



# County of Fairfax, Virginia

## MEMORANDUM

**DATE:** April 18, 2016

**TO:** Pending Zoning Ordinance Amendments ListServ  
Adopted Zoning Ordinance Amendments ListServ

**FROM:** Leslie B. Johnson  
Zoning Administrator

**SUBJECT:** Proposed Zoning Ordinance Amendment Concerning Shape Factor in the R-C District, Increase in Residential Building Height; and Minor Lot Line Adjustments

### **BACKGROUND**

The purpose of this memorandum is to transmit a draft Zoning Ordinance Amendment for public review and comment prior to the Board of Supervisor's authorization of the advertisement of the public hearings for this amendment. All comments that are received will be reviewed and considered as part of staff's continuing evaluation of the proposed amendment. The public will also be given the opportunity to provide comments at the Planning Commission and Board of Supervisor's public hearings on this amendment.

The proposed amendment addresses several items that are set forth in the 2015 Zoning Ordinance Amendment Work Program, including the addition of shape factor in the R-C District, and the consideration of an increase in the maximum allowable building height in the R-C, R-E and R-1 Districts when the impact of the increased height on adjacent properties is mitigated. In addition, the proposed amendment would add language that facilitates the minor adjustment of lot lines between corner lots and the adjacent lots when such lots do not meet the current lot area, lot width and/or shape factor requirements, but met the requirements that were in effect when the lots were created. The need for this language has recently become apparent based on several minor lot line adjustment requests that have recently been submitted.

### **PROPOSED AMENDMENT DISCUSSION**

A description of each element of the proposed amendment is set forth below and the proposed Zoning Ordinance Amendment text is attached.

### **Shape Factor in the R-C District**

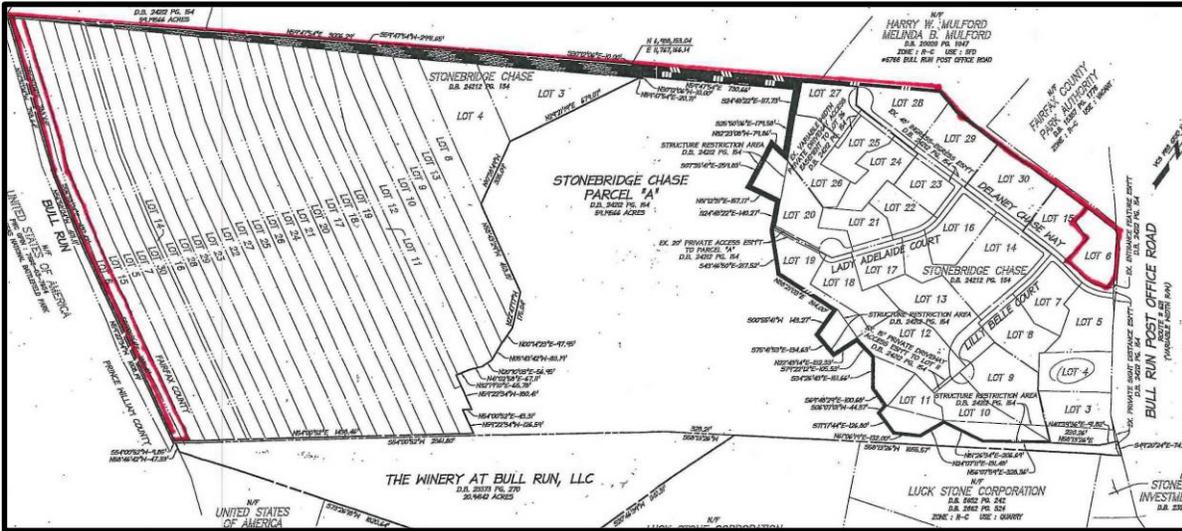
Shape factor is designed to prevent irregularly shaped lots by providing a measurement by which the compaction and degree of regularity of the shape of a lot can be evaluated. Shape factor is defined in the Zoning Ordinance as the non-dimensional ratio of the lot perimeter squared, divided by the lot area, where the perimeter and area are derived from the same unit of measurement. In order to understand the context of shape factor, the most compact geometric shape is a circle which has a shape factor of 12.5. The current Zoning Ordinance allows a maximum shape factor of 35 by right in the R-E through R-8 Districts. Lots designated as open space, depicted on an approved development plan in the PRC District, depicted on an approved final development plan in a PDH or PDC District, or located in a cluster subdivision approved with special exception approval by the Board, are not required to meet shape factor.

In recognition that there may be some limited circumstances in which an increase in shape factor may be warranted, the Zoning Ordinance allows the Board to approve a special exception for an increase in the maximum allowable shape factor from 35 up to 50. Such special exception approval requires a determination that a portion of the property is required for the establishment of a wastewater and/or stormwater management facility or a stream valley trail as an outlot within a proposed subdivision, provided that there is no alternative location on the property being subdivided for the proposed facility or trail.

At the time of the establishment of the shape factor limitation, it was believed that shape factor should not apply to the R-C District as most lots in the R-C District require septic drain fields, the minimum lot size for a conventionally developed lot in the R-C District is 5 acres and subdivision approval is not required for such development. However, it was recognized shortly after the shape factor requirement became effective that it might be appropriate to include a shape factor requirement in the R-C District given the irregular shape of certain lots that were being created in the R-C District. There have been a number of recent residential developments in the R-C District, specifically along Bull Run Post Office Road in the Sully District, that have resulted in lots with highly irregular shapes. Examples of two such developments are located below.

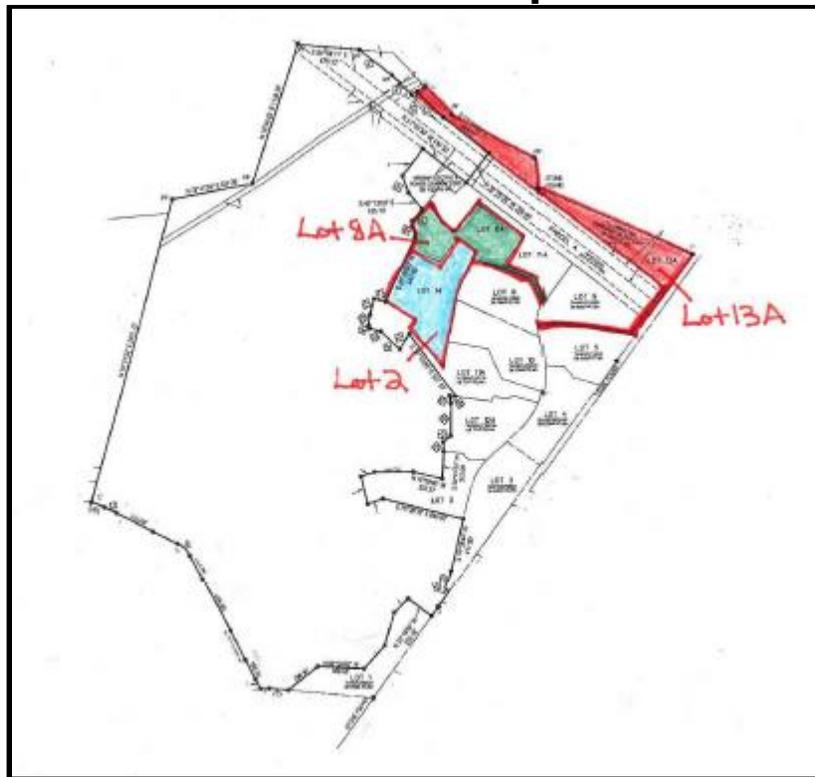
For illustrative purposes, Lot 6 in Development #1 is highlighted in red and has a shape factor of 1,211, which is approximately 35 times greater than that allowed in other districts.

## R-C District Development #1



The lots in Development #2 are not as extreme as the lots in Development #1 as the overall lots are more compact in shape. For illustrative purposes, Lot 2 has a shape factor of 24, Lot 8A has a shape factor of 53 and Lot 13A has a shape factor of 196.

## R-C District Development #2



The higher the shape factor is on a lot, the more irregular the shape of the lot and the more difficult it is to locate property boundaries and to place structures on the lot that meet the minimum yard requirements (setbacks). Therefore, based on the two developments depicted above and other examples of irregularly shaped lots that have been created in the R-C District, it is believed appropriate to add a shape factor requirement in the R-C District.

### **Increase in Residential Building Height**

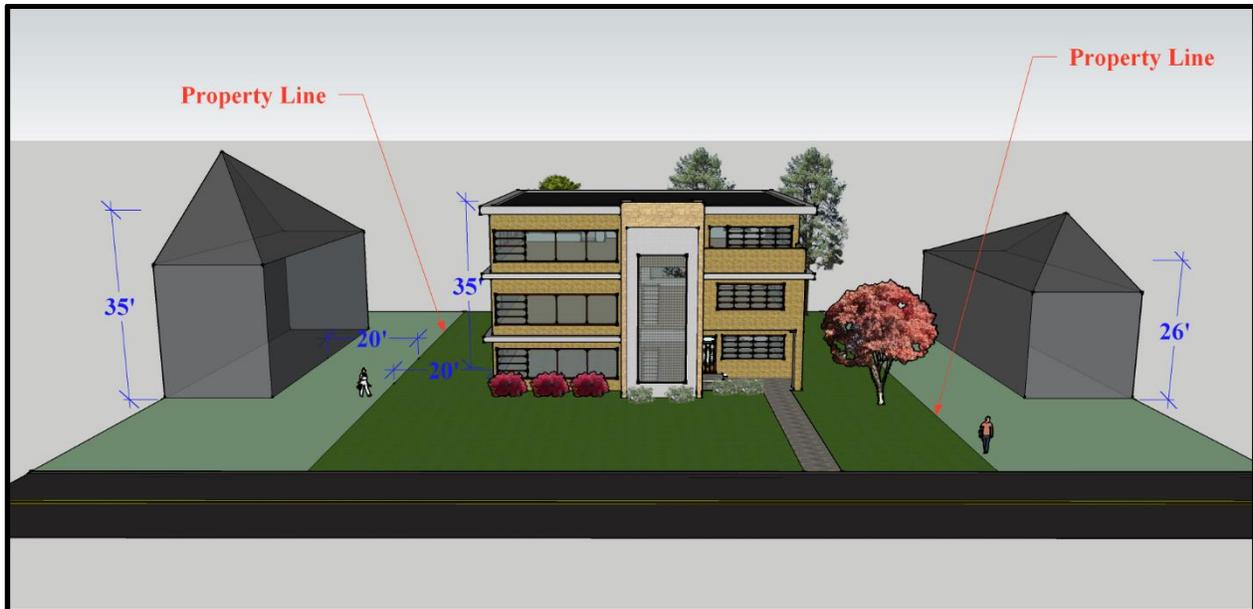
The zoning district bulk regulations, including the maximum building height and the minimum yard requirements, are intended to reduce the bulk impact from a structure located on a property onto an adjacent property and to ensure adequate light and openness between buildings. Minimum lot size and yard requirements (setbacks) vary by zoning district and the districts with smaller minimum lot size requirements, also have smaller minimum yard requirements than the districts with larger minimum lot area requirements. However, the maximum building height requirement for single family detached dwellings is 35 feet in all residential zoning districts. Building height is defined in the Zoning Ordinance as follows:

**HEIGHT, BUILDING:** The vertical distance to the highest point of the roof for flat roofs; to the deck line of mansard roofs; and to the average height between eaves and the ridge for gable, hip and gambrel roofs measured from the curb level if the building is not more than ten (10) feet distant from the front lot line, or from the GRADE in all other cases.

Custom home builders have requested additional building height flexibility in certain zoning districts with larger minimum lot size requirements, as such districts have larger lot area and greater minimum yard requirements than districts with smaller minimum lot size requirements, and therefore, a dwelling with a building height greater than 35 feet would have less of an impact on adjacent properties than in districts with smaller lot size and minimum yard requirements. It can be difficult to build a single family dwelling with nontraditional architecture on steep slopes, such as along the Potomac River, that does not exceed the 35 foot maximum height limitation, particularly given that grade is based on the lower of the pre-existing or post development average grade around a structure and there is frequently a large amount of fill or cutting required to develop such lots.

Building Height Illustration 1 below shows the minimum side yard requirement of 20 feet in the R-1, R-E and R-C Districts and a maximum building height of 35 feet. This illustration shows what could currently occur by right in the R-C, R-E, and R-1 Districts.

## Building Height Illustration 1 35' Tall Dwelling with 20' Side Yard Setback



The proposed amendment would allow a single family dwelling to be up to 40 feet in height in the R-C, R-E and R-1 Districts, provided that a minimum yard of 50 feet is maintained from all lot lines for any such building greater than 35 feet in height. The R-C, R-E and R-1 Districts were selected as these districts have relatively large minimum lot size requirements for lots developed under the conventional provisions, with a minimum lot size requirement of 5 acres in the R-C District, 75,000 square feet in the R-E District, and 36,000 square feet in the R-1 District. Except for the R-E District which has a minimum front yard requirement of 50 feet, the R-C, R-E and R-1 Districts have a minimum front yard requirement of 40 feet, a minimum side yard requirement of 20 feet, and a minimum rear yard requirement of 25 feet. It is believed that an additional five feet of building height would provide adequate additional flexibility to accommodate most house designs. The impact of an increase in building height on an adjacent lot can be mitigated with an increase in setback from the property lines. As such, staff is recommending that a minimum setback of 50 feet be required from all lot lines for any dwelling taller than 35 feet and up to 40 feet in height in the R-C, R-E, and R-1 Districts.

Building Height Illustration 2 shows the visual impact of the proposed recommendations which includes a maximum building height of 40 feet with a minimum required setback of 50 feet from the side property lines.

## Building Height Illustration 2 40' Tall Dwelling with 50' Side Yard Setback

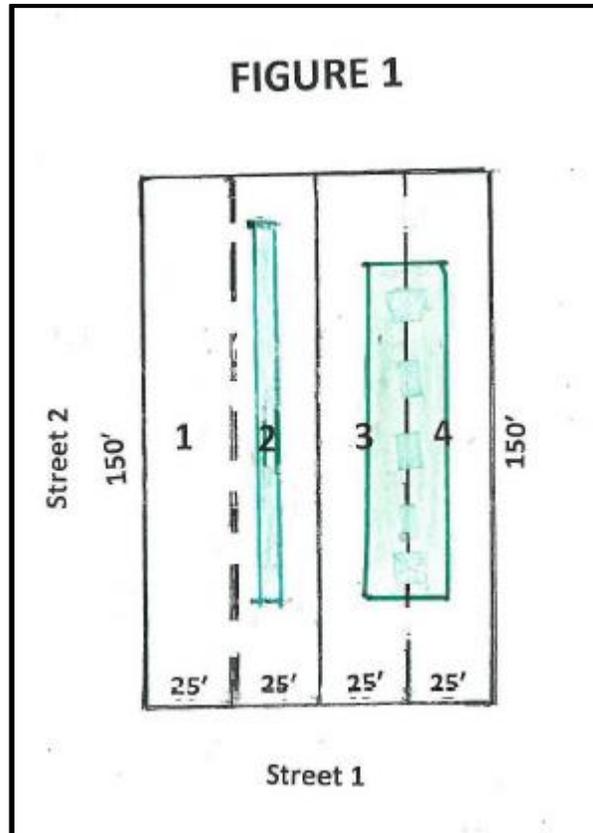


### Minor Lot Line Adjustments

Under Sect. 2-405 of the Zoning Ordinance, if a lot met the zoning requirements in effect when the lot was recorded, but does not meet the current minimum district size, lot area, lot width or shape factor requirements, either as a single lot or in combination with other such lots, such lot pursuant to a building permit can be used for any use permitted in the zoning district even though the lot does not meet the minimum district size, lot area, lot width and/or shape factor requirements, provided that all other requirements can be met, including minimum yard requirements. Such lots cannot be subdivided except for a subdivision for a public purpose, such as dedication for road right-of-way, or for a minor adjustment of lot lines pursuant to the Subdivision Ordinance. A subdivision for a minor lot line adjustment may be permitted provided that such subdivision is only to consolidate land area of contiguous lots, or to rearrange lot lines in order to reallocate land area between contiguous lots such that the reconfigured lots contain either the same lot area as existed prior to the adjustment of lot lines or a greater area than existed prior to the adjustment of lot lines which results in a reduced number of lots. In addition, a minor lot line adjustment shall not result in any additional lots or outlots being created, an increase in the maximum density and the resultant lot lines shall not create any new or aggravate any existing noncompliance with regard to minimum lot area, lot width, shape factor or minimum yard requirements.

Many lots that are considered “buildable” under Sect. 2-405 are extremely narrow and it is difficult, if not impossible, to place a structure on such a lot that would meet the minimum side yard requirements. Figure 1 below contains a fairly typical arrangement of four 25-foot wide lots. For illustrative purposes, the lots in Figure 1 are zoned R-3 District which has a minimum lot area requirement of 10,500 square feet and a minimum lot width requirement of 80 feet for interior lots

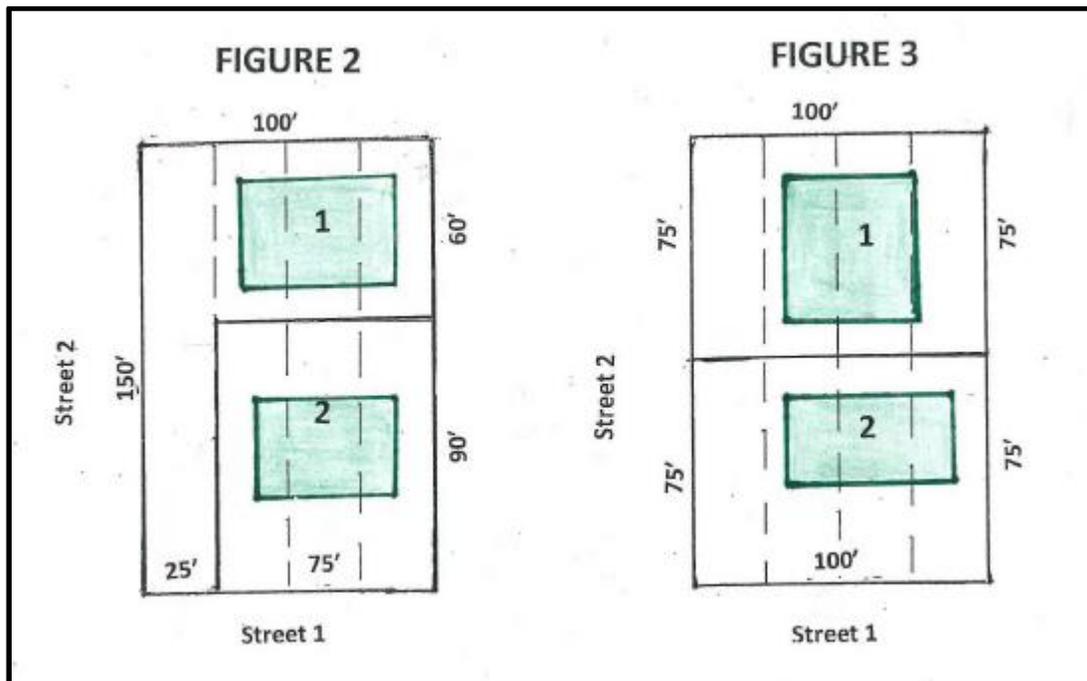
and 105 feet for corner lots. The R-3 District also has a minimum front yard requirement of 30 feet, minimum side yard requirement of 12 feet and a minimum rear yard requirement of 25 feet. On a corner lot the rear yard can take on the dimensions of a side yard.



Under Sect. 2-405, all four lots depicted on Figure 1 are “buildable” even though the lots do not meet the current minimum lot area or lot width requirements. However, any dwelling constructed would have to meet the minimum yard requirements. Given the minimum 12 foot side yard requirement in the R-3 District, it is impossible to place a structure on only one of the 25-foot wide lots. As previously noted, Sect. 2-405 allows for the consolidation of lots. If the four lots depicted in Figure 1 were consolidated into two lots, with Lots 1 and 2 combined into one lot and Lots 3 and 4 combined into a second lot, the resulting “building envelopes” are depicted in green. A building envelope is a term that is frequently used to describe the buildable area of a lot based on the minimum yard requirements. Combined Lots 1 and 2 would be limited to a structure that is 8 feet in width, and it is infeasible to build a structure within that building envelope. The scenario depicted on Figure 1 is a fairly common situation and frequently a minor lot line adjustment is pursued in order to achieve two lots that are of a configuration that is more functional and easier to place structures that meet the minimum yard requirements.

In Figure 1 above, the four lots are oriented toward Street 1 and the minimum lot width is measured along Street 1. Figure 3 below shows a logical minor adjustment of lot lines that results in two lots that are compact and regular in shape and would allow structures to be placed on both lots that

met the minimum yard requirements. While such a minor lot line adjustment would result in an increased minimum lot width of the resulting lots from 25 to 75 feet and, therefore, decrease the lot width nonconformity; such a minor lot line adjustment as depicted in Figure 3 cannot be approved under the current Zoning Ordinance provisions as lot width noncompliances are being created for both Lots 1 and 2 along Street 2, whereas on the original lots depicted in Figure 1 there was no lot width noncompliance along Street 2. Therefore, in order to subdivide these properties and not create any new lot width noncompliances, the lots could be subdivided as depicted on Figure 2 below. The lot width for Lot 1 on Figure 2 has not changed along Street 1 and the lot width for Lot 2 has been increased to 75 feet along Street 1. Under this scenario, there has been no change to the dimension of Lot 1 along Street 2. Although Lot 1 is somewhat irregularly shaped, it has a shape factor of 22.4 and would not exceed the maximum allowable shape factor of 35. Although the resulting lots in Figure 2 meet the minor lot line adjustment criteria in Sect. 2-405, the resulting Lot 1 is not desirable given its configuration with an appendage along Street 2. The resulting lots in Figure 3 are more desirable and it would be easier to place structures that met the minimum yard requirements on such lots.



In order to allow a minor lot line adjustment for Sect. 2-405 corner lots as depicted in Figure 3 above, the proposed amendment adds a new Paragraph 1B(3) to Sect. 2-405 that would allow a minor adjustment of lot lines between corner lots and contiguous lots that changes the road frontage or orientation of the lots, provided that there are no additional lots or outlots created, the number of lots that do not comply with the current minimum lot width requirement is not increased, and the amount of lot width noncompliance is not aggravated. In addition, such adjustment of lot lines cannot create or aggravate any existing noncompliance with regard to minimum lot area, shape factor or minimum yard requirements. Staff believes that allowing for the lots depicted in Figure 3 to be approved as a minor lot line adjustment would result in lots that are better designed in a corner lot situation.

**CONCLUSION**

Any comments or questions regarding the proposed amendment may be referred to Lorrie Kirst, Senior Deputy Zoning Administrator, at 703-324-1314, or by sending written comments to [ORDADMIN@fairfaxcounty.gov](mailto:ORDADMIN@fairfaxcounty.gov). Please submit all comments by May 4, 2016.

Attachment: A/S

cc: Board of Supervisors  
Edward L. Long, Jr., County Executive  
Robert A. Stalzer, Deputy County Executive  
David P. Bobzien, County Attorney  
Fred Selden, Director, DPZ  
Elizabeth Teare, Deputy County Attorney  
Catherine A. Chianese, Clerk to the Board of Supervisors

