit down when a site is sloped. Staff recommend exploring an update to this definition to allow more flexibility.

Another concern raised was the effective date of the change. It was suggested the date be pushed out so that local architects and developers have time to familiarize themselves with the new ordinance. Pushing out the effective date also recognizes that the design process is lengthy, often a year or more, before a project even submits for building permits.

Planning staff have also reviewed more recent projects to better understand how the proposed amendments would have impacted the final designs. The projects selected were suggested by ISD staff, local architects, and other Planning staff who have direct contact with the approval process. Through this preliminary research, Planning staff found that most projects would have a by-right pathway forward under the proposed ordinance with similar square footage, but with a modified design that is likely more contextual with the neighborhood. The special permit allowance is already in place for additional FAR or a 3 story structure if a developer wanted to pursue the design as proposed.

## **Updates to Zoning Ordinance**

Working closely with other City Departments (Inspectional Services, Engineering, and Law), Planning recommends the drafted amendments found in Attachment A and B. Note that the proposed changes do not change the formula for how average grade is calculated for determining grade. Rather, the amendments would require the formula to utilize a different starting point: original grade and not proposed grade. The key changes include:

1. Defining original grade (with and without an existing building, and subdivisions)
2. Building height is measured from original grade, or proposed grade if lower

## **Looking Ahead**

After the public hearing, the Planning Department suggests setting an effective date for January 2025.

<b>Attachment A</b>	Red Line draft ordinance revisions to Sec. 1.5.4.E and F, and 1.5.5.D.1
<b>Attachment B</b>	Clean draft ordinance revisions to Sec. 1.5.4.E and F, and 1.5.5.D.1

#### 1.5.4. Height

E. Original Grade. The grade of the lot before any regrading, demolition, development, or redevelopment begins based on the following standards:~~In cases where the walls of the building are more than five (5) feet from the nearest street line, the grade shall mean the mean elevation of the ground adjoining said wall; and in all other cases, the mean elevation of the nearest sidewalk.~~

1. If a lot,

- a. Has an existing building that is to be demolished or modified, the original grade of the lot shall be the grade that existed prior to any activity that caused a change in position or location of soil, sand, rock, gravel, or similar earth material, which changes the grade of the lot, that occurred after September 1, 2024 and within five (5) years of the date of application for the building permit for such demolition or modification of the existing building; or
- b. Has no existing building on the property, the natural grade of the property, prior to any activity that causes a change in position or location of soil, sand, rock, gravel, or similar earth material, which changes the grade of the lot, shall be considered the original grade; or
- c. Is a new subdivision, notwithstanding anything to the contrary contained in the City of Newton Zoning Ordinance, the original grade shall mean the approved and recorded grade.

2. The original grade shall be certified by a registered Massachusetts licensed professional land surveyor and shown on a certified plot plan to be verified by the Building Inspector prior to commencement of work on the property with all elevations in Newton City base.

F. Grade Plane Average. A horizontal reference plane for a building as a whole representing the average of ~~finished original or proposed grade, whichever is lower,~~ elevations around the perimeter of a building, as determined by the length-weighted mean formula below. All walls of length six (6) feet or greater~~greater than 6 feet~~ shall be included in segments of consistent grade or slope.

1. In cases where the walls of the building are more than five (5) feet from the nearest street line, the grade shall refer to the mean elevation of the ground adjoining said wall; and in all other cases, the mean elevation of the nearest sidewalk.

$$\Sigma = (e1 + e2) / 2 \times L P$$

Where:

- $\Sigma$  sums the weighted average grades of all segments;
- Segments less than 6 feet in length are not included as separate segments;
- e1 and e2 are the elevations of the finished ground level at the respective ends of each segment, determined as the lowest point at each end of the segment within 6 feet of the foundation or the lot line, whichever is closer;
- L is the corresponding horizontal length of the segment; and
- P is total horizontal length of all segments

### 1.5.5. Floor Area

D. **Mass Below First Story.** For the purposes of calculating gross floor area, any cellar, crawl space, basement, or other enclosed area lying directly below a first story in a residential structure.

1. **Standards.** The lesser of 50 percent of the floor area of mass below first story OR:  
((X/Y) floor area of mass below first story)

Where:

- X = Sum of the width of those sections of exposed walls below the first story having an exterior height  $\geq 4$  feet as measured from ~~existing-original~~ or proposed grade, whichever is lower, to the top of the subfloor of the first story.
- Y = Perimeter of exterior walls below first story

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  - a. Has an existing building that is to be demolished or modified, the original grade of the lot shall be the grade that existed prior to any activity that caused a change in position or location of soil, sand, rock, gravel, or similar earth material, which changes the grade of the lot, that occurred after September 1, 2024 and within five (5) years of the date of application for the building permit for such demolition or modification of the existing building; or
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F. **Grade Plane Average.** A horizontal reference plane for a building as a whole representing the average of original or proposed grade, whichever is lower, elevations around the perimeter of a building, as determined by the length-weighted mean formula below. All walls of length six (6) feet or greater shall be included in segments of consistent grade or slope.

1. In cases where the walls of the building are more than five (5) feet from the nearest street line, the grade shall refer to the mean elevation of the ground adjoining said wall; and in all other cases, the mean elevation of the nearest sidewalk.

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