



Ruthanne Fuller  
Mayor

**City of Newton, Massachusetts**  
Department of Planning and Development  
1000 Commonwealth Avenue Newton, Massachusetts 02459

Telephone  
(617) 796-1120  
Telefax  
(617) 796-1142  
TDD/TTY  
(617) 796-1089  
www.newtonma.gov

Barney S. Heath  
Director

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## MEMORANDUM

**DATE:** February 15, 2024

**TO:** Councilor 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 Discussion and possible ordinance amendment to deal with grade changes created during construction causing stormwater runoff on neighboring properties**  
COUNCILORS ALBRIGHT, LIPOF, WRIGHT, AND LEARY requesting a discussion with the Planning Department to address concerns relative to the trend of significantly raising grade elevations on lots, using retaining walls, terracing and other means to add soil to conceal a raised basement, which can lead to new buildings that are significantly taller than nearby existing houses in the area and cause denuding of wooded areas and increase stormwater runoff. This discussion may result in an ordinance change to Chapter 30 section 5.4.2 which would require a special permit or other means of city review of all retaining walls over 4 feet on a site.

**MEETING:** February 15, 2024

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

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### Overview

The subject docket item is intended to identify and address concerns regarding the significant altering of the existing grades when new single and two-family homes are built. Grading, terracing, and retaining walls are used to raise up the house, maximize areas 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, the potential for increased stormwater runoff, and aesthetic and safety concerns regarding retaining walls.

## **Existing Regulations**

### Height

The Zoning Ordinance sets maximum height and floor area limits for new single and two-family homes. Height is 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.

### Grading and retaining walls

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. Retaining walls outside of setbacks do not require a Special Permit and do not have any maximum height restrictions.

### Stormwater

In 2009, along with the retaining wall regulations, the stormwater regulations section of the Zoning Ordinance (Section 5.3) was also amended to reference Engineering's thresholds for stormwater review. The thresholds at the time applied to new development that resulted in an increase in impervious area by more than 4% of the lot size or 400 square feet. Often sites were significantly redeveloped, however if the site had been previously developed the impervious area was not actually increased, resulting in no stormwater management requirements.

In 2022 the stormwater ordinance was updated to require stormwater management for most development projects. The new thresholds capture any residential development or redevelopment, any development or redevelopment creating more than 400 sf of new impervious area, construction of retaining walls, trench excavation requiring dewatering, and land disturbances of more than 5,000 sf.

## **Issues**

### Height

Measuring height from the finished grade allows for significant altering of existing grades prior to construction. This can be seen in the homes that terrace or create a pedestal for the new home,

resulting in a height that can be significantly higher than adjacent homes. This may be desirable in order to construct a full basement where there is a high-water table, create a walk-out basement, provide a garage under the home, or to maximize the area within the home that is exempt from the floor area ratio (FAR) calculation. Solutions to explore include requiring an existing topographic survey (representing the grades on the site prior to any work) and measuring height from the existing grade or measuring height from a constant grade, such as the back of sidewalk.

### Retaining walls

Retaining walls over four feet (the point at which they need to be designed by a licensed engineer) require a Special Permit if they are located in the setback, however retaining walls located outside of the setback are by-right and are not subject to a height maximum. There have been examples of properties undergoing significant grading with very large retaining walls in order to provide a flat yard on a sloped lot or to allow construction of a home on a steep lot. These large retaining walls present aesthetic and safety concerns for adjacent properties.

Possible solutions to explore include requiring a Special Permit for all retaining walls over a certain height, and/or capping the maximum height of individual or terraced retaining walls.

### Stormwater

Since the Zoning and Planning Committee last discussed this topic, in 2021, the Stormwater Ordinance has been updated to address many of the previous issues. The new ordinance requirements various levels of review and onsite management of stormwater for most new development projects, whereas previously large redevelopment projects could be exempt if the existing site was mostly impervious.

## **Next Steps**

### **Potential Solutions**

The following outlines options to consider for how best to address the issues described above. They are separated into two groups: 1) strategies that are easy to implement with limited complications and 2) strategies that have broader impacts that increase the complexity of the option.

#### Straight Forward

- Require special permit for retaining walls or series of retaining walls exceeding 4' anywhere on the property
  - There is precedent for this already in our VCOD zoning ordinance
  - The current retaining wall ordinance already restricts by-right retaining walls in the set back to 4' so this would simply expand that to include the entire property

#### Complex Options

- Measure height from existing grade or a fixed point such as the back of sidewalk
- Measure height along the front elevation, not average grade
- Set a maximum height for individual or terraced retaining walls
- Explore when basement counts toward FAR and number of stories

The complex options will require further analysis and coordination with Inspectional Services and Engineering as well as property owners, architects and builders. Changing the rules around how height and FAR are measured have broad implications and need to be thoroughly studied to ensure any possible solutions address the concerns without creating new unintended consequences.