



Subdivision Staging Policy: Revised Student Generation Rates

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Description

In approving the annual school test, the Planning Board also approves the methodology used to calculate the results of the annual school test. One component of the test, used to estimate projected student enrollment, is the student generation rate. The student generation rate is a factor used to estimate the number of potential students generated by the construction of different types of housing.

Staff Recommendation

Approve the revised methodology for calculating student generation rates.

Summary

The annual school test analysis is prepared by Montgomery County Public Schools staff. One component of the methodology used to calculate the annual school test involves estimating the number of students generated by different types of housing. This factor is frequently referred to as the student generation rate.

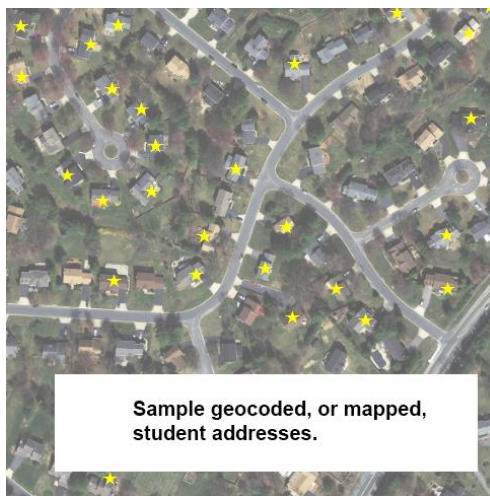
In the past, the official source of these “yield” factors, or student generation rates, has been the Montgomery County Planning Department’s Census Update Survey. The Census Update Survey was last conducted in 2008 and there are no plans to conduct it in the future. Due to the unavailability of the survey data, over the past year Planning Department staff and MCPS staff have been working on a new methodology for calculating these rates.

Address Data and the Parcel File Methodology

For the year beginning July 1, 2014, student generation rates have been calculated using a new methodology developed in cooperation with the Montgomery County Public Schools (MCPS). These rates rely on two major data files: a student address database (scrubbed of confidential information) provided by the Division of Long-range Planning, MCPS, and the parcel file

developed and provided by the Montgomery County Planning Department. The data in each file were spatially matched using the method outlined below:

1. The MCPS December 2012 file of student addresses was linked to valid address points in the County. This process is known as geocoding. Of 149,283 student addresses, 0.27% were not geocoded because they fell outside the County or had unrecognizable addresses.



The geocoded addresses were then matched to residential parcels designated single-family detached, single-family attached, low-rise (four or fewer floors), and high-rise (five or more floors). The residential dwelling unit type designations for low- and high-rise buildings were based on Light Detection and Ranging (LIDAR) information (assuming 12 ft. per building floor). Of the 148,874 geocoded student addresses, only 2.13% were not matched to designated residential parcels.

To calculate the student generation rates, only addresses that matched residential parcels where the structure was built within the last ten years for single-family detached or attached buildings and any year for multi-family buildings were used. The reason for considering only more recently built (2002 – 2012) single-family attached and detached structures was that it was assumed that their associated generation rates would better reflect the demographics associated with new single-family construction, and would thereby assist in forecasting enrollment from new housing. (The number of school-age children is higher in housing occupied within the last ten years than in older housing stock.). On the other hand, for multi-family structures it was determined that considering all housing units, regardless of age, provides a better estimate of the full impact of this type of housing over time. (The number of school-age residents is slightly higher as multi-family structures age.)

2. Student addresses designated by housing type were separated into school levels: pre-k, k-5, 6-8, and 9-12. The student generation rate for each school level was then

calculated by dividing the number of students by housing type by the total number of residential units. An example is given below:

High School (grades 9 to 12)			
Student Residence Type	Students	Parcel File Count of Unit Type	Rate
Multi-Family High Rise (all periods)	1,694	50,675	0.033
Multi-Family Low to Mid Rise (all periods)	5,917	76,915	0.077
Single Family Attached (last ten years)	737	6,529	0.113
Single Family Detached (last ten years)	1,971	10,361	0.190

The resulting student generation rates by housing type and school level are attached to this memorandum.

Census Update Survey

Prior to calculating the student generation rates using the methodology described above, generation rates were derived from a sample-based household survey known as the Census Update Survey (CUS) done in 2008. The new method that is being proposed differs from the old one due to a change in source data and the method of calculation. The following is a summary of the differences in data and methodology:

- The proposed generation rates depend on a housing unit count that does not consider occupancy status, whereas the 2008 rates used only occupied units.
- The proposed rates rely on actual student enrollment, as reported by MCPS, while the 2008 figures relied on a sampling of households that were weighted using that year's public school enrollment to statistically arrive at an estimate of the number of children in the County.
- The proposed calculation method matches enrolled students by address to a corresponding housing type from the parcel file, while the 2008 rates were derived from the weighted survey results of households with children enrolled in public school and the reported structure type verified against that year's parcel file.
- The proposed rates use student enrollment data only for students whose place of residence is a single-family detached or attached home built within the last ten years or a multi-family structure built any year. Meanwhile, the 2008 CUS took into account "mobility", allowing the calculation of separate rates for households that moved within or into the County five years prior to the survey. The rationale for assessing the student yield characteristics of recent movers was the assumption that their generation rates would better reflect the demographics associated with new residential construction.

Beyond these methodological differences, the calculation deriving a student generation rate was the same in both approaches for example, determining the number of students by school level

and housing type and then dividing this sum by the corresponding number of housing units by type in various regions of the County.

Conclusion

The methodology used to calculate the student generation rates shown below was vetted internally by Planning Department staff and the staff of the Division of Long-range Planning, MCPS. It was also found to be sound and consistent with previously calculated yield rates. In addition, MCPS has shared the new version of the student generation rates with the community, and the resulting feedback was incorporated into the methodology used to derive the calculated rates. As a result, the Research and Special Projects Division requests that both the new methodology and the student generation rates that it generates be approved by the Montgomery County Planning Board.

Montgomery County Student Generation Rates by Housing Type				
Housing Type	Elementary	Middle	High	Total K-12
Single Family Detached	0.357	0.153	0.190	0.700
Single Family Attached	0.214	0.082	0.113	0.409
Multi-Family Low to Mid Rise	0.146	0.055	0.077	0.278
Multi-Family High Rise	0.060	0.025	0.033	0.118

Based on 2013 analysis of students residing in single family and townhouse units built within the last 10 years, and in multi-family units of any age.

Source: Montgomery County Planning Department-MNCPD, Research and Special Projects Division and the Montgomery County Public Schools, Division of Long-range Planning.