

Carroll County Buildable Land Inventory

Appendix A: Residential Multipliers

These multipliers were derived for the original report in 2005 and were accepted unchanged for this latest report.

To determine lot yield in Carroll County when a subdivision is proposed, a straight density calculation on the gross acreage is not used. Rather, certain factors are considered and certain acreage removed from the gross acreage before lot yield can be calculated. Therefore, using a straight density calculation on gross acreage produces an inflated potential lot yield. To try to account for some of the factors that almost always affect lot yield, the absolute constraint data was used to remove parcels from consideration that weren't likely to have a lot yield. The remaining parcels would be considered developable. However, in calculating the potential number of lots that could be created, infrastructure – in this case, new roads and stormwater management (SWM) – needed to serve the new lots also needs to be considered. In most cases, needed infrastructure will reduce the overall lot potential.

Since the actual acreage needed for roads and SWM on each undeveloped parcel cannot be determined before a development plan is submitted, a percentage of gross acreage that would likely be taken by roads and SWM was developed to help provide a more accurate picture of potential lot yield.

Various Carroll County data was reviewed to identify the lot yield historically attained for property in each of the residential zoning/land use designation categories. A multiplier, representing the percentage of land remaining

after accounting for infrastructure, was estimated for each residential zoning/land use designation categories. Since the data was not easy to aggregate, the numbers were modified to reflect a more realistic and logical figure for Carroll County.

The following steps were taken to identify these initial multipliers:

1. The Development Review Tracking System, which was created in 1990, was queried to create a list of all of the subdivisions in the C and R Districts that have been recorded since 1995. The query identified 76 plans in the C District, 37 plans in the R-40,000 District, 34 plans in the R-20,000 District, 26 plans in the R-10,000 District, and 3 plans (since 1990) in the R-7,500 District.
2. In each of these districts, it was determined that a minimum of 15 plans should be reviewed for acreage figures to calculate an average percentage of gross acreage dedicated to new roads and SWM. In reality, all of the plans were reviewed in the R-7,500 District because there were only a total of 3 plans recorded since 1990. In the other districts, more than 15 plans were actually reviewed. Although every other plan on the list (listed chronologically by recording date) was reviewed to provide a random review, additional plans that yielded large numbers of lots were also reviewed to try to increase the level of representative accuracy. Most of the smaller subdivisions – 10 or less lots – did not require an appreciable amount of acreage for new roads or SWM. A total of 27 plans were reviewed in the C District, 20 plans in the R-40,000 District,

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- 21 plans in the R-20,000 District, and 16 plans in the R-10,000 District.
- The scanned plats for the above plans were reviewed to identify gross acreage, actual lot yield, acreage in new roads, and acreage in SWM. Some plans had to be eliminated from the calculations because acreage figures were either not provided on the plat or were not readable. Those eliminated were not counted in the total number of plans reviewed.
 - For each plan reviewed, the total acreage in new roads was divided by the gross acreage to determine a percentage of the total plat area devoted to new roads. In each district, the percentage of the gross acreage of each of the plans was averaged to identify an overall percentage of the parcel that should represent new roads when lot yield is estimated for purposes of this study.
 - Task 4 above was repeated using the total acreage in SWM to determine an overall percentage of the parcel that should represent SWM facilities when lot yield is estimated for purposes of this study.
 - The total identified percentage for each district for both new roads and SWM were added together to produce one overall percentage for new infrastructure to be applied for the buildable land calculations on potential lot yield. Because there was insufficient data for the R-7,500 District, the percentage and multiplier to be used for R-10,000 was identified for the R-7,500 District as well.

The original multipliers developed using this method were approximated as .99 for the Conservation zone, .95 for the R-40,000 zone, .89 for the R-20,000 zone, .93 for the R-10,000 zone, .93 for the R-7,500 zone, and .89 for the Heritage zone. The table below identifies the modified

multipliers, the multipliers actually used for this report. Many jurisdictions around the country that have done a buildable land inventory use multipliers within the .75 to .85 range. However, for Carroll County, the numbers tend to be correspondingly higher. Therefore, a graduated range was developed that closely approximated the initial multipliers, but that were more practical and logical. These multipliers are the best representation for Carroll County at this time.

Modified Multipliers Used in This Report:	
Multiplier for Gross Acreage of Buildable Residential Land To Calculate Buildable Land Remaining After Accounting for New Roads and SWM Facilities	
Zoning District*	Multiplier
Conservation	0.950
R-40,000	0.925
R-20,000	0.900
R-10,000	0.875
R-7,500	0.850
Heritage**	0.900

* A multiplier was not identified for the A District because the formula used to calculate lot yield in that District can accommodate needs for new infrastructure without reducing lot yield.
 ** The minimum lot size in the Heritage District is the same as for the R-20,000 District. Therefore, the same multiplier was used for both.

Source: Carroll County Bureau of Planning – For Use w/ Buildable Land Inventory Only

To identify multipliers for the municipalities, the multiplier for the County zoning district that was roughly closest to the municipality's zoning district was used.