

## Department of Planning and Zoning

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**TO:** Planning Commission Ordinance Committee  
**FROM:** Scott Gustin  
**DATE:** February 1, 2018  
**RE:** Density and Intensity of Development Calculations

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Following a second discussion by the full Planning Commission on January 23, 2018, the pending amendment to Sec. 5.2.7 was referred again to the Ordinance Committee. This amendment was put forth to eliminate the provision for rounding so as to reflect express residential density limits articulated for the residential zones in Article 4. With the majority of the Planning Commission seemingly in favor of allowing rounding, even when resulting in an additional surplus unit, staff recommends that the amendment simply be dropped at this point.

Section 5.2.7 as presently written is below:

### **Sec. 5.2.7 Density and Intensity of Development Calculations**

#### **(a) Dwelling Units per Acre:**

In accordance with the district-specific provisions of Article 4, the calculation of development intensity shall be measured as follows in such cases where the intensity of development is measured on a dwelling unit per acre basis:

1. Density Calculation: The total number of dwelling units provided on a development site, or portion of the site where split by a zoning district boundary, shall be divided by the gross site area expressed in acres. In calculating the number of residential units permitted, fractional units of less than five-tenths (0.5) shall be rounded down to the nearest whole number and fractional units of five-tenths (0.5) or greater shall be rounded up to the nearest whole number. Any rounding of fractional units shall be limited to a single final calculation for any development.
2. Density Equivalent, Nonresidential Uses: For purposes of density calculations, each one thousand, five hundred (1,500) square feet of nonresidential gross floor area not contained within a dwelling unit or within common hallways, stairwells and elevator shafts serving said dwelling units shall be counted as one dwelling unit.

#### **(b) Floor Area Ratio:**

As written.

A number of concerns about the methodology for present density calculation were expressed by Attorney Murphy on January 23. These concerns are addressed below.

Concern was raised as to the use of the term “development site” (see highlighted). It is not defined in Article 13: Definitions of the CDO.

Density Calculation: The total number of dwelling units provided on a **development site**, or portion of the site where split by a zoning district boundary, shall be divided by the gross site area expressed in acres. In calculating the number of residential units permitted, fractional units of less than five-tenths (0.5) shall be rounded down to the nearest whole number and fractional units of five-tenths (0.5) or greater shall be rounded up to the nearest whole number. Any rounding of fractional units shall be limited to a single final calculation for any development.

Use of this term is intentional. A development site may be a single lot of land or multiple lots together. Where buildable area restrictions apply (i.e. wetlands and steep slopes), the development site is actually smaller than the entire lot. Not every term in the CDO is defined in Article 13, nor does it need to be. The term could be deleted in favor of reference to lot or lots, including buildable area where applicable or simply left as is.

Concern was raised as to the CDO's reference to "gross site area" versus "net area." Staff sees no inconsistency in the CDO. The reference to "gross site area" in Sec. 5.2.7 is consistent with the notation at the bottom of Table 4.4.5-2: *Base Residential Density* that states:

Inclusive of new streets but exclusive of existing streets, and without bonuses or any Inclusionary Zoning allowances.

This notation simply means that the allowable residential density of a parcel is calculated across its entire (i.e. gross) area, even if the lot is to be subdivided to include a new public road. The density calculation, of course, leaves out land associated with existing streets. Both gross and net area are defined in Article 13. Only "gross area" pertains to density calculation.

Concern was expressed as to the degree of fraction considered in calculating allowable residential density on a per acre basis (i.e. 0.5 acre or 0.49 or 0.498 etc.). In practice, this concern is without merit. Every lot of land in Burlington is included in the Amanda permit system. Each lot has a lot size expressed in square feet. In other words, lot size information is provided down to the square foot. Whatever the lot size is expressed in acres is used as the basis for the density calculation, whether the fractional numbers are carried out to the 1<sup>st</sup>, 2<sup>nd</sup>, or 10<sup>th</sup> decimal place.

Concern was expressed as to the methodology itself and its basic premise of starting with a desired number of units and dividing that by the lot size expressed in acreage.

Example (RM zone)

12 units (desired) / .58 acres = 20.7 units.

This number exceeds the 20 unit/acre limitation in the RM zone, so 12 units cannot be permitted.

Linking allowable residential density to lot size is simply a ratio. As such, there are limited methods to calculate it. An alternative method to calculate density is below:

Example (RM zone)

20 units (allowable per-acre density) X 0.58 acre = 11.6 units.

The fractional 11.6 is rounded up to 12, so 12 units would be permitted.

Between the two methods, the former is less likely to yield cases of rounding up for an additional unit than the latter as demonstrated in the two above examples. Lacking a compelling reason to change the formula, staff recommends that it be left unchanged.

Finally, a suggestion was made that rounding fractional results to the next higher whole number be limited to fractions of 0.7 or greater. Employing this standard would be inconsistent with rounding used for parking calculations, inclusionary housing requirements, and mathematical rounding practices generally. It would amount to another “one-off” in the CDO and would invite mistakes. Insofar as rounding is to be allowed, it should follow standard procedure: 0.5 or greater rounds up to the next higher whole number. Less than 0.5 would be rounded down to the next lower whole number.

In sum, the formula for density calculation in Sec. 5.2.7 works. The question as to allowing rounding up even past the express density limit has been answered by the Planning Commission. No restructuring of this section or related sections pertaining to density is needed. Staff recommends simply dropping the proposed amendment.